Governing the EU ETS: The Contribution and Modalities of Linkage

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Declaration

‘I, Gerard Hugh Kelly, confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.’

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Abstract

This thesis examines the legal mechanics and dynamics of implementing linkage with the EU ETS. The voluminous literature which has developed exploring climate governance has more often equated climate governance with multilateral treaty-making. This thesis instead suggests that the global framework for climate governance is more likely to percolate up from diverse multi-level and multi-actor initiatives rather than filter down from multilateral agreement. In such a multi-level governance landscape, linkage is advanced as a mechanism to promote and maintain complementarity between emissions trading schemes, whilst advancing the incremental evolution of a global carbon trading architecture.

The EU has played a leading role in international efforts to promote collective action to confront climate change since the 1990s. This thesis reviews these efforts and critically evaluates the EU's climate leadership credentials before suggesting how the EU should moderate its leadership model. The central discussion and analysis of this thesis considers the implementation of linkage with the EU ETS. Linkage is conceptualised as a continuum, not a single event. To this end, this thesis advances direct linkage as the objective of an incremental process to achieve de minimis alignment of schemes' critical design features. By identifying and elaborating core convergence criteria necessary for direct linkage, a framework is advanced to ensure that any candidate scheme has achieved the appropriate degree of alignment for the implementation of direct linkage with the EU ETS. Finally, through application of the previously defined core convergence criteria, this thesis advances a first substantive examination of the potential for direct linkage between the EU ETS and South Korea's emissions trading scheme ("KETS") since the latter's launch in 2015.

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List of Abbreviations

CDM	Clean Development Mechanism
CER	Certified Reduction Units
EU	European Union
EU ETS	European Union Emissions Trading Scheme
KETS	South Korean Emissions Trading Scheme
OECD	Organisation for Economic Co-operation and Development
UNFCCC	United Nations Framework Convention on Climate Change

CHAPTER 1

INTRODUCTION

1.1 The Challenge of Climate Change

Climate change has emerged as "the defining issue of our age".[1] The landmark establishment in 1988 of the International Panel on Climate Change (IPCC), a panel of over 2,000 scientists, by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) has provided a structured framework within which to assess and present a clear scientific view on the current state of knowledge in climate change and its potential environmental and socio-economic impacts. In its most recent Fifth Assessment the IPCC concluded that it is "extremely likely that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in greenhouse gas concentrations and other anthropogenic forcings together".[2] Present atmospheric concentrations of carbon dioxide, methane, and nitrous oxide are now at levels which are "unprecedented in at least the last 800,000 years".[3] In its scale, inter-connectedness, socio-ecological complexity, and potentially chaotic economic impacts, climate change presents multiple challenges which require multi-level and multi-actor engagement.

There is no single solution to avert climate change, nor is there a silver bullet to the governance challenges which it creates. In this sense, climate

[1] Ban Ki-moon, 'Opening Remarks at 2014 Climate Summit' (22 September 2014) <http://www.un.org/apps/news/infocus/sgspeeches/print_full.asp?statID=2355> accessed 14 April 2017.
[2] IPCC, 'Climate Change 2014 Synthesis Report Summary for Policymakers' (2014) IPCC: Fifth Assessment Report (AR5), 5 <http://ipcc.ch/pdf/assessment-report/ar5/syr/AR5_SYR_FINAL_SPM.pdf> accessed 14 April 2017. The IPCC defines "extremely likely" as at least a 95% chance.
[3] ibid 4.

change has quite rightly been described as a "wicked problem" par excellence.[4] The task of developing effective climate governance arrangements is made all the more challenging by the uniquely transnational nature of the problem. Whilst it is often observed that "climate change is a global problem that requires a global solution",[5] the elusive search for a "solution" within the international treaty-making context may be at best naïve and at worst positively dangerous given the compelling scientific basis for more immediate and drastic action.[6] Climate change is "the quintessential multi-scalar problem",[7] but although the rhetoric of confronting climate change has often been replete with cooperative language, the practical reality of multilateral action has proven more sobering. Many countries have been "less prepared to commit to what may be scientifically sound activities and more interested in protecting their own countries' short-term interests".[8] This dynamic is further accentuated by the fact that just as responsibility for creating and deepening the climate problem is unevenly spread, so too are the consequences: countries will be impacted in vastly different and unequal ways.[9]

It is clear that the potential consequences of climate change are so diverse and far-reaching that climate change must be framed as not only an

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[4] Harro van Asselt, *The Fragmentation of Global Climate Governance: Consequences and Management of Regime Interactions* (Edward Elgar Publishing 2014) 3 and Maria Lee, *EU Environmental Law, Governance and Decision-Making* (2nd edn, Hart Publishing 2014) 132 applying the "wicked problem" concept elaborated by Horst WJ Rittel and Melvin M Webber, 'Dilemmas in a General Theory of Planning' (1973) 4(2) Policy Sciences 155.

[5] Felicia Jackson, *Conquering Carbon: Carbon Emissions, Carbon Markets and the Consumer* (New Holland Publishers 2009) 20 and Yasuko Kameyama, 'Comment on "Multi-Level Governance and Climate Change in East Asia"' (2010) 5 Asian Economic Policy Review 108.
The concept of collective action better captures the essence of the required response to climate change: Arild Underdal, 'Complexity and Challenges of Long-Term Environmental Governance' (2010) 20(3) Global Environmental Change 386.

[6] Qiang Wang and Xi Chen, 'Rethinking and Reshaping the Climate Policy: Literature Review and Proposed Guidelines' (2013) 21 Renewable and Sustainable Energy Reviews 469, 472.

[7] Maria Carmen Lemos and Arun Agrawal, 'Environmental Governance and Political Science' in Megali A Delmas and Oran R Young (eds), *Governance for the Environment: New Perspectives* (Cambridge University Press 2009) 69, 90.

[8] Louise Van Schaik and Simon Schunz, 'Explaining EU Activism and Impact in Global Climate Politics: Is the EU a Norm or Interest-Driven Actor?' (2012) 50(1) Journal of Common Market Studies 169, 183.

[9] It has been predicted that Asian countries, in particular, are highly vulnerable.
Asian Development Bank, *The Economics of Climate Change in Southeast Asia: A Regional Review* (Asian Development Bank 2009) 12.

environmental governance issue, but also "a development issue, an economic issue, a rights issue and a legal issue".[10] It is within this broader interdisciplinary context which the more discrete undertaking of this research must be understood. As the foregoing demonstrates, climate governance is of urgent contemporary relevance, but the contribution of emissions trading – the focus of this research – remains only one piece of a much more complex, fluid, and unsettled global governance mosaic.

1.2 Climate Governance and the Contribution of this Research

At the core of EU climate policy is the European Union's Emissions Trading Scheme (EU ETS). Launched across the EU in 2005, the EU ETS is now in its third phase and is the world's largest market in carbon emissions allowances.[11] Significant expansion of the scheme has occurred since its launch: the accession states of east and central Europe have been integrated within the scheme and extension of the EU ETS to include international aviation and shipping is in progress.[12] Yet it was far from clear that the EU ETS would emerge as the "pièce de résistance of EU climate change policy".[13] Indeed, as will be analysed in Chapter 2, it is noteworthy to recall that the concept of market trading was initially championed by the United States and viewed with scepticism by many EU

[10] Mary Robinson, 'Social and Legal Aspects of Climate Change' in Anna Grear and Conor Gearty, *Choosing a Future: The Social and Legal Aspects of Climate Change* (Edward Elgar Publishing 2014) 15, 16.

[11] Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC [2003] OJ L273/32 (EU ETS Directive).
The EU ETS now covers more than 12,000 industrial emissions and is responsible for almost half of the EU's CO_2 emissions: see Christian de Perthuis and Raphael Trotignon, 'Governance of CO_2 Markets: Lessons from the EU ETS' (2014) 75 Energy Policy 100.

[12] Directive 2008/101/EC of the European Parliament and of the Council of 19 November 2008 amending Directive 2003/87/EC so as to include aviation activities in the scheme for greenhouse gas emission allowance trading within the Community [2009] OJ L8/3 (Aviation Emissions Directive).

[13] Nicolas de Sadeleer, 'Salvaging the Carbon Market: Will the Phoenix Rise from the Ashes?' (2016) 13(2) Journal for European Environmental and Planning Law 133, 134.

Member States.[14] Given this historical backdrop, it is intriguing to observe that by its commitment to develop the EU ETS, the EU has not only retreated from its traditional advocacy of command-and-control measures, but rather the Union has also embraced – with unexpected enthusiasm – the centrality of an economic approach in addressing climate change.

The convert's zeal with which the Union has promoted market trading, particularly evident in its ambition to place the EU ETS at the heart of a global carbon market, is illustrative of the EU's confidence in the contribution of market trading to climate governance.[15] The EU ETS Directive explicitly acknowledges the Union's aspiration to explore linkage between the EU ETS and other envisaged emissions trading schemes[16] and the Commission has consistently advocated OECD-wide emissions trading.[17] Yet "the emergence, to date, of national and regional carbon markets has been characterised by a virtual absence of institutional structures for the governance of trading markets across borders".[18] The pursuit of compatibility between emissions trading schemes is emerging as a central concern in climate governance and is a core focus of this research.

Compatibility, as explored in Chapter 5, does not require the attainment of perfect uniformity across emissions trading schemes. It is, instead, an effort to create a zone of convergence within which emissions trading schemes can pursue multi-speed pathways towards direct linkage. This thesis builds upon the

[14] Michael Grubb, Christiaan Vrolijk and Duncan Brack, *The Kyoto Protocol: A Guide and Assessment* (Earthscan 1999) 19.
[15] Jürgen Lefevere, 'The EU Greenhouse Gas Emissions Allowance Trading Scheme' in Farhana Yamin (ed), *Climate Change and Carbon Markets: A Handbook of Emissions Reduction Mechanisms* (Earthscan 2005) 34.
[16] EU ETS Directive, art 25.
[17] Commission, 'Building a Global Carbon Market: Report Pursuant to Article 30 of Directive 2003/87/ EC and Commission – Towards a Comprehensive Climate Change Agreement in Copenhagen' (Communication) COM (2009) 676 final, 11.
[18] Andreas Türk, Michael Mehling, Christian Flachsland and Wolfgang Sterk, 'Linking Carbon Markets: Concepts, Case Studies and Pathways' (2009) 9(4) Climate Policy 341, 342.

concept of linkage by degrees, developed by Burtraw and colleagues, and advocates the contribution of linkage by incrementally minimising and removing the potential for conflict in schemes' critical design features.[19] Linkage, however, can and should go further by actively nurturing complementarity between schemes. Young has emphasised that institutions can interact with one another as a result of both functional interdependencies arising from inherent connections and strategic links which arise from exercises in political design and management.[20] In the latter sense, the contribution of linkage to climate governance becomes readily apparent as an exercise in political management "to forge connections between or among institutions intentionally in the interests of pursuing individual or collective goals".[21] Indeed, in the context of climate governance, it is difficult to overstate the importance of promoting and facilitating complementary interaction, particularly given that there remains "a mismatch between the apparent seriousness of the problem and our collective institutional response".[22]

As Chapter 3 elaborates, surveying the emerging emissions trading landscape through a multi-level governance lens uncovers critical questions concerning linkage including the design of modalities to: (i) minimise conflictive interaction; and (ii) promote complementarity. By identifying environmental integrity as the governing rule guiding the identification of core convergence criteria for direct linkage, as defined in Chapter 5, this thesis reflects an instrumentalist understanding which holds that it is appropriate to deploy

[19] David Burtraw, Karen Palmer, Clayton Munnings, Paige Weber and Matt Woerman, 'Linking by Degrees: Incremental Alignment of Cap-and-Trade Markets' (2013) Resources for the Future Discussion Paper 04/2013, 4.
[20] Oran R Young, 'Institutional Interplay: The Environmental Consequences of Cross-Scale Interactions' in Elinor Ostrom, Thomas Dietz, Nives Dolšak, Paul C Stern, Susan Stonich and Elke U Weber (eds), *The Drama of the Commons* (National Academies Press 2002) 263, 264.
[21] ibid.
[22] Stephen Gardiner, 'Saved by Disaster? Abrupt Climate Change, Political Inertia, and the Possibility of an Intergenerational Arms Race' (2009) 40(2) Journal of Social Philosophy 140, 143.

emissions trading for economic efficiency purposes in order to achieve climate policy objectives which continue to be set by the state.[23] Significantly, this conceptualisation of emissions trading does not endorse an unregulated free market philosophy in this arena.[24] Moreover, this understanding is consistent with the fluid multi-level governance landscape explored in Chapter 3. Through recognition of the centrality of environmental integrity in the process of creating a zone of compatibility between candidate partner schemes, this thesis engages with the "major concern" identified by Peel and colleagues "as to whether the multiplicity of different regulations will ultimately 'add-up' to what is required in order to meet broader global goals of climate change mitigation".[25]

The proliferation of regional, national, and subnational climate initiatives has resulted from the persistent failures of multilateral climate governance to put into effect the necessary action to confront climate change.[26] Given the glacial pace with which the multilateral process has progressed over the past two decades, this research advances linkage as offering the prospect of achieving substantive progress towards developing and deepening climate governance. By elaborating core convergence criteria to enhance coherence in this climate governance node, this thesis seeks to engage with the challenge of navigating a route between maximising avenues for broader participation in climate governance, whilst also recognising that such expanded participation must preserve the environmental integrity of individual governance initiatives which, in the context of this research, refers to the EU ETS. The conceptualisation of

[23] Eckard Rehbinder, 'Ecological Contracts: Agreements Between Polluters and Local Communities' in Gunther Teubner, Lindsay Farmer and Declan Murphy (eds), *Environmental Law and Ecological Responsibility: The Concept and Practice of Ecological Self-Organization* (John Wiley & Sons 1994) 147.
[24] Terry Anderson and Donald Leal, 'Free Market Versus Political Environmentalism' (1992) Harvard Journal of Law and Public Policy 297.
[25] Jacqueline Peel, Lee Godden and Rodney Keenan, 'Climate Change Law in an Era of Multi-Level Governance' (2012) 1(2) Transnational Environmental Law 245, 250.
[26] Brad J Butterfield and Nicholas P Low, 'Reducing Carbon Emissions from Transport: Multi-Level Governance and the Problem of Monitoring' Urban Policy and Research (forthcoming).

linkage as a spectrum, as elaborated in Chapter 4, emphasises the importance, without unnecessary delay, of regulatory dialogue to prevent the emergence of conflictive design features. The relevance of such early engagement should not be underestimated given that "the need to harmonise programs in advance" has been recognised as the "greatest obstacle to linking".[27] Yet this thesis also acknowledges that the work of developing durable and viable frameworks to govern linkages between emissions trading schemes – whilst of critical importance – represents an incomplete response to climate change by itself. The challenge of ensuring that diverse climate governance experimentation matures into an effective and legitimate global response to climate change necessarily extends beyond the construction of modalities to govern linkages between emissions trading schemes and, consequently, the confines of this research.

1.3 The Evolving Context for this Research

The EU continues to commit itself to a comparatively ambitious climate policy. In the context of climate governance, it would have been consistent with Hardin's tragedy of the commons for the EU to undertake onerous emission reduction commitments only as part of a broader collective endeavour.[28] Indeed, some scholars have argued as much, emphasising that a state's incentive to limit emissions is only to the extent that it is "assured that all others would reduce their emissions as well".[29] However, the EU *has* unilaterally acted and committed itself to further ambitious action to reduce the Union's greenhouse gas emissions. The

[27] William A Pizer and Andrew J Yates, 'Terminating Links Between Emissions Trading Programs' (2015) 71 Journal of Environmental Economics and Management 142, 145.
[28] Garrett Hardin, 'The Tragedy of the Commons' (1968) 162 Science 1243.
[29] Scott Barrett and Michael Toman, 'Contrasting Future Paths for an Evolving Global Climate Regime' (2010) 1(1) Global Policy 64, 65.

climate and energy objectives outlined in the Europe 2020 Strategy included a reduction in greenhouse gas emissions by at least 20% compared to 1990 levels; increasing the share of renewable energy sources in the EU's final energy consumption to 20%; and a 20% increase in energy efficiency.[30] Since 2014 the European Council has committed the EU to achieving a deeper reduction in emissions of at least 40% by 2030 compared to 1990 levels.[31]

The EU ETS is the EU's primary vehicle for achieving such reductions. In order to ensure that the 40% reduction target by 2030 is achieved, sectors falling within the scope of the EU ETS are expected to deliver a 43% reduction in emissions compared to 2005 levels.[32] However, during the course of this research a number of external events have undermined the functioning of the EU ETS. As is explored further in Chapter 4, during Phase I (2005 – 2007) and Phase II (2008 – 2011), Member States retained responsibility for determining the number and allocation of allowances in accordance with a National Allocation Plan (NAP) and were particularly generous to their domestic industries during Phase I.[33] Consequently, when assessing NAPs for Phase II, the Commission adopted a much stricter review. As is explored in Chapter 3, this resulted in considerable friction between the EU and a number of Member States. Moreover, from 2008 the economic slowdown reduced output (and emissions) leaving many EU ETS participants with excess allowances, whilst simultaneously depressing market demand.[34] The consequence has been an over-abundance of emission

[30] Decision No 406/2009/EC of the European Parliament and of the Council of 23 April 2009 on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020 [2009] OJ L140/136, art 8.
[31] European Council, Conclusions of 23 and 24 October 2014, EUCO 169/14, para. 2.1.
[32] ibid.
[33] de Perthuis and Trotignon (n 11) 100.
[34] Commission Regulation (EU) No 176/2014 of 25 February 2014 amending Regulation (EU) No 1031/2010 in particular to determine the volumes of greenhouse gas emission allowances to be auctioned in 2013-20 [2014] OJ L56/11, recital 3.

allowances resulting in a collapse in price: between 2005 and 2014, the price fell from €30 to €5.[35]

The EU has since taken corrective action. Decision 1359/2013 permitted the Commission to alter the timetable for the release, via auctioning, of allowances to the market, a technique referred to as backloading.[36] More decisively, Decision 2015/1814 introduced two important market stabilisation innovations and created a new Market Stability Reserve which will become operational from 2019.[37] First, Decision 2015/1814 prevents the release of 300 million allowances and 600 million allowances which otherwise were due for auctioning in 2019 and 2020 respectively.[38] Second, Decision 2015/1814 provides that, beginning in 2019, an amount of allowances corresponding to 12% of the number of allowances in circulation should be deducted in each subsequent year from the volumes to be auctioned and placed in reserve.[39] Whilst this Market Stability Reserve has accurately been described as a "fire-fighting operation", rather than structural reform of the EU ETS,[40] the cumulative impacts of the unexpected financial crisis on the operation of the EU ETS and the innovative legal amendments discussed above have introduced a layer of uncertainty to the surrounding context for this research.

[35] de Sadeleer (n 13) 139.
[36] Decision No 1359/2013/EU of the European Parliament and of the Council of 17 December 2013 amending Directive 2003/87/EC clarifying provisions on the timing of auctions of greenhouse gas allowances [2013] OJ L343/1.
[37] Decision No 2015/1814/EU of the European Parliament and of the Council of 6 October 2015 concerning the establishment and operation of a market stability reserve for the Union greenhouse gas emission trading scheme and amending Directive 2003/87/EC [2015] OJ L 264/1.
[38] ibid, recital 8 and art 1(2). Instead, the 900 allowances will be deposited in a reserve and may be released in subsequent years.
[39] ibid, recital 5 and art 1(5).
[40] de Sadeleer (n 13) 143.

1.4 Point of Departure and Key Research Themes

Climate governance generally and emissions trading in particular are the subject of heightened contemporary relevance and have now produced volumes of research. There is an ever-expanding body of literature on emissions trading within scholarly periodicals devoted to various disciplines and sub-disciplines of law, the natural sciences, moral philosophy, environmental economics (and indeed economics generally), political science, and international relations. Indeed, in the years since the launch of the EU ETS in 2005, climate law has generated an ocean of scholarship.[41]

Given this expansive interdisciplinary scholarship, it may be questioned to what extent a further legal analysis is necessary or, indeed, helpful. In response, the central contention of this thesis is that the "big bang"[42] approach of achieving a global carbon market via a multilateral agreement has proven misguided. Such a vision has been a universalist illusion which, particularly in light of the "shortfall in overall ambition" of the Paris Agreement, is no longer viable.[43] Instead, it is suggested that emphases should be re-directed towards approaches which foster cross-scale complementarity between diverse climate governance initiatives. Until recently, the vexed question of improving traditional multilateral treaty-making in the sphere of climate law has tended to dominate climate governance research. Yet, as is argued in this thesis, scholarly attention should instead examine the component parts of how "global climate governance" is already

[41] Lee (n 4) 133.
[42] Bodansky and Diringer's "big bang theory" of climate treaty-making refers to a very rapid process of deepening obligations: Daniel Bodansky and Elliot Diringer, *The Evolution of Multilateral Regimes: Implications for Climate Change* (Pew Center on Global Climate Change 2010) 13.
[43] Charlotte Streck, Paul Keenlyside and Moritz von Unger, 'The Paris Agreement: A New Beginning' (2016) 13(1) Journal for European Environmental and Planning Law 3, 13.

incrementally developing, rather than an idealised meta-architecture which remains a distant objective of dubious attainability.

This thesis considers the potential prospect of linkage for the EU ETS and, through multi-level governance theory, locates the EU ETS as one element within a variegated climate governance landscape. The EU's normative aspirations and contributions to shaping this landscape are evaluated and provide a context to understand and explore the core research theme of this research: the concept and operationalisation of linkage. It has been observed that "the establishment of links between systems remains understudied":[44] as such, this thesis departs from the present literature by examining a key climate governance issue which has been afforded only more peripheral attention. In essence, this thesis seeks to break new ground by evaluating, with respect to the EU ETS, the concept and contribution of linkage; locating this analysis within a landscape of multi-level governance experimentation; defining core convergence criteria necessary for the implementation of direct linkage; and, theorising the application of the core convergence criteria in the context of direct linkage between the EU ETS and South Korea's Emissions Trading Scheme ("KETS").

The key points of originality developed by such an approach may be considered to be as follows.

First, by introducing an incrementalist perspective of linkage located within a multi-level governance framework as both practical and achievable, this thesis advances linkage by degrees – the incremental alignment of the design features of emissions trading schemes – as a viable pathway towards direct linkage. This involves rejecting the illusory universalist "big bang" approach and instead argues

[44] Jørgen Wettestad and Torbjørg Jevnaker, 'The EU's Quest for Linked Carbon Markets: Achievements and Challenges' (International Studies Association Annual Convention, San Francisco, 3-6 April 2013), 2 <https://www.yumpu.com/en/document/view/24270183/the-eus-quest-for-linked-carbon-markets-fridtjof-nansens-institutt> accessed 14 April 2017.

that attention and energy should be more fruitfully redirected towards fostering cross-scale complementarity between climate governance initiatives generally and, in particular, between existing and emerging emissions trading schemes. It is suggested that this perspective represents a departure from the dominant theme in the literature which, until recently, has focused on constructing climate governance through international treaty-making.

Second, this thesis excavates the concept and implications of linkage and defines core convergence criteria to facilitate direct linkage between emissions trading schemes. By advocating a governing rule of securing schemes' environmental integrity, as the threshold for direct linkage between trading schemes, this rule posits that linked trading schemes should not lead to fewer emissions reductions than if the EU ETS (and proposed partner scheme) continued to operate independently.

Third, this thesis builds on the EU's stated aspiration to advance the EU ETS as the hub of a global interconnected system of emissions trading schemes since linkage is a necessary core component of such a vision. The progress and prospects of the EU as a climate leader provide a necessary context within which to understand this vision. This is also where points one and two above provide an integrated whole by advancing an incrementalist understanding of linkage within which the core convergence criteria facilitate the attainment of direct linkage. This thesis seeks to redress a lacuna in the literature by providing a synthesised evaluation of the framework within which the EU must act to advance its objective of an interconnected system of emissions trading schemes.

Fourth, by building on the largely theoretical literature exploring linkage and, in particular, the core convergence criteria defined through this research, this thesis contributes to understanding the necessary conditions for direct

linkage. This enhanced understanding is advanced by evaluation of the design features of the KETS and application of the core convergence criteria to the KETS. As the first scholarly analysis of the prospects and implications of direct linkage between the EU ETS and the KETS since; (i) the launch of the KETS in January 2015; and, separately, (ii) in a post-Paris Agreement landscape, this thesis will help policymakers identify the potential for and the implications of linkage and stimulate further discussion about the contribution of linkage to incremental climate governance.

1.5 Structure of Thesis

This thesis comprises eight chapters. Following this introductory chapter, Chapter 2 commences by outlining the process leading to the adoption of emissions trading in the EU as the Union's favoured climate policy instrument.[45] Chapter 2 unpacks and evaluates how, through further development and enhanced sophistication of the EU ETS, the EU has not only retreated from its advocacy of traditional regulatory approaches but has also embraced and championed the centrality of economic approaches in climate governance. The EU's confidence in the contribution of market trading to climate governance has been evident in the EU's climate leadership ambitions and this Chapter progresses to evaluate the normative nature of EU climate leadership and the limitations revealed by this approach. In seeking to draw lessons from past deficiencies in the EU's normative-inspired model of climate leadership, Chapter 2 then considers options for enhancing the effectiveness of external EU climate policy in the future. Understanding the limitations of EU climate leadership and the opportunities for

[45] Grubb, Vrolijk and Brack (n 14) 19.

maximising the Union's influence are important considerations which inevitably inform how the EU can promote linkage.

Following this, Chapter 3 evaluates the variable geometry of the emerging multi-level climate governance landscape. The quest to maintain complementarity as bottom-up incrementalist regimes develop is a core theme in this thesis. This Chapter provides a critical analysis of multi-level governance theories before arguing that multi-level governance models are particularly apt to facilitate the incrementalist development of an integrated framework for emissions trading. It is acknowledged that whilst there are different variants of multi-level governance approaches, all consistently share fundamental assumptions about the fragmentation of power collapsing state/non-state distinctions, as "state" actors take on roles of promotion, facilitation, and advocacy traditionally associated with civil society actors, whilst "sovereignty free" actors become responsible for the development of policy goals.[46] By providing space for innovative and experimentalist governance initiatives, multi-level governance offers the opportunity to accommodate diverse climate governance arrangements.

Chapter 4 introduces and evaluates the concept of linkage and, expanding on the incrementalist theme of Chapter 3, advances a nuanced understanding of linkage which extends beyond orthodox conceptualisations of formal linkage between emissions trading schemes and recognises the emerging concept of "linkage by degrees".[47] To this end, this Chapter offers a critical overview of current conceptualisations of linkage and reconstructs linkage within a spectral typology which recognises incremental alignment of schemes' design features

[46] The term is Rosenau's: see James N Rosenau, *Turbulence in World Politics: A Theory of Change and Continuity* (Princeton University Press 1990) 36.
[47] Burtraw and colleagues (n 19).

through “linkage by degrees”. This perspective challenges the dominant position that a global trading architecture can only be framed via multilateral climate negotiations and the contrary perspective that the “quest to build inclusive trading markets” should be entirely abandoned in favour of short-term political deals.[48] Instead, an incrementalist-informed perspective, applied to the concept of linkage suggests that “domestic policies need to be embedded in a broader international effort”.[49] Complementarity is the key watchword requiring constant vigilance to promote and maintain compatibility between emissions trading schemes.

Following this, Chapter 5 builds on Chapter 4’s typology of linkage and critically explores the implementation of linkage in practice. This Chapter offers an appraisal of the mechanics of linkage and introduces the governing rule of environmental integrity which it is argued informs the identification of core convergence criteria. Chapter 5 suggests that the presence of core convergence criteria is a necessary prerequisite for the implementation of direct linkage between the EU ETS and an external emissions trading scheme. The maintenance of a minimal degree of convergence between emissions trading schemes is necessary to ensure the functionality of any linked schemes, but more fundamentally it is also critical to ensure that the key objective of reducing carbon emissions – the raison d'être for promoting market trading as a regulatory tool in the first place – is not compromised. Given that the design of an institutional architecture promoting and supporting linkage is not preset, policymakers must engage in a process of dialogue, consistent with linkage by degrees, to assess potential pathways to promote the necessary degree of alignment before implementation of direct linkage.

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[48] Thomas Heller, ‘Climate Change: Designing an Effective Response’ in Ernesto Zedillo (ed), *Global Warming: Looking Beyond Kyoto* (Brookings Institution 2007) 115, 140.
[49] Robert Falkner, Hannes Stephan and John Vogler, ‘International Climate Policy After Copenhagen: Towards a ‘Building Blocks’ Approach’ (2010) 1(3) Global Policy 252, 259.

Chapter 6 evaluates the contribution of the Clean Development Mechanism (CDM) to climate governance. The CDM, as a form of indirect linkage, could potentially link multiple trading schemes. This Chapter assesses the CDM in practice, critiques of the CDM, and, in the post-Paris Agreement landscape, the potential contribution of the CDM or any successor mechanism to climate governance. Chapter 6 concludes by offering a perspective as to the future contribution of the CDM and any successor mechanism to climate governance.

Chapter 7 theorises the implementation of the core convergence criteria, defined in Chapter 5, by exploring the prospects of direct linkage, as elaborated in Chapter 4, between the EU ETS and the KETS. Due to the paucity of secondary materials considering the KETS, certain parts of this Chapter are necessarily descriptive and provide the building blocks for analysis later in the Chapter. Chapter 7 further builds on the analysis of the Paris Agreement offered in Chapter 6 by broadening consideration beyond the CDM to examine the implications of the Agreement for direct linkage. For the EU, the search for a candidate linkage partner has often seemed a Sisyphean undertaking. With the launch of the KETS in 2015, it is suggested that South Korea offers the prospect of stable climate settings with which the EU can negotiate. This Chapter evaluates the critical design features of the KETS before applying the core convergence criteria in the context of potential direct linkage with the EU ETS. The degree to which the design of the KETS provides scope for such direct linkage is critically explored. Direct linkage of the EU ETS with the KETS could send an important signal about the EU's commitment to cooperation in international climate governance and this Chapter concludes by offering a perspective on how policymakers might reflect on this Chapter's analysis.

Finally, Chapter 8 concludes by reflecting on the vision of linkage advanced throughout this thesis and the original contribution provided by this research.

1.6 Methodology

1.6.1 Methods and Materials

Discussion and analysis of the key research themes elaborated in Section 1.4 engages a range of different research methods encompassing doctrinal and non-doctrinal approaches. As such, this thesis is "concerned both with doctrine *and* with placing those doctrinal materials in their social context".[50]

Through doctrinal analysis the law with respect to emissions trading, particularly as it relates to linkage, is identified and explained. Whilst this is perhaps most conspicuous in the case study examining the KETS (and the associated legislative framework) in Chapter 7, a doctrinal approach is also invoked to elaborate the international climate governance framework and the design, implementation and operation of the EU ETS. In such instances, the purpose is twofold: first, to clarify the state of the existing law; and second, to describe, as best as is possible, how the law applies. It is not always possible to perform the second task with precision. For example, in the context of the KETS, further empirical research is necessary to better understand how elements of the scheme are being implemented in practice. As Section 1.6.2 recognises, this presents certain limitations.

Determining the existing law is critically important as it provides the foundation to consider and evaluate questions of policy and law reform. This

[50] Fiona Cownie, *Legal Academics: Cultures and Identities* (Hart Publishing 2004) 197 (emphasis original).

requires non-doctrinal analysis and theoretical, comparative, and interdisciplinary approaches are invoked. Chapter 2, for example, builds on the rich interdisciplinary literature to provide an understanding of the EU's climate leadership credentials before considering how the EU might moderate its leadership model. The cautionary note implied by Wilson's understanding of the role of lawyers in approaching such interdisciplinary material is relevant: "[f]or lawyers to be interested, concerned and knowledgeable about such matters does not mean that they must become experts in other disciplines but, at least in the first instance, that they should develop a broader notion of what is relevant to their own".[51] Such an approach, however, also means that there is inevitably much which remains unsaid. For example, whilst the law and economics origins of emissions trading are considered in Chapter 2, the vibrant dialogue within the field of environmental economics theorising how best to develop and calibrate an efficient emissions trading scheme is beyond the focus of this research.

Chapter 3 adopts a theoretical approach to review and explore the extensive multi-level governance literature and how it relates to the emerging climate governance landscape. As the EU aspires to internationalise emissions trading and envisages a central role for the EU ETS within such a global trading architecture, Chapter 3 builds on the synthesised understanding of the EU's evolving model of climate leadership offered in Chapter 2. Whilst Chapter 3 recognises that the EU is not a monolithic entity, further research – beyond the context of linkage – could forensically disaggregate the implications of the Union's multi-level governance model for the EU's external climate leadership ambitions set out in Chapter 2.[52]

[51] Geoffrey Wilson, 'Comparative Legal Scholarship' in Mike McConville and Wing Hong Chui (ed), *Research Methods for Law* (Edinburgh University Press 2007) 87, 91.
[52] For example, in the context of climate governance, it has been questioned whether the EU is a leaderless leader: Andrew Jordan, Harro van Asselt, Frans Berkhout, Dave Huitema and Tim Rayner,

As has been noted, a doctrinal approach is necessary to elaborate the legislative and regulatory framework governing emissions trading. However, the framework within which emissions trading is evolving engages public international law, EU law and domestic law(s). As such, a comparative approach is invoked to provide the necessary methodological scaffolding to explore and evaluate interactions between international, regional, and domestic legal systems in the field of emissions trading and to assess such potential impacts on the formulation of public policy.

It has been observed that "law is a discipline in transition moving away from traditional doctrinal analysis towards a more contextual, interdisciplinary approach".[53] For the purposes of this research, the contextual landscape is fundamental to any rigorous inquiry assessing the development and implementation of linkage between emissions trading schemes since the design of each such scheme reflects the evolution of climate policy and other specific domestic circumstances.[54] Consequently, the discussion and analysis of the CDM in Chapter 6 is predominantly socio-legal in nature in the sense that it explores "an interface with a context within which law exists, be that a sociological, historical, economic, geographical, or other context".[55] Whilst empirical work has not been conducted as part of this research, aspects of this thesis draw on the empirical work of others: for example, in Chapter 6 to exemplify the deficiencies of the CDM. A combination of methods, often termed a mixed-method approach, between doctrinal, in terms of clarifying the existing law governing linkage, and socio-legal, in relating the law to the surrounding context,

'Understanding the Paradoxes of Multilevel Governing: Climate Change Policy in the European Union' (2012) 12(2) Global Environmental Politics 43, 44.

[53] Cownie (n 50) 197.

[54] Türk, Mehling, Flachsland and Sterk (n 18) 349.

[55] Sally Wheeler and Phil A Thomas, 'Socio-Legal Studies' in David Hayton (ed), *Law's Future(s)* (Hart Publishing 2000) 267, 271.

are employed in Chapters 4, 5 and 7 to advance a comprehensive understanding of linkage.

The primary data sources consulted include international treaties, EU legislation, national legislation and case law, whilst secondary data sources encompass a wide range of legal and non-legal research and writings including books, journals, reports, print and electronic media sources, and other web resources.

1.6.2 Limitations of Thesis

Like any product of research, this thesis is not without its limitations. An extensive survey of every aspect of European climate policy would be an impossible task and would not further the key research themes outlined above. Consequently, important European climate policy developments, such as the Renewable Energy Directive, are beyond the scope of this thesis.

The EU ETS has undergone significant revision. Phases I and II have passed and policymakers have learned many lessons. Internal shifts and revisions in EU climate policy, however, have not been the most significant developments since commencing this research in 2010. From the perspective of promoting and exporting the EU's vision of an interconnected network of emissions trading schemes, the most significant change has instead been the transformation in the external climate governance landscape. The development of emissions trading schemes beyond the EU has "generally progressed slowly [and] [t]hat has meant fewer candidates for the EU to approach seriously with a view to establishing linkages."[56] Moreover, the climate of multilateral treaty-

[56] Jørgen Wettestad and Torbjørg Jevnaker, 'The EU's Quest for Linked Carbon Markets: Turbulence and

making had, until the Paris Agreement, grown progressively more inhospitable. Whilst the EU has worked energetically to promote rigorous climate governance, the Kyoto Protocol had remained a solitary achievement in more than a decade of stasis in multilateral climate negotiations.

The degree of activity shown by the EU and the political capital which the Union has invested throughout this period has failed to produce favourable substantive advances in climate governance. From the outset, the Kyoto Protocol came under sustained pressure, but significant developments during the course of researching this thesis, including Canada's formal withdrawal from the Protocol,[57] the floundering of a bill before the United States' Senate to adopt a federal emissions trading scheme,[58] and more recently the adoption of the Paris Agreement have changed (and changed again) the international governance context within which the EU ETS must co-exist. The contested nature of climate science and policy within political discourse in a number of countries has made it increasingly challenging to identify the EU's likely or preferred climate governance partners in the years ahead. For example, Australia embraced[59] – then rejected[60] – the prospect of implementing an emissions trading scheme with linkage to the EU ETS. As of April 2017, despite emerging evidence of increasing

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Headwind' in Todd L Cherry, Jon Hovi, and David M McEvoy (eds), *Toward a New Climate Agreement: Conflict, Resolution and Governance* (Routledge 2014) 266, 273.

[57] Bernard Simon, 'Canada Leaves Kyoto to Avoid Heavy Penalties' *The Financial Times* (London, 13 December 2011) <http://www.ft.com/cms/s/0/cdb66522-2519-11e1-8bf9-00144feabdc0.html > accessed 14 April 2017.

[58] The Waxman-Markey Bill was an energy bill in the 111th United States Congress (HR 2454) which would have established a variant of an emissions trading scheme similar to the EU ETS. It failed in the Senate.
For further discussion of US climate governance initiatives see Laurie Ristino and Katherine Hannon Michel, 'Carbon Trading in the United States' in Geert van Calster, Wim Vandenberghe and Leonie Reins (eds), *Research Handbook on Climate Mitigation Law* (Edward Elgar Publishing 2014) 476.

[59] It had been envisaged that implementation of the proposed linkage would take effect by July 2015. Commission, 'Linking EU ETS with Australia: Commission Recommends Opening Formal negotiations' (*DG Climate Action: Newsroom*, 21 January 2013) <http://ec.europa.eu/clima/news/articles/ news_2013012401_en.htm> accessed 14 April 2017.

[60] Latika Bourke, 'Emissions Trading "Never Coming Back in Any Form" Under Coalition, Says Greg Hunt' *The Sydney Morning Herald* (Sydney, 30 October 2014) <http://www.smh.com.au/federal-politics/political-news/emiss ions-trading-scheme-never-coming-back-in-any-form-under-coalition-says-greg-hunt-2014102911dzhh.html> accessed 14 April 2017.

public and corporate support for emissions trading, the prospect of an Australian scheme continues to remain uncertain.[61] In fact, Australian climate policy, as a microcosmic illustration of global climate policy, continues to trundle along in a state of flux.[62]

However, potentially game-changing possibilities are discernible on the horizon. Building on the previous commitment to reduce China's growth of emissions by "a notable margin" by 2020,[63] the Chinese Government has unveiled plans for a national emissions trading scheme which is expected to launch in the second half of 2017.[64] The implementation of emissions trading in China could accelerate adoption rates globally for emissions trading schemes.[65] The deepening of China-EU dialogue concerning the EU ETS is also particularly positive and preliminary discussions have raised the tantalising prospect of linkage.[66] However, whilst of potentially huge significance, it is challenging to determine how a national Chinese scheme will look and operate in practice. Inevitably, this has meant that it is not possible to analyse the applicability of the core convergence criteria elaborated in this thesis to what could yet emerge to be the most significant climate governance initiative to date.

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[61] Matt Chambers, 'Emissions Trading Scheme a Fair Call, Origin Boss Frank Calabria Says' *The Australian* (Sydney, 8 March 2017) <http://www.theaustralian.com.au/business/mining-energy/emissions-trading-scheme-a-fair-call-origin-boss-frank-calabria-says/> accessed 14 April 2017 and Katherine Murphy, 'Majority of Voters Back Emissions Trading scheme, Guardian Essential Poll Finds' *Guardian Australia* (Canberra, 3 April 2017) <https://www.theguardian.com/australia-news/2017/apr/04/majority-of-voters-back-emissions-trading-scheme-guardian-essential-poll-finds> accessed 14 April 2017.

[62] Hudson, less charitably, has referred to the "absurd(ist) rollercoaster that is Australian climate change policy": see Marc Hudson, 'Ten Years of Backflips Over Emissions Trading Leave Climate Policy in the Lurch' *ABC News* (8 December 2016) <http://www.abc.net.au/news/2016-12-08/10-years-of-emissions-trading-leaves-climate-policy-in-the-lurch/8100870> accessed 14 April 2017.

[63] Harvey Morris, Fiona Harvey and Geoff Dyer, 'China Makes Energy Efficiency Pledge' *The Financial Times* (London, 22 September 2009) <http://www.ft.com/cms/s/0/1079b734-a785-11de-b0ee-00144feabdc0.html> accessed 14 April 2017.

[64] Stian Reklev, 'China National ETS Launch Likely in Second Half of 2017' *Carbon Pulse* (15 March 2016) <http://carbon-pulse.com/17057/> accessed 14 April 2017.

[65] Steinar Andresen, Jon Birger Skjærseth, Torbjørg Jevnaker and Jørgen Wettestad 'The Paris Agreement: Consequences for the EU and Carbon Markets' (2016) 4(3) Politics and Governance 188, 192.

[66] Council, 'EU-China Joint Statement on Climate Change' (*Press Releases and Statements*, 29 June 2015) <http://www.consilium.europa.eu/en/press/press-releases/2015/06/29-eu-china-climate-statement/> accessed 14 April 2017 and Commission, 'EU Steps Up Cooperation on Emissions Trading with China: New €10 Million Project Announced' (*DG Climate Action: Newsroom*, 28 June 2016) <https://ec.europa.eu/clima/news/articles/news_2016062801_en> accessed 14 April 2017.

For the reasons advanced in Section 7.3 the KETS is a particularly interesting and relevant case study with which to evaluate the prospects of direct linkage with the EU ETS. However, such an analysis is not without limitations. The Korea Legislation Research Institute's Legislative Translation Centre is an invaluable resource by providing English translations of South Korean legislation. However, without fluency in Korean, the accuracy of such translations cannot be assured. There is also a paucity of secondary material (in English) evaluating the KETS, but it is recognised that this also enhances the originality of this research.

The shifting sands of international climate negotiations have necessarily influenced the direction and outcomes of this research. Perspectives which had been somewhat peripheral in the literature at the outset of this research, such as intense scepticism concerning the capacity of the multilateral process and the relevance of linkage, respectively, have gradually become much less marginal. With respect to linkage, Seppänen and colleagues, writing as recently as 2013, have observed that "linking … schemes to each other to create a global carbon market is *starting to become a relevant topic of discussion*".[67] With respect to the multilateral process, the Paris Agreement, which entered into force as this research neared completion, may be interpreted as reflecting and reinforcing a certain modesty of ambition within multilateral climate negotiations, given that it creates few binding rights and obligations for States – the key attributes and advantages traditionally associated with international treaty-making. Analysis of the Paris Agreement, where relevant to linkage, is woven into the fabric of this thesis, particularly with respect to indirect linkage in Chapter 6 and direct linkage in Chapter 7. An alternative approach might instead consolidate discussion and

[67] Sampo Seppänen and colleagues, *Demand in a Fragmented Global Carbon Market: Outlook and Policy Options* (Norden 2013) 47 (emphasis added).

analysis of the Paris Agreement in a single Chapter. Neither approach was without risk in terms of the broader coherence of this thesis: as a consequence of the former, discussion of the Agreement is less consolidated, whilst the latter could have produced an analysis less contextualised and more detached from the surrounding thesis.

The Paris Agreement successfully entered into force on 4 November 2016, thirty days after ratification by at least 55 Parties to the Convention accounting for at least an estimated 55% of the total global greenhouse gas emissions.[68] At the time of writing, however, the future of the Agreement remains uncertain. As Young has observed, "changes in the composition of governments can bring to power officials who did not participate in the creation of a regime and have little interest in fulfilling obligations undertaken by their predecessors".[69] In this respect, the announcement by President Trump, as this research was nearing completion, of his administration's intention to withdraw from the Paris Agreement is a case in point.[70] As the Republican presidential candidate, he was severely critical on the campaign trail of both the underlying science of climate change and, specifically, the Paris Agreement,[71] even if subsequent to his election, he observed that he had "an open mind" regarding the Agreement.[72] It is little wonder then that some scholars had voiced concerns that the Paris Agreement remained vulnerable to the prospect of an American withdrawal and that a "non-party US

[68] Article 21.1 of the Paris Agreement provides the mechanics for the Agreement entering into force. It sets forth an entry threshold of 55 Parties depositing their ratification instrument with the depositary (the Secretary General of the United Nations) accounting in total for at least an estimated 55% of total greenhouse gas emissions.
[69] Young, 'Institutional Interplay' (n 20) 277.
[70] US Presidency, 'Statement by President Trump on the Paris Climate Accord: 1 June 2017' (White House: Speeches and Remarks) <https://www.whitehouse.gov/the-press-office/2017/06/01/statement-president-trump-paris-climate-accord> accessed 1 June 2017.
[71] Miranda A Schreurs, 'The Paris Climate Agreement and the Three Largest Emitters: China, the United States and the European Union' (2016) 4(3) Politics and Governance 219, 221.
[72] Oliver Milman, 'Paris Climate Deal: Trump Says He Now Has an 'Open Mind' About Accord' *The Guardian* (London, 22 November 2016) <https://www.theguardian.com/us-news/2016/nov/22/donald-trump-paris-climate-deal-change-open-mind> accessed 14 April 2017.

could lethally wound [it]".[73] American disengagement could certainly prove particularly problematic in the coming years, especially as international efforts seek to elaborate an implementation framework under the Agreement. It is likely to prove particularly challenging, for example, to secure the success of international climate governance efforts "by somehow passing over or actively excluding the USA".[74] For the purposes of this research, however, it is relevant to note that the Kyoto Protocol continues to provide the international climate governance architecture until 2020. The Protocol will then be replaced by arrangements – which at the time of writing remain to be defined – under the Paris Agreement.

To date, the EU has not formally agreed, much less implemented, direct linkage of the EU ETS with a major developed economy and, as such, "practice on linking remains in its early stages".[75] Other European countries, notably the EFTA states (including Norway), have joined the EU ETS. However, it will only be possible to fully appraise the potential of the EU ETS to emerge as the hub of an interconnected system of emissions trading schemes once linkage is implemented beyond the EU's immediate orbit. Therefore, qualitative assessment of the implementation and performance in practice of the core convergence criteria devised in this thesis, whilst evaluated on a theoretical level in Chapter 7 with regard to the KETS, must await successful implementation of the first direct linkage with the EU ETS.

Finally, the intention has been to ensure that the law and policy in this thesis is up to date as at 14 April 2017, although some later developments have

[73] Luke Kemp, 'US-Proofing the Paris Agreement' (2017) 17(1) Climate Policy 86, 101.
[74] Thomas Giegerich, 'The Impact of the USA on Regime Formation and Implementation' in Gerd Winter (ed), *Multilevel Governance of Global Environmental Change: Perspectives from Science, Sociology and the Law* (Cambridge University Press 2011) 275, 303.
[75] Seppänen and colleagues (n 67) 56.

been included; unless otherwise noted, all web links were also last accessed on that date.

CHAPTER 2

THE EUROPEANISATION OF EMISSIONS TRADING

2.1 Introduction

As the EU progresses with Phase III of the EU ETS, with development of an internationally integrated architecture of emissions trading integral to the Union's vision of global climate governance, it is helpful to recall the origins of market trading and the implementation of the concept in the EU. This Chapter endeavours to unpack the concept and provide an understanding of the Union's adoption and gradual positioning of this instrument at the "cornerstone" of EU climate policy.[1] Section 2.2 assesses the theoretical rationale underpinning market trading before reviewing the instrument's transition from theory to practice. Section 2.3 reconsiders the origins of the EU ETS and evaluates the remarkable change in Union policymaking which witnessed the Union's reframing of emissions trading as an effective and efficient instrument for climate governance and the re-positioning of emissions trading as the "flagship measure" of EU climate policy.[2] Finally, Section 2.4 theorises the EU's aspirations to climate leadership. Manners' classification of the EU as a normative power which is not only constructed on a normative basis, but which is also predisposed to act in a normative way is re-appraised in the context of climate governance.[3] The contours of the limits of EU climate leadership,

[1] *Arcelor Atlantique and Lorraine and Others v Commission* (Case C-127/07) [2008] ECR I-9895, Opinion of AG Maduro, para 2.
[2] Stavros Dimas, 'The Commission's Initiatives for Shaping Future Policy' (Speech to Climate Change Conference, Vienna, 3 October 2005) <http://europa.eu/rapid/press-release_SPEECH-05-567_en.htm> accessed 14 April 2017.
[3] Ian Manners, 'Normative Europe: A Contradiction in Terms?' (2002) 40(2) Journal of Common Market Studies 235, 252.

revealed in successive rounds of international climate negotiations, are assessed and, in particular, the lessons which these experiences provide for the post-Paris Agreement landscape. Section 2.4 concludes by re-considering the EU's potential leadership contribution to climate governance and offers an alternative model of leadership which seeks to move beyond the normative framing of much existing scholarship.

The adoption of carbon market trading in the EU was far from assured. Indeed, scholars have chronicled how the rise of emissions trading as the EU's flagship climate policy was a somewhat unexpected development.[4] Prior to the Kyoto Protocol, the EU had been hostile to market trading and its potential contribution to climate governance. During the Kyoto Protocol negotiations, the EU's position was based on three key principles: a commitment to mandatory caps on emissions by developed countries; an undifferentiated target of emission reductions of 15%; and what has been described as "antipathy to emissions trading as a mechanism for achieving these targets".[5] There was a concern – also prominently articulated in the academic literature – that emissions trading could be construed as a "right to pollute" or as "trading in indulgences", characterisations which might ultimately undermine the instrument's legitimacy and effectiveness.[6] Many EU governments were also

[4] Jon Birger Skjærseth and Jørgen Wettestad, *EU Emissions Trading: Initiation, Decision-Making and Implementation* (Ashgate 2008).
The contributions of Lefevere and Delebeke, key Commission policymakers in the development of the EU ETS, provide valuable insights into the adoption of market trading in the EU.
See Jürgen Lefevere, 'The EU Greenhouse Gas Emission Allowance Trading Scheme' in Farhana Yamin (ed), *Climate Change and Carbon Markets: A Handbook of Emission Reduction Mechanisms* (Earthscan 2005) 75 and Jos Delbeke, 'The Emissions Trading Scheme (ETS): The Cornerstone of the EU's Implementation of the Kyoto Protocol' in Jos Delbeke (ed), *EU Energy Law, Volume IV: Environmental Law: The Greenhouse Gas Emissions Trading Scheme* (Claeys and Casteels 2006) 1.
[5] Frank Convery, 'Origins and Development of the EU ETS' (2009) 43 Environmental and Resource Economics 391, 393.
[6] Hermann Ott and Wolfgang Sachs, 'Ethical Aspects of Emissions Trading' (2000) Wuppertal Institute for Climate, Environment and Energy Paper 110/2000 <http://wupperinst.org/en/publications/details/wi/a/s/ad/713/> accessed 14 April 2017; Robert Goodin, 'Selling Environmental Indulgences' (1994) 47 Kyklos 573; and, Gerd Winter, 'The Climate is No Commodity: Taking Stock of the Emissions Trading System' (2010) 22(1) Journal of Environmental Law 1.

sceptical that market trading could be achieved within a timely window[7] and failed to share the United States' singular confidence in market-based solutions to the problem of climate change.[8] Some, too, wondered whether American support for the proposal may have been less than altruistic.[9] Unsurprisingly, the explicit endorsement by the Kyoto Protocol of emissions trading[10] was affirmed in the United States as a "major victory for us".[11]

Given this historical backdrop, the EU's conversion to market trading, and subsequent vocal championing of the merits of this regulatory approach, is particularly intriguing.[12] It is evident too that by so doing the EU has not only retreated from its preference for orthodox command-and-control measures in environmental protection, but it has also embraced the centrality of an economic incentivisation approach to addressing climate change. For current purposes, it is also particularly noteworthy that from the earliest European expressions of interest in emissions trading, a vision of a global trading architecture was consistently present. From the outset, for example, there had been an expectation that the United States would also adopt emissions trading as a key policy instrument and "compatibility of approach could simultaneously be a useful stimulus to US action and facilitate intercontinental trading".[13] Whilst the

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[7] Marcel Braun and Tilman Santarius, 'Climate Politics in the Multi-Level Governance System: Emissions Trading and Institutional Changes in Environmental Policy-Making' (2008) Wuppertal Institute for Climate, Environment and Energy Paper No. 172/2008, 16 <http://wupperinst.org/en/publications/details/wi/a/s/ad/713/> accessed 14 April 2017.

[8] Karen Campbell, 'From Rio to Kyoto: The Use of Voluntary Agreements to Implement the Climate Change Convention' (1998) 7(2) Review of European Community and International Environmental Law 159, 162.

[9] Some European governments questioned whether the US introduced emissions trading as a ploy to delay negotiations: see Michael Grubb, Christiaan Vrolijk and Duncan Brack, *The Kyoto Protocol: A Guide and Assessment* (Royal Institute of International Affairs 1999) 92.

[10] 1997 Kyoto Protocol to the United Nations Framework Convention on Climate Change 2303 UNTS 148, art 17.

[11] Stuart Eizenstat, 'Implications of Kyoto Protocol on Climate Change: Statement before the Senate Foreign Relations Committee' (Washington DC, 11 February 1998) <http://www.gpo.gov/fdsys/pkg/CHRG-105shrg46812/html/CHRG-105shrg46812.htm> accessed 14 April 2017.

[12] Jon Birger Skjærseth, 'EU Emissions Trading: Achievements, Challenges, Solutions' in Todd L Cherry, Jon Hovi and David M McEvoy (eds), *Toward a New Climate Agreement: Conflict, Resolution and Governance* (Routledge 2014) 254, 255.

[13] Convery (n 5) 399.

EU's vision of achieving an OECD-wide carbon market by 2015 has proven overly ambitious, the Union has for some time identified the prospect of gaining experience in the implementation of such an instrument *before* international emissions trading commenced as an advantage in the long-term.[14] Understanding the processes by which the EU ETS came to occupy the cornerstone of EU climate policy is therefore of significance to the wider prospect of internationalising emissions trading.

2.2 The Rise of Market Trading

2.2.1 Overview

Market trading is not only intriguing in the EU climate context merely because of the radical volte face it represented in EU climate policy: it has also become a defining characteristic of climate law more generally.[15] However, the migration of emissions trading from academic scholarship to practical implementation has been a gradual process characterised by intermittent progress. Whilst the influence of market trading in environmental law today has been described as a "virtual orthodoxy", for a considerable period the theoretical foundations of today's current carbon markets remained an academic debate with minimal application in practice.[16] For example, Dryzek still felt justified, writing in 2005,

[14] For example, see Commission, 'Green Paper on Greenhouse Gas Emissions Trading within the European Union' (Communication) COM (2000) 87 final and José Manuel Barroso, 'Action de Lutte Contre le Changement Climatique / Paquet sur les Énergies Renouvelables' (Press Conference on Climate Change and the Renewable Energy Package, Brussels, 23 January 2008) <http://europa.eu/rapid/press-release_ SPEECH-08-36_fr.htm> accessed 14 April 2017.
[15] Marjan Peeters, 'Inspection and Market-Based Regulation through Emissions Trading: The Striking Reliance on Self-Monitoring, Self-Reporting and Verification' (2009) 2(1) Utrecht Law Review 177 and Benjamin Richardson, 'Climate Law and Economic Policy Instruments: A New Field of Environmental Law' (2004) 1 Environmental Liability 1.
[16] Jody Freeman and Charles Kolstad, 'Prescriptive Environmental Regulations versus Market-Based Incentives' in Jody Freeman and Charles Kolstad (eds), *Moving to Markets in Environmental Regulation: Lessons After Twenty Years of Experience* (Oxford University Press 2006) 3, 4.

in observing that "the pace of diffusion of economic rationalism into environmental policy practice has been glacial".[17] Even though since the 1970s (and before),[18] the regulating power of economic incentivisation approaches and market trading in particular has been the subject of much scientific literature, perhaps most prominently in the field of environmental economics, this dialogue had only recently filtered through to policy practice.[19]

In view of this historical development, the frequent description of economic policy instruments as "new" is somewhat misplaced, as there is little which is novel about the discourse. It is also noteworthy that the practical adoption of such instruments, in many instances, has resulted from a much slower and more incremental evolution of national environmental policies, rather than a revolution in environmental policy formation.[20] Traditionally it has more often been the case that when economic incentivisation approaches have been introduced, there is no wholesale radical departure from the existing regulatory landscape.[21] In a very real sense, this process resembles von Homeyer's "institutional layering" thesis of EU environmental policy evolution, where governance is characterised "not only by change, but also by considerable continuity".[22]

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[17] John Dryzek, *The Politics of the Earth: Environmental Discourses* (2nd edn, Oxford University Press 2005) 137.
[18] Arthur Pigou, *The Economics of Welfare* (Macmillan Press 1920) and John Dales, *Pollution, Property and Prices: An Essay in Policy-Making and Economics* (Toronto University Press 1968).
[19] Hans Bressers and Dave Huitema, 'Economic Instruments for Environmental Protection: Can We Trust the "Magic Carpet"' (1999) 20(2) International Political Science Review 175, 176.
[20] Andrew Jordan, Rüdiger KW Wurzel and Anthony R Zito, '"New" Instruments of Environmental Governance: Patterns and Pathways of Change' (2003) 12(1) Environmental Politics 1, 5.
[21] Economic incentivisation approaches are usually not "implemented from scratch [but] are grafted onto regulatory systems in which permits and standards play a dominant role": see Robert Hahn, 'Economic Prescriptions for Environmental Problems: How the Patient Followed the Doctor's Orders' (1989) 3(2) Journal of Economic Perspectives 95, 107.
[22] Ingmar von Homeyer, 'The Evolution of EU Environmental Governance' in Joanne Scott (ed), *Environmental Protection: European Law and Governance* (Oxford University Press 2009) 1, 24.

2.2.2 Integrating Theory and Practice

Until the 1960s, economic instruments were tools which "only existed on blackboards and in academic journals, as products of the fertile imaginations of academics".[23] However, the economic theory underlying such instruments was gaining increasing prominence. Ronald Coase's seminal work, "The Problem of Social Cost", advanced highly influential propositions about the potential of liability rules for the allocation of resources and the distribution of benefits, perspectives which were further validated by his receiving the Nobel Prize for Economics in 1991.[24] Building on Coase's conceptualisation, Dales argued that prevailing private property structures failed to capture externalities which could more appropriately be internalised by market trading.[25] Gordon and Hardin framed this situation as the "tragedy of the commons" – the ideal-type unmanaged pasture where shepherds have every reason to continue to over-populate the common pasture with livestock advancing their own self-interest and insufficient incentive to consider the collective interest.[26] More recently, Stern has similarly refashioned the nature of the problem of climate change as "market failure on the greatest scale the world has seen".[27]

The intrinsic nature of this approach to an environmental problem also serves to indicate the nature of the prescribed solution.[28] The economist's objective when seeking to correct such market failures is to integrate or create

[23] Hahn (n 21) 95.
[24] Ronald Coase, 'The Problem of Social Cost' (1960) 3 Journal of Law and Economics 1.
[25] Dales (n 18) and Allen Kneese and Blair Bower, *Managing Water Quality: Economics, Technology, Institutions* (John Hopkins University Press 1968).
[26] H Scott Gordon, 'The Economic Theory of a Common Property Resource: The Fishery' (1954) 62 Journal of Political Economy 124 and Garrett Hardin, 'The Tragedy of the Commons' (1968) 162 Science 1243.
[27] "[H]uman-induced climate change is an externality, one that is not 'corrected' through any institution or market, unless policy intervenes": see Nicholas Stern, *The Economics of Climate Change: The Stern Review* (Cambridge University Press 2007) 24.
[28] Timothy Swanson, 'Economic Instruments and Environmental Regulation: A Critical Introduction' (1995) 4(4) Review of European Community & International Environmental Law 287, 288.

mechanisms which remedy that failure. Indeed, as Stern has put it, the "appropriate response to a substantial market failure is not to abandon markets but to act directly to fix it, through taxes, other forms of price correction, or regulation".[29] Theoretically, by changing the incentive structure which actors face, the power of the market can be harnessed and directed toward the achievement of environmental goals promoting consonance between private choice and social interest.[30] More specifically, in the context of emissions, an optimal allocation of emissions should develop through market trading. Entities willing to pay the most for allowances are the ones who face the highest costs of reducing emissions. Consistently, emissions cuts will be achieved by entities and sectors most adept at delivering reductions, thereby promoting economically efficient outcomes. Inevitably, some entities and installations may well be better equipped or more favourably positioned structurally to minimise their emissions.[31]

However, it is important to emphasise that such an approach is quite distinct from that of scholars who advocate an entirely unregulated free market philosophy in this arena.[32] Whilst free market environmentalism envisions the allocation of property-rights for natural resources to private interests with the market determining the value of environmental goods, the philosophy underlying economic instruments advanced in this research, aptly articulated by Rehbinder, is that "the market should be used for economic efficiency purposes in a merely

[29] Nicholas Stern, *A Blueprint for a Safer Planet: How We Can Save the World and Create Prosperity* (Vintage 2010) 11.
[30] Tom H Tietenberg, 'Economic Instruments for Environmental Regulation' (1990) 6(1) Oxford Review of Economic Policy 17.
[31] During the pilot phase of the EU ETS, some sectors emissions allocations were restrained more than others. UK power-plants received, on average, 72% of reference emissions, chemical plants received 88%; whilst cement manufacturers received 96.5%: see James Allen and Anthony White, 'Carbon Trading' (2005) 30(5) Electric Perspectives 50, 54.
[32] Terry Anderson and Donald Leal, 'Free Market Versus Political Environmentalism' (1992) Harvard Journal of Law and Public Policy 297.

instrumental way in order to achieve environmental policy goals that continue to be set by the state".[33] Emissions trading is not, as Zapfel and Vainio have emphasised, primarily about trading but rather deploying a mechanism that allows or increases the likelihood of realising a specified environmental objective.[34] In this sense, Golub has appropriately characterised this re-imagining of regulation as "re-regulation rather than deregulation",[35] despite long-standing concerns that movement towards economic incentivisation approaches may contribute to or cause light-touch regulation.[36] It is evident too that this process of re-regulation, in the context of climate law, entails the integration of complex multi-level governance processes across differing levels of social activity and involving state and non-state actors, themes which are explored further in Chapter 3.

2.2.3 The Advent of Market Trading in the United States

It has been suggested that market trading retains a distinctive "made in America" imprint given that "[c]ap and trade concepts were invented in the United States".[37] By the mid-1990s, market trading had "com[e] of age in the policy arena",[38] particularly with the advent of the United States' sulphur dioxide trading scheme in 1995. This "Grand Policy Experiment" provided an early template for the EU ETS and is still widely regarded as the genesis of the many different

[33] Eckard Rehbinder, 'Ecological Contracts: Agreements Between Polluters and Local Communities' in Gunther Teubner, Lindsay Farmer and Declan Murphy (eds), *Environmental Law and Ecological Responsibility: The Concept and Practice of Ecological Self-Organization* (John Wiley & Sons 1994) 147.
[34] Peter Zapfel and Matti Vainio, 'Pathways to European Greenhouse Gas Emissions Trading: History and Misconceptions' (2002) Fondazione Eni Enrico Mattei Working Paper Series 85/2002, 21.
[35] Jonathan Golub, 'Introduction and Overview' in Jonathan Golub, *New Instruments for Environmental Policy in the EU* (Routledge 1998) 8.
[36] Howard Latin, 'Ideal Versus Real Regulatory Efficiency: Implementation of Uniform Standards and "Fine-Tuning" Regulatory Reforms' (1983) 54 Stanford Law Review 1267.
[37] Scott Deatherage, *Carbon Trading Law and Practice* (Oxford University Press 2011) 20.
[38] Robert Hahn and Robert Stavins, 'Economic Incentives for Environmental Protection: Integrating Theory and Practice' (1992) 82(2) American Economic Review 464.

trading systems operating today.[39] As such, the application of market trading concepts in North America was highly influential in the development of carbon trading in the EU by "provid[ing] European economists with insights to apply to the European situation and … officials in both Member States and the Commission with a body of literature and people to interrogate and to learn from".[40]

The US emissions trading programme, authorised under the Clean Air Act 1990, was extolled in many quarters as a success with claims that abatement costs were considerably less than would otherwise have been the case under traditional regulatory approaches.[41] Indeed, Bogojevic has commented that the scheme's success "played a crucial role in the decision to place emissions trading at the centre of the international attempt to fight climate change".[42] Early forecasts had indicated that the programme would cost $6 billion annually once it was fully implemented. However, actual estimated costs were considerably lower, in the region of $1.1 to $1.8 billion, less than 30% of original predictions.[43] The trading programme achieved its core environmental objective and significantly reduced SO_2 emissions by 22% below mandated levels during the scheme's first phase.[44] Ellermann and colleagues concluded that the core lesson of the experience was that "large-scale tradable permits programs can work more or less as textbooks describe".[45]

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[39] Stavins coined the term reflecting on the success of the US sulphur dioxide trading scheme: Robert Stavins, 'What Can We Learn From the Grand Policy Experiment? Lessons From SO_2 Allowance Trading' (1998) 12(3) Journal of Economic Perspectives 69.
[40] Convery (n 5) 397.
[41] The Environmental Defense Fund (EDF) has observed that emissions trading achieved "superior environmental protection by giving businesses both flexibility and a direct financial incentive to find faster, cheaper, and more innovative ways to reduce pollution".
See EDF, 'The Cap and Trade Success Story' UNICEF (2011) <http://cleartheair.edf.org/page.cfm?tagID=1085> accessed 14 April 2017.
[42] Sanja Bogojević, *Emissions Trading Schemes: Markets, States and Law* (Routledge 2013) 7.
[43] EDF (n 41).
[44] ibid.
[45] A Denny Ellermann, Paul L Joskow, Richard Schmalensee, Juan-Pablo Montero and Elizabeth M Bailey, *Markets for Clean Air: The US Acid Rain Program* (Cambridge University Press 2000) 315.

The success of sulphur dioxide trading in the United States provided further support for the argument that the traditional positioning of economic and environmental principles as diametrically opposed objectives was outdated and that it was possible to construct a regulatory framework which could accommodate, indeed advance, both interests. A school of thought had long suggested that the notion of an inevitable struggle between the environment and the economy was a misplaced premise and that "properly designed environmental standards can trigger innovation that may partially or more than fully offset the costs of complying with them".[46]

In fact, this notion of "ecological modernisation" was identified in the EU's Environmental Action Programmes as far back as 1987 which explicitly recognised the potential competitive advantages for European industry.[47] An integral dimension to this concept was the idea that the EU's economy could modernise through ecologically sound technological innovation, a dynamic which would not only enhance environmental protection but also deliver competitive first-mover advantages to key sectors such as the energy industry.[48] This idea that properly designed environmental standards could deliver economic dividends also resonates with the approach in the 2006 Stern Review commissioned by the British Government.[49] Viewing climate change through an economic lens and characterising it as "market failure on the greatest scale the world has seen",[50] Stern estimated that whilst the costs of mitigation were in the

[46] Michael Porter and Claas van der Linde, 'Toward a New Conception of the Environment-Competitiveness Relationship' (1995) 9(4) Journal of Economic Perspectives 97, 98.
[47] Resolution of the Council of the European Communities and of the representatives of the Governments of the Member States, meeting within the Council of 19 October 1987 on the continuation and implementation of a European Community policy and action programme on the environment (1987-1992) [1987] OJ C328, para 2.1.3 and 2.3.13.
[48] Barroso (n 14).
[49] Stern, *The Stern Review* (n 27).
[50] ibid 24.

region of 1-2% of global GDP during the next few decades, the costs of inaction were more likely between 5-20% of global GDP.[51]

However, whilst market trading is now a "key trend" in environmental regulation,[52] it would be disingenuous to overlook the significant volume of criticism which continues to surround the perceived intrusion of economic principles into environmental value determinations, an intrusion which, it has often been argued, only serves to ultimately weaken the environmental integrity of governance arrangements.[53] Nor has the claimed success of economic incentivisation approaches been universally acknowledged. Golub makes a salient point, linked to von Homeyer's layering phenomenon discussed earlier, that economic incentivisation "instruments have almost invariably been applied in the EU as merely one tool within a package, supplementing pre-existing command-and-control regulation".[54] In such circumstances it is difficult to isolate the perceived advantages and successes of economic incentivisation approaches from the influence of the surrounding governance landscape, much of which may remain traditional in character.

Perhaps this should not be surprising: a clear causal pattern is rarely as demonstrable in the social sciences as exact sciences. Instead, as Braithwaite and Drahos have observed, shedding light on why something happened may be possible by identification of a causal mechanism that led to an event, but why that mechanism rather than another was triggered is likely to remain under a

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[51] Stern, *A Blueprint for a Safer Planet* (n 29) 90-94.
Reflecting on his earlier review, Stern observed that "[l]ooking back, I think the Stern Review assumptions led to an *under-estimation* of the costs of inaction" (emphasis added): see Stern, *A Blueprint for a Safer Planet* (n 29) 94.
[52] Joanne Scott, 'The Multi-Level Governance of Climate Change' in Paul Craig and Gráinne de Búrca (eds), *The Evolution of EU Law* (Oxford University Press 2011) 805, 806.
[53] For example, Eckersley has expressed concern that economic incentivisation approaches are philosophically misguided: see Robyn Eckersley, 'Markets, the State, and the Environment: An Overview' in Robyn Eckersley, *Markets, the State and the Environment: Towards Integration* (Macmillan 1995) 12.
[54] Golub (n 35) 22.

veil.[55] For example, the innovation dividend of market trading, sometimes accepted as given, remains the subject of considerable debate.[56] Specifically with respect to the US sulphur dioxide trading scheme, Taylor and colleagues have commented that "the weight of evidence of the history of innovation in SO_2 control technology does not support the superiority of … emissions trading as an inducement for environmental technological innovation, as compared with the effects of traditional environmental policy approaches".[57] Distilling the causative influence of economic incentivisation approaches, from the broader traditional regulatory landscape within which they are often located, is a particularly challenging endeavour. However, recognition of the validity of rival perspectives in this context is particularly important, even if detailed evaluation of such critical commentaries is not the focus of this research. Such critiques provoke many questions, particularly by presenting alternative visions of governance arrangements which are less influenced by (or anchored to) economic incentivisation approaches.[58]

2.3 The Origins of the EU ETS

2.3.1 Emissions Trading: A Global Vision?

The development and implementation of emissions trading has had "considerable influence in the transformation of environmental governance

[55] John Braithwaite and Peter Drahos, *Global Business Regulation* (Cambridge University Press 2011) 15.
Importantly mechanisms, in this sense, are distinguished from general laws, as commonly applied in the exact sciences, which allow with certitude the formation of conclusions both in an explanatory and predictive sense.
[56] Convery (n 5) 397.
[57] Margaret Taylor, Edward Rubin and David Hounshell, 'Regulation as the Mother of Innovation: The Case of SO_2 Control' (2005) 27(2) Law & Policy 348, 370.
[58] Robert Falkner, 'Private Environmental Governance and International Relations' (2003) 3(2) Global Environmental Politics 72, 82.

regimes throughout the world".[59] It is, perhaps, in the EU that this influence has been most penetrating and enduring. Market trading has emerged as the flagship instrument in EU climate policy.[60] The Union's adoption of emissions trading, however, signalled a considerable paradigm shift in governance from a largely command-and-control topography to confidence in the centrality of the market in climate governance. The endurance of this instrument is aptly demonstrated by the EU's continuing emphasis on the long-term contribution of the EU ETS to climate policy. The Commission has presented plans for a fourth trading phase from 2021 – 2028 during which auctioning will become the sole means of allocation.[61] It is clear that emissions trading is not a transient regulatory innovation: it is now a central pillar of the EU's climate governance philosophy.[62]

By establishing the EU ETS, the EU has also attempted to reinforce its climate governance credentials, whilst remaining competitive in an unevenly carbon-regulated world. Damro and Luaces Méndez have suggested that the "thrust of EU climate change [policy] has reflected a desire to claim Union leadership, both externally and internally, in the policy field".[63] For example, the EU's ambitious vision of implementing OECD-wide carbon trading with further expansion to transitional economies represents not only a statement of the EU's faith in the contribution of emissions trading to climate governance, but also the EU's confidence in its directional leadership, a theme further elaborated in

[59] Jan-Peter Voß, 'Innovation Processes in Governance: The Development of "Emissions Trading" as a New Policy Instrument' (2007) 34(5) Science and Public Policy 329, 330.
[60] Commission, 'Revised Emissions Trading System Will Help EU Deliver on Climate Goals' (DG Climate Action: Newsroom, 15 July 2015) <https://ec.europa.eu/clima/ news/articles/news_2015071501_en> accessed 14 April 2017 and Torbjørg Jevnaker and Jørgen Wettestad, 'Ratcheting Up Carbon Trade: The Politics of Reforming EU Emissions Trading' (2017) 17(2) Global Environmental Politics 105.
[61] Proposal for a Directive of the European Parliament and of the Council amending Directive 2003/87/EC to Enhance Cost-Effective Emission Reductions and Low-Carbon Investments of 15 July 2015 (Communication) COM (2015) 337 final.
[62] Convery (n 5) 393.
[63] Chad Damro and Pilar Luaces Méndez, 'Emissions Trading at Kyoto: From EU Resistance to Union Innovation' (2003) 12(2) Environmental Politics 71, 79.

Section 2.4. It is also possible to interpret the early implementation of the EU ETS as a not-too-subtle attempt to establish Union climate policy as "the world's benchmark in combating climate change, with the [EU ETS] at the core of [this] strategy".[64] Indeed, the prospect that the EU ETS could eventually form the nucleus of a global trading architecture had long been recognised by the Commission and with the successful expansion of the EU ETS to include the EFTA Member States, this objective has remained constant as a policy objective.[65] Consistently, the importance of playing a formative role in the early development of the design features of emissions trading was also recognised. By early implementation of the EU ETS, the EU could aspire to become the international standard-setter "in control of the most important international regulatory effort to limit greenhouse gases".[66] The then Environment Commissioner, Ritt Bjerregaard, was explicit about the importance of such influence: "We have to get involved in emissions trading… we cannot let others dictate the rules".[67]

The importance of this process of shaping and influencing the development of emissions trading has also been recognised as a significant motivating factor at the national level. Whilst Germany had initially been cool towards the possibility of market trading,[68] Zapfel and Vainio have emphasised that "[t]he possibility to be involved in the early stages and influence rule development was a major engine to power German interest in the new and

[64] Geert van Calster, 'Against Harmonisation – Regulatory Competition in Climate Change Law' [2008] Carbon and Climate Law Review 89, 89.
[65] Jos Delbeke, 'The Emissions Trading Scheme (ETS): The Cornerstone of the EU's Implementation of the Kyoto Protocol' (2006) 1(2) European Review of Energy Markets 1, 13.
[66] Christian Egenhofer and Thomas Legge, 'After Marrakech: The Regionalisation of the Kyoto Protocol', Centre for European Policy Studies (2001) <http://old.ceps.eu/Article.php?article_id=232> accessed 14 April 2017.
[67] Skjærseth and Wettestad (n 4) 36.
[68] Felix Christian Matthes and Franzjosef Schafhausen, 'The EU ETS Allocation Process: Germany' in A Denny Ellermann, Barbara Buchner and Carlo Carraro, *Allocation in the European Emissions Trading Scheme: Rights, Rents and Fairness* (Cambridge University Press 2007) 72, 73.

coming instrument".[69] Such a strategy may be interpreted as an effort to minimise the administrative adjustment costs expected to follow from the introduction of emissions trading, a driver which has been highlighted elsewhere in European environmental regulation.[70] Similar motivations have likely influenced British support for emissions trading: along with Denmark, the UK was one of the first countries in the world to establish a domestic carbon emissions trading scheme.[71] It has been suggested that early adoption of emissions trading by the UK delivered first-mover advantages, such as practical emissions trading experience prior to the start of the EU ETS and nurturing the emergence of the City of London as a global capital for emissions trading.[72] The Commission has also identified the significance of securing first-mover advantage in the environmental sphere, recognising that "in an increasingly competitive world environmental performance can be a factor giving companies or their products a competitive edge".[73] Yet securing first-mover advantage by playing an early pioneering role in the implementation of emissions trading does not by itself fully explain the remarkable change in the EU's attitude towards the use of this instrument.

2.3.2 The EU's Change in Position Towards Emissions Trading

In a very short space of time, emissions trading moved from being a non-considered policy option for the EU to become the cornerstone of EU climate

[69] Zapfel and Vainio (n 34) 10.
[70] Ragmar Löfstedt, 'The Swing of the Regulatory Pendulum in Europe: From Precautionary Principle to (Regulatory) Impact Analysis' (2004) 28(3) Journal of Risk and Uncertainty 237, 245.
[71] Voß (n 59) 338.
[72] Rüdiger Wurzel, *The Politics of Emissions Trading in Britain and Germany* (Anglo-German Foundation 2008) 28.
[73] Commission, 'Integrated Product Policy – Building on Environmental Life-Cycle Thinking' (Communication) COM (2003) 302 final, 6.

policy.[74] The EU's change in position has been described as moving from "follower to leader"[75] and – perhaps more accurately – from "sceptic to frontrunner".[76] However, Ellermann and colleagues have suggested that the EU is not alone in undertaking this Damascene conversion: in the United States too "emissions trading has gone from being a pariah among policymakers to being a star".[77] This Section will evaluate the context within which and the process through which the EU's remarkable regulatory change occurred with a view to exploring whether there are lessons in this evolution which may be of relevance as the EU looks to broaden the horizons of the EU ETS.

Prior to consideration of emissions trading, the Commission had unveiled the introduction of a carbon tax as the core component of its climate governance strategy. The perceived interrelatedness of economics and climate change influenced policymakers' thinking and contributed to the view that it was too difficult to steer climate governance by traditional command-and-control regulation alone.[78] The concept of a carbon tax represented a significant step in the journey towards harnessing market forces in the field of environmental governance, a not uncontroversial progression in itself.[79] However, little progress was achieved in devising substantive measures to coordinate Member States' climate policies throughout the 1990s and the concept of a carbon tax floundered amidst national sovereignty and competitiveness concerns.[80] Key Member States, such as the UK and Spain, were vociferously opposed to a

[74] Convery (n 5) 404.
[75] European Environment Agency, 'Market-based Instruments for Environment Policy in Europe' (2005) EEA Technical Report 8/2005, 16.
[76] Atle Christiansen and Jørgen Wettestad, 'The EU as a Frontrunner on Greenhouse Gas Emissions Trading: How Did it Happen and Will the EU Succeed' (2003) 3 Climate Policy 3, 4.
[77] Ellermann, Joskow, Schmalensee, Montero and Bailey (n 45) 4.
[78] Damro and Luaces Méndez (n 63) 80.
[79] EU agreements to limit CO_2 emissions from new vehicles sold in the EU were concluded with European, Japanese and Korean car manufacturers in 1998 and 1999.
[80] Markus Wråke, Dallas Burtraw, Åsa Löfgren and Lars Zetterberg, 'What Have We Learnt from the European Union's Emissions Trading System?' (2012) 41 Ambio: A Journal of the Human Environment 12, 12.

carbon tax which, as a fiscal matter, required unanimity in the Council of Ministers to pass into legislation.[81] Expanding on the EU's competitiveness concerns, Huber has attributed the failure to introduce an EU-wide carbon tax to a "cost-free leadership" vision, where the Commission and Member States were reluctant to act without securing commitments from the US and Japan to introduce comparable energy and CO_2 taxes.[82] Instead, Member States forged ahead with diverse climate policies encompassing traditional regulation, energy and CO_2 taxes, and voluntary agreements. As it became clear that a harmonised EU tax was increasingly unlikely, the Commission encouraged Member States to establish national taxes on a product-by-product basis.[83]

However, developments were also already in motion nudging the EU towards emissions trading. European industry was moving towards an acceptance of emissions trading – a trend particularly evident when BP announced the launch of an internal emissions trading scheme in 1998 with Shell following suit shortly after.[84] Describing major oil corporates as "policy entrepreneurs" during this phase of the EU's conversion towards emissions trading, Meckling has identified BP's influence as "considerable" on the "take-up of emissions trading in Europe".[85] Within the Commission policymakers recognised such developments as "increasingly powerful drivers",[86] but the prospect of proliferating individual national trading schemes – whilst welcome laboratories of the concept of market trading in practice – also risked the

[81] Jørgen Wettestad, 'The Making of the 2003 EU Emissions Trading Directive: An Ultra-Quick Process due to Entrepreneurial Efficiency' (2005) 5(1) Global Environmental Politics 1, 8.
[82] Michael Huber, 'Leadership in European Climate Policy: Innovative Policy Making in Policy Networks' in Duncan Liefferink and Mikael Skou Andersen (eds), *The Innovation of EU Environmental Policy* (Scandinavian University Press 1998) 145, 150.
[83] Commission, 'Communication under the UN Framework Convention on Climate Change' (Communication) COM (1996) 217 final.
[84] Jonas Meckling, *Carbon Coalitions: Business, Climate Politics, and the Rise of Emissions Trading* (MIT Press 2011) 104.
[85] ibid.
[86] Zapfel and Vainio (n 34) 9.

emergence of a patchwork of domestic schemes with potentially conflicting rules and market distortions. In 1999 the Danish Parliament approved a bill on CO_2 quotas for electricity production as part of legislative reform of the electricity sector. Whilst only eight companies participated in the trading scheme, it nonetheless covered more than 90% of emissions from power generation. In 2002 the UK Government endorsed and financially supported a pilot scheme developed by an association of business actors, the Emissions Trading Group.

Emissions trading was also gaining momentum beyond its contribution to climate governance as a distinct and thriving service economy and was beginning to actively lobby for expansion of its market.[87] A commercial infrastructure rapidly developed encompassing consultancies, banks, brokers, exchanges, risk managers, and lawyers which contributed to both breaking-down and gradually winning over initially hostile and sceptical actors. For instance, German industry and the German federal government switched to advocating emissions trading after strong initial resistance to the concept.[88] The establishment of the International Emissions Trading Association in 1999, with the objective of promoting the worldwide development of emissions markets, also contributed to the momentum favouring emissions trading. The developing broad support for emissions trading across a wide range of business and industry groups across the EU was also an important driver,[89] a perspective further underscored by the Commission's own consultations with industry stakeholders.[90] This "conscious collective effort of the Commission to co-

[87] ibid.
[88] Meckling (n 84) 179.
[89] Christiansen and Wettestad (n 76) 9.
[90] Commission, 'Green Paper on Greenhouse Gas Emissions Trading Within the European Union: Summary of Submissions: Non-Governmental Submissions', 14 May 2001.

operate with stakeholders"[91] underscores the invariably multi-level and multi-actor reality of governing emissions trading, a theme interrogated in Chapter 3.

Convergence of industry and government perspectives, although not universal, is also consistent with a fundamental hypothesis underpinning the attractiveness of market trading which Bakker describes as the "hope of a virtuous fusion of economic growth, efficiency, and environmental conservation".[92] Indeed, Bailey and Maresh have argued that the creation of the EU ETS "was made possible by a swift convergence among supranational, state, and industry actors around the regulatory logic of EU emissions trading as a cost-effective means of achieving emissions targets agreed in the Kyoto Protocol".[93] Of course, this same regulatory logic had been rigorously advanced by the United States during negotiations of the Kyoto Protocol, the persuasiveness of which had been highly contested by the EU. How then can the EU's later adoption of emissions trading be reconciled with its prior vociferous opposition?

2.3.3 The EU's Escape from Norm Entrapment

In a number of ways, as illustrated in Section 2.3.2, the landscape was becoming increasingly benign towards the development of an EU-wide emissions trading scheme. Yet in the international sphere debate about the appropriateness of emissions trading and its effectiveness continued to obstruct attempts to negotiate rules implementing the Kyoto Protocol. Indeed, heated exchanges

[91] Damro and Luaces Méndez (n 63) 75.
[92] Karen Bakker, 'Neoliberalizing Nature? Market Environmentalism in Water Supply in England and Wales' (2005) 95(2) Annals of the Association of American Geographers 542, 543.
[93] Ian Bailey and Sam Maresh, 'Scales and Networks of Neoliberal Climate Governance: The Regulatory and Territorial Logics of European Union Emissions Trading' (2009) 34 Transactions of the Institute of British Geographers 445, 447.

surrounding emissions trading and, in particular, the extent to which international trading of allowances would be permitted, has been ascribed as one of the key conflicts contributing to the derailment of The Hague negotiations in 2000.[94] Whilst the considerations explored in Section 2.3.2 represented powerful drivers in the process creating the EU ETS, the impact of the United States' long-term advocacy of emissions trading is perhaps the most mystifying.

Damro and Luaces Méndez have characterised the transformation in the EU's position as a process of policy transfer driven primarily by the EU's perception of necessity: emissions trading was an alien policy instrument for the EU but one which, given American preferences for market trading, the EU would need to quickly acquaint itself with.[95] As such, during the Kyoto Protocol negotiations and later during The Hague negotiations, the EU was facing a significant potential disadvantage as its own system was so completely unfamiliar with implementing this type of instrument. However, interaction in this transnational process also contributed to a progressive learning process within the EU regarding market trading. Whilst Damro and Luaces Méndez have characterised the EU's subsequent implementation of an emissions trading scheme as "*nothing more* than the introduction of an instrument to deal with already established policy objectives",[96] Cass has instead persuasively emphasised the profound normative readjustment which acceptance and adoption of market trading by the EU necessarily required.[97]

Normative considerations are particularly influential within the EU actor constellation. Indeed, some scholars have suggested that the EU is a

[94] Urs Steiner Brandt and Gert Tinggaard Svendsen, 'Hot Air in Kyoto, Cold Air in The Hague – The Failure of Global Climate Negotiations' (2002) 30 Energy Policy 1191.
[95] Damro and Luaces Méndez (n 63) 71.
[96] ibid 80 (emphasis added).
[97] Loren Cass, 'Norm Entrapment and Preference Change: The Evolution of the European Union Position on International Emissions Trading' (2005) 5(2) Global Environmental Politics 38.

qualitatively distinct normative power emphasising "the ideational impact of the EU's international identity/role as representing normative power".[98] During climate negotiations with the United States, the EU emphasised the importance of domestic climate action and sought to cap the use of flexibility mechanisms, rejecting the American approach as a crass attempt to "buy its way out of its Kyoto commitments".[99] However, as a "synergistic and multi-level mix of factors"[100] began to emerge propelling the EU towards emissions trading, the EU increasingly faced a situation aptly described as "norm entrapment".[101] Drawing on Schimmelfennig's research in the context of the EU's eastern expansion,[102] Cass has defined this scenario as "the inability to pursue a preferred policy that violates a norm because of prior rhetorical affirmation of the norm".[103] Consequently, even as emissions trading garnered support internally, the EU remained trapped by the normative objections which it had earlier raised against the idea. The EU subsequently invested substantial efforts in reframing emissions trading from a strategic device in the hands of the United States to dilute binding emission reduction commitments to an effective and efficient instrument for climate governance in the EU.[104]

In early 2001, when the Bush administration withdrew from the Kyoto Protocol and described it as fatally flawed, the necessary space was created for the EU to reframe emissions trading. As a result, a concept which the EU had previously sought to delegitimise as an American attempt to evade domestic responsibilities was instead reconstructed as a legitimate strategy to salvage the

[98] Manners (n 3) 238.
[99] Jason Shogren, 'Benefits and Costs of Kyoto' in Carlo Carraro (ed) *Efficiency and Equity of Climate Change Policy* (Springer-Science+Business Media Dordrecht 2000) 17, 35.
[100] Christiansen and Wettestad (n 76) 8.
[101] Cass (n 97) 38.
[102] Frank Schimmelfennig, 'The Community Trap: Liberal Norms, Rhetorical Action, and the Eastern Enlargement of the European Union' (2001) 55(1) International Organization 47.
[103] Cass (n 97) 38.
[104] Voß (n 59) 339.

Kyoto Protocol. Paradoxically, the withdrawal of the United States from the Protocol, far from delivering the coup de grâce to the Kyoto framework which some scholars had forecast,[105] instead facilitated the rapid development of the world's largest carbon market. American withdrawal from Kyoto galvanised the resolve of the EU to reach the necessary compromises with other states, particularly Russia, to ensure that the Protocol would come into effect.[106]

Yet the EU's core aim of constructing an international framework was far from abandoned and advancing such a multilateral framework has remained a consistent leitmotif in EU climate policy.[107] The architects of the EU ETS had recognised from the outset that whilst it represented "a major novelty in the way the EU approaches environmental regulation",[108] the EU ETS was also an experiment which could form the prototype for developments elsewhere, developments which the EU would be favourably positioned to influence. Consequently, some commentators expected the EU to lead attempts to develop new governance undertakings in the field, carving out a ''climate hegemon'' role by not only challenging, but also persuading the United States to participate.[109] As Christiansen and Wettestad have aptly recognised, the EU "sees its system in a more long-term, global perspective".[110]

[105] David Victor, *The Collapse of the Kyoto Protocol and the Struggle to Slow Global Warming* (Princeton University Press 2001).
[106] John Meadowcroft, 'The Next Step: A Climate Change Briefing for European Decision-Makers' (2003) Florence European Union Institute, Robert Schuman Centre, Policy Paper 02/13, 17.
[107] Karin Bäckstrand and Ole Elgström, 'The EU's Role in Climate Change Negotiations: From Leader to "Leadiator"' (2013) 20(10) Journal of European Public Policy 1369, 1375.
[108] Delbeke (n 65) 11.
[109] Egenhofer and Legge (n 66).
[110] Christiansen and Wettestad (n 76) 16.

2.4 Theorising EU Climate Leadership

2.4.1 Re-Appraising EU Normative Power

This thesis is not the place to analyse the voluminous literature exploring the normative features of the EU's identity but it is important to evaluate, in the context of climate governance, claims which ascribe a primarily normative dimension to the character and actions of the EU in this sphere.[111] Indeed, such an enquiry is perhaps particularly relevant in the context of climate governance given the suggestion that it is in this domain that the EU's influence is strongest.[112] As such, it is appropriate to consider the normative dimensions to EU policy and action in this arena.

The notion that the EU may be best understood as a "normative power" has generated considerable scholarly debate about the meaning and implications of this characterisation. Since Manners first formulated the concept in 2002,[113] drawing on earlier research by Duchêne,[114] there have been numerous constructive critiques unpacking and refining the concept. Indeed, revisiting the term in 2013, Manners acknowledged the explosion in literature which had marked the past decade's research and the interest which exists in using his normative power approach to attempt to "explain, understand and judge the EU in global politics".[115] As elaborated by Manners, the status of

[111] Manners (n 3) 235.
[112] Zaki Laïdi, 'The Normative Empire. The Unintended Consequences of European Power' (2008) Garnet Policy Brief 6/2008, iv <http://www.sciencespo.fr/ceri/en/garnetpolicybriefs> accessed 14 April 2017.
[113] Manners (n 3) 235.
[114] Duchêne ascribed the status of "civilian power" to the EU: the Union was not a "military power" in contradistinction to the two superpowers at that time, the USA and the USSR.
See François Duchêne, 'Europe's Role in World Peace' in Richard Mayne (ed), *Europe Tomorrow: Sixteen Europeans Look Ahead* (Fontana 1971) 19.
[115] Ian Manners, 'Assessing the Decennial, Reassessing the Global: Understanding European Union Normative Power in Global Politics' (2013) 48(2) Cooperation and Conflict 304, 320.

normative power suggests that "not only is the EU constructed on a normative basis, but that this predisposes it to act in a normative way in world politics".[116]

A norm can be defined as "a standard of appropriate behaviour for actors with a given identity".[117] As understood within the framework of Manners' normative power concept, this means that the EU has the ability to "shape conceptions of 'normal' in international relations".[118] Laïdi considers the EU's capacity to shape conceptions of normal in a more muscular manner construing the EU as a "normative Empire" with the ability to "enforce" (as opposed to merely shape) its norms beyond its own frontiers.[119] There is, however, a common thread splicing the perspectives of Manners and Laïdi: the perception of the EU as a normative power is far from merely an inward-oriented assessment of the EU's vision of itself within its own legal system and its relationship with its Member States, but rather an expression of the Union's external capacity to act and exert influence *beyond* its boundaries. It is this dimension which has particular relevance with respect to climate governance.

So far, as a theoretical concept, the notion of a normative power is relatively unproblematic, although it is certainly possible to progress beyond Manners' uniform conceptualisation and segregate norms through classification as standards with different levels of abstraction.[120] Brauns, in the context of assessing the degree to which EU climate norms have internally diffused to recent accession Member States, has distinguished between what Wiener has identified as fundamental norms and organising principles.[121] Fundamental

[116] Manners (n 3) 252.
[117] Martha Finnemore and Kathryn Sikkink, 'International Norm Dynamics and Political Change' (1998) 52(4) International Organisation 887, 891.
[118] Manners (n 3) 239.
[119] Laïdi (n 112).
[120] Antje Wiener, 'Enacting Meaning-in-Use: Qualitative Research on Norms and International Relations' (2009) 35(1) Review of International Studies 175, 184.
[121] Mats Braun, 'EU Climate Norms in East-Central Europe' (2014) 52(3) Journal of Common Market Studies 445, 448.

norms must, at the very least, encompass the five "core norms" of peace, liberty, democracy, rule of law, and human rights, which define the nature of the EU.[122] The notion of a fundamental norm may also legitimately extend to include Manners' four "minor norms" of social solidarity, anti-discrimination, sustainable development, and good governance.[123] For the purposes of this research, it is possible to remain equivocal on whether such an extension is appropriate. Instead, it is more relevant to emphasise that it is possible to hierarchically structure norms and that within such a framework the norms which influence EU climate policy are more accurately understood, consistent with Wiener's classification, as organising principles which are subordinate to the fundamental norms of the Union identified by Manners.

This is consistent with Wiener's elaboration that organising principles "evolve through the practices of politics and policy-making", rather than representing "core constitutional norms" of the more appropriately ascribed "fundamental" status.[124] The point at which an "organising principle" may be viewed as sufficiently settled and integral so that it warrants reconsideration as a "fundamental norm" remains unclear, but Wiener has explicitly acknowledged this inherent and necessary fluidity and has recognised that the status of a norm may "change in light of ongoing contestation".[125] Within the context of this thesis, there is an evident heuristic value to Wiener's theoretical framework since it provides an analytic toolkit to both frame and better understand the normative space within which EU climate policy is produced.

Identifying the normative organising principles which underpin and shape EU climate policy presents a more complex challenge. Yet in order to

[122] Manners (n 3) 242.
[123] ibid.
[124] Wiener (n 120) 184.
[125] ibid.

understand the success with which the EU projects normative power in the arena of climate negotiations, it is necessary to define the normative principles which influence policy formation. Van Schaik and Schunz, in their evaluation of the impact of EU activism in international climate negotiations, have identified three principles which influence the design of EU climate policy: multilateralism, sustainable development, and the precautionary principle informed by climate science.[126] Other scholars have more succinctly identified the EU's "normative preferences" in the climate sphere as simply consisting of "multilateralism and environmental protection".[127] Van Schaik and Schunz's categorisation has a more coherent attractiveness and defines "environmental protection", in the context of climate change, with greater specificity by separately recognising sustainable development and the precautionary principle informed by climate science.

Whilst Van Schaik and Schunz have described the three principles as "driving factors", it is suggested that the three principles may instead be better understood as exhibiting the qualities of "organising principles" within Wiener's norm typology. The difficulty of ascribing (or discovering) a normative quality to these principles is that there is little explanation as to why certain other principles, which may also influence EU climate policy, have been omitted. For example, the principle of equity has also arguably animated EU policy, insofar as we can measure such influence, whilst "sub-objectives of an economic nature" have been identified as influential.[128] Van Schaik and Schunz, however,

[126] Louise Van Schaik and Simon Schunz, 'Explaining EU Activism and Impact in Global Climate Politics: Is the EU a Norm or Interest-Driven Actor?' (2012) 50(1) Journal of Common Market Studies 169, 173.
[127] Katja Biedenkopf and Claire Dupont, 'A Toolbox Approach to the EU's External Climate Governance' in Astrid Boening, Jan-Frederik Kremer and Aukje van Loon (eds) *Global Power Europe – Volume 1: Theoretical and Institutional Approaches to the EU's External Relations* (Springer-Verlag Berlin Heidelberg 2013) 181, 183.
[128] Case T-178/05, *UK v Commission* [2005] ECR II-4807, para 60.

have not identified these as "driving factors". Interestingly, whilst Bäckstrand and Elgström have agreed that the EU has been guided by the three principles identified by Van Schaik and Schunz, they interpret "effective multilateralism" in a more refined manner as denoting "science-based legally binding reduction targets and the principle of fairness and North-South equity".[129] It is not at all clear that "effective multilateralism" need be so specifically defined, but the varying interpretations which may legitimately be assigned to each organising principle and the challenge of identifying – much less weighing – the relative importance of each principle, is illustrative of a distinct lack of definitional clarity.[130] Given the conceptual undertaking involved perhaps this should not be surprising, but there are implications in terms of measuring with confidence the extent of the EU's claimed normative influence in external climate governance arrangements.

Moreover, even if it can be demonstrated that the EU is exerting a material influence in the development of such external governance arrangements, it is not at all clear against which organising principle the success of this influence should be measured, particularly given that it is unlikely that all three normative organising principles are equal either in terms of their internal importance to the EU or their external influence on other actors beyond the EU. Thus, one norm may legitimately be construed as more influential than others. For example, the EU has been described as the embodiment of the principle of multilateralism given that its Member States have agreed to be bound in their relations with one another by a set of stable rules and principles.[131] It is not

[129] Bäckstrand and Elgström (n 107) 1375.
[130] The difficulty of accurately interpreting "sustainable development" is a case in point and the definitional ambiguity of the concept has raised challenging questions in other areas of emissions trading governance, as evaluated in Chapter 6.
[131] Diarmuid Torney, 'External Perceptions and EU Foreign Policy Effectiveness: The Case of Climate Change' (2014) 52(6) Journal of Common Market Studies 1358, 1364.

surprising, therefore, that the principle of multilateralism – given its prominence in the domestic ordering of the EU – should also similarly animate EU climate policy.[132] However, the sum of these conceptual deficiencies, is that any analysis based on Van Schaik and Schunz's three normative organising principles – multilateralism, sustainable development, and the precautionary principle informed by climate science – must come with a health warning concerning the limitations of such an analysis. The metrics against which we analyse the normative power of the EU in the arena of climate governance intrinsically involve assumptions, the veracity of which can only be weighed rather than proven.

Given that it is possible to identify, if perhaps not evidentially establish, some of the normative principles which may underpin and shape the development of EU climate policy, the next stage of analysis requires an assessment of the degree to which the EU also influences the climate policies of external actors. Cox and Jacobson's seminal study of influence is particularly instructive by emphasising the distinction between power as potential influence, on the one hand, and actual influence, on the other. As the scholars explain:

> Power means capability; it is the aggregate of political resources that are available to an actor…. Power may be converted into influence, but it is not necessarily so converted at all or to its full extent. Although those who possess the greatest power may also exercise the greatest influence, this is not logically necessary.[133]

[132] Consolidated Version of the Treaty on European Union [2008] OJ C115/13, art 21.
[133] Robert W Cox and Harold J Jacobson, *The Anatomy of Influence: Decision Making in International Organization* (Yale University Press 1973) 4.

It is not enough to merely speak of the EU as a normative power in international climate governance, but rather it is instead necessary to evaluate the authenticity of such a claim. Claims of EU normative leadership in climate governance – or significant potential for such leadership – are widespread.[134] For example, Egenhofer and Legge have considered whether "by finding itself in control of the most important international regulatory effort to limit greenhouse gases" the EU could exert such influence over the emerging climate governance architecture that it could emerge as a "climate hegemon".[135] Laïdi has emphasised that the EU recognises that "it is only by norms…. that it can make its voice heard"[136] and that the Kyoto Protocol has proven to be the "perfect vehicle for normative influence".[137]

Yet all too often such claims of EU normative leadership in climate governance are assumed rather than proven with little or no evidence demonstrating how such leadership has effectively translated power into influence by modifying other actors' behaviours, beliefs, or preferences. However, it makes little sense to talk of leadership if other actors do not follow.[138] Instead, "followership" is a necessary corollary to leadership.[139] Consistent with Cox and Anderson's distinction between power and influence, in this context the status of "follower" can be understood as denoting the conversion of power into influence by the successful modification of the follower's behaviour, beliefs, or preferences. A more stringent construction might demand modification of an

[134] For example: Anthony R Zito, 'The European Union as an Environmental Leader in a Global Environment' (2005) 2(3) Globalizations 363 and Martijn LP Groenleer, Louise Van Schaik and Simon Schunz, 'United We Stand? The European Union's International Actorness in the Cases of the International Criminal Court and the Kyoto Protocol' (2007) 45(5) Journal of Common Market Studies 969.
[135] Egenhofer and Legge (n 66).
[136] Laïdi (n 112) iii.
[137] ibid iv.
[138] Stefan A Schirm, 'Leaders in Need of Followers: Emerging Powers in Global Governance' (2010) 16(2) European Journal of International Relations 197.
[139] Torney, 'External Perceptions and EU Foreign Policy Effectiveness' (n 131) 1363.

actor's *behaviour* as evidence of "followership". By applying this more rigorous framework to assess claims of EU climate leadership, it is possible to better understand the potential but also the limitations of normative power.

As Section 2.3 evaluated, the EU was not originally a proponent of market trading. Indeed, it was not merely sceptical but openly hostile to the contribution of such an instrument to climate governance. Given the intensity of the EU's hostility towards emissions trading it is not misplaced to characterise this stance as akin to constituting a normative organising principle, similar in status to those enumerated.[140] As a consequence, this created a norm entrapment dilemma for the EU: as emissions trading gradually evolved to become a more favoured policy choice, the EU felt unable to pursue such a policy as it violated a norm which the EU had previously repeatedly rhetorically affirmed. This dilemma was only truly unlocked after American withdrawal from the Kyoto Protocol created more favourable conditions for the EU to reposition emissions trading as a component of Union climate policy.

At the time of its negotiation, the essential fabric of the Kyoto Protocol was consistent with prevailing EU climate policy. The Protocol is multilateral and based on binding reduction commitments; embeds the principle of common but differentiated responsibilities; and, through a further outworking of this principle, has sought to reconcile sustainable development with carbon mitigation via the architecture of the CDM. Consequently, it is possible to construe the intrinsic nature of the Kyoto Protocol as broadly consistent with the normative organising principles shaping EU climate policy. Whilst it is far more challenging to identify the causative process by which EU power was converted into influence, it is not

[140] Cass (n 97) 38.
It is also equally possible to construe market trading as consistent with the normative principle of ecological modernisation discussed earlier which, perhaps unhelpfully, serves to further underscore the inherently ambiguous and unsettled nature of the normative landscape.

overreaching to conclude that the EU has exerted a degree of influence in fashioning the final design of the Kyoto Protocol. Consistent with this analysis, however, it is far more challenging to measure precisely the degree to which the final architecture is primarily attributable to EU influence.

It was during the succeeding years, as the focus moved to ratification of the Kyoto Protocol, that the EU's claimed normative leadership was particularly tested. Scholars have interpreted the ratification of the Kyoto Protocol and the EU's undoubted central role in this process in contradictory ways. Laïdi views ratification of the Kyoto Protocol as resembling something akin to the high watermark of EU climate leadership and has suggested that the EU identified with the Protocol as a symbol of the Union's "distinct political identity".[141] For many commentators securing ratification of the Kyoto Protocol was first and foremost the EU's success and there can be little doubt that the political commitment of the EU to the Protocol was crucial to its eventual ratification.[142] Indeed, some scholars have considered the EU's quest to ensure ratification of the Protocol as "a test of the EU itself".[143]

To truly assess claims of EU normative leadership during this period, it is necessary to evaluate whether the Kyoto Protocol in the guise eventually implemented was consistent with the EU's normative organising principles. Whilst acknowledging that the EU's leadership role during this period has come across relatively successfully, Van Schaik and Schunz have also identified the high bargaining cost which the EU conceded to secure ratification.[144] The imprint of the EU's normative organising principles of multilateralism, sustainable

[141] Laïdi (n 112) iv.
[142] ibid.
[143] Michael Grubb, 'The UK and the European Union: Britannia Waives the Rules?' in Detlef Sprinz (ed) *Climate Change After Marrakech: The Role of Europe in the Global Arena* (German Policy in Dialogue, University of Trier 2009) 9, 11.
[144] Van Schaik and Schunz (n 126) 173.

development, and the precautionary principle are evident in the Kyoto Protocol, but the overall level of ambition and the inability of the EU to bind the United States raises questions about the EU's capacity to translate normative power into influence. Whilst this concern was evident throughout the process of securing ratification of the Protocol, it was during negotiations for a post-Kyoto climate settlement, particularly at the Copenhagen Conference in 2009, that the "normative Empire" vision of EU power was laid bare.

The EU approached the Copenhagen summit with agreement preferences moulded by its normative organising principles. Consistent with the EU's climate norms of multilateralism and the precautionary principle and informed by the climate science of the most recent IPCC report, the Union sought a legally binding agreement limiting average temperature rise to less than 2°C above pre-industrial levels. To achieve this, the EU proposed an ambitious move towards an enhanced 30% reduction below the 1990 baseline, if other industrialised countries would similarly commit to comparable binding targets. As Groen, Niemann and Oberthür have observed, this negotiating position was "very ambitious and nearly completely in line with the ultimate goal of the UNFCCC and the related scientific advice".[145]

Whilst the EU's position was normatively-inspired, it is clear too that the definitional ambiguity of the normative organising principles would prove troublesome. For example, for the first time in international climate negotiations, the EU's interpretation of multilateralism shifted markedly from the construction advanced by Bäckstrand and Elgström as encompassing "the principle of fairness and North-South equity".[146] Whilst the EU had originally championed

[145] Lisanne Groen, Arne Niemann and Sebastian Oberthür, 'The EU as a Global Leader? The Copenhagen and Cancun UN Climate Change Negotiations' (2012) 8(2) Journal of Contemporary European Research 173, 178.
[146] Bäckstrand and Elgström (n 107) 1375.

the principle of common but differentiated responsibility during the negotiations of the Kyoto Protocol, at the Copenhagen summit and during the subsequent Paris negotiations, the Union instead advocated a single comprehensive agreement covering all countries, a perspective which had long been advanced by the United States.[147] The Paris Agreement's architecture acknowledges that "developed countries must take the lead, but cannot solve the problem of climate change on their own".[148] Normatively, this shift can be explained in one of two ways. First, by revising its approach to North-South equity the EU demonstrated that the principle of fairness, whilst important in EU climate policy, was not normative in nature or, analogously, that norms and strategic interests cannot be easily distinguished.[149] Second, all climate norms may not be equal and it is possible to explain the EU's shift in priority as the subordination of the (normative) principle of fairness to the overriding climate science-informed precautionary principle which considered the adoption of more rigorous climate action by China and India as necessary to avert catastrophic climate change.[150]

However, the outcome of the Copenhagen negotiations and the intermittent progress achieved since then until adoption of the Paris Agreement have revealed serious deficiencies in claims of EU normative leadership in climate governance. During the Copenhagen summit, the EU was effectively side-lined at crucial moments,[151] whilst the final text of the Copenhagen Accord

[147] Daniel Bodansky, 'The Copenhagen Climate Change Conference: A Postmortem' (2013) 104(2) American Journal of International Law 230, 234.
[148] Charlotte Streck, Paul Keenlyside and Moritz von Unger, 'The Paris Agreement: A New Beginning' (2016) 13(1) Journal for European Environmental and Planning Law 3, 26.
[149] Thomas Diez, 'Constructing the Self and Changing Others: Reconsidering "Normative Power Europe"' (2005) 33(3) Millennium: Journal of International Studies Law 613, 625.
[150] The centrality of the Asian contribution to climate governance is increasingly recognised which further underscores the potential significance of EU-South Korean collaboration, as evaluated in Chapter 7. "The success of efforts to address climate change will be in large part determined by Asia": see Miranda A Scheurs, 'Multi-Level Governance and Global Climate Change in East Asia' (2010) 5 Asia Economic Policy Review 88, 89.
[151] Van Schaik and Schunz (n 126) 181.

demonstrated that "the EU [had] achieved hardly any of its goals".[152] Instead, the contents of the final Copenhagen Accord were the product of US negotiations with advanced developing countries.[153] Consequently, the EU did not secure either a legally binding agreement or commitments from other developed and advanced developing countries on carbon reductions. Whilst the EU would succeed in securing the former during the Paris negotiations, with respect to the latter and in contrast with the Kyoto Protocol, the Paris Agreement does not incorporate emission reduction commitments for individual Parties.[154] This disconnect between the rhetoric of climate leadership and the frequently limited evidence of such leadership in practice raises profound questions for the EU's future role in climate governance. More specifically, in the context of this research, these experiences provide lessons for how EU policymakers should realistically engage other countries to promote the Union's flagship climate policy of emissions trading.

2.4.2 The Limits of EU Normative Leadership

The failure of the EU to direct, much less influence, the outcome of the Copenhagen negotiations contributed to a reflective re-assessment of the EU's aspirations to climate leadership. Described as a wake-up call by some scholars,[155] others diagnosed that in an increasingly multipolar environment the EU's tactics "proved to be too normative, rigid and euro-centric".[156] Indeed,

[152] Groen, Niemann and Oberthür (n 145) 178.
[153] ibid.
[154] Streck, Keenlyside and Unger (n 148) 5.
[155] Bäckstrand and Elgström (n 107) 1380.
[156] Alisa Herrero and Hanne Knaepen, 'Run-up to 2015: A Moment of Truth for EU External Climate Action' (2014) No 67 European Centre for Development Policy Management Briefing Note, 3 <http://ecdpm.org/wp-content/uploads/BN67-Run-up-2015-moment-truth-for-EU-external-climate-action1.pdf> accessed 14 April 2017.

recurrent themes in critiques examining the EU's claimed normative leadership have emphasised the "narrative gap" between the EU and other actors which the Union seeks to persuade;[157] the limits of "aspirational or directional leadership";[158] and, the "few signs of the EU being seen as a normative power".[159] Consequently, this research is being undertaken at a time when the lens of reflection has rarely been sharper concerning claims of Union leadership in the arena of climate governance. Such critiques ultimately raise questions concerning the degree to which the EU's normative advocacy translates into tangible influence. In fact, there are persuasive reasons to believe that the EU's normative climate principles (and norms beyond climate governance) may even exert a potentially counter-productive influence.

Larsen has evaluated external perceptions of the EU's normative power status and has concluded that this status is "weaker or non-existent in the former European empires where a critical image of a neo-colonial EU dominates".[160] In this sense, Laïdi's assertive construction of the EU as a "normative Empire" shaping conceptions of normal and enforcing its norms beyond its own frontiers potentially reawakens distinctly unhelpful historical connotations.[161] Indeed, Manners explicitly recognised that the normative power conceptual framing of the EU could be construed "as a neo-colonial attempt to 'civilize' the world (again)".[162] Such concerns have implications for the EU's external promotion of its climate norms. For example, whilst much more focused research is required

[157] Diarmuid Torney, 'Assessing EU Leadership on Climate Change: The Limits of Diffusion in EU Relations with China and India' (2012) No 46 KFG Working Paper 2012, 22 <http://www.polsoz.fu-berlin.de/en/v/transformeurope/ publications/working_paper/WP_46_Torney.pdf> accessed 14 April 2017.
[158] Vicki L Birchfield, 'Coercion with Kid Gloves? The European Union's Role in Shaping a Global Regulatory Framework for Aviation Emissions' (2015) 22(9) Journal of European Public Policy 1276, 1281.
[159] Henrik Larsen, 'The EU as a Normative Power and the Research on External Perceptions: The Missing Link' (2014) 52(4) Journal of Common Market Studies 896, 904.
[160] ibid 904.
[161] Laïdi (n 112) i.
[162] Manners, 'The European Union as a Normative Power: A Response to Thomas Diez' (n 149) 174.

to empirically excavate perceptions of the EU's climate norms in developing countries, it is not unreasonable to surmise that the reception of such norms may be skewed by a neo-colonial narrative which limits the extent to which the EU can shape conceptions of normal. As Larsen has put it, "in many countries and contexts, the normative arguments are not accepted *because* they are put forward by the EU".[163] It is possible that this neo-colonial narrative may have added resonance in post-Paris Agreement negotiations given the EU's shift in normative emphasis towards more rigorous climate action by advanced developing countries, a position which – it has been suggested – "created distrust among developing countries".[164] In other words, whilst the EU had previously been supportive of the firewall between developed and developing countries, the Union's modified position could resurrect (or reinforce) more unfavourable perceptions concerning the external projection of the Union's climate norms.

Relatedly, it may also be that from the outset developing countries understood the EU's normative leadership in a fundamentally different way than the EU's own interpretation of its climate norms by instead prioritising the EU's normative organising principles with a different hierarchical structuring. As has already been noted, the ordering of the normative organising principles within internal EU policymaking is characterised by a distinct lack of precision and it is therefore not unreasonable to believe that any external diffusion of these norms will result in a varied and less than uniform reception. For example, the focus of developing countries on the moral responsibility of developed countries to take the lead in reducing greenhouse gas emissions, a perspective shared – but as

[163] Larsen (n 159) 907 (emphasis original).
[164] Thomas Spencer, Kristian Tangen and Anna Korppoo, 'The EU and the Global Climate Regime: Getting Back in the Game' (2010) Finnish Institute for International Affairs Briefing Paper 55, 6 <http://www.fiia.fi/ en/publication/ 106/the_eu_and_the_global_climate_regime/> accessed 14 April 2017.

Section 2.4.1 demonstrated – not similarly prioritised by the EU, may be explained as a normative dissonance between the relative ordering of the normative organising principles within developing countries and the EU. This highly fluid context calls for further conceptual research to better understand the complex connections between the hierarchical ordering of climate norms within the EU and the subsequent diffusion and (re)ordering of such norms by external actors and how, if at all, in climate policy terms the EU may moderate this diffusion.

The challenge of translating normative climate power into influence is not confined to the EU's relationship with the developing world. For some time now, perceptions of unilateralism on the part of the EU have also rankled with the Union's partners in the developed world too. Claims of "regulatory imperialism"[165] and "lone-ranger unilateralism",[166] for example, have contributed to creating a more challenging diplomatic terrain to promote the EU's climate norms. Such unilateralism is neither new nor has it been confined to climate policy: as van Calster observed in 2000, the EU "is far from a stranger to unilateral foreign trade policy".[167] More recent EU climate initiatives to project external influence have, however, strained Manners' understanding of normative power and extend far beyond the notion that "the most important factor shaping the international role of the EU is not what it does or what it says, but what it is".[168] For example, as Scott and Rajamani's research has illuminated, the EU's ambitious strategy of "contingent unilateralism" – extra-

[165] Wall Street Journal Editorial, 'Regulatory Imperialism' *The Wall Street Journal* (New York 26 October 2007) <http://www.wsj.com/articles/SB119334720539572002> accessed 14 April 2017.
[166] US Congress, The European Union's Emissions Trading Scheme: Hearings before the Committee on Commerce, Science, and Transportation, Senate, 112th Cong. 11 (2012) (Testimony of Ray Lahood).
[167] Geert van Calster, 'The EU, Trade, Environment and Unilateralism: Passing the Buck' (2000) 5 European Foreign Affairs Review 9, 9.
[168] Manners (n 3) 252.

territorially extending the scope of EU climate law – little resembles influence achieved purely by what the EU is.[169] Whilst it is true that the EU's integration of non-EU airlines in the EU ETS is an attempt to define "normality" (or create a new "normal") in international climate governance, it is far removed from the six more subtle forms of norm diffusion elaborated by Manners.[170]

Similarly, the enhanced "environmental conditionality" advocated by some scholars, such as by the EU "propos[ing]/impos[ing] the adoption and implementation of its environmental standards to third countries"[171] is far removed from normative diffusion through the "ideational impact of the EU's international identity".[172] Evidence of such conditionality is already present since more recent bilateral and inter-regional agreements between the EU and trading partners include climate change cooperation clauses which incorporate a commitment to cooperate on trade-related aspects of the emerging international climate governance framework.[173] Manners has not suggested that the notion of normative power excluded other conceptions of power,[174] but the EU's more muscular projection of influence is far from uncontroversial and resonates with critiques that the EU is seeking to "force its environmental standards" on its partners.[175] There is, as Scott has identified, a detectable transformation in the EU's leadership style "leading it away from directional leadership in the direction of what is sometimes called 'structural leadership'".[176]

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[169] Joanne Scott and Lavanya Rajamani, 'EU Climate Change Unilateralism' (2012) 23(2) European Journal of International Law 469.
[170] Manners' six forms are contagion, informational diffusion, procedural diffusion, transference, overt diffusion, and cultural filter: see Manners (n 3) 244-245.
[171] Massimiliano Montini, 'EC External Relations on Environmental Law' in Joanne Scott (ed) *Environmental Protection: European Law and Governance* (Oxford University Press 2009) 127, 170.
[172] Manners (n 3) 238.
[173] Elisa Morgera and Kati Kulovesi, 'The Role of the EU in Promoting International Standards in the Area of Climate Change' (2013) Edinburgh School of Law Working Paper 22/2013, 4.
[174] Indeed, he recognised that "*in addition to* civilian or military conceptions, the EU should be considered a normative power": Manners (n 3) 253 (emphasis added).
[175] Wall Street Journal Editorial (n 165).
[176] Joanne Scott, 'The Multi-Level Governance of Climate Change' [2011] Climate and Carbon Market Law Review 25, 28.

It remains to be seen whether pursuit of a more structural approach, heavily reliant on the EU's material power, will create the necessary conditions to enhance global climate governance arrangements generally and, in particular, for the purposes of this research, foster broader diffusion and adoption of emissions trading as a preferred regulatory tool. The EU's more structurally-inspired model of leadership, however, has not been without success. In the context of spurring progress towards regulating aviation emissions, it has been observed that the "EU's game of brinksmanship forced conflicting parties to address GHG emissions within the realm of aviation".[177] The International Civil Aviation Organisation (ICAO) agreed at its 2013 Assembly to explore ways to curb global aviation emissions and committed itself to delivering a plan by its next triennial meeting. At its subsequent 2016 meeting, the ICAO Assembly adopted a resolution for the establishment of a Global Market Based Measure to offset carbon emissions from international aviation and contribute to the carbon neutral growth of the sector from 2020 onwards.[178] The EU had long lobbied for a more active stance by the ICAO to the regulation of aviation emissions and Birchfield has interpreted the EU's negotiating approach as one of using its coercive capacity through its market power "to influence the behaviour of other actors… to pursue its normative agenda of addressing aviation's contribution to climate change".[179]

"Structural leaders are experts in translating the possession of material resources into bargaining leverage cast in terms appropriate to the issues at stake": see Oran R Young, 'Political Leadership and Regime Formation: On the Development of Institutions in International Society' (1991) 45(3) International Organization 281, 288.

[177] Darren A Prum and Kathryn Kisska-Schulze, 'The Environmentally Conscious Skies: Did the European Union's Game of Brinksmanship Lead to a Viable Global Plan for Emissions Trading in Aviation' (2015) 14(1) Washington University Global Studies Law Review 1, 47.

[178] Nicholas Rock, Adam Hedley, Peter Zaman and Shariq Gilani, 'First Ever Global Regime for Aviation Emissions: ICAO Adopts Global Market-Based Measure to Combat Aircraft CO_2 Emissions' (2016) <https://www.reedsmith.com/First-ever-global-regime-for-aviation-emissions-ICAO-adopts-Global-Market-Based-Measure-to-combat-aircraft-COSUB2SUB-emissions-10-10-2016/> accessed 14 April 2017 and Ruwantissa Abeyratne, 'Progress Made on the Development of a Global Market-Based Measure for Aircraft Emissions' (2016) 46(3-4) Environmental Policy and Law 238.

[179] Birchfield (n 158) 1289.

The full implications of a more structural approach and the degree to which it could reinforce less favourable perspectives of EU leadership remains uncertain. This approach has, however, produced a stern response from other key international actors (and necessary climate governance partners). For example, vigorous opposition in the United States resulted in the passage of the European Union Emissions Trading Scheme Prohibition Act of 2011 which specifically prohibited US airline operators from participating in the EU ETS. Similarly, the Chinese government responded by issuing a directive to its airlines prohibiting participation in the EU ETS and, in its own display of structural influence, stalled orders by state-owned companies of approximately $12 billion for 45 EU-manufactured Airbus long-haul aircraft.[180]

2.4.3 Re-Framing EU Climate Leadership

There is a case to be made for re-considering the EU's potential leadership contribution to climate governance and progressing beyond the normative framing of much existing scholarship. As has been emphasised, "followership" should be viewed as a fundamental dimension to leadership in practice, rather than merely leadership as theorised. That this connection is often overlooked is particularly surprising given the innately relational qualities of the two concepts. All too frequently claims of EU normative leadership in climate governance are assumed and "lack an account of how such a leadership example affects the decision structure in which others may be induced to follow".[181] Prior to the

[180] Peter Marsh, Joshua Chaffin and Simon Rabinovitch, 'Delay EU Carbon Levy, Says Air Industry' The Guardian (London, 11 March 2012) <http://www.ft.com/cms/s/0/3362d176-6b9c-11e1-8337-00144feab49a.html#axzz3eLSJf54u> accessed 14 April 2017.
[181] Steve Vanderheiden, 'Coaxing Climate Policy Leadership' (2012) 26(4) Ethics & International Affairs 463, 477.

unsuccessful Copenhagen negotiations, the EU had continued to pursue a model of leadership by example, yet the causal connection between such "leadership" and the exercise of influence, in the sense identified earlier by Cox and Anderson, is tenuous. As Schunz has observed, "[h]oping that it would suffice to demonstrate the feasibility of de-carbonising European societies to incite others to follow in the medium to long term may quickly turn out to be a fatal form of wishful thinking".[182]

In view of this backdrop, it is important to consider how the EU's approach to external climate governance should evolve. Unfortunately, despite the evident limitations of the Union's model of leadership by example, this approach is "very strongly embedded in the EU's identity as a norm-driven actor".[183] As discussed in Section 2.3.3, norm entrapment prevented the EU from more swiftly adopting emissions trading as its preferred policy instrument of choice. In a not dissimilar way, there is a very real risk that the EU's deeply embedded normative organising principles could lock the Union into an inward-focused vision of climate governance which lacks the necessary flexibility to adapt to changing geopolitical realities and shifting responsibilities for global emissions. However, the surrounding circumstances have evolved markedly since negotiation of the Kyoto Protocol.

The rapid industrialisation of advanced developing countries, particularly China and India, challenge interpretations of climate responsibility based exclusively on historic responsibility.[184] In fact, changes in relative contributions

[182] Simon Schunz, 'Beyond Leadership by Example: Towards a Flexible European Union Foreign Climate Policy' (2011) German Institute for International and Security Affairs Working Paper 1/2011, 3 <http://www.swp-berlin.org/fileadmin/contents/products/fachpublikationen/wpFG8_2011_01_schunz_ks.pdf> accessed 14 April 2017.
[183] ibid 22.
[184] Wouter JW Botzen, John M Gowdy and Jeroen CJM van den Bergh, 'Cumulative CO_2 Emissions: Shifting International Responsibilities for Climate Debt' (2008) 8 Climate Policy 569.

to the climate problem since the Kyoto Protocol was signed have been quite startling with China overtaking the United States in 2007 in total annual CO_2 emissions.[185] As the American National Academies have noted, even though cumulatively the United States is the largest emitter of carbon measured at the level of individual countries (with the USSR the second largest emitter), even under an historic framing of climate change responsibility, China is now the third largest emitter.[186] It has been forecast that by 2021 China will have larger cumulative CO_2 emissions than Western Europe, whilst by 2052 China will surpass the United States as the largest cumulative emitter.[187] The emissions of other advanced developing countries have similarly surged: South Korea's annual CO_2 emissions from fossil fuel combustion were the fourth highest globally in 2010, whilst the country's growth rate of greenhouse gas emissions since 2000 has been the highest in the world.[188] Consequently, by the end of the current third phase of the EU ETS in 2020 it is likely that the EU's mitigation efforts will have already become much less important to the global effort than they had been in previous decades.[189]

However, it is not just a question of the EU's declining responsibility, relative to other international actors, to resolve the problem of climate change which is relevant. The geopolitical realities of 2017 are also very different to 1997 with the rise of the emerging economies of Asia and Latin America. This presents distinct challenges for the Union's aspirations to climate leadership as the EU's diminishing weight in international negotiations heightens the risk of

[185] Netherlands Environmental Assessment Agency, *China Now No 1 CO_2 Emissions: USA in Second Position* (Netherlands Environmental Assessment Agency 2007) <http://www.pbl.nl/en/dossiers/Climatechange/Chinanono1inCO2emissionsUSAinsecondposition> accessed 14 April 2017.
[186] National Academies, *America's Climate Choices: Panel on Informing Effective Decisions and Actions Related to Climate Change* (National Academies Press 2010) 29-30.
[187] Botzen, Gowdy and van den Bergh (n 184) 571.
[188] Sun-Jin Yun, Dowan Ku, and Jin-Yi Han, 'Climate Policy Networks in South Korea: Alliances and Conflicts' (2014) 14(2) Climate Policy 283, 284.
[189] Schunz (n 182) 11.

further marginalisation in a more multipolar world of climate politics. Whilst the current status of the EU and its Member States in many organisations is a privileged one, it is also conceivable that reforms in the years ahead to the constitution of international organisations could further reduce the EU's global status and, consequently, mechanisms to exert influence.[190] The new geopolitics of climate change means that the opportunity structures within which the EU can exercise influence are being altered. This in turn has profound consequences for the Union's capacity to influence, much less define, the "normality" of climate governance. There is a growing recognition that, as a "medium-sized power in climate politics", the EU cannot determine either the agenda or the outcome of climate negotiations.[191]

As such, it is highly likely that the new geopolitical distribution of power will further limit the EU's capacity to translate its normative climate governance principles into practice.[192] The dexterity with which the EU navigates this emerging geopolitical landscape will not only have consequences for the EU's climate leadership aspirations but potentially also the long-term prospects of the EU ETS. Yet there is also evidence that the EU is learning lessons and responding accordingly. For example, during the Cancun negotiations the EU adopted a much more "pragmatic approach and set less ambitious goals", an approach which was further replicated during the successful Paris negotiations.[193] Indeed, scholars have observed that "[a]fter its defeat at the

[190] Hanna Tuominen, 'The Changing Context of Global Governance and the Normative Power of the European Union' in Astrid Boening, Jan-Frederik Kremer and Aukje van Loon (eds) *Global Power Europe – Volume 1: Theoretical and Institutional Approaches to the EU's External Relations* (Springer-Verlag Berlin Heidelberg 2013) 201, 214.
[191] Sebastian Oberthür, 'Global Climate Governance After Cancun: Options for EU Leadership' (2011) 46(1) The International Spectator 5, 10.
[192] Tuominen (n 190) 214.
[193] Groen, Niemann and Oberthür (n 145) 182.

Copenhagen climate summit, the EU can be considered to have scored a relative success with the Paris Agreement".[194]

However, for the EU to focus primarily on achieving progress through the prism of multilateral negotiations alone could prove misguided by increasing the risks of stalemate and stagnation. Yet radically shifting focus is also likely to prove problematic for a Union where multilateralism has been such an entrenched normative organising principle. Indeed, it has been suggested that such is the status of multilateralism within the EU that it has now become a matter of routine, something of a "way of life".[195] Article 21 TEU specifically commits the EU to "promot[ing] multilateral solutions to common problems" and an "international system based on stronger multilateral cooperation". Meanwhile, the EU's Security Strategy specifically provides that the advancement of "an international order based on effective multilateralism" is the cornerstone of the EU's international interactions.[196]

It is little wonder then that some scholars, far from viewing "effective multilateralism" as merely one normative organising principle amongst many, have instead characterised it as "[t]he essence of the EU's normative power".[197] This is perhaps too elevated a status. The fundamental norms of the EU which, under Wiener's classification, can be considered as constituting the highest normative strand as "core constitutional norms" have been generally viewed as reserved for norms of the nature of democracy, peace, and rule of law.[198] It is open to consideration as to whether, given the explicit imprimatur of Article 21(1)

[194] Sebastian Oberthür and Lisanne Groen, 'The European Union and the Paris Agreement: Leader, Mediator, or Bystander' (2017) 8(1) Wiley Interdisciplinary Reviews: Climate Change 1, 6.
[195] John Groom, 'Multilateralism as a Way of Life in Europe' in Edward Newman, Ramesh Thakur and John Tirman (eds) *Multilateralism Under Challenge? Power, International Order, and Structural Change* (United Nations University Press 2006) 460.
[196] European Council, *A Secure Europe in a Better World: European Security Strategy* (European Union 2003) 9.
[197] Tuominen (n 190) 213.
[198] Wiener (n 120) 184.

TEU, "effective multilateralism" should be elevated to the status of a fundamental norm. Such a claim surely rests on highly contested and ambiguous foundations. It is difficult, for example, to reconcile growing evidence of unilateral EU climate initiatives, such as extension of the EU ETS to non-EU aircraft operators, as demonstrative of an undiluted commitment to multilateralism. Instead, a more persuasive claim could be made to assert that "multilateralism" may enjoy primacy over the other normative organising principles of sustainable development and the precautionary principle informed by climate science.

As the succeeding Chapters in this thesis explore, the EU must actively embrace a flexible vision of incrementally evolving climate governance arrangements. This requires the Union to move beyond multilateralism and effectively promote multi-speed climate governance experimentation, particularly by exploiting opportunities to advance the EU ETS as a central component in bilateral climate partnerships. As Schunz has correctly emphasised, "[t]o attain a multilateral, legally binding solution… not each step on a longer way has to be legally binding and forged through multilateral cooperation".[199] Soft policy tools, such as collaborative projects and the external effects of EU pioneering policies, such as the EU ETS, can contribute to "incremental rapprochement between the EU and other jurisdictions".[200]

Chapter 3 elaborates on the nature of the emerging climate governance landscape and how the EU can adapt to foster the development of complementary governance arrangements. As this Chapter has emphasised, it is clear that the EU must become a more flexible and strategic climate policy

[199] Schunz (n 182) 22.
[200] Biedenkopf and Dupont (n 127) 196.

actor. Such flexibility should necessarily entail an enhanced focus on coalition-building and bridge-building. Oberthür has correctly observed that as "one pole within a multipolar world of climate geopolitics, alliance building has to remain at the centre of the EU's strategy".[201] Such alliance building should extend to including a renewed focus on efforts to identify potential linkage partners for the EU ETS. The "normative gap"[202] and "normative disconnect"[203] which scholars have identified in the EU's climate discourse with external actors reveals a rigid EU-centric leitmotif guided by a static normative compass. It is critically important that this is instead tempered – if not replaced – by a more pragmatic outlook focusing on incremental progress towards durable climate governance arrangements with achievable intermediate objectives.

Expansion of the EU ETS to incorporate linkage with external partners is likely to prove a necessary component of incremental climate governance. However, all too often in the sphere of climate governance there has been a "dissonance between the kind of actor the EU is and the good example it offers others versus its ability to actually influence other actors".[204] This is not leadership and it is not possible to be a leader without followers. In fact, the EU's changed and changing role is perhaps better captured by the concept of the Union as a "leadiator" – "a leader-cum-mediator that work[s] with rather than against the changing geopolitical context of climate change".[205] Indeed, during the Paris climate change negotiations, the EU more resembled such a leadiator model.[206]

[201] Oberthür (n 191) 11.
[202] Torney, 'Assessing EU Leadership on Climate Change' (n 157) 22.
[203] Jonathan Holslag, 'Europe's Normative Disconnect with the Emerging Powers' (2010) 5(4) Brussels Institute of Contemporary China Studies Asia Paper 1.
[204] Birchfield (n 158) 1280.
[205] Bäckstrand and Elgström (n 107) 1381.
[206] Oberthür and Groen (n 194) 6.

It is unclear if the EU has embraced this more strategic approach, but as Chapter 3 shall show, given the diversity of the emerging climate governance mosaic, such a model could better position the EU to engage with and influence external emissions trading initiatives. It is reasonable to expect that in the post-Paris Agreement environment the EU will have to engage in bridge-building par excellence if it is to successfully promote a vision of incremental climate governance with the EU ETS at its core. Whilst this thesis evaluates the contribution of linkage to this incrementally evolving governance framework, it is important to emphasise that this represents only one component of an increasingly fragmented, diverse, and multi-polar climate governance landscape. Few climate governance initiatives exist in splendid isolation. There are connections – or the potential for such connections – and it is exploiting this scope for promoting incremental complementarity and convergence where EU regulatory and policymaking energies could make their most significant contribution.

2.5 Conclusion

In an extraordinarily short space of time emissions trading has evolved from being a much maligned and marginalised instrument to becoming the cornerstone of EU climate governance. The emergence of the EU as one of the primary innovators of emissions trading, through development of the EU ETS and advocacy of an international trading framework, has resulted in a certain Europeanisation of the concept. This was far from predictable. Yet the sapling which became the EU ETS was a product of two failures.[207] First, the carbon tax

[207] Convery (n 5) 392.

initiative, which the Commission had championed throughout the 1990s failed to navigate the Scylla of competitiveness reservations and the Charybdis of national sovereignty concerns. Even with political agreement, it was increasingly recognised that achieving the desired emissions reductions from taxation initiatives would likely require successive iterative "trial-and-error" adjustments in tax rates.[208] Second, the Commission's efforts during negotiation of the Kyoto Protocol to prevent the inclusion of flexibility mechanisms were ultimately unsuccessful.

Multiple factors contributed to the EU's shift towards emissions trading.[209] The inclusion of the concept in the Kyoto Protocol certainly gave rise to a perception that the practical implementation was more a matter of "how", rather than "if".[210] The literature also reveals the considerable contribution of individual policy entrepreneurs, located within the Commission, to the evolution of the concept.[211] Some scholars have suggested that the process of policy formation was dominated "by three or four 'policy entrepreneurs' who… repeatedly found ways to speed up the policy process, expand the room for manoeuvre and to create new latitude for other players".[212] The lack of progress in the 1990s towards effective EU climate governance mechanisms also contributed to the positioning of a previously untried instrument centre stage, whilst the synergistic and multi-level convergence of diverse actors' interests reinforced the valuable role which emissions trading could play.

[208] Frank Gagelmann and Bernd Hansjürgens, 'Climate Protection through Tradable Permits: The EU Proposal for a CO_2 Emissions Trading Scheme in Europe' (2002) 12(4) European Environment 185, 189.
[209] Markus Pohlmann, 'The European Union Emissions Trading Scheme' in David Freestone and Charlotte Streck (eds), *Legal Aspects of Carbon Trading* (Oxford University Press 2009) 237, 240.
[210] Zapfel and Vainio (n 34) 10 and Wettestad (n 77) 16.
[211] Christiansen and Wettestad (n 76) 6.
[212] Braun and Santarius (n 7) 21.

The EU's climate leadership credentials have evolved during the past two decades of climate negotiations. Unlike earlier negotiations, such as those preceding the Kyoto Protocol, the international context in more recent years has become multi-polar and the EU constitutes only one of several important actors.[213] The EU remained firmly committed to a normatively-inspired leadership model throughout climate negotiations until the Copenhagen debacle. Climate leadership, as informed by the Union's normative organising principles, had meant the conclusion of a multilateral agreement with ambitious binding reduction targets. Yet despite this normative compass, there had been a marked disconnect between the EU's long-term engagement in global climate politics and significant investment of political capital in climate policy and its track record of attempted, but failed leadership.[214] Moreover, the effectiveness of the EU's normative leadership style has been further challenged by the changing global order.

As Hoffmann has reflected, "[f]or all the efforts of negotiators and urgency surrounding this issue, multilateral treaty-making has consistently failed to produce treaties and agreements that *effectively* address climate change".[215] Of course, this is not merely paralysis on the part of the EU. Shue is correct, for example, to remark that "the American failure of political leadership is one major factor that is crippling efforts to negotiate multilateral action at the international level".[216] But American "failure" in this respect, it must be cautioned, could be better framed as disengagement or a reticence to lead. This has not been the case with respect to the EU. Instead, time and time again the EU has failed in

[213] Oberthür and Groen (n 194) 4.
[214] Schunz (n 182) 4.
[215] Matthew J Hoffmann, *Climate Governance at the Crossroads: Experimenting with a Global Response After Kyoto* (Oxford University Press 2011) 16 (emphasis added).
[216] Henry Shue, 'Face Reality? After You! – A Call for Leadership on Climate Change' (2011) 25(1) Ethics & International Affairs 17, 29.

its active attempts to upload its climate policy preferences to the international level. This experience provides salient lessons in the post-Paris Agreement context, as renewed international efforts remain as necessary as ever to "form coalitions and agreements with which to populate the Paris Agreement in the months and years ahead".[217]

The leadiator model offers the potential to reconcile the EU's normative organising principles with the Union's ability to "build bridges between partners that are further apart from each other than from the EU".[218] Van Schaik and Schunz have observed that the EU's normatively inspired leadership may even have decreased its chances of influencing global climate policy formation, as it prevented the Union from exploiting its other capacities to exert influence.[219] Instead, the EU must now broaden its climate governance lens and actively engage in coalition-building and bridge-building beyond the multilateral context. This reorientation will continue to prove challenging given the EU's normative predisposition towards promoting multilateral solutions, but moderation of this predisposition successfully contributed to forming the basis of an effective EU bridge-building and coalition-building strategy during the Paris negotiations.[220] Indeed, international climate negotiations since the Copenhagen Accord have revealed something of a strategic shift on the part of the EU. Bäckstrand and Elgström have observed that in Durban the EU "changed its strategy" and realised "the need for shaping alliances and pragmatism attuned to the realities of the changing power constellation".[221]

[217] Streck, Keenlyside and Unger (n 148) 17.
[218] Oberthür (n 191) 11.
[219] Van Schaik and Schunz (n 126) 183.
[220] Oberthür and Groen (n 194) 5.
[221] Bäckstrand and Elgström (n 107) 1382.

The EU retains influential means to incentivise and motivate other actors to participate in climate governance initiatives. The EU ETS, the biggest and first supranational trading scheme, could yet emerge as the role model for schemes emerging elsewhere and there is evidence that policymakers designing such schemes have been receptive to learning lessons from the EU's extensive experience.[222] As Chapter 3 explores, such is the multi-scalar and multi-actor nature of the evolving climate governance landscape that the EU's contribution to shape global climate governance arrangements should not be confined to (or predominantly focus on) multilateral negotiations. The evolving climate governance landscape with the intertwining of scales and actor constellations has major implications for the governability of emissions trading. Chapter 3 unpacks and evaluates the contribution of multi-level governance as a conceptual and analytical frame for mapping the complex terrain of climate governance and surveys the EU ETS through this theoretical lens.

[222] Hyungna Oh, Junwon Hyon and Jin-Oh Kim, 'Korea's Approach to Overcoming Difficulties in Adopting the Emission Trading Scheme' (2017) Climate Policy 1, 9 (forthcoming).

CHAPTER 3

SURVEYING THE EU ETS THROUGH A MULTI-LEVEL GOVERNANCE LENS

3.1 Introduction

"We are in the midst of revolutionary change on a global scale".[1] It has been said that powerful trends, such as the globalisation of economic markets and the concomitant diminution of state power, have contributed to the creation of a new global environment where the Westphalian state, whilst not quite obsolete or impotent, has lost most of its lustre. The degree to which this perspective accurately reflects the true nature of state power today is highly contested.[2] However, the capacity of the state to exercise monopolistic control, at least, has diminished.[3] Rosenau has suggested that this diminution has occurred "at a rate comparable to the rapid acceleration of globalisation",[4] acknowledging that whilst the dynamics of globalisation may be numerous and varied, the outcomes present an altogether clearer vista: a weakened state less able to manage the flow of people, money, jobs, trade, pollution, ideas, crime and drugs that crosses its borders.[5] Whilst this general trend from government to governance with a particular emphasis on globalisation and the hollowing out of the nation state is well-documented,[6] the specific nexus between globalisation and weakening state

[1] N Brian Winchester, 'Emerging Global Environmental Governance' (2009) 16(1) Indiana Journal of Global Legal Studies 7, 22.
[2] For example, see Stephen Krasner, 'Sovereignty' (2001) 122 Foreign Policy 20.
[3] Nicolas de Sadeleer, *Environmental Principles: From Political Slogans to Legal Rules* (Oxford University Press 2002) 223.
[4] James N Rosenau, 'Governing the Ungovernable: The Challenge of a Global Disaggregation of Authority' (2007) 1 Regulation & Governance 88, 91.
[5] ibid and James N Rosenau, *Distant Proximities: Dynamics Beyond Globalisation* (Princeton University Press 2003) 50-79.
[6] John Morison, 'Democracy, Governance and Governmentality: Civic Public Space and Constitutional

control is more opaque: often the precise relationship between both processes is assumed, rather than demonstrated.[7]

In fact, the supposed marginalisation of the state is a far more fluid and complex process than the narrative of state decline suggests. Increasingly, the state acts in concert with "sovereignty free" actors.[8] These evolutionary changes are particularly evident in the context of climate governance where the diverse range of actors is collapsing the orthodox state/non-state binary, as state actors take on roles of promotion, facilitation, encouragement and advocacy long associated with civil society actors, while at the same time actors from outside the state are becoming more responsible for the development and regulation of policy.[9] Yet as the state grows more enmeshed in complex networks, responsibility for some functions is increasingly blurred.[10] This concern has spawned a burgeoning research agenda which explores the search for legitimacy and accountability, but whilst these themes are highly relevant and require careful consideration, they do not constitute the core focus of this thesis.[11]

This Chapter builds on the preceding analysis in Chapter 2 by evaluating the nature of multi-level governance in the context of emissions trading with a particular focus on the EU ETS. Section 3.2 and Section 3.3 unpack and explore the concept of multi-level governance by evaluating what, precisely, the term may mean and what may be included within its scope. As a concept, multi-level

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Renewal in Northern Ireland' (2011) 21(2) Oxford Journal of Legal Studies 287, 293.

[7] Stephen Welch and Caroline Kennedy-Pipe, 'Multi-Level Governance and International Relations' in Ian Bache and Matthew Flinders (ed), *Multi-Level Governance* (Oxford University Press 2004) 127.

[8] James N Rosenau, *Turbulence in World Politics: A Theory of Change and Continuity* (Princeton University Press 1990) 36.

[9] Harriet Bulkeley and Susanne C Moser, 'Responding to Climate Change: Governance and Social Action Beyond Kyoto' (2007) 7(2) Global Environmental Politics 1, 2.

[10] Ian Bache and Matthew Flinders, 'Multi-Level Governance: Conclusions and Implications' in Ian Bache and Matthew Flinders (ed), *Multi-Level Governance* (Oxford University Press 2004) 195, 201.

[11] Such concerns are not new. In the 1930s Landis condemned the ''inappropriate'' combination of legislative, judicial, and executive functions within regulatory agencies and their lack of accountability. See Julia Black, 'Constructing and Contesting Legitimacy and Accountability in Polycentric Regulatory Regimes' (2008) 2 Regulation & Governance 137, 141.

governance theories also engage and, to some extent, overlap with the concerns of new governance scholars to "explore, understand and critique changes in EU governance as they move away from traditional, top-down, command and control modes of regulation … and towards deliberative, diverse, flexible, decentralised, experimental, multi-level, reflexive, and participatory forms of decision-making".[12] In many respects multi-level governance remains an "essentially contested concept" but, as this Chapter suggests, consensus is converging on a sufficient analytical core to facilitate a deeper deconstruction of the implications of multi-level governance.[13] Arguably, this consensus rests upon the twin pillars of increasingly multi-tiered frameworks of governance and the growing role of non-state actors.

Section 3.4 evaluates the development and present state of multi-level climate governance. The EU ETS is the archetypal example of diffused yet interactive multi-level governance as it straddles international, regional, national, and subnational levels. A perspective of climate governance is presented which advances the merits of incrementalism, as understood in the context of this thesis as gradual evolution towards enhanced global climate governance arrangements. Section 3.5 suggests that diversified climate governance arrangements are consistent with multi-level governance theories and facilitate an experimentalist ethos where regulatory innovation and learning flourish. Whilst multi-level governance theories offer some descriptive purchase on the character of such diverse climate governance arrangements, this Chapter concludes by

[12] Steven Vaughan, 'Differentiation and Dysfunction: An Exploration of Post-Legislative Guidance Practices in 14 EU Agencies' (2015) 17 Cambridge Yearbook of European Legal Studies 66, 70.
[13] However, the existence of "concepts the proper use of which inevitably involves endless disputes about their proper uses on the part of their users" is not a defence to exposing such concepts to analytical rigour. See Walter B Gallie, 'Essentially Contested Concepts' (1955) 56 Proceedings of the Aristotelian Society 167, 169.

considering the perspective that multi-level governance may also advance a superior normative claim in the context of climate law.

3.2 Conceptualising Governance

Any inquiry into the nature of multi-level governance raises the preliminary question of clarifying the meaning of the term *governance*.[14] Young has advanced a Lockean formulation: "Governance arises as a social or societal concern whenever the members of a group find that they are interdependent in the sense that the action of each impinge on the welfare of the others".[15] For Young, interdependence is the key quality denoting the existence of governance.[16] He has further elaborated that:

> At the most general level, governance involves the establishment and operation of social institutions (in the sense of rules of the game that serve to define social practices, assign roles, and guide interactions among the occupants of these roles) capable of resolving conflicts, facilitating cooperation, or, more generally, alleviating collective-action problems in a world of interdependent actors.[17]

Quite consistently, Young has clarified that there is nothing in this conceptual framing of governance which presupposes the need to create organisations

[14] Welch and Kennedy-Pipe (n 7) 127.
[15] Oran R Young, *International Governance: Protecting the Environment in a Stateless Society* (Cornell University Press 1994) 15.
[16] Oran R Young, 'Institutional Interplay: The Environmental Consequences of Cross-Scale Interactions' in Elinor Ostrom and others (ed), *Multi-Level Governance* (National Academies Press 2002) 263, 264.
[17] Young, *International Governance* (n 15) 15.

(physical structures encapsulating governance functions), much less the need to create *government* itself.[18]

Whilst aspects of Welch and Kennedy-Pipe's interpretation of governance as "denot[ing] the coordination of social relations in the absence of a unifying authority" chime with the definition advanced by Young, the point of departure is their positioning of governance as primarily a contrastive concept with the notion of government, rather than arising more broadly in *all* instances where the actions of interdependent actors are regulated.[19] Government is not the counterpoint of governance: it is rather one form of governance. Consequently, Young's vision of governance subsumes government as but one example of governance in practice; Welch and Kennedy-Pipe's definition, on the other hand, admits of no such convergence. In a similar fashion to Young, Börzel and Risse advance an overarching concept of governance as "includ[ing] hierarchical steering by state actors, but also includ[ing] the involvement of non-governmental actors in the provision of collective goods through non-hierarchical coordination".[20] In this sense, governance consists of both structure and process. Government as structure relates to organisations, whereas process denotes the modes of social coordination by which actors engage in rulemaking and implementation.[21] In Young's conceptual framing of governance, this structure/process dyad is less relevant: for him, institutions remain at the core of governance. Institutions, in the sense of "sets of rules of the game or codes of conduct that serve to define social practices, assign roles to the participants in these practices, and guide the interactions among occupants of these roles".[22]

[18] ibid 16.
[19] Welch and Kennedy-Pipe (n 7) 127.
[20] Tanja A Börzel and Thomas Risse, 'Governance Without a State: Can it Work?' (2010) 4 Regulation & Governance 113, 114.
[21] ibid.
[22] Young, *International Governance* (n 15) 3.

Yet Young's definition that governance involves the "establishment" and "operation" of social institutions is also not a given. The notion of "operation" suggests the presence of some form of activity and is resonant of Finkelstein's emphasis that "we should be rigorous in insisting that governance is an activity – that is, doing something".[23] Smouts, on the other hand, sees value in the definition of governance advanced in the 1995 report by the Commission on Global Governance:[24]

> Governance is the sum of the many ways individuals and institutions, public and private, manage their common affairs. It is a continuing *process* through which conflicting or diverse interests may be accommodated and co-operative action taken. It includes formal institutions and regimes empowered to enforce compliance, as well as informal arrangements that people and institutions either have agreed to or perceive to be in their interest.[25]

Under this construction, governance is neither a rule system nor an activity, but a *process*. It is also a *continuing* process. To what extent we can comfortably relate this concept to Young's emphasis on interaction is not clear and it may be that van Kernsbergen and van Waarden are correct in their conclusion that 'governance' cannot in the near future become a common 'theory' shared between disciplines.[26] However, it is suggested that there is a sufficient analytical

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[23] Lawrence S Finkelstein, 'What is Global Governance' (1995) 1 Global Governance 367, 368.
[24] Claude Smouts, 'The Proper Use of Governance in International Relations' (1998) 50 International Social Sciences Journal 81, 83.
The Commission on Global Governance was formed on the initiative of former West German chancellor, Willy Brandt, the Commission included leading luminaries of the world of government such as Jacque Delors and Sadako Ogata.
[25] Commission on Global Governance, *Our Global Neighbourhood* (Oxford University Press 1995) (emphasis added).
[26] Kees van Kernsbergen and Frans van Waarden '"Governance" as a Bridge Between Disciplines: Cross-Disciplinary Inspiration Regarding Shifts in Governance and Problems of Governability, Accountability and Legitimacy' (2004) 43 European Journal of Political Research 143, 144.

core upon which a measure of consensus is emerging. The erosion (to varying extents) of state authority, the porous nature of modern boundaries, and the vast proliferation of organisations at every level of society, but particularly in international law, provide focal points to evaluate how an ever-more crowded global stage can be regulated and governed. In the context of emissions trading, the dialogue of governance offers a framework within which to explore these issues.

3.3 Multi-Level Governance

3.3.1 The Origins of Multi-Level Governance

Whilst a precise conceptual definition of governance remains contested, it is possible to chart the contours of the concept. The evolution of governance processes across differing levels of social activity and the involvement of state and non-state actors gives rise to a fundamental challenge concerning the allocation of specific governance functions to the "appropriate" level. Moreover, it is not just a case of governance occurring at varying levels: governance is also active in multiple places simultaneously.[27] It is, perhaps, this phenomenon of the increasing complexity of governance frameworks and the growing role of non-state actors which, in an admittedly broad sense, multi-level governance seeks to conceptually capture.

The phrase multi-level governance was first used in the early 1990s in an effort to better understand the enhanced collective decision-making processes introduced in the EU by the Single European Act.[28] This development had been

[27] Michele M Betsill, 'Regional Governance of Global Climate Change: The North American Commission for Environmental Cooperation' (2007) 7(2) Global Environmental Politics 11, 13.
[28] Ian Bache and Matthew Flinders, 'Themes and Issues in Multi-Level Governance' in Ian Bache and

widely interpreted as signalling a significant shift in governance from state-centric intergovernmentalism towards a form of governance more resembling that of a domestic political system rather than an organisation of international law. Multi-level governance was offered as a vehicle for evaluating and understanding this shift.[29] Marks and Hooghe, having evaluated governance trends across the EU, observed that whilst half of EU Member States have decentralised authority to a regional tier of government since 1980, no EU country has become more centralised.[30] However, the dispersion of governance is much more complex than identifying shifts upwards alone: indeed, a school of thought also favours more localised governance.[31] However, it is the core argument of multi-level governance which is most appealing in the context of climate law governance. Marks and Hooghe have described the central claim:

> [G]overnance must operate at multiple scales in order to capture variations in the territorial reach of policy externalities. Because externalities arising from the provision of public goods vary immensely – from planet-wide in the case of global warming to local in the case of most city services – so should the scale of governance. To internalise externalities, governance must be multi-level.[32]

Matthew Flinders (eds), *Multi-Level Governance* (Oxford University Press 2004) 1, 1.

[29] Marks' work has been especially influential and he is credited with the early elaboration of the concept. See Gary Marks, 'Structural Policy and Multi-Level Governance in the EU' in Alan W Cafruny and Glenda G Rosenthal (eds), *The State of the European Community Volume 2: The Maastricht Debates and Beyond* (Longman/Boulder 1993) 391.

[30] Gary Marks and Liesbet Hooghe, 'Contrasting Visions of Multi-Level Governance' in Ian Bache and Matthew Flinders (eds), *Multi-Level Governance* (Oxford University Press 2004) 15, 15.

[31] In the EU, this notion is captured by the principle of subsidiarity which holds that decisions should be taken at the lowest level possible consistent with effectiveness.

[32] Marks and Hooghe (n 30) 16.

In some contexts, the normative superiority of multi-level governance has been assumed rather than demonstrated. For example, as President of the European Commission, Romano Prodi called for "more effective multi-level governance in Europe", adding that "[t]he way to achieve real dynamism, creativity and democratic legitimacy in the European Union is to free the potential that exists in multi-layered levels of governance".[33] Similarly, Bothe has noted that the climate change regime represents a multi-level regulatory challenge.[34] In other contexts, the language of multi-level governance has been presented as the most appropriate framework of analysis. The European Commission, for example, has expounded a vision for governance of the Union explicitly anchored in multi-level governance.[35] Interestingly, the Commission has also identified a significant challenge of multi-level governance: "establishing clear rules for how competence is shared – not separated".[36] This is resonant of Young's emphasis on the management of "institutional interplay".[37] Young directs attention not to finding the right level or scale to address specific problems arising from environmental relations, but rather towards "taking steps to ensure that cross-scale interactions produce complementary rather than conflicting actions".[38]

[33] It is not the purpose of this thesis to advance such a claim, but this perspective provides a valuable insight into the governance Weltanschaung of some advocates of multi-level governance.
See Liesbet Hooghe and Gary Marks, 'Unravelling the Central State, But How? Types of Multi-Level Governance' (2003) 97(2) American Political Science Review 233, 234.
[34] Michael Bothe, 'The United Nations Framework Convention on Climate Change – An Unprecedented Multilevel Regulatory Challenge' (2003) 63 Heidelberg Journal of International Law 239, 254.
See also Betsill (n 27).
[35] Commission, 'European Governance – A White Paper' (Communication) COM (2001) 428 final 34-35. The Commission signals its support for "a Union based on *multi-level governance* in which each actor contributes in line with his or her capabilities or knowledge to the success of the overall exercise" (emphasis added).
[36] ibid 35.
[37] Young, 'Institutional Interplay' (n 16) 263.
[38] ibid 266.

3.3.2 A Typology of Multi-Level Governance

As first articulated by Marks, multi-level governance described a "system of continuous negotiation among nested governments at several territorial tiers – supranational, national, regional, and local", features particularly distinctive of EU structural policy.[39] Since then the term has undergone considerable conceptual evolution. However, the focus has remained on ever-increasing diversity in governance arrangements. Marks and Hooghe have sought to develop a conceptual framework for understanding multi-level governance and how it is (or should be) structured. This, in itself, is a considerable accomplishment when one reflects on the alternative concepts which consist, to varying extents, of differing multi-level governance strands. For example, Frey and Eichenberger have developed the concept of functional, overlapping, competitive jurisdictions (FOCJ).[40] The key quality of FOCJ is their jurisdictional flexibility, since FOCJ are versatile units which can be wound down when their services are no longer needed. As such, FOCJ offer a dynamic mechanism to vary the size of public jurisdictions in order to minimise spill-overs.[41] In the Swiss context, six types of FOCJ have been recognised, whilst Frey and Eichenberger identified 178 entities providing specialised services in the canton of Zürich alone.[42] Marks and Hooghe's typology, on the other hand, focuses on two distinct forms of multi-level governance: Type I and Type II.[43] Whilst the authors have recoiled from introducing further terminological complexity in an already jargon-laden field, they

[39] Marks (n 29) 392.
[40] Bruno Frey and Reiner Eichenberger, *The New Democratic Federalism for Europe: Functional, Overlapping, and Competing Jurisdictions* (Edward Elgar Publishing 1999).
[41] ibid 41.
[42] ibid 49-53; typically, such FOCJ functions include schools, street lighting, and utilities services, such as electricity.
[43] Marks and Hooghe (n 30) 15.

have acknowledged that Type I substantively concerns "general-purpose jurisdictions", whilst Type II instead relates to "task-specific jurisdictions".[44]

Type I multi-level governance is intellectually inspired by federalism.[45] It is concerned with governmental jurisdictions operating at just a few levels and is characterised by a number of distinctive qualities.[46] Type I jurisdictions are durable since they are often legislatively (or constitutionally) established making reform creating, abolishing, or radically adjusting such jurisdictions uncommon.[47] The alternative description of Type I structures as general-purpose jurisdictions encompasses the multiple functions and responsibilities which defines modern government.[48] It is perhaps when we construe Type I multi-level governance in this manner that the distinction with *government* becomes most tenuous. Crucially, in the context of Type I structures, membership boundaries do not intersect: "every citizen is located in a Russian Doll set of nested jurisdictions, where there is one and only one relevant jurisdiction at any particular territorial scale".[49] In some respects, Type I multi-level governance presents a vision of an enduring and influencing state: change at this level more often takes the form of reallocating policy functions across existing levels of governance, rather than dissolution of a jurisdiction. But yet, from another perspective, the balkanisation

[44] Hooghe and Marks (n 33) 236.
[45] Federalism is chiefly concerned with the relationship between central government and a tier of non-intersecting subnational governments, such as that in Germany between the institutions of the Bundesrepublik and Bundesländer.
[46] The number of levels may vary: according to the European NUTS (Nomenclature des Unite's Statistiques Territoriales) classification, they vary between three in the case of Luxembourg and six for Finland, Greece, Portugal, and the UK.
See Marks and Hooghe (n 30) 18.
[47] Constitutional change in the UK, in the form of devolution, is a salient example of Type I multi-level governance. For example see: Amanda Sloat, 'An Actor-Centred Approach to Multi-Level Governance: Expectations of Scotland's Role in Europe' (2002) 12(3) Regional and Federal Studies 156.
[48] Responsibilities and functions which, as Ranney has pointed out, are expansive: "For better or worse, modern governments do just about everything… a complete list of all the functions performed by governments today… would undoubtedly include activities which directly and powerfully affect just about every conceivable aspect of human life – marriage, the rearing of children, education, the production and distribution of wealth, religion, art, sport, and so on ad infinitum". See Austin Ranney, *The Governing of Men* (Rinehart & Winston 1966) 42.
[49] Hooghe and Marks (n 33) 236.

which Type I multi-level governance sometimes represents, whilst illustrative of the relevance of *government*, does not necessarily imply dominant central government. For example, it has been observed that European integration and regionalisation are complementary processes in which central state authority is dispersed above and below the nation state.[50]

An alternative form of multi-level governance, Type II, is one in which jurisdictions are aligned on not just a few levels, but instead operate at numerous territorial scales.[51] Such jurisdictions are more flexible and task-specific, but less durable and general-purpose. Multiple, independent jurisdictions fulfil distinct functions, often crossing borders, with intersecting membership.[52] It is not dissimilar to the process of decentring where "governments are constrained in their actions and that they are as much acted upon as they are actors".[53] In the context of multi-level governance, decentring also captures the removal of the state from the conceptual hierarchy of state-society and the move to more heterarchical relationships where the roles of governors and governed are shifting and ill-defined.[54] This understanding has particular resonance with respect to Type II multi-level governance arrangements.[55] Type II multi-level governance jurisdictions, however, lack the enduring qualities of their Type I counterparts. Indeed, one study found that of 1,063 international governmental

[50] Marks and Hooghe (n 30) 19.
[51] Hooghe and Marks (n 33) 237.
[52] ibid.
[53] The concept of decentring is much broader and encompass a number of notions which have both normative and positive dimensions: see Julia Black, 'Decentring Regulation: Understanding the Role of Regulation and Self-Regulation in a "Post-Regulatory" World' (2001) 54 Current Legal Problems 103, 103-104.
[54] ibid.
[55] Elsewhere, this process has been described as "fragmegration": a neologism combining fragmentation and integration: see Rosenau, *Distant Proximities* (n 5) 11.

organisations existing in 1981, only 723 survived a decade later.[56] Such a high mortality rate contrasts starkly with the durability of Type I jurisdictions.[57]

The contribution of Marks and Hooghe's typology is considerable. Whilst Type I multi-level governance is more akin to federalism, this typology provides a canvass against which to understand the fundamentally different vision advanced by Type II multi-level governance where functionally discrete jurisdictions dominate. Applying this dichotomy to the context of climate governance, Betsill has observed that authority may more appropriately reside at levels of social organisation – other than central government – where decision-makers have more direct jurisdiction over causatively relevant activities.[58] Whilst this intuitively redirects attention towards Type I multi-level governance, it is important to recall that the raison d'être of Type II multi-level governance is to address a limited set of related problems (ie potentially climate governance).

The diverse mosaic of climate governance experimentation which is unfolding reveals ample evidence of the emergence of Type II functional governance. Examples of such governance initiatives include Sweden's Klimatkommunerna, an association of Swedish municipalities, counties, and regions established specifically to work closely on climate issues and the Chicago Climate Exchange, a private cap and trade scheme whose members voluntarily committed to legally binding emissions reductions.[59] Whilst the first is driven by subnational actors, the second is inspired by the governance experimentation of private actors. Both examples, however, show climate governance is evolving as a multi-level and multi-actor phenomenon.[60]

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[56] Cheryl Shanks, Harold K Jacobson and Jeffrey Kaplan, 'Inertia and Change in NGOs: 1981 – 1992' (1996) 50 International Organization 593.
[57] Hooghe and Marks (n 33) 239.
[58] Betsill (n 27) 13.
[59] Matthew J Hoffmann, *Climate Governance at the Crossroads: Experimenting with a Global Response After Kyoto* (Oxford University Press 2011) 50-55.
[60] Martin Jänicke, 'Horizontal and Vertical Reinforcement in Global Climate Governance' (2015) 8 Energies

Whilst Marks and Hooghe's typology is helpful in identifying and understanding varying models of multi-level governance, it need not be prescriptive. Moreover, it is possible that some shifts in governance are not fully captured by this typology.[61] For example, whilst attention has often focused on shifts from national to international or regional "government", as exemplified in Type I multi-level governance, there have also been observable shifts from national to supranational courts, such as the European Court of Justice and the European Court of Human Rights,[62] and these shifts are less apt to accommodation within Marks and Hooghe's typology.[63] It is unsurprising, therefore, that scholars have extended Marks and Hooghe's work by developing additional analytical tools to evaluate multi-level governance. Farrelly and colleagues, for example, have advanced "network governance" as "opening up the communicative and ideational aspects of interactions between levels of government and other actors".[64] The scholars argue that the concept is particularly relevant in the context of the EU governance system where authority does not cascade downwards from the highest spatial scale (or, as the authors put it, a structure not ordered as a "spatial hierarchy").[65] By espousing a pluricentric perspective of governance, network governance also shares a similar

5782, 5789.

[61] van Kernsbergen and van Waarden (n 26) 155.

[62] ibid 153.

[63] Marks and Hooghe acknowledge that Type I multi-level governance usually adopts the *trias politicas* structure, but such a framework is less readily applicable with respect to the European Court of Human Rights.
See Hooghe and Marks (n 33) 237.

[64] A detailed study of "network governance", a burgeoning research agenda in its own right, would be beyond the scope of this thesis, but at the core of such an approach, as defined by Farrelly and colleagues, "is the conceptualisation of network governance as a communicative arena in which actors cooperate, contest, or are co-opted in a continual process of sense-making about the world they inhabit." See Michael Farrelly, Stephen Jeffares and Chris Skelcher, 'Rethinking Network Governance: New Forms of Analysis and the Implications for Intergovernmental Relations and Multi-Level Governance' in Edoardo Ongaro, Andrew Massay, Marc Holzer and Ellen Wayenberg (eds), *Governance And Intergovernmental Relations In The European Union And The United States – Theoretical Perspectives* (Edward Elgar Publishing 2010) 87, 88.

[65] ibid 87.

vision to that of multi-level governance where hierarchical structuring is less prevalent.[66]

3.4 Locating EU Action within Multi-Level Climate Governance

3.4.1 Kyoto's Multi-Level Governance Architecture: Beyond the EU

Emissions trading programmes under the Kyoto Protocol are inherently connected within a complex multi-level governance framework. The regulatory approach chosen by the UNFCCC and the Kyoto Protocol is characterised by a division of tasks between various levels which innately fosters a multi-level division of governing authority.[67] As Chapter 2 explored, market trading was included within the Kyoto Protocol after considerable hesitancy, but it is not the Protocol itself which operationalises emissions trading. Instead, the Protocol endorses emissions trading as an instrument of preference, leaving the actual implementation of trading to individual states (or regional economic integration organisations, as the case may be).[68] The Kyoto Protocol's specific endorsement of emissions trading has been widely viewed as an ultimately unsuccessful inducement to the United States:[69] it would, for example, have been perfectly possible for the Protocol to have remained silent regarding instruments of implementation.[70]

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[66] van Kernsbergen and van Waarden (n 26) 148.
[67] Bothe (n 34) 242.
[68] The concept of "regional economic integration organisation" is the device by which EU participation is facilitated.
[69] It has been observed that the "three 'flexible mechanisms' … were supposed to make the provisions more agreeable to the US": see Phillip Pattberg and Johannes Stripple, 'Beyond the Public and Private Divide: Remapping Transnational Climate Governance in the 21st Century' (2008) 8 International Environmental Agreements: Politics, Law and Economics 367, 374.
[70] Driesen has referred to this as the "pluralism option": where national governments independently select their preferred instruments.
See David Driesen, 'Choosing Environmental Instruments in a Transnational Context' (2000) 27 Ecology Law Quarterly 1, 18.

As is common with substantially all international environmental agreements, the Protocol "shares [a] dependence upon national implementation [for its realisation]… because there is no international bureaucracy capable of regulating private conduct directly".[71] In the context of emissions trading, this has facilitated regulatory experimentation by providing space for differing, but potentially diverging, design features in each emissions trading scheme. However, as regions, states, and cities opt to pursue emissions trading policies, it is becoming critically important to assess how: (i) this complex landscape of multi-level regulatory efforts is evolving; and, (ii) the implications of this phenomenon for the construction of complementary arrangements governing emissions trading.[72]

Whilst the Kyoto Protocol provided the foundations for a multi-level governance framework for emissions trading by authorising but not elaborating the technical specifications of trading, multilateral negotiations in the succeeding years have further sanctioned the validity of diverse climate governance arrangements with varying levels of ambition and across multiple scales. For example, the Copenhagen Accord and the agreements reached at Cancun allowed countries to nominate their own future emissions reduction commitments and permitted a variety of baselines for determining such pledges. These innovations would prove critical to the decentralised framework which subsequently emerged in the Paris Agreement. In the absence of a framework in the Kyoto Protocol to oversee and implement global carbon trading, it was perhaps inevitable that the implementation of emissions trading schemes would instead develop at multiple speeds with varying levels of ambition and technical

[71] David Driesen, 'Linkage and Multi-Level Governance' (2009) 19 Duke Journal of Comparative and International Law 389, 392.
[72] Jacqueline Peel, Lee Godden and Rodney Keenan, 'Climate Change Law in an Era of Multi-Level Governance' (2012) 1(2) Transnational Environmental Law 245, 249.

specifications. As Section 3.5 will elaborate, such decentralised arrangements should not be considered as a negative feature of multi-level climate governance. Indeed, some scholars have welcomed such multi-level governance experimentation and gone further than is suggested in this research by arguing that "the *only* appropriate response [to climate change] is a multilevel governance response in which concurrent policy processes at all levels identify policy space and foster initiatives as well as put pressure on the other governance levels".[73]

However, for the purposes of this research it is not necessary to advance the normative superiority of multi-level governance models. Instead, this thesis demonstrates how multi-level governance theories contribute to climate governance by providing the analytical tools to (i) describe and (ii) better understand the shifting landscape of climate governance. Such a contribution is highly valuable in itself and facilitates the efforts of climate governance scholars to make sense of this highly fluid and fragmented terrain. Governing emissions trading also engages related questions concerned with the minimisation of conflictive interaction between schemes and the promotion of complementarity, both of which are critical considerations in the quest to develop durable linkages. Consequently, "a major concern remains as to whether the multiplicity of different regulations will ultimately 'add-up' to what is required in order to meet broader global goals of climate change mitigation and adaptation".[74]

This concern sharpens the significance of the analysis advanced in Chapters 4 and 5 proposing viable pathways towards incremental and durable linkage between emissions trading schemes. Admittedly, this is a modest endeavour when cast within the Amazonia of climate governance. The sheer

[73] Joyeeta Gupta, Kim Van Der Leeuw and Hans De Moel, 'Climate Change: A "Glocal" Problem Requiring "Glocal" Action' (2007) 4(3) Environmental Sciences 139, 144 (emphasis added).
[74] Peel, Godden and Keenan (n 72) 250.

breadth of experimentation which characterises climate governance presents problems of regime interaction which exist far beyond the discrete context of emissions trading complementarity. Whilst it is true that economic incentivisation approaches are particularly prevalent in climate governance experimentation,[75] there remains a striking absence of regulatory interaction between and across many climate initiatives. As such, much climate governance experimentation is unexplored and under-explored.[76] The multi-level governance nature of this domain is increasingly self-evident, particularly as multi-level climate governance arrangements develop beyond the EU. In an American context, with reference to state policymakers' contribution to the development of federal climate policy, Rabe has observed that "[i]ronically, the American case may have some striking parallels with climate policy in other federal or multi-level governance systems, whether or not they have ratified the Kyoto Protocol".[77]

Many US states, for example, have developed considerable climate policy expertise through innovative emissions reduction initiatives even though it is the federal government which retains the (under-utilised) ability to develop consistent rules on a national scale and the sovereign authority to interact on an international level.[78] The prominence and contribution of such subnational initiatives to climate governance are likely to increase further given the recent announcement by President Trump of his administration's intention to withdraw from the Paris Agreement.[79] Such governance experimentation, however, is neither uniquely

[75] Hoffmann (n 59) 39.
[76] However, Sabel and Zeitlin provide a valuable contribution to experimentalist governance more broadly within the EU: see Charles F Sabel and Jonathan Zeitlin (eds), *Experimentalist Governance in the European Union: Towards a New Architecture* (Oxford University Press 2010).
[77] Barry G Rabe, 'States on Steroids: The Intergovernmental Odyssey of American Climate Policy' (2008) 25(2) Review of Policy Research 105, 126.
[78] ibid 125.
[79] US Presidency, 'Statement by President Trump on the Paris Climate Accord: 1 June 2017' (White House: Speeches and Remarks) <https://www.whitehouse.gov/the-press-office/2017/06/01/statement-president-trump-paris-climate-accord> accessed 1 June 2017.

European nor American, but rather a product of the "kaleidoscopic world" of climate governance which provides space for actors to create and join experiments that suit their normative and/or material preferences.[80] There is, for example, an increasing recognition that climate mitigation in China must involve a multi-level governance approach,[81] whilst Oh and colleagues have observed that the South Korean government utilised multi-level governance to adopt its domestic emissions trading scheme.[82] In the EU the application of multi-level governance is much more familiar terrain and it is to this dimension of multi-level climate governance to which analysis turns.

3.4.2 The Multi-Level Governance of the EU ETS

The implementation of emissions trading on a regional level in the EU has revealed a rich multi-level governance tapestry. Bothe has elaborated that in the "multi-level [climate] set-up, Europe constitutes an intermediate level [as] [o]n the one hand, it implements the global regime, but it has a decentralised regime of its own which in many respects is comparable to the global one".[83] Even in this most elementary sense, a striking resemblance is apparent to Type I multi-level governance, akin to federalism. The design features of the original EU ETS Directive in 2003 and accompanying Linking Directive in 2004 were highly decentralised and contributed to producing an inherently diffused emissions trading framework.[84] This framework has fostered and relied upon close

[80] Edith Weiss Brown, 'International Law in a Kaleidoscopic World' (2011) 1(1) Asian Journal of International Law 21.
[81] Miranda A Schreurs, 'Multi-level Governance and Global Climate Change in East Asia' (2010) 5 Asian Economic Policy Review 88.
[82] Hyungna Oh, Junwon Hyon and Jin-Oh Kim, 'Korea's Approach to Overcoming Difficulties in Adopting the Emission Trading Scheme' (2017) Climate Policy (forthcoming) 1, 10.
[83] Bothe (n 34) 243.
[84] Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council

consultation and coordination between the EU, Member States, and within Member States where strong sub-national entities exist.[85] EU environmental policy has often been characterised as a two-level affair between the EU and its Member States, but this broad generalisation eschews the variations and complexity in sub-national governance evident across Member States.[86]

This is particularly true in the context of climate governance where the nature of the climate change problem has encouraged governance experimentation at multiple levels. Climate governance in some Member States, such as Germany and the Netherlands, is innately multi-level since "state-local relations are cooperative and the national government is in a relatively weak position in terms of its influence in the implementation of climate policy at the local level".[87] For example, Dutch climate policy has been based on a covenant (the "Klimaatcovenant") which is a multi-level arrangement involving local, provincial, and central government.[88] In the context of constructing climate governance arrangements in Belgium, Happaerts, Schunz, and Bruyninckx have observed that internal negotiations between federal and subnational governments regarding the allocation of Belgium's 7.5% EU reduction commitment "were very similar to those that had taken place at the global and EU levels".[89] These

Directive 96/61/EC [2003] OJ L273/32 (EU ETS Directive) and Directive 2004/101/EC of the European Parliament and of the Council of 27 October 2004 amending Directive 2003/87/EC establishing a scheme for greenhouse gas emission allowance trading within the Community, in respect of the Kyoto Protocol's project mechanisms [2004] OJ L338/18 (Linking Directive).

[85] Jon Birger Skjærseth and Jørgen Wettestad, *EU Emissions Trading: Initiation, Decision-Making and Implementation* (Ashgate 2008) 40-64.

[86] Simona Piattoni, *The Theory of Multi-Level Governance: Conceptual, Empirical, and Normative Challenges* (Oxford University Press 2010) 124.

[87] Kristine Kern, 'Climate Governance in the European Union Multilevel System: The Role of Cities' in Inger Weibust and James Meadowcroft (eds), *Multilevel Environmental Governance: Managing Water and Climate Change in Europe and North America* (Edward Elgar Publishing 2005) 111, 118.

[88] ibid.

[89] Sander Happaerts, Simon Schunz and Hans Bruyninckx, 'Federalism and Intergovernmental Relations: The Multi-Level Politics of Climate Change Policy in Belgium' (2012) 20(4) Journal of Contemporary European Studies 441, 446.

More generally, the internal dispersion of governance between subnational institutions in Belgium is somewhat unique with Happaerts, Schunz and Bruyninckx observing that "if something carrying the label 'national' is launched, it is almost always the result of an effort to comply with international commitments": ibid 450.

examples are illustrative of the dispersal of climate governance across multiple scales and are consistent with Type I multi-level governance. Of course, sub-national levels in every Member State are not necessarily as actively involved in climate governance. Indeed, highly centralised Member States, such as Ireland and Finland, have adhered to centralised climate governance arrangements and even more progressively devolving Member States, such as the United Kingdom, have not opted for internal re-distribution of their national emissions cap. Yet the emerging picture is consistent with multi-level governance theories which provide a valuable analytical framework to both describe and better understand the nature of EU climate governance.

A closer analysis of key design elements of the EU ETS further underscores the multi-level governance nature of these arrangements. The process of cap-setting and allocating allowances, in particular, have demonstrated the innately multi-level governance character of the EU ETS. The EU as a whole determined some important trading design decisions, but arguably the most important decision of all – the amount of reductions to require from participating entities – initially remained a matter for each Member State. Consequently, the EU cap during the first two phases represented the aggregation of the total of each individual Member State's National Allocation Plan (NAP).[90] Member States retained broad discretion to develop an individualised NAP. The EU ETS Directive required that during the pilot phase at least 95% of allowances should be allocated free of charge, whilst during Phase II Member States were required to allocate at least 90% of allowances free of charge. However, the actual allocation and crucially the number of allowances to

[90] EU ETS Directive, as amended, art 9(1).

allocate in the first place remained within the discretion of each Member State.[91] According to Article 9(3) of the EU ETS Directive (as it then was), the Commission had the power to reject a NAP proposed by a Member State, on the basis that it was incompatible with one or more of the specified guiding criteria in the Directive.[92]

Tensions between the EU and its Member States during Phases I and II, particularly concerning the appropriate allocation of power between them, provoked heated disputes and it is within the context of NAPs that this friction was most evident. It had been widely speculated that Member States were overly generous during the pilot phase when allocating allowances to industries and consequently, when assessing NAPs for the second phase, the Commission adopted a much stricter review.[93] The Commission's refusal to sign-off on the NAPs of Poland and Estonia resulted in each country successfully challenging the Commission's decisions before the Court of First Instance (CFI).[94] The CFI heavily circumscribed the power of the Commission to reject Member States' NAPs by determining that whilst the Commission could legally reject an NAP if the methods of economic analysis or data used by the Member State were incorrect, it was not open to the Commission to assume (as it had in the case of Poland) that methods or data are incorrect merely because they varied from the Commission's preferred approach.[95] The implementation and operation of emissions trading within the EU during this critical period in the development of

[91] ibid, as amended, art 10. This form of allocation is usually referred to as "grandfathering", a not uncontroversial method of distribution in itself.
[92] Annex III of the EU ETS Directive outlines a number of criteria which Member States should have regard to in drafting their NAP including the targets set by the Kyoto Protocol, assessments of actual and projected progress toward national targets, and the potential of activities covered by the EU ETS to reduce their emissions.
[93] Christian de Perthuis and Raphael Trotignon, 'Governance of CO_2 Markets: Lessons from the EU ETS' (2014) 75 Energy Policy 100.
[94] Case T-183/07 *Poland* v *Commission* [2009] ECR II-03395 and Case T-263/07 *Estonia* v *Commission* [2009] ECR II-03463. The CFI is now the General Court.
[95] Javier de Cendra de Larragán, 'Case Note: Republic of Poland v. Commission - Case T-183/07, 23 September 2009' (2010) 1(1) Climate Law 199, 204.

the EU ETS relied on multi-level interplay but also, as the litigation demonstrates, contested governance. This experience revealed friction between different levels of *government* within what has been characterised as the "federalism dimension" of multi-level governance,[96] yet such contestation over which level has authority also reveals how the outworking of Marks and Hooghe's Type I model of multi-level governance in practice may prove complex and contentious. Indeed, beyond emissions trading, ambiguous authority has been identified as a central feature of EU environmental law.[97]

3.4.3 Harmonisation and Multi-Level Governance

In 2009, following a period of consultation, the EU ETS Directive was radically overhauled.[98] The amendments introduced a single EU-wide cap with allowances allocated on the basis of harmonised rules for the third trading phase from 2013 – 2020.[99] This ended the role of Member States in the development of caps in the form of NAPs. Phase III also witnessed the replacement of grandfathering by auctioning as the primary method of allocation.[100] Skjærseth and Wettestad, in seeking to explain this shift towards harmonisation, have elaborated that a key background factor in the turn to more auctioning was the "bad experience from the pilot phase, including cumbersome and frustrating NAP processes, suspicions about free-riders in other countries, and windfall profits stemming from

[96] Joanne Scott, 'The Multi-Level Governance of Climate Change' [2011] Carbon and Climate Law Review 25, 25.
[97] Maria Lee, 'The Ambiguity of Multi-Level Governance and (De-)Harmonisation in EU Environmental Law' (2013) 15 Cambridge Yearbook of European Legal Studies 357.
[98] Directive 2009/29/EC of the European Parliament and of the Council of 23 October 2009 amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community (Amending Directive).
[99] Amending Directive, art 9.
[100] EU ETS Directive, art 10a(7).

free allowances".[101] Consistently, the Commission argued that "[a] harmonised emission trading system is imperative to best exploit the benefits of emission trading and to avoid distortions of competition in the internal market".[102]

This shift towards enhanced harmonisation within the EU ETS has been interpreted as suggestive of the need for an element of steering.[103] Given the degree of discord which characterised much of the NAP process, it is perhaps unsurprising that amendments to the EU ETS Directive introduced hierarchical elements. A degree of uniformity and harmonisation, however, is not incompatible with multi-level governance theories. Indeed, it has been suggested that "the potential of multi-level governance to realise climate change mitigation and adaptation benefits will require some mechanism – most likely situated at a 'higher' level of governance – for coordinating and evaluating different regulatory actions."[104] Other scholars, however, have considered such a reversion to hierarchy as undermining of a multi-level governance philosophy.[105] Marks and Hooghe's typology is silent on the question of hierarchy and as such, whilst the presence of hierarchy must be recognised as possible, its presence or absence is not a necessary quality of multi-level governance arrangements.[106] Governance in the EU is often highly contested and more resembles, as Vaughan has observed, a "complex world of hybrid rules in which legislative and non-legislative texts and tools issued from a variety of sources interact with each other in multiple ways from 'not at all' to wholly fused on multiple levels, amid a

[101] Jon Birger Skjærseth and Jørgen Wettestad, 'Fixing the EU Emissions Trading Scheme? Understanding the Post-2012 Changes' (2010) 10(4) Global Environmental Politics 101, 109.
[102] Commission, Guidance Document on the Optional Application of Article 10c of Directive 2003/87/EC [2011] OJ 99/03 [3].
[103] Peel, Godden and Keenan (n 72) 280.
[104] ibid 252.
[105] Arthur Benz, 'The European Union as a Loosely Coupled Multi-Level System' in Henrik Enderlein, Sonja Wälti and Michael Zürn (eds), *Handbook on Multi-Level Governance* (Edward Elgar 2010) 214, 218.
[106] Marks and Hooghe (n 30) 18.

constellation of public and private actors".[107] It has been suggested that "government, business, and civil society almost always negotiate under a 'shadow of hierarchy'",[108] but governing emissions trading is proving a multi-actor and multi-scalar endeavour and it is difficult to identify with confidence a single site of uncontested authority which could form the apex of such hierarchy. Instead, governance of the EU ETS has more accurately been described as "oscillat[ing] between decentralisation and centralisation".[109]

Consequently, whilst recent amendments to the EU ETS have advanced a more centralising theme, emissions trading in the EU is far from fully harmonised. Governance remains dispersed with vertical and horizontal differentiation an enduring feature of this landscape. Thus, whilst the allocation of allowances to the power sector has generally been governed by auctioning since 2013, some Member States continue to avail of a derogation for installations poorly integrated into the European electricity grid or which individually provide more than 30% of national electricity in countries with relatively low GDP (such as Poland and other Central and Eastern European countries).[110] Such installations may continue to receive up to 70% of all allowances free of charge in 2013, declining gradually to zero by 2020.[111] Consistently, whilst the Directive mandates auctioning as the primary method of allocating allowances, revealingly Article 3d(4) also expressly provides that "[i]t shall be for Member States to determine the use to be made of revenues generated from the auctioning of allowances".[112]

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[107] Vaughan (n 12) 67.
[108] Börzel and Risse (n 20) 116.
[109] Nicolas de Sadeleer, 'Salvaging the Carbon Market: Will the Phoenix Rise from the Ashes?' (2016) 13(2) Journal for European Environmental and Planning Law 133, 136.
[110] EU ETS Directive, art 10c(1).
[111] ibid, art 10c(2).
[112] ibid, art 3d(4).
Contestation remains and this has been described as a "clear victory for the Member States' collective opposition to earmarking": see Skjærseth and Wettestad, 'Fixing the EU Emissions Trading Scheme' (n

Such varied multi-level governance arrangements, far from reinforcing formal hierarchical structures, instead continue to reveal a much more fluid reality of mutual interaction. For example, reconsidering the EU's normative organising principles through a multi-level governance lens offers valuable insights. The Union-wide consensus advancing the three normative organising principles elaborated in Chapter 2 – namely multilateralism, sustainable development, and the precautionary principle as informed by climate science – has been less than uniform in recent years with some Member States "becom[ing] increasingly assertive in expressing their opposition to strengthening EU climate policy".[113] This was particularly evident both before and during the Copenhagen negotiations.[114] In advance of the Copenhagen negotiations, for example, Hungary and Poland advocated a base year of 2005 for calculating their carbon reduction commitments, rather than 1990 as suggested by the Commission, a position subsequently endorsed by the majority of East and Central European Member States.[115] Poland positioned itself at the vanguard of this coalition to stymie the adoption of a more ambitious EU climate policy by successively vetoing the proposed low carbon roadmap in 2011 and the energy roadmap in 2012.[116] The auctioning derogation is yet further evidence of internal dissonance within the Union concerning EU climate policy prioritisation.[117] This normative divergence has arguably been further accentuated by the economic crisis.[118]

101) 109.

[113] Carolina B Pavese and Diarmuid Torney, 'The Contribution of the European Union to Global Climate Change Governance: Explaining the Conditions for EU *Actorness*' (2012) 55 Revista Brasileira de Política Internacional 125, 138.

[114] Lisanne Groen, Arne Niemann, Sebastian Oberthür, 'The EU as a Global Leader? The Copenhagen and Cancun UN Climate Change Negotiations' (2012) 8(2) Journal of Contemporary European Research 173, 179.

[115] Mats Braun, 'EU Climate Norms in East-Central Europe' (2014) 52(3) Journal of Common Market Studies 445, 452.

[116] Andrzej Ancygier, 'Poland and the European Climate Policy: An Uneasy Relationship?' (2013) 7 e-Politikon 76, 86-88.

[117] EU ETS Directive, art 10c(1).

[118] Charles F Parker and Christer Karlsson, 'Environmental Law, Climate Change and the European Union's Leadership Moment: An Inconvenient Truth?' (2010) 48(4) Journal of Common Market Studies 923.

Consequently, even whilst it is widely acknowledged that the EU has embarked on an endeavour to "lead the world on climate change in line with its normative foundations",[119] the uneven diffusion of these norms within the EU itself presents an altogether more complex and messy reflection of EU climate policy. Indeed, scholars have observed that the Union's climate norms are often "challenged or ignored" and it is not beyond the realm of possibility that these norms could be recast over time.[120] The departure of the UK from the EU, one of the Union's more ambitious and committed Member States with respect to climate policy, may even hasten such norm reshaping.[121]

This fluid reality of mutual interaction suggests that whilst EU climate governance exhibits strong features resonant of Type I multi-level governance, authority does not cascade downwards evenly or consistently from the highest spatial scale. Instead, climate governance within the EU has been a much more unsettled multi-level governance landscape from Phase I through to the current Phase III. Member States continue to retain broad discretion to exercise climate governance functions and EU climate policy relies on a complex dynamic of multi-level negotiations, rather than centralised steering.[122] The operationalisation of emissions trading in the EU and the increasing contestation of the normative bedrock upon which Union climate policy is based reveals an elaborate multi-level governance landscape. Contrary to perspectives emphasising the presence of hierarchy, the dominant picture which emerges from the experience of emissions trading in the EU is one of a vertically differentiated structure characterised by unsettled and contested authority.

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[119] Louise Van Schaik and Simon Schunz, 'Explaining EU Activism and Impact in Global Climate Politics: Is the EU a Norm or Interest-Driven Actor?' (2012) 50(1) Journal of Common Market Studies 169, 178.
[120] Braun (n 115) 458.
[121] Cameron Hepburn and Alexander Teytelbohm, 'Climate Change Policy After Brexit' (2017) 33(S1) Oxford Review of Economic Policy S144, S145.
[122] Happaerts, Schunz and Bruyninckx (n 89) 455.

3.4.4 The Role of Sovereignty Free Actors

Whilst consideration of multi-level climate governance in the EU is critical to achieving a greater understanding of the framework within which cross-linkages can evolve, it is also clear that multi-level governance must reach beyond *multi-level* government, as *governance* implies that the state is "one node amongst many in a world of diffused power and responsibility".[123] In this respect, attention is directed towards the role of Rosenau's sovereignty free actors in climate governance. In order to fully appreciate the contribution of "the state" to EU climate governance, regional and subnational levels have been considered in this Chapter. This reflects the reality in EU governance generally (and particularly climate governance) of a disaggregated state, a phenomenon since at least the Single European Act and one which originally inspired Marks and Hooghe's conceptual reframing of EU governance. However, for the purposes of analysing EU climate governance, the term "non-state" actor is insufficiently precise to properly capture governance experimentation beyond the state under conditions where many "non-state" actors – such as the EU – continue to exercise public power.

Instead, Rosenau's term of "sovereignty free" actor is preferred and provides a clearer demarcation with the disaggregated state.[124] Such sovereignty free actors have been particularly active and influential in the climate governance arena. As Skjærseth and Wettestad have recognised "[i]ndustry and environmental non-governmental organisations (NGOs) can significantly affect EU climate policy even in the absence of formal decision-making power".[125] Other

[123] Neil Gunningham, 'Environmental Law, Regulation and Governance: Shifting Architectures' (2010) 21(2) Journal of Environmental Law 179, 181.
[124] Rosenau, *Turbulence in World Politics* (n 8) 36.
[125] Skjærseth and Wettestad, 'Fixing the EU Emissions Trading Scheme' (n 101) 111.

scholars have gone further: Meckling, for example, has suggested that there is "considerable evidence that the outcome of international climate politics in general and the rise of carbon markets in particular have been strongly affected by the political behaviour of firms".[126] Many environmental NGOs were far less receptive to the concept of emissions trading and had initially raised moral and substantive objections to the introduction of the EU ETS. However, by the start of the Kyoto commitment phase, inimical opposition was much less widespread: for example, during consultations on the EU ETS review process in 2007, four leading environmental NGOs collectively described "the existence of the EU ETS [as] a tremendously important achievement for European Climate Change Policy".[127]

A consensus is emerging that non-state actors make a difference in environmental governance.[128] Indeed, the influence of such diverse sovereignty free actors in climate governance is reflective of developments in the broader area of international environmental law where trends towards "fragmentation, decentralisation, and grassroots empowerment are producing a more 'kaleidoscopic' world consisting of a 'multi-layered system' of activity undertaken by states, international institutions, the private sector and non-governmental organizations".[129] Whilst some scholars have even suggested that environmental governance structures may "[be] driven by non-state actors",[130] it is perhaps more

[126] Jonas Meckling, *Carbon Coalitions: Business, Climate Politics, and the Rise of Emissions Trading* (MIT Press 2011) 2.
[127] Climate Action Network, WWF, Friends of the Earth and Greenpeace, *ECCP EU ETS Review Process* (Climate Action Network, WWF, Friends of the Earth and Greenpeace 2007).
[128] Lars H Gulbrandsen and Steinar Andresen, 'NGO Influence in the Implementation of the Kyoto Protocol: Compliance, Flexibility Mechanism, and Sinks' (2004) 4(4) Global Environmental Politics 54.
[129] Peel, Godden and Keenan (n 72) 251.
[130] Frank Biermann and Philipp Pattberg, 'Global Environmental Governance: Taking Stock, Moving Forward' (2008) 33 Annual Review of Environment and Resources 277, 280.
Some NGOs may be particularly influential: Gulbrandsen and Andresen have suggested that Environmental Defense, which enjoys close connections with US political circles, may even have 'had an effect on the design of the Kyoto mechanisms': see Gulbrandsen and Andresen (n 128) 65.

accurate to observe that it is difficult to precisely measure the influence of sovereignty free actors on the emerging scheme of climate governance.[131]

Braun and Santarius have succinctly described the multi-level interplay between state and sovereignty free actors in EU climate governance:

> [E]missions trading may be described as an example of multi-level governance. For, on the basis of the Kyoto process, the international level has played a role that has in turn influenced the European emissions trading system. Supranational institutions of the European Union (Commission, Parliament, Council of Ministers) have been and are involved in negotiating and introducing this system, along with national governments (EU delegations to international conferences, EU Council of Ministers), and various non-governmental players (eg, the Federation of German Industry (BDI), the Chemical Industry Federation (VCI), the Confederation of European Business (UNICE), Friends of the Earth).[132]

Interestingly, Wallace has observed that the Commission "became receptive to new analyses of environmental problems and kept an ear open for ideas and policy preferences formulated by NGOs and the newly formed Green movement".[133] Consistently, Brachthäuser has referred to a process where "[b]oundaries are reconfigured as all actors constantly revise their relations,

[131] In the context of non-state actors' role during the Kyoto negotiations, Braun and Santarius have observed that "[a]lthough the participation of non-state players has become more lively, it is hard to assess the actual impact they had on the emissions trading negotiations": see Marcel Braun and Tilman Santarius, 'Climate Politics in the Multi-Level Governance System: Emissions Trading and Institutional Changes in Environmental Policy-Making' (2008) Wuppertal Institute for Climate, Environment and Energy Paper No 172/2008, 18 <http://wupperinst.org/en/publications/details/wi/a/s/ad/713/> accessed 14 April 2017.
[132] ibid 10.
[133] ibid 11.

forming new coalitions, alliances and networks, and create new public-private spaces".[134] In the EU context, it has been observed that the Commission "pursues a multiplicity of direct relations", including with "expert" communities and Member States.[135]

The totality of these relationships and arrangements reinforce the dynamic nature of the multi-level climate governance landscape. As has been emphasised, it is difficult to discern an overarching "controlling mind" in such an environment where competition and contestation are as evident as control. The contribution of sovereignty free actors to climate governance, however, continues to grow. The development of voluntary markets, considered further in Section 5.2.3(ii), illustrates the important role played by non-state actors in governing emissions trading.[136] However, integrating non-state actors into existing models of global environmental governance introduces enormous complexities.[137] Concerns about "legitimacy and accountability are recurring themes" in assessments of multi-level and other more novel forms of governance.[138] Moreover, questions concerning the limits of non-state actors' influence and the challenges of understanding the personality of such actors are beyond the scope of this thesis, but raise thorny and under-researched questions with respect to non-state actors' multiple simultaneous identities and how to theorise the contribution of such actors to governance. For example, from an analytical perspective, a multinational corporation can be construed simultaneously as both

[134] Christine Brachthäuser, 'Explaining Global Governance – A Complexity Perspective' (2011) 24(2) Cambridge Review of International Affairs 221, 229.
[135] Braun and Santarius (n 131) 11.
[136] Eva Lövbrand and Johannes Stripple, 'Disrupting the Public-Private Distinction: Excavating the Government of Carbon Markets Post-Copenhagen' (2012) 30(4) Environment and Planning C Government and Policy 658, 662.
[137] Virginia Haufler, 'Transnational Actors and Global Environmental Governance' in Megali A Delmas and Oran R Young, *Governance for the Environment: New Perspectives* (Cambridge University Press 2009) 119, 122.
[138] Lee (n 97) 379.

local and transnational. Moreover, within a multinational corporation, different and potentially conflicting perspectives may be evident and it is not possible to treat such an actor as unitary in terms of motivation and policy. This was illustrated by the Exxon Mobil shareholder revolt of early 2008 where 19 institutional investors with a combined $8.6 billion shareholding sought to restructure Exxon's management and force the company to focus on the renewable energy market by tabling a motion asking Exxon's board to address climate risks and opportunities.[139]

Insofar as non-state actors influence state actors, accurately measuring the contribution of such non-state actors challenges orthodox understandings of governance which either overlook or fail to fully appreciate the influence of sovereignty free actors in decision-making. Meckling has advanced a compelling argument that "a transnational protrading business coalition was instrumental in enabling governments to go forward with mandatory yet market-based climate policy".[140] A central attraction of a multi-level governance analytic model is that it moves beyond the orthodox state-centric view common to international law and explicitly recognises the contribution made by the activities of sovereignty free actors such as NGOs, corporations, and civic society. Whilst there is a considerable heuristic value to this theoretical model by helping map the challenging terrain of climate governance, it must also be acknowledged that the multiple drivers and parameters shaping the contributions of such actors requires much more focused research.

The contribution of non-state actors to climate governance extends beyond influencing and, in the view of some scholars, driving governance

[139] Felicia Jackson, *Conquering Carbon: Carbon Emissions, Carbon Markets, and the Consumer* (New Holland Publishers Limited 2009) 59-60.
[140] Meckling (n 126) 167.

experiments which otherwise continue to remain nestled within broadly multi-level *government* frameworks. Although the EU ETS ultimately relies on public authority,[141] the market infrastructure surrounding and supporting emissions trading has been the product of financial actors' innovation. The EU ETS has been transformed into an elaborate market with the standard features of many other financial markets: differentiated products to meet diverse client demands, derivative markets, and information-diffusing mechanisms.[142] For example, Credit Suisse, as far back as 2008, was the first bank to launch a "structured carbon product".[143] The bank bundled together carbon credits from 25 different offset projects across three countries which were being developed by five different project developers at varying stages of CDM approval. The package of project credits was then split into three tranches with different risk levels to allow investors to customise their preferred level of risk. Whilst this initial pioneering Credit Suisse transaction was relatively small, deals since then have become both bigger in value and more complex in nature, with the bundling of carbon credits from many more projects of mixed types and origins.

Based on regulatory and market rules which are governed by public authorities, as within the case of the EU ETS, an international carbon market is evolving with entrepreneurs and capital providers contributing as influential non-state actors. Indeed, it has been argued that it is from the "primordial soup" of entrepreneurs and capital providers that an international system of greenhouse gas emission reductions and a carbon market is now emerging.[144] It should be

[141] Markus Lederer, 'Market Making via Regulation: The Role of the State in Carbon Markets' (2012) 6 Regulation & Governance 524, 537.
[142] Peter Newell and Matthew Peterson, *Climate Capitalism: Global Warming and the Transformation of the Global Economy Consumer* (Cambridge University Press 2010) 74.
[143] Michael Szabo, 'Credit Suisse to Offer Largest Structured CO_2 Deal' *Reuters* (London, 22 October 2008) <http://in.reuters.com/article/2008/10/22/carbon-creditsuisse-idINLM27916420081022> accessed 14 April 2017.
[144] Scott Deatherage, *Carbon Trading Law and Practice* (Oxford University Press 2011) 18.

recalled, as identified in Chapter 2, that others are far less positive about the virtuous qualities of this market dynamic.[145] Yet this market evolution, including the far less predictable emergence of voluntary markets, suggests that emissions trading schemes have built a "powerful constituency among financiers who [now] have a vested interest in carbon emissions reductions".[146] It was far from assured that this would happen. Indeed, for many years, companies generally viewed environmental regulation as "something imposed from above and devoted a lot of effort and money to resist it".[147]

The contribution of sovereignty free actors to governing emissions trading generally and the EU ETS in particular is a far more complex tale than merely the lobbying of such actors. The implementation and experience of emissions trading in the EU instead suggests that public actors have exerted an influence beyond mere coercion on private actors' by creating the conditions (for example, in the form of the EU ETS) where firms and markets have then innovated, whilst the adoption and fashioning of emissions trading in the EU in the first place reveals the influence of private actors on the design of Union climate policy. Non-state actors have demonstrated their capacity in the field of emissions trading to be both the producers and consumers of regulation, a trend consistent with broader regulatory theories suggesting the "de-apexing" of the state and a transition to more heterarchical governance arrangements.[148]

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[145] For example, Winter has suggested that "the parallel market for emission allowances, established as a means to cope with the externalities of the primary market (of the production and consumption of goods), has made absolute its own code and has tended to forget its genuine task, climate protection".
See Gerd Winter, 'The Climate is No Commodity: Taking Stock of the Emissions Trading System' (2009) 22(1) Journal of Environmental Law 1, 21.
[146] Newell and Peterson (n 142) 75.
[147] Issachar Rosen-Zvi, 'Climate Change Governance: Mapping the Terrain' [2011] Carbon and Climate Law Review 234, 238.
[148] Black, 'Decentring Regulation' (n 53) 104.

3.5 *Quo Vadis* Multi-Level Climate Governance?

3.5.1 Multi-Level Climate Governance as an Emerging Pattern

The current landscape of climate governance is now diverse and fragmented. By straddling international, regional, national and subnational levels, the EU ETS presents the archetypal example of diffused yet interactive multi-level governance. Diversification of governance has also been characterised by a multiplication of actors. These trends raise significant questions about the future of governing of emissions trading and normative considerations about the desirability of such governance arrangements. Bulkeley and Moser have articulated the thrust of this core concern by asking whether, given the myriad of activities which are taking place in the name of climate protection and the importance of actors at different levels and in different arenas in shaping the potential effectiveness of these activities, more "joined up" climate governance is either desirable or possible?[149]

There is a growing recognition that "a functioning framework for climate governance is unlikely to be constructed all at once, in a top-down fashion".[150] However, by moving beyond the notion of more centralised climate governance and seeking small steps in a polycentric world of pluralist preferences, it is possible to uncover opportunities to develop pathways to enhance and deepen governance initiatives over time.[151] The Paris Agreement, the emissions trading-implications of which are considered in Chapter 6 and Chapter 7, holds out such an incrementalist vision by providing a "politically acceptable structure and

[149] Bulkeley and Moser (n 9) 6.
[150] Robert Falkner, Hannes Stephan and John Vogler, 'International Climate Policy After Copenhagen: Towards a "Building Blocks" Approach' (2010) 1(3) Global Policy 252, 258.
[151] Mike Hulme, 'Moving Beyond Climate Change' (2010) 52(3) Environment 15, 19.

process through which *all* countries can play their part and tighten their commitments over time".[152]

3.5.2 Multi-Level Climate Governance as an Incrementalist Pathway

The argument that an incremental and gradual approach may prove more successful in developing viable and durable climate governance arrangements is not without historical precedent. It has often been noted that the World Trade Organisation is the product of precisely such incrementalism.[153] The historical evolution of the EU itself also "makes a good case for the incrementalist approach".[154] Importantly, advancing such an incrementalist vision is not incompatible with promotion of a comprehensive global climate change agreement with binding commitments. Instead, advocating an incrementalist approach reflects a healthy (and increasingly necessary) scepticism as to the prospects of such an agreement developing via a "big bang".[155] Indeed, in the coming years, the success of the Paris Agreement, which has entered into force as this research nears completion, will depend on such an incrementalist vision. The Agreement contains few binding provisions that formulate precise and enforceable commitments and instead, as Streck and colleagues have observed,

[152] Jorge E Viñuales, Joanna Depledge, David M Reiner and Emma Lees, 'Climate Policy After the 2015 Paris Climate Conference' (2017) 17(1) Climate Policy 1, 7 (emphasis original).
[153] For example, William Antholis, 'Five 'Gs': Lessons from World Trade for Governing Global Climate Change' in Lael Brainard and Isaac Sorkin (eds), *Climate Change, Trade, and Competitiveness: Is a Collision Inevitable?* (Brookings Institution Press 2009) 121 and Matthew Ranson and Robert N Stavins, 'Linkage as a Foundation for Post-Durban Climate Policy Architecture' (2012) 15(3) Ethics, Policy and Environment 272, 274.
[154] Rafael Leal-Arcas, 'Alternative Architecture for Climate Change: Major Economies' (2011) 4(1) European Journal of Legal Studies 26, 37.
[155] As described by Bodansky and Diringer, the "big bang theory" of climate treaty-making refers to a very rapid process of deepening obligations – whereas, more typically regimes start out quite shallow, with weak obligations, and gradually become deeper over time.
See Daniel Bodansky and Elliot Diringer, *The Evolution of Multilateral Regimes: Implications for Climate Change* (Pew Center on Global Climate Change 2010) 13.

"confers trust into process, assessment procedures, and inter-active follow-up to stimulate mitigation efforts".[156]

In fact, the architecture of the Paris Agreement, constructed upon a "carefully calibrated mix of hard, soft, and non-obligations",[157] is consistent with the building blocks approach articulated by Falkner and colleagues by "combin[ing] the long-term objective of a global climate architecture with a dose of political realism in the process of creating this architecture".[158] Thus, rather than reflecting consensus on the way forward, the Paris Agreement instead encapsulates different and diverse potential pathways.[159] This approach may legitimately be considered within the orbit of multi-level governance by acknowledging the growing reality that "the governance of climate change increasingly occurs in a variety of … arenas operating at different levels of social organization and involving actors beyond the state".[160] As such, incrementalism in this context, understood as evolution towards a global climate architecture, can properly be located within multi-level governance thinking.[161]

In the coming years, the contribution of incrementalism is likely to prove of increasing relevance, particularly as confidence in the notion of universalism in climate governance has proven illusory.[162] Moreover, a multi-level governance framework can stimulate "incentives and opportunities for regulatory innovation and regulatory learning across different states"[163] in ways which stringent and

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[156] Charlotte Streck, Paul Keenlyside and Moritz von Unger, 'The Paris Agreement: A New Beginning' (2016) 13(1) Journal for European Environmental and Planning Law 3, 5.
[157] Lavanya Rajamani, 'The 2015 Paris Agreement: Interplay Between Hard, Soft and Non-Obligations' (2016) 28 Journal of Environmental Law 337, 358.
[158] Falkner, Stephan and Vogler (n 150) 258.
[159] Viñuales, Depledge, Reiner and Lees (n 152) 7.
[160] Betsill (n 27) 11.
[161] The organisation of arrangements as top-down or bottom-up need not necessarily conflict with the multi-level governance qualities of a particular architecture.
[162] Beyond climate governance, perhaps one of the most widely supported international treaties, the Convention on the Rights of the Child, has been ratified by 193 parties, but not yet by the United States and Somalia.
UNICEF, "Convention on the Rights of the Child: Frequently Asked Questions", UNICEF (2006) <http://www.unicef.org/crc/index_30229.html> accessed 14 April 2017.
[163] Scott (n 96) 33.

uncompromising universalist structures do not. It is worth recalling that a central critique of traditional forms of regulation has often been the one-size-fits-all approach, fostering a tick-box philosophy with little incentive to move beyond compliance. Instead, a decentralised framework, as is most typically evident in multi-level governance, allows states to function as "laboratories of experimentation", as the great American jurist, Louis Brandeis, once put it.[164] Indeed, van Calster has argued that states should "stumble along with robust but varied regulatory measures and not focus all their energy on international harmonisation efforts in climate change regulation".[165] Given such experimentation, the incrementalist path towards construction of a global framework is not pre-determined, but rather one which involves the progressive construction of a coherent governance framework out of separate agreements and partial initiatives.[166] Whilst this model accommodates multi-speed mitigation efforts and holds out the prospect of facilitating incrementalist progress in developing durable climate governance structures, Young's call to remain vigilant of the complementarity of cross-scale interactions, remains particularly prudent.[167]

It is this consideration – the importance of promoting and maintaining complementarity – which accentuates the centrality of linkage, particularly direct linkage as elaborated in Chapter 4, within the evolving multi-level climate governance landscape. Whilst the EU ETS has developed "with an eye towards serving as a model for an international emissions trading system",[168] the implementation in practice of this vision remains fraught with complexity. This

[164] *New State Ice Co v Liebmann* 285 US 262, 311 (1932) (Brandeis J dissenting).
[165] Geert van Calster, 'Against Harmonisation – Regulatory Competition in Climate Change Law' [2008] Carbon and Climate Law Review 89, 94.
[166] Falkner, Stephan and Vogler (n 150) 259.
[167] Young, 'Institutional Interplay' (n 16) 266.
[168] Betsill (n 27) 22.

thesis engages with this complexity by elaborating how linkage can inject a measure of coherence into what is a fluid multi-level climate governance landscape characterised by regulatory experimentation and diversity. Peel and colleagues have accurately observed that "the potential of multi-level governance to realise climate change mitigation and adaptation benefits will require some *mechanism* … for coordinating and evaluating different regulatory actions."[169] Linkage, the central focus of this research, may be understood as one highly significant example of such a "mechanism".

The establishment of the International Carbon Action Partnership (ICAP) in 2007 represents a further, though less concrete, potential mechanism in the sphere of emissions trading to promote complementarity and potentially harmonisation across schemes by facilitating information exchange through diplomatic and regulatory dialogue. Given the ICAP's diverse membership profile, comprising regional, national and sub-national authorities, it is possible that it could gradually mature into a more prominent forum in the coming years to coordinate emissions trading interactions.[170] The ICAP's foundational objective of "contribut[ing] to the establishment of a well-functioning global cap and trade carbon market [by] provid[ing] the opportunity for member countries and regions to share best practices and learn from each other's experiences" is consistent with the notion of linkage by degrees elaborated in Chapter 4 which envisages the incrementalist evolution of enhanced connectivity between emissions trading schemes.[171]

[169] Peel, Godden and Keenan (n 72) 252 (emphasis added).
[170] As of 14 April 2017, the ICAP has 31 members and 4 observers, the most recent being Switzerland which joined on 17 July 2015.
[171] International Carbon Action Partnership, 'About ICAP' (ICAP, 29 March 2012) <http://icapcarbonaction.com/index.php?option=com_content&view=article&id=52&Itemid=2> accessed 14 April 2017.

Multi-level climate governance, by facilitating experimentation in emissions trading, has allowed for the comparison of different policies and uncovering of different ways to implement emissions trading. This spirit of experimentalism was especially evident during Phases I and II of the EU ETS and it was acknowledged by Commission policymakers that "'learning by doing' is an important in-built feature of the [EU ETS] Directive".[172] The EU's experiences with emissions trading have also informed the development of schemes beyond the EU.[173] Consequently, it *is* possible to identify mechanisms, of the kind alluded to by Peel and colleagues, which promote coordination and evaluation of regulatory action in the sphere of emissions trading. Whilst it is the contribution of linkage as one such mechanism which provides the particular focus of this thesis, it seems clear that further research could identify, catalogue, and clarify the range of potential mechanisms available to advance and maintain complementarity in multi-level climate governance.

3.6 Conclusion

Climate governance has evolved into a complex process and the diversity of climate governance initiatives today defies traditional hierarchical assumptions and the state/non-state binary. Multi-level governance clearly offers some descriptive purchase on the character of such diverse governance arrangements. Fairbrass and Jordan have acknowledged that in the EU environmental context multi-level governance provides a "compelling description" of what happens to decisions once they escape the domain of intergovernmental bargaining.[174] In

[172] Farhana Yamin, *Climate Change and Carbon Markets: A Handbook of Emission Reduction Mechanisms* (Earthscan 2005) xviii (emphasis added).
[173] Oh, Hyon and Kim (n 82) and de Perthuis and Trotignon (n 93) 100.
[174] Jenny Fairbrass and Andrew Jordan, 'European Union Environmental Policy: A Case of Multi-Level

this sense, multi-level governance identifies and describes key dimensions of a complex governance reality. Consistently, Bache and Flinders have suggested that the distinction between Types I and II multi-level governance "provides a useful heuristic tool for deconstructing and refining arguments in this area".[175]

However, the question also arises, particularly in the context of emissions trading, as to whether multi-level governance advances a superior normative claim beyond its descriptive and heuristic value. Some commentators have suggested that multi-level governance represents a preferable governance structure. Betsill has identified a shift in governance thinking: "[w]here international relations scholars once assumed that "global" problems should be governed by "global" institutions, there is now greater recognition that the scale of the problem need not dictate the scale of governance".[176] Meanwhile, other scholars have gone further: Leca has suggested that multi-level governance in the EU, as involving the interaction of private and public actors that transcends territorial allegiance, could foreshadow "the governance of the future".[177] Much depends, however, on the precise interpretation of multi-level governance employed and considerable definitional ambiguity persists. Yet multi-level governance's central claim that "governance must operate at multiple scales in order to capture variations in the territorial reach of policy externalities"[178] is especially attractive with respect to climate governance. This perspective does not extol multi-level governance as a transformative theory, but rather that it has a valuable role to play in understanding and promoting the reconfiguration of governance models as multi-scalar structures.

Governance?' in Ian Bache and Matthew Flinders (eds), *Multi-Level Governance* (Oxford University Press 2004) 147, 162.

[175] Bache and Flinders (n 10) 200.

[176] Betsill (n 27) 12.

[177] Smouts (n 24) 83.

[178] Marks and Hooghe (n 30) 16.

It is not necessary to advance a claim that multi-level governance represents the *only* or indeed necessarily the *best* governance model. Instead, within the context of this research, a more modest recognition that particular dimensions of climate governance, such as emissions trading, may be better mapped and understood within a multi-level governance analytic model seems a sufficient basis to acknowledge the contribution of the concept. There is certainly evidence of a normative preference for multi-level governance within EU policymaking: former EU Commissioner for Institutional Relations, Maroš Šefčovič, for example, emphasised that "[m]ulti-level governance is a key principle for the good functioning of the European Union",[179] whilst some scholars have theorised that multi-level governance is a "purposeful strategy of the European institutions".[180] An incrementalist understanding of the evolution of climate governance arrangements is not inconsistent with such perspectives, but nor is it dependent on such normative claims.

This thesis does not advocate multi-level governance as a normatively superior governance model. Instead, multi-level governance is understood as an analytical model to map and understand institutions to develop and deepen viable and durable climate governance arrangements at a time when faith in multilateral universalist models has proven misplaced. Achieving progress, where possible, towards more binding climate governance arrangements is imperative given the urgency of the underlying climate science. In such an environment, the evolution of a complex multi-jurisdictional architecture fostering complementary cross-scale interactions rather than allowing the development of conflicting norms is of fundamental importance. The succeeding Chapters engage with this question

[179] Maroš Šefčovič, 'Subsidiarity and Multi-Level Governance' (Speech to the Committee of the Regions, Brussels, 4 October 2010).
[180] Jänicke (n 60) 5793.

and consider how, in this multi-level climate governance landscape, linkage can contribute to promoting and maintaining complementarity between emissions trading schemes.

CHAPTER 4

UNDERSTANDING LINKAGE

4.1 Introduction

The concept of market trading is forming an increasingly central component of the emerging climate governance framework. It is little wonder then that it has been observed that "the momentum for market-based climate action at different levels is growing".[1] Moreover, in the years since the EU ETS was launched, the "incentive, opportunity and momentum to link the EU ETS to other emissions trading schemes have increased dramatically".[2] The causative factors driving these developments are more complex than some scholars have suggested: for example, the characterisation of emissions trading as primarily an institutional innovation created to conform to the constraints of capitalism overlooks the contribution of emissions trading to climate governance.[3] For example, the normalisation of the regulation of carbon in the EU has, in large part, been a product of the EU ETS,[4] an achievement also recognised as a core accomplishment of emissions trading schemes elsewhere in the world.[5]

As Chapter 2 demonstrates, the EU's conversion to emissions trading has provided a salutary lesson in the diversity of factors which influences the

[1] Constanze Haug, Michel Frerk and Marissa Santikarn, 'Towards a Global Price on Carbon: Pathways for Linking Carbon Pricing Instruments' (Adelphi 2015) 12 <https://www.adelphi.de/en/publication/towards-global-price-carbon-pathways-linking-carbon-pricing-instruments> accessed 14 April 2017.
[2] MJ Mace and Jason Anderson, 'Legal and Design Issues Arising in Linking the EU ETS with Existing and Emerging Emissions Trading Schemes' (2009) 6(2) Journal for European Environmental and Planning Law 197, 198.
[3] For a flavour of these perspectives, see: Benjamin Richardson, 'Climate Law and Economic Policy Instruments: A New Field of Environmental Law' (2004) 1 Environmental Liability 1 and Bob Jessop, 'The Political Economy of Scale and European Governance' (2005) 96 Tijdschrift voor Economische en Sociale Geografie 225.
[4] Maria Lee, *EU Environmental Law, Governance and Decision-Making* (2nd edn, Hart Publishing 2014) 146.
[5] Anders Nordeng, Joo-jin Kim, Jin Kim and Thomas Winkehner, 'Dialogue: What Now for South Korea's Emissions Trading Scheme?' (2016) Carbon Pulse 5 July 2016 <http://carbon-pulse.com/22019/> accessed 14 April 2017.

adoption of market trading as a climate governance instrument of choice. It is clear that carbon markets remain intensely controversial, but it is not the objective of this thesis to retrace or synthesise the lively and highly developed debate concerning the appropriateness of emissions trading in climate governance. However, given the experimentalist and unsettled nature of the climate governance landscape, the continuing competition for support between differing climate governance approaches provides a healthy critical dialogue within which advocates of emissions trading must continue to justify the logic, viability, and potential of such an approach.[6] This is very much consistent with the instrumentalist understanding of the contribution of emissions trading elaborated in Chapter 2.

As Section 1.4 emphasised, this thesis argues that scholarly attention must focus more on the component parts of how global climate governance is *already* incrementally emerging, rather than reimagining an idealised vision of climate governance as it might be reconstructed if revisited with the benefit of hindsight. In the current context, for example, the presence of carbon markets – and their centrality to any climate governance landscape rooted in reality – must be acknowledged as a political fact. This research does not claim to substantially shape the distinctly separate ethical debate of whether market trading *should* be the preeminent response to climate change. Instead, Chapter 6 engages with elements of this ethical dimension, insofar as it relates to the specific context of the CDM. This thesis shares the perspective of Betsill and Hoffmann that "our observations of global climate change politics and extensive

[6] For example, van Calster has argued that "in the absence of certainty of climate law impacts, the presumption should be against unity in regulation": see Geert van Calster, 'Against Harmonisation – Regulatory Competition in Climate Change Law' [2008] Carbon and Climate Law Review 89, 93. Instead, he has advocated "more unilateral trials of a wide range of regulatory policies": ibid 94.

investigation of carbon markets over the past several years convinces us that cap and trade will remain an aspect of the global response to climate change".[7]

Indeed, this perspective is particularly applicable with respect to EU climate policy. The policy transformation considered in Chapter 2 has resulted in the EU emerging as a vocal champion of emissions trading. It is unlikely that the EU's consistent (and persistent) commitment to emissions trading for the past decade will diminish in the coming years, particularly since the EU ETS is now also "a political prestige project for the EU".[8] As Chapter 2 demonstrated, the dominance of market trading theory in the sphere of EU climate governance could not have been predicted, but the significant regulatory energies and political capital expended by the EU in emissions trading since adoption of the EU ETS strongly suggests that emissions trading will continue to remain the fulcrum of EU climate policy. With Phase III of the EU ETS due to last until 2020 and a further fourth phase already envisaged, there is every reason to believe that far from diminishing in importance, emissions trading is instead a regulatory tool whose time has come.[9]

This Chapter is informed by and builds on the EU's aspiration to advance the EU ETS as the hub of a global interconnected system of emissions trading schemes by evaluating the requirements of this objective.[10] This vision is not new: from the embryonic stages of the EU ETS policymakers had envisaged that the scheme could form the core component of a global trading framework,

[7] Michele Betsill and Matthew J Hoffmann, 'The Contours of "Cap and Trade": The Evolution of Emissions Trading Systems for Greenhouse Gases' (2011) 28(1) Review of Policy Research 83, 87.
[8] Jørgen Wettestad, 'The EU Emissions Trading System: Frontrunner in Trouble' in Geert van Calster, Wim Vandenberghe and Leonie Reins (eds) *Research Handbook on Climate Change Mitigation Law* (Edward Elgar Publishing 2015) 451, 474.
[9] Commission, 'Green Paper: A 2030 Framework for Climate and Energy Policies' (Communication) COM (2013) 0169 final.
[10] Commission, 'Building a Global Carbon Market: Report Pursuant to Article 30 of Directive 2003/87/ EC and Commission – Towards a Comprehensive Climate Change Agreement in Copenhagen' (Communication) COM (2009) 676 final.

perhaps even the "blueprint" for such an interconnected system.[11] Consistent with this vision, Article 25(1) of EU ETS Directive has explicitly provided a legislative basis for linkage of the EU ETS with other emissions trading schemes. As far back as 2000, the Commission's Green Paper, initiating discussion of the advantages of emissions trading in the EU, identified the importance of gaining experience in the implementation of such an instrument before international emissions trading commenced.[12] Therefore, positioning the EU ETS at the heart of an international emissions trading framework has always been a guiding principle in the acceptance, implementation and gradual championing of emissions trading in the EU.[13]

4.2 Why Does Linkage Matter?

Whilst the advancement of linkage between emissions trading schemes is a central element of the EU's vision for the EU ETS, it is important to consider why, beyond this strong policy preference, linkage should otherwise matter. Therefore, before exploring the concept of linkage in Section 4.3, it is necessary to consider why linkage between emissions trading schemes is a critical question.

Chapter 1 set out the overarching contention that as the "big bang" approach of advancing global climate governance via multilateral treaty-making fades, scholarly emphases must refocus on the less grand but more functional task of fostering cross-scale complementarity across emerging climate

[11] Jos Delbeke, 'The Emissions Trading Scheme (ETS): The Cornerstone of the EU's Implementation of the Kyoto Protocol' (2006) 1(2) European Review of Energy Markets 1, 13.
[12] Commission, 'Green Paper on Greenhouse Gas Emissions Trading within the European Union' (n 9).
[13] Commission, 'Building a Global Carbon Market' (n 10) 11.

governance arrangements.[14] This undertaking requires consideration of how to effectively govern a fragmented and ever-more crowded global climate stage.[15] The diversity of climate governance experimentation unfolding is quite remarkable and, as Chapter 3 explored, climate governance is now the province of every level of government and extends to encompass the initiatives of sovereignty free actors. A multi-level governance landscape has emerged revealing interactions between more traditional territorial *government* actors and sovereignty free actors within the incorporeal networks of commodity and capital markets.[16] Importantly, this research does not seek to devise pathways towards convergence for *all* emerging climate governance arrangements – such an ambition would under-estimate the enormity of the task. This does not mean, however, that the complexity of this fluid governance landscape should inhibit research with a view towards advancing complementarity in *specific* spheres of climate governance. Consequently, this Section identifies and explores four key considerations to explain why linkage is particularly important within the sphere of emissions trading.

First, linkage, as elaborated in Section 4.3, is interpreted as a mechanism through which complementarity between emissions trading schemes may be promoted and maintained, but it is important to recognise that emissions trading represents only one element – albeit an increasingly critical one – of a complex climate governance landscape. The focus of this research is not whether or why emissions trading experimentation is (or normatively should be) compartmentalised or less integrated within climate governance

[14] During the course of this research there has been a marked increase in scholarly focus on more modest bottom-up climate governance initiatives, rather than the "big bang" aspiration of a global climate agreement incorporating binding emissions reduction commitments.
[15] James N Rosenau, 'Governing the Ungovernable: The Challenge of a Global Disaggregation of Authority' (2007) 1 Regulation & Governance 88, 93.
[16] Ian Bailey and Sam Maresh, 'Scales and Networks of Neoliberal Climate Governance: The Regulatory and Territorial Logics of European Union Emissions Trading' (2009) 34 Transactions of the British Institute of Geographers 445, 456.

arrangements.[17] Innovative carbon pricing mechanisms beyond emissions trading schemes, such as carbon taxes, are already common and often operate as flanking measures to emissions trading schemes or as a jurisdiction's primary climate policy.[18] The multiplicity of different regulations has, however, given rise to a "major concern" which now pervades climate governance: whether the proliferation of different regulations will ultimately produce an effective global climate governance framework.[19] This research engages with a discrete but core aspect of this "major concern": the quest to promote and maintain complementarity between the EU ETS and other emissions trading schemes.

Second, it may be asked why, as an initial inquiry, is complementarity between emissions trading schemes important? Young has observed that the achievement of successful environmental outcomes is a function not only of the allocation of tasks to institutions operating at different levels of social organisation, but also of the interactions between arrangements and whether such interactions are characterised by complementarity rather than conflict.[20] In the context of emissions trading, the importance of promoting and preserving complementarity between schemes is developing as a particularly significant consideration given that "[i]nstead of looking to *join* a global cap and trade system, policymakers now often talk about *creating* an international system from the bottom up by linking markets organised in different political

[17] There is, however, a burgeoning literature exploring this question. For example, see generally Matthew J Hoffmann, *Climate Governance at the Crossroads* (Oxford University Press 2011).
[18] Several EU Member States have implemented carbon taxes which complement participation in the EU ETS by establishing carbon pricing for firms and sectors which are currently beyond the scope of the EU ETS, such as heating and liquid fossil fuels for transport.
See Haug, Frerk and Santikarn (n 1) 12.
[19] Jacqueline Peel, Lee Godden and Rodney Keenan, 'Climate Change Law in an Era of Multi-Level Governance' (2012) 1(2) Transnational Environmental Law 245, 250.
[20] Oran R Young, 'Institutional Interplay: The Environmental Consequences of Cross-Scale Interactions' in Elinor Ostrom and colleagues (eds) *Multi-Level Governance* (National Academies Press 2002) 263, 266.

jurisdictions".[21] The absence of a global framework governing emissions trading has raised the spectre of "a patchwork of carbon markets, where each jurisdiction sets its own rules and where linkage between carbon markets is highly doubtful".[22] Such a prospect is not inevitable, but the potential emergence of a disconnected patchwork of schemes reinforces the relevance of research evaluating the contribution and modalities of linkage. Indeed, the presence or absence of strong complementarity between schemes – advanced and preserved through linkage – is likely to materially influence the direction of emissions trading governance in the coming years by tilting the emerging governance landscape towards either an incrementally harmonising architecture or a more uncertain vista characterised by detached, atomised and potentially conflicting schemes. As such, analysis of linkage offers an important contribution to a research agenda which continues to require a much more forensic focus on how policymakers should structure climate policy to eliminate or at least alleviate the potential for friction and conflict with other climate governance initiatives.

Third, economic theory strongly suggests that linkage could offer multiple benefits including: increased efficiency, as a larger interconnected network of schemes could unlock more abatement options; and, increased liquidity, since there are more buyers and sellers which should also reduce transaction costs.[23] Moreover, the greater the prevalence of linkage between emissions trading schemes, the more reduced the risks of both carbon leakage and adverse distortions in international competitiveness. In fact, as Hawkins and Jegou have

[21] Betsill and Hoffmann (n 7) 94 (emphasis original).
[22] Matthew Paterson, 'Selling Carbon: From International Climate Regime to Global Carbon Market' in John Dryzek, Richard Norgaard and David Schlosberg (eds), *The Oxford Handbook of Climate Change and Society* (Oxford University Press 2011) 611, 620.
[23] Wolfgang Sterk and Joseph Kruger, 'Establishing a Transatlantic Carbon Market' (2009) 9(4) Climate Policy 390.

observed, the economic logic for implementation of an emissions trading scheme in the first place, as explored in Chapter 2, extends to justifying linkage between emissions trading schemes.[24] The UK's expert Committee on Climate Change, a body statutorily tasked with providing independent and evidence-based advice to the British Government and Parliament, has also endorsed the important contribution of linkage emphasising that "increased linking (rather than delinking) of international carbon trading schemes is desirable in promoting the least-cost international path to reducing global emissions".[25] Such economic factors are particularly significant given that the cost-effectiveness of climate governance initiatives is highly likely to prove critical to the ultimate success or failure of climate policy in many countries, especially in circumstances where public willingness to pay has been shown to be limited and the costs of mitigation are substantial.[26] For example, the failure of the United States to ratify the Kyoto Protocol has largely been attributed to the twin interrelated concerns of "substantial compliance costs and domestic voters' low willingness to pay."[27]

Finally, whilst linkage of emissions trading schemes is emerging as a fundamental consideration in climate governance, it is acknowledged that there are limitations in the understanding of linkage elaborated in this Chapter and applied in this research. Implicit in this acknowledgement is recognition of the fact that the understanding of linkage advanced in Section 4.3 does not

[24] Sonja Hawkins and Ingrid Jegou, 'Linking Emissions Trading Schemes: Considerations and Recommendations for a Joint EU-Korean Carbon Market' (2014) International Centre for Trade and Sustainable Development Global Platform on Climate Change, Trade and Sustainable Energy – Climate Change Architecture Series Issue No 3 March 2014, 23 <https://www.ceps.eu/publications/carbon-market-provisions-paris-agreement -article-6> accessed 14 April 2017.
[25] Committee on Climate Change, 'Implications of Brexit for UK Climate Policy' (Briefing Note, October 2016), 6 <https://www.theccc.org.uk/wp-content/uploads/2016/10/Meeting-Carbon-Budgets-Implications-of-Brexit-for-UK-climate-policy-Committee-on-Climate-Change-October-2016.pdf> accessed 14 April 2017.
[26] Samuel Fankhauser and Cameron Hepburn, 'Designing Carbon Markets, Part I: Carbon Markets in Time' (2010) 38 Energy Policy 4363, 4364.
[27] Christoph Böhringer, 'Two Decades of European Climate Policy: A Critical Appraisal' (2014) 8(1) Review of Environmental Economics and Policy 1, 15.

integrate climate governance initiatives *beyond* the orbit of emissions trading. This is an important limitation, but also an unavoidable one within the confines of this research. Thus, the application of economic instruments beyond market trading, such as carbon taxes, is not considered.[28] Innovative decarbonisation initiatives, such as personal carbon accounting, whilst illustrative of the kaleidoscopic and experimentalist nature of climate governance – particularly the governance, rather than government dimension, as elaborated in Chapter 3 – also fall outside the preserve of promoting complementarity across emissions trading schemes.

4.3 Deconstructing Linkage

4.3.1 The Concept of Linkage

As implementation of emissions trading schemes continues to proliferate, the question of facilitating linkages between the EU ETS and other schemes is likely to attract greater prominence in both the literature and policymakers' decision-making.[29] In less than a decade, as Chapter 2 has explored, the prospect of emissions trading in the EU progressed "from seemingly politically impossible to practical implementation".[30] The evolution of emissions trading in the EU is being emulated in other regions: South Korea's emissions trading scheme ("KETS") launched in January 2015, whilst the Chinese Government

[28] Panayotou has provided what is perhaps the classic typology of economic instruments: Theodore Panayotou, 'Economic Instruments for Environmental Management and Sustainable Development' (1994) United Nations Environment Programme: Environmental Economics Series Paper No 16/1994 <http://conservationfinance.org/ guide/guide/images/40_panay.pdf> accessed 14 April 2017.
[29] For example, as of November 2016, there were 17 emissions trading systems operating across 35 countries, 13 states and seven cities: Tallat Hussain, Ingrid York and James Read, 'What is the Future of Emissions Trading Scheme?' (2016) White & Case LLP 18 November 2016 <https://www.whitecase.com/ publications/alert/ what-future-emissions-trading> accessed 14 April 2017.
[30] Markus Wråke, Dallas Burtraw, Åsa Löfgren and Lars Zetterberg, 'What Have We Learnt from the European Union's Emissions Trading System?' (2012) 41 Ambio: A Journal of the Human Environment 12, 13.

has unveiled plans for an ambitious national scheme which is due to launch in the second half of 2017.[31] Given this, the concept of linkage – what we can appropriately consider as within the definition of the term and how such linkages might develop – is of increasing significance.[32]

Traditionally the concept of linkage has been interpreted as relating to the specific context of when the regulatory authority of one emissions trading scheme permits regulated entities within its scheme to use emission allowances or emission reduction credits generated from another scheme for the purposes of satisfying domestic compliance obligations.[33] Haite's exposition of this classic definition provides that "two national emissions trading schemes are linked if one country's allowance can be used, directly or indirectly, by a participant in the other country's scheme for compliance purposes"[34] whereas Gilbert, whilst also employing this definition, further adds the important caveat that "such linking need not be restricted to national trading schemes alone".[35] More recently, however, this classic definition has been reconsidered.[36] Metcalfe and Weisbach have expounded a particularly expansive definition of linkage which is not limited to emissions trading and instead encompasses any "policies that allow regional or national carbon regimes to interact in such a way as to narrow or eliminate differences in the marginal cost of abatement between different

[31] Stian Reklev, 'China National ETS Launch Likely in Second Half of 2017' *Carbon Pulse* (15 March 2016) <http://carbon-pulse.com/17057/> accessed 14 April 2017.
[32] Dyck has observed that linkage is not a new concept and has "long been advocated as a way to develop global cooperation on international trade": Tyson Dyck, 'Missing Linkages: Canada, Cap-and-Trade and the International Climate Architecture' (2009) 8(1) Canadian International Lawyer 1, 13.
[33] Judson Jaffe, Matthew Ranson and Robert N Stavins, 'Linking Tradable Permit Systems: A Key Element of Emerging International Climate Policy Architecture' (2009) 36 Ecology Law Quarterly 789, 791; Alexander Roßnagel, 'Evaluating Links Between Emissions Trading Schemes: An Analytical Framework' [2008] Carbon and Climate Law Review 394; Michael Mehling and Erik Haites, 'Mechanisms for Linking Emissions Trading Schemes' (2009) 9 Climate Policy 169; Mace and Anderson (n 2); and William A Pizer and Andrew J Yates, 'Terminating Links Between Emissions Trading Programs' (2015) 71 Journal of Environmental Economics and Management 142.
[34] Erik Haites, 'Harmonisation Between National and International Tradeable Permit Schemes: CATEP Synthesis Paper' (2003) OECD, March 2003, 5.
[35] Alyssa Gilbert, 'Linking Carbon Markets: The Climate Change Silver Bullet?' (2009) 20(6) Energy and Environment 901, 902.
[36] For example, see Gilbert E Metcalfe and David Weisbach, 'Linking Policies When Tastes Differ: Global Climate Policy in a Heterogeneous World' (2012) 6(1) Review of Environmental Economics and Policy 110.

regions or countries".[37] However, Burtraw and colleagues, in a persuasive study examining the prospects of linking emissions trading schemes, have articulated a definition which moves beyond the orthodox understanding of linkage by "expand[ing] the definition of … linking to also describe the incremental alignment of various program elements across trading programs".[38] Yet this definition also retains the attraction of denoting interactions between emissions trading schemes, rather than between an emissions trading scheme and climate policy more generally. For present purposes, Burtraw and colleagues' novel recharacterisation of the term also has the attraction of incorporating a progressive dynamic, a feature which is also central to the incrementalist vision articulated in Chapter 3.

Incrementalism, in the context of climate governance, emphasises the importance of progressing towards gradual harmonisation by actively ensuring that cross-scale interactions produce complementary rather than conflicting actions.[39] As Chapter 3 has elaborated, the "big bang" vision of a comprehensive and binding global climate change agreement has proven illusory and the evolving incrementalist multi-level governance framework,[40] typified by an "emerging mosaic of trading schemes",[41] offers many advantages, including providing space for experimentalism. Whilst such progress, via fragmented and multi-speed efforts, has been described, in a nod to American

[37] ibid 113.
[38] David Burtraw, Karen Palmer, Clayton Munnings, Paige Weber and Matt Woerman, 'Linking by Degrees: Incremental Alignment of Cap-and-Trade Markets' (2013) Resources for the Future Discussion Paper 04/2013, 1.
[39] Young (n 20) 266.
[40] As Chapter 3 advanced, universalism is largely non-existent in international law; there are numerous successful examples of incrementalism, including the WTO and the EU. Importantly, climate governance is characterised by the challenge of managing externalities which, as Underdal identified, "are sometimes unidirectional or at least strongly symmetrical, leaving the victim aggrieved and the polluter quite happy". Underdal's research expands on the challenges of forging top-down international frameworks: see Arild Underdal, 'International Cooperation: Transforming "Needs" into "Deeds"' (1987) 24(2) Journal of Peace Research 167, 173.
[41] Wolfgang Sterk and Ralf Schüle, 'Advancing the Climate Regime Through Linking Domestic Emission Trading Systems' (2009) 14 Mitigation and Adaption Strategies for Global Change 409, 411.

constitutionalism, as Madisonian and resulting in something akin to a "global federalism of climate policy",[42] the emerging multi-level governance architecture is arguably more complex but suggests that "it is more likely that a global system will emerge as cap and trade systems in different policy venues are linked to one another".[43] An incrementalist approach retains a particular attractiveness by integrating the medium-term objective of a fully linked emissions trading network with the more immediate objective of working to ensure that emerging emissions trading schemes are not so detached so as to be incompatible with one another. Such an approach is mindful of Young's emphasis on advancing the complementarity of cross-scale interactions and recognises the reality and contribution of multi-level governance in mapping and understanding the development of a framework which progressively facilitates such complementarity.[44]

The development of linkages between emissions trading schemes is a necessary but not sufficient condition for the achievement of harmonious interaction by minimising potential conflicts of interest and maximising efficiencies in pursuit of the common decarbonisation goal. Moreover, whilst the linking of emissions trading schemes should not be perceived as a silver bullet,[45] it remains essential to explore how such schemes could interact and link with one another, particularly given that schemes are currently "evolving at different rates, at different levels and… displaying different degrees of compatibility with the EU ETS".[46]

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[42] David Victor, Joshua House and Sarah Joy, 'A Madisonian Approach to Climate Policy' (2005) 309 Science 1820, 1820.
[43] Betsill and Hoffmann (n 7) 100.
[44] Young (n 20) 266.
[45] Indeed, perhaps a "silver buckshot" approach is more appropriate: Gwyn Prins and Steve Rayner, 'The Wrong Trousers: Radically Rethinking Climate Policy' (2007) A Joint Discussion Paper of the James Martin Institute for Science and Civilization, University of Oxford and the MacKinder Centre for the Study of Long-Wave Events, London School of Economics <http://eureka.sbs.ox.ac.uk/66/> accessed 14 April 2017.
[46] Mace and Anderson (n 2) 231.

The definition of linkage advanced in this research, whilst focused on linking emissions trading schemes, also incorporates the process of facilitating formal linkages between such schemes.[47] Hence whilst the *outcome*, in the form of a global network of direct linkages between emissions trading schemes, represents the classic definition of linkage, it is proposed that the *process* by which this outcome is produced can also properly be accommodated within this definition.[48] This is consistent with the construction of linkage advanced by Burtraw and colleagues which recognises that "the process of linking does not have a final stage; it will be ongoing".[49] Moreover, it remains open to sovereign jurisdictions to change their policies and linkages are not immutable.[50] Consequently, even after the operationalisation of direct linkage, in the absence of agreed oversight by a single regulator, the relevant regulatory authorities must continue to work cooperatively with one another to ensure that the schemes remain harmonised.

Drawing on the experiences of transnational regulation in the context of the financial services sector, the EU-US Financial Markets Regulatory Dialogue provides an example of a viable template to regularise structured dialogue and cooperation.[51] The EU is increasingly active in experimenting with a regulatory dialogue model, albeit primarily within the sphere of the Single Market, but this is not only a European phenomenon.[52] Braithwaite and Drahos have observed that regulatory dialogues are now key ways by which governments address the

[47] A construction which is consistent with that defined by Burtraw and colleagues (n 38).
[48] In this context, the underlying environmental rationale for each emissions trading scheme, consistent with the instrumentalist philosophy emphasised in Chapter 2 remains constant: the achievement of carbon emissions reductions. However, it is recognised that there will be variations with respect to the level of ambition of each linked scheme.
[49] ibid 4.
[50] Pizer and Yates (n 33) 145.
[51] For a detailed evaluation of the Transatlantic Financial Markets Regulatory Dialogue see Kern Alexander, Eilís Ferran, Howell Jackson and Niamh Moloney, 'The Transatlantic Financial Markets Regulatory Dialogue' (2006) 7(3) European Business Organization Law Review 647.
[52] Commission, 'The EU Single Market: Regulatory Dialogues' (2014) <http://ec.europa.eu/internal_market/ext-dimension/dialogues/index_en.htm> accessed 14 April 2017.

uncertainties of the world.[53] Given the unsettled history of climate governance to date, the maintenance of emissions trading linkages will require continuing close coordination between regulatory authorities. Consequently, it is important to emphasise that harmonisation is not a single one-time event, but rather a potentially "uncertain and confusing" ongoing process which raises significant governance implications,[54] a theme revisited and developed in Chapter 7 in the context of linkage between the EU ETS and KETS.

4.3.2 A Typology of Linkages

As Jaffe, Ranson and Stavins have noted, linkages may be defined as direct or indirect.[55] Other scholars have instead drawn a distinction between primary and secondary linkage,[56] but for the avoidance of ambiguity this thesis adopts the classification of direct or indirect. This classic definition, which has been widely adopted in the literature, extends to further categorising direct linkages as unilateral, bilateral or multilateral. However, building on this taxonomy, it is also possible to envisage a third category which Burtraw and colleagues have described as "linking by degrees".[57] Whilst this broader construction does not yet represent a settled definition of the concept, it is preferable to the orthodox understanding by providing a more nuanced organising framework which also accommodates an incrementalist dynamic. The contribution to theory of such a

[53] John Braithwaite and Peter Drahos, *Global Business Regulation* (Cambridge University Press 2000) 562.
[54] David Driesen, 'Linkage and Multilevel Governance' (2009) 19 Duke Journal of Comparative and International Law 389, 404.
[55] Jaffe, Ranson and Stavins (n 33) 789.
[56] Ipshita Chaturvedi, 'One Scheme to Bind Them All? Should Emissions Trading Schemes Be Linked' (2014) 17 Asia Pacific Journal of Environmental Law 91, 93.
Whilst it is possible to construct further subcategories, such as "direct and comprehensive linking" and "direct and limited linking", as suggested by Roßnagel, it is not proposed to adopt such a classification here: see Roßnagel (n 33) 396-397.
[57] Burtraw and colleagues (n 38).

classification is that it provides a map to the complex and changing world of emissions trading by more fully defining and classifying linkages.

4.3.2(i) Direct Linkage

To establish a direct linkage between two systems, either one or both systems must accept the other's allowances or credits as valid for use in demonstrating compliance in its domestic system.[58] Direct linkages can be distinguished by whether they permit trading in one or more directions.

A *unilateral direct linkage* can be said to exist in circumstances where one system's domestic legislation (or operating rules) provide that allowances from a foreign scheme are recognised for domestic compliance purposes. Therefore, whilst entities in one scheme may purchase and use allowances issued under another scheme for compliance purposes, the reverse does not apply. An administrator of a scheme can establish a unilateral link with another scheme by agreeing to accept allowances or credits issued by the other scheme for compliance purposes, as occurred with respect to Norway, prior to that country's full integration with the EU ETS. During Phase I of the EU ETS (2005 – 2007) Norway accepted allowances from the EU ETS for compliance purposes with its domestic scheme, but the EU did not reciprocate by accepting Norwegian allowances.[59] In circumstances where scheme A establishes a one-way link by recognising scheme B's allowances, if scheme A's allowance price is the higher of the two, then inter-trading can be expected to occur until the prices of the two schemes stabilise at an intermediate level. Similarly, if scheme A's prices are lower to begin with, then there is no incentive for regulated

[58] Jaffe, Ranson and Stavins (n 33) 796.
[59] Andreas Türk, Michael Mehling, Christian Flachsland and Wolfgang Sterk, 'Linking Carbon Markets: Concepts, Case Studies and Pathways' (2009) 9 Climate Policy 341, 343.

entities to engage in inter-scheme trading.[60] In practice, this would serve to function as a price cap. Thus, Norwegian firms would not purchase EU allowances until such time as the price of Norwegian allowances exceeded that of the EU allowances. The Memorandum of Understanding ("MoU") of the Regional Greenhouse Gas Initiative ("RGGI"), a carbon trading partnership of nine US states, also provided for a unilateral link to the EU ETS conditional on the breach of a price ceiling for RGGI allowances.[61] Since the price ceiling was never triggered, the "safety valve" was not invoked in practice. However, this provision is demonstrative of the diversity of unilateral direct linkage models.

A *bilateral direct linkage* occurs when two trading schemes mutually recognise allowances as eligible for compliance, thereby facilitating two-way traffic between the schemes. If more than two schemes participate, such a link is characterised as a *multilateral direct linkage*, as it permits the flow of allowances between multiple trading schemes. The implementation of bilateral or multilateral linkages necessarily involves considerable coordination to synchronise the relevant legislation and rules governing each scheme.[62] Depending on the design features of the linked schemes, bilateral direct linkage will tend to gradually harmonise the allowance prices of the linked schemes. Consequently, even though a price variation may exist when the linkage is first implemented, operators in the scheme with the higher price can be expected to purchase allowances from sellers in the lower-price scheme, a phenomenon which will persist until a common convergence price is achieved across the linked schemes.[63] However, if multiple emissions trading schemes establish

[60] Judson Jaffe and Robert N Stavins, Linking Tradable Permit Systems for Greenhouse Gas Emissions: Opportunities, Implications, and Challenges (International Emissions Trading Association 2007) 11.
[61] Regional Greenhouse Gas Initiative Memorandum of Understanding, 20 December 2005, clause F(4)(a) 'Safety Valve Trigger'.
[62] Türk and colleagues (n 59) 343.
[63] This general observation on a macro level potentially conceals variations which occur at a micro level. Net sellers in a system with a low price will be better off after a link to a system with a higher price, but net

linkages with one another, the governance of emissions trading becomes characterised by ever-increasing complexity. For example, as Blyth and Bosi have elaborated:

> Negotiations, by definition, are about compromises, with an uncertain outcome. Non-EU countries interested in linking their domestic trading scheme with the EU ETS might have an interest in being first in line in any linking negotiations with the EU. Once bilateral negotiations on linking the two schemes and decisions have been made on eligible units and compliance regimes of the linked schemes, then a third country wishing to link with an 'expanded-EU' scheme might very well need to negotiate with the two parties: the EU and the linked country, and no longer only the EU.[64]

From an EU legal system perspective, Article 12 of the EU ETS Directive provides that, where allowances are recognised under Article 25, Member States must facilitate the transfer of such allowances, without restrictions, between persons within the EU and persons in third countries.[65] As such, the Directive not only promotes the concept of linkage, but also clearly facilitates the mechanics of bilateral direct linkage.

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buyers in the lower price system will be worse off after linking. See Jaffe, Ranson and Stavins (n 33) 800.
[64] William Blyth and Martina Bosi, *Linking Non-EU Domestic Emissions Trading Schemes with the EU Emissions Trading Scheme* (Organisation for Economic Cooperation and Development 2004) 31.
[65] However, Article 12(1)(b) expressly permits the adoption of restrictions pursuant to the Directive or otherwise contained within it.

4.3.2(ii) Indirect Linkage

Indirect linkage can be said to occur between two emissions trading schemes, A and B, under conditions where each scheme is not linked to each other, but where each is instead linked to a third common crediting mechanism. In such circumstances, schemes A and B have entered into an arrangement where (a proportion of) allowances in each respective scheme may be sourced from an external mechanism to which both are linked. In practice, the proliferation of indirect linkages should "result in partial convergence of carbon prices and marginal abatement costs across different emissions trading schemes which improve their cost effectiveness as a whole".[66] As Chapter 6 reveals, however, the transition from theory to practice with respect to indirect linkage has not been seamless with O'Neill describing the CDM as "an archetype of what happens when an elegant economic idea is pasted onto a messy, uncertain, and contested political terrain".[67]

Over the course of the past decade, as schemes implemented linkages to the CDM, the emergence of a web of mostly indirect linkages had, for some time, seemed likely.[68] This gave rise to a perspective, evident in the literature, that indirect linkage via a common emission-reduction-credit system, such as the CDM, could emerge as an important pillar of the developing climate governance architecture.[69] This prospect has grown more distant, particularly as the CDM is "losing its central role as a source of offsets for world carbon

[66] Rob B Dellink, Stéphanie Jamet, Jean Chateau and Romain Duval, 'Towards Global Carbon Pricing: Direct and Indirect Linking of Carbon Markets' (2014) 2013 OECD Journal: Economic Studies 209, 223.
[67] Kate O'Neill, *The Environment and International Relations* (2nd edn, Cambridge University Press 2016) 217.
[68] For example, the EU ETS Directive continues to accommodate limited linkage. The Chicago Climate Change also has a link with the CDM, as does Japan.
See Timo Behr and Jan Martin Witte, *Towards a Global Carbon Market: Potential and Limits of Carbon Market Integration* (Global Public Policy Institute 2009) 7.
[69] Jaffe, Ranson and Stavins (n 33) 803.

markets".[70] The CDM has been the subject of sustained criticism, as Chapter 6 considers in detail and, at the time of writing, there is a lack of clarity regarding the mechanism's post-2020 future.

The core dynamic of the CDM is the issuance of CERs – each one of which corresponds to one ton of comparable CO_2 equivalents (tCO_2e) – for voluntary emission reduction projects in developing countries that ratified the Kyoto Protocol, but are not among the Annex B countries subject to the Protocol's emission limitation commitments. CERs may be used by Annex B countries to contribute to satisfying their domestic carbon reduction obligations under the Protocol and for compliance purposes by participating entities in cap-and-trade schemes in such countries. Whilst economic theory suggests that well-functioning crediting mechanisms have "very large potential for saving costs, reflecting the vast low-cost abatement potential existing in a number of emerging and developing countries",[71] the operation of the CDM in practice has attracted considerable controversy, a theme which is revisited and explored in Chapter 6. However, whilst the CDM is the most significant source of offsets within the global carbon markets infrastructure, it is not the only offset mechanism. For example, participating entities in the KETS are only permitted to surrender offset credits which have been generated as a result of domestic projects (as opposed to overseas projects), so-called Korean Offset Credits (KOCs).[72] KOCs are issued for abatement for either local CDM projects or local non-CDM offset projects, but in practice "most KOCs are known to have been issued for emission reductions within local CDM projects."[73]

[70] Matthew Ranson and Robert N Stavins, 'Linkage of Greenhouse Gas Emissions Trading Schemes: Learning from Experience' (2016) 16(3) Climate Policy 284, 287.
[71] Dellink, Jamet, Chateau and Duval (n 66) 220.
[72] Younghun Choi, 'Korean Offset Market Development' in ICIS, *Carbon Markets Almanac 2016: Global Developments & Outlook* (Reed Business Information Ltd 2016) 58.
[73] ibid.

The contribution of offset schemes to enhancing climate governance arrangements remains highly contested,[74] however, the CDM has nonetheless "developed a substantial constituency despite concerns about its performance".[75] It is reasonable to expect that the CDM, or a successor mechanism, will remain a feature of the climate governance landscape beyond 2020. However, forecasting with accuracy the future influence of offset schemes in market-based climate governance is a much more challenging undertaking particularly since, in its current form, the CDM has raised "a number of concerns that are comparatively greater than those arising from direct linkage".[76]

4.3.2(iii) Linkage by Degrees

Linkage by degrees may be understood as the incremental alignment of key design features of emissions trading schemes "prior to the potential introduction of formal linking enabling the exchange of allowances or offsets".[77] Such an approach recognises that a global carbon market is likely to occur incrementally in a staged process. This perspective challenges the orthodox position that a global trading architecture can only be framed via multilateral climate negotiations and the contrary perspective that the "quest to build inclusive trading markets" should be entirely abandoned in favour of short-term political deals.[78] As such, linkage by degrees represents a via media between the Scylla of investing excessive energies in a flailing multilateral negotiation process and the Charybdis of atomised and potentially conflictive climate governance

[74] See Steffen Böhm and Siddhartha Dabhi (eds), *Failures of Global Carbon Markets and CDM? Upsetting the Offset: The Political Economy of Carbon Markets* (MayFlyBooks 2009) where a range of critiques are advanced.
[75] Jaffe, Ranson and Stavins (n 33) 807.
[76] Dellink, Jamet, Chateau and Duval (n 66) 229.
[77] Burtraw and colleagues (n 38) 9.
[78] Thomas Heller, 'Climate Change: Designing an Effective Response' in Ernesto Zedillo (ed), *Global Warming: Looking Beyond Kyoto* (Brookings Institution 2007) 115, 140.

initiatives. An incrementalist perspective, consistent with the "building blocks approach" advanced by Falkner, Stephan and Vogler, instead "recognise[s] that domestic policies need to be embedded in a broader international effort".[79] In the context of carbon trading, Petsonk has advocated the creation of "docking stations", spaces in the emerging carbon market infrastructure inviting new participants to "dock in" to the market.[80] Such docking stations could incentivise the adoption of emissions caps, provide substantive and procedural assistance to countries developing emissions trading schemes, and facilitate linkage with existing schemes. It is an approach which is gaining favour: the Commission has already recognised that it should actively facilitate wider participation in emissions trading by "help[ing] interested developing countries gain experience in emissions trading, in particular set[ting] up sound governance structures and strong domestic institutions and to boost their capacity to monitor and report emissions".[81]

Linkage by degrees represents a species of Petsonk's docking station by providing a process by which design features of emerging schemes may be pre-emptively synchronised or later gradually reconciled where potentially conflictive differences could otherwise emerge. Gilbert has sensibly recognised that "[g]radual linking creates the danger that two or more alternate larger schemes will develop at the international level that may ultimately be incompatible".[82] Therefore, it is fundamentally important that, as emissions trading schemes emerge, "considerable efforts are made in all directions to prioritise linking in the

[79] Robert Falkner, Hannes Stephan and John Vogler, 'International Climate Policy After Copenhagen: Towards a 'Building Blocks' Approach' (2010) 1(3) Global Policy 252, 259.
[80] Annie Petsonk, '"Docking Stations:" Designing a More Welcoming Architecture for a Post-2012 Framework to Combat Climate Change' (2009) 19 Duke Journal of Comparative and International Law 433, 437.
[81] Commission, 'Building a Global Carbon Market' (n 10) 9.
[82] Gilbert (n 35) 920.

future".[83] Betsill and Hoffmann have suggested that policymakers often "survey the landscape for possible design options and adapt design elements to fit the context of their particular venue".[84] Whilst this bodes well for the EU ETS – as the most developed carbon market – it would be overly idealistic to assume that establishing linkages between developed markets will be a straightforward process. Quite understandably policymakers will be primarily concerned with creating a functioning domestic scheme and whilst existing emissions trading schemes may prove instructive in this process, it is unlikely they will prove determinative in the design process. Although Norway's scheme was "designed to be compatible with the EU ETS in scheme participation, allowance allocation, monitoring, reporting, verification, registry operation and compliance mechanisms",[85] other jurisdictions are much less likely to adopt the EU ETS blueprint en masse without potentially diverging domestic refinements.[86]

It should be recalled that the challenge is not constructing perfectly identical emissions trading schemes, but rather facilitating alignments representing "the de minimis amount of alignment that must occur before formal linking".[87] Compatibility, not identity, is the crucial touchstone. Such an approach does not put a premium on the lowest common denominator, but rather seeks to construct a global framework incrementally by degrees. Similarly, such an approach does not seek to limit the degree of convergence

[83] ibid.
[84] Betsill and Hoffmann (n 7) 100.
[85] Mace and Anderson (n 2) 202.
[86] Norway already adopts much EU legislation and contributes about €240 million annually to the EU budget. Former Norwegian prime minister, Erna Solberg, has candidly observed that "[n]ot many countries would live with such a position": see Anne Leer, 'Norway's EU Deal "Not Right for the UK"' (BBC News, 18 April 2013) <http://www.bbc.co.uk/news/world-europe-22188028> accessed 14 April 2017.
As Gilbert has noted: "[T]he Norwegian market was itself very small, and geographical and trading links are already strong with the EU": see Gilbert (n 36) 920.
However, commentators have also suggested that the EU ETS may represent the best prototype: see Denny Ellerman, 'The EU Emissions Trading Scheme: A Prototype Global System' in Joseph Aldy and Robert N Stavins (eds), *Post-Kyoto International Climate Policy: Implementing Architectures for Agreement* (Cambridge University Press 2010) 88 and Sheila Olmstead and Robert N Stavins, 'Three Key Elements of a Post-2012 International Climate Policy Architecture' (2012) 6(1) Review of Environmental Economics and Policy 65, 76.
[87] Burtraw and colleagues (n 38) 10.

which may conceivably occur, but rather promotes convergence where possible by recognising the multi-speed nature of emissions trading experimentation. Whilst the objective of establishing a global carbon trading architecture via a universal and comprehensive treaty should not be disregarded and the certainty offered by the binding force of such an approach is attractive, Hoffmann's observation that the future of multilateral negotiations "appears dim" provides a salutary warning against misplaced confidence in such a pathway.[88] Instead, an incremental approach focusing on finding common ground on which to link schemes has much to recommend it and could both supplement and support international climate policy.[89] Assessing opportunities for incremental alignment between emissions trading schemes should aim to identify what might be considered as "low-hanging design features": those features which represent administratively straightforward opportunities for harmonisation. Such steps could also generate momentum for deeper coordination since early harmonisation of scheme design features such as emissions monitoring and reporting, allowance tracking, and auctioning of allowances would likely provide "administrative efficiencies for jurisdictions and market participants".[90]

4.3.3 Determinants of Linkage

The decision to implement linkage is complex and informed by a number of strategic environmental, economic, and political determinants. Whilst linkage policy formation is likely to maintain a "sharp focus on economic functionality",[91]

[88] Hoffmann (n 17) 11.
[89] Gilbert (n 35) 925.
[90] Kathryn Zyla, 'Linking Regional Cap-and-Trade Programs: Issues and Recommendations' (Georgetown Climate Center, April 2010) <http://www.georgetownclimate.org/linking-regional-cap-and-trade-programs-issues-and-recommendations> accessed 14 April 2017.
[91] Chaturvedi (n 56) 93.

it is also important to emphasise, consistent with the vision of market trading espoused in Chapter 2, that the theoretical basis for advancing emissions trading in this thesis is not predicated on free market environmentalism, but rather an instrumentalist perspective that the market may be used for economic efficiency (amongst other purposes) to advance an environmental objective, namely that of reducing carbon emissions.[92] It is impossible to exhaustively enumerate, much less forensically comparatively measure, all determinants of linkage. Indeed, the value and weight attached to each determinant will vary from one jurisdiction to another.

The linkage negotiations between the EU and Australia revealed the varying reasons of each jurisdiction for pursuing linkage. For example, whilst the EU had emphasised that Australia is expected to be a net importer of allowances, Australia on the other hand focused on the interconnectedness of the EU and Australian economies and emphasised the stability and credibility associated with implementing linkage to a much larger and more well-established emissions market such as the EU ETS.[93] As Chapter 7 explores further, the reasons for South Korea and the EU to pursue linkage are also varied. At more than three times the size of the KETS, the EU ETS would provide South Korean market participants with a significantly wider range of abatement opportunities.[94] However, the KETS is the second largest emissions trading scheme in the world and it is reasonable to surmise that EU policymakers would view this as a material consideration given that the KETS is likely to exert a non-negligible influence on the overall allowance price across

[92] Eckard Rehbinder, 'Ecological Contracts: Agreements Between Polluters and Local Communities' in Gunther Teubner, Lindsay Farmer and Declan Murphy (eds), *Environmental Law and Ecological Responsibility: The Concept and Practice of Ecological Self-Organization* (John Wiley & Sons 1994) 147.
[93] Sampo Seppänen and colleagues, *Demand in a Fragmented Global Carbon Market: Outlook and Policy Options* (Norden 2013) 53.
[94] Hawkins and Jegou (n 24) 39.

the linked schemes by contributing to price stability and a higher common allowance price.[95]

Consequently, determinants of linkage are construed and defined in unique spatiotemporal contexts. Such value-based judgments are also subject to reinterpretation and, as fluctuations in Australian climate policy have illustrated, the values attached to determinants are subject to political reframing. For example, in July 2014 the Australian government passed legislation to terminate Australia's plans to implement an emissions trading scheme and by so doing reversed the previous government's negotiated arrangements with the EU to implement bilateral linkage in 2018.[96] This policy shift was somewhat surprising, particularly given that "the initiative [had come] mainly from the Australian side",[97] but this experience demonstrates the complexity of governing emissions trading and the susceptibility of climate policy to political swings. This is consistent with the highly fluid nature of emissions trading analysed in Chapter 3.

Comprehensively defining and cataloguing determinants of linkage is further complicated by the fact that any such determinant may often also be construed as an *implication* of linkage. As potential implications of linkage are assessed in Section 4.4, it is not proposed to additionally and separately consider the determining qualities of each implication here. However, by way of example, as is considered in Section 4.4.2, linkage produces multiple and varied economic implications including uneven distributional impacts. It is reasonable to assume that each jurisdiction, informed by rational policymakers,

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[95] ibid.

[96] Rob Taylor and Rhiannon Hoyle, 'Australia Becomes First Developed Nation to Repeal Carbon Tax' *The Wall Street Journal* (New York, 17 July 2014) <http://www.wsj.com/articles/australia-repeals-carbon-tax-1405560964> accessed 14 April 2017.

[97] Jørgen Wettestad and Torbjørg Jevnaker, 'The EU's Quest for Linked Carbon Markets: Turbulence and Headwind' in Todd L Cherry, Jon Hovi and David M McEvoy (eds), *Toward a New Climate Agreement: Conflict, Resolution and Governance* (Routledge 2014) 266, 274.

will assess the potential implications of any direct linkage. Such potential future implications would therefore also retain a determining quality. Consequently, it is reasonable to expect that each potential implication of linkage, as envisaged in advance by policymakers in a particular jurisdiction, will also influence that jurisdiction's decision to implement (or not implement) linkage. As such, it is likely that what may be perceived as an implication of linkage may properly, under another lens, also be construed as a determinant of linkage.

Moreover, policymakers in one jurisdiction will consider the prospects of linkage under a localised lens. Whether a rational assessment is ultimately reached after weighing determinants is quite another matter, particularly given the uniquely contextual considerations outlined above. There is also no guarantee that rational decision-making will always prevail during such deliberations. Governments may, for example, be "far more concerned with political and economic dogma than with rational and evidence-based decision-making".[98] The then Australian Prime Minister, Tony Abbott, questioned the settled nature of climate science and, in particular, the degree to which human conduct is responsible for climate change despite the unequivocal consensus of the IPCC on this matter.[99] Unsurprisingly widespread commentary regarding the then Australian Government's abandonment of emissions trading considered that political factors had been influential.[100] Consistently, withdrawal from the Kyoto Protocol has demonstrated that "[t]he politics of carbon is also readily

[98] Neil Gunningham, 'Environmental Law, Regulation and Governance: Shifting Architectures' (2010) 21(2) Journal of Environmental Law 179, 211.

[99] In its most recent Fifth Assessment, the IPCC concluded that it is now "extremely likely that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in greenhouse gas concentrations and other anthropogenic forcings together". See Intergovernmental Panel on Climate Change, 'Climate Change 2014 Synthesis Report Summary for Policymakers' (2014) Intergovernmental Panel on Climate Change: Fifth Assessment Report (AR5), 5 <http://ipcc.ch/pdf/assessment-report/ar5/syr/AR5_SYR_FINAL_SPM.pdf> accessed 14 April 2017.

[100] Abbott has observed that "[t]here are lots of legitimate questions about [t]he extent [of climate change], how much humans are causing it, and certainly there is a very real and necessary debate about the mechanism for dealing with it." See Alexander White, 'We Need to Call out Abbott's Climate Nihilism' *Guardian Australia* (Sydney, 22 August 2014) <http://www.theguardian.com/environment/southern-crossroads/2014/aug/22/tony-abbott-climate-denial-weathervane-nihilism> accessed 14 April 2017.

apparent in Canada".[101] In a considerable number of jurisdictions climate change remains a highly contested political issue and despite the long-settled consensus within climate science,[102] reservoirs of scepticism exist. Indeed, Paterson is likely correct to emphasise that "where climate policies are contested, as in the United States and Australia, this contestation is *less about the use of markets* in the design of climate policy, but more a question of *reinvigorated opposition to climate change action per se*".[103] This suggests that domestic political opposition and prevailing political mores within a jurisdiction are materially relevant considerations which should be regarded as individual determinants, but also as factors which influence and shape the surrounding conditions under which *all* determinants are interpreted.

However, in some contexts, the political climate may also encourage linkage and it has been observed that "political strengthening may be lurking behind the enthusiasm of some linking proponents".[104] This reflects a perspective that an emissions trading scheme which is more integrated through linkage with other schemes is less susceptible to weakening and dismantling in the future, what some scholars have described as "institutional lock-in".[105] Ultimately, however, the determinants of linkage are framed (and reframed) within conditions unique to each jurisdiction and assessment of the potential implications of linkage – or at least those implications which are reasonably foreseeable – should also be understood as likely determinants of linkage. For the purposes of discussion and analysis, this Chapter has separately

[101] Shaun Fluker and Salimah Janmohamed, 'Who Regulates Trading in the Carbon Market?' (2014) 26(2) Journal of Environmental Law and Practice 83, 118.
[102] The IPCC concluded, as far back as 1995, that there was strong scientific evidence that human activities were affecting global climate. In its Third Assessment Report in 2001, the IPCC stated unequivocally that human activities are having detectable effects on the Earth's atmosphere and hydrosphere.
[103] Paterson (n 22) 618 (emphasis added).
[104] Pizer and Yates (n 33) 145.
[105] Hawkins and Jegou (n 24) 23.

compartmentalised the determinants of linkage and the implications of linkage but, as the foregoing discussion has emphasised, this is for analytical purposes and it is not an assertion of the qualitative distinctiveness of the features of either a determinant or implication of linkage.

It has been suggested that the "single most significant predictor of systems linking may be proximity".[106] The early examples of linkage with the EU ETS have been with the EU's neighbouring EFTA Member States. Negotiations between the EU and Switzerland officially commenced in 2011, even though the Swiss emissions trading scheme was "initially rather different from the EU ETS, being a voluntary scheme and including a price floor".[107] Significant amendments were made to the Swiss emissions trading scheme in 2013 to enhance its compatibility with the EU ETS, including the introduction of a mandatory regime and the removal of price containment measures.[108] A linkage agreement was finally confirmed in January 2016, but implementation has been delayed as a consequence of a Swiss referendum vote favouring the introduction of immigration restrictions and the EU's response to suspend cooperation with Switzerland in a range of policy areas.[109]

The EU's early linkage negotiations with Norway and subsequently Switzerland suggests the significance of geographic proximity as a factor influencing decisions about linkage, a finding which is also consistent with existing patterns of trade agreements. For example, as Ranson and Stavins have emphasised, one of the most robust findings of analyses of negotiated trade agreements is that such agreements are most likely between nations that are in close geographic proximity, a fact which has largely been attributed to

[106] Ranson and Stavins (n 70) 287.
[107] Torbjørg Jevnaker and Jørgen Wettestad, 'Linked Carbon Markets: Silver Bullet, or Castle in the Air?' (2016) 6(1-2) Climate Law 142, 147.
[108] Hawkins and Jegou (n 24) 33.
[109] Jevnaker and Wettestad (n 107) 147.

transportation costs and market information.[110] In addition, it is reasonable to expect that countries which are near to each other are also more likely to enjoy a pre-existing heightened culture of cooperation since neighbouring countries often work closely on other issues. This is certainly true in the case of the EU and EFTA where both entities enjoy highly developed harmonisation arrangements in policy areas beyond climate governance. For example, in the context of passport and immigration controls harmonisation, commonly referred to as "the Schengen area", EFTA Member States are more fully integrated with the EU than some EU Member States.[111] In a similar vein to the EU's first linkage experimentation with other European countries, the experience of the Regional Greenhouse Gas Initiative (RGGI) in the United States, a cooperative effort by ten US northeastern and mid-Atlantic states to limit GHG emissions, further suggests the influence of geographic proximity as an important determinant of linkage.

Elsewhere, the determinants of linkage have been identified more broadly with Seppänen and colleagues observing that "linking is more likely between countries with closely linked economies, regulatory systems and climate objectives".[112] This is not inconsistent with proximity representing the "most significant predictor" of linkage.[113] Indeed, it is not surprising that countries in close proximity may also share pre-existing economic links and more similar regulatory systems, potentially even more closely aligned climate policy objectives. Furthermore, where economies are already closely integrated, much closer linkage arrangements may be possible at an earlier juncture. In

[110] Ranson and Stavins (n 70) 287 applying the findings of John Tinbergen, *Shaping the World Economy: Suggestions for an International Economic Policy* (Twentieth Century Fund 1962).
[111] Ireland and the UK have negotiated opt-outs from the Schengen accord.
[112] Seppänen and colleagues (n 93) 57.
[113] Ranson and Stavins (n 70) 287.

other words, more advanced progress through linkage by degrees is possible along what might be construed as a spectrum of convergence.

4.4 The Implications of Linkage

4.4.1 Overview

The EU has been a leader in pioneering emissions trading and, as Andrei has observed, its efforts have "been largely responsible for the fact that a cap and trade system is one of the options many jurisdictions around the world are examining".[114] However, the implementation of linkage between schemes will not be effects-neutral on the EU ETS, but rather linkage will have diverse and continuing implications. Consequently, it remains important to consider the merits of each specific direct linkage and, separately, the normative preference that linkage should form an integral element of the developing international climate governance architecture. As linkage by degrees recognises, creating the correct building blocks to facilitate future direct linkage should involve emissions trading schemes collaborating to work towards the harmonisation of specific design features.[115]

Governing a global carbon market will prove challenging since the development paths of individual emissions trading schemes are less an exercise in social engineering in which apolitical design principles predominate, but rather the product of conditions specific to the domestic economic and political context.[116] In other words, as Türk and colleagues have observed,

[114] Lars Zetterberg, *Linking the Emissions Trading Systems in EU and California* (FORES: Swedish Environmental Research Institute 2012) 45.
[115] Gilbert (n 35) 920.
[116] Eric Knight, 'Market Design and Maturity in the Asia Pacific' in Geert van Calster, Wim Vandenberghe and Leonie Reins (eds) *Research Handbook on Climate Change Mitigation Law* (Edward Elgar Publishing 2015) 499, 506.

"[e]ach ETS, in its design, reflects the evolution of climate policy and other specific circumstances in the country concerned".[117] Yet the importance of maintaining a degree of compatibility with other emissions trading schemes and maximising the potential for synergistic implications, whilst unlikely to feature prominently in domestic discussions, is fundamental to the prospects of successfully implementing linkages. The creation of bilateral working groups incorporating developed and economically more advanced developing countries to consider the design of emissions trading schemes would be very welcome, particularly since before moving forward with linkage negotiations, it will be important to conduct a "feasibility analysis to ascertain if linkage is likely to be workable and if issues are capable of leading to agreement".[118]

4.4.2 Economic Implications

Kruger, Oates and Pizer have observed that "[t]he economic underpinnings of linking are seemingly unassailable".[119] Economic theory suggests that linking schemes should enhance allocative efficiency and lower the costs for attaining the combined cap since greater reduction options are available in a linked scheme.[120] A project is allocatively efficient if its benefits match its costs.[121] As Chapter 2 has considered, the prevalence of economic concepts in climate governance discourse and practice is contested. Yet there is also increasing

[117] Türk and colleagues (n 59) 349.
[118] Seppänen and colleagues (n 93) 60.
[119] Joseph Kruger, Wallace Oates and William A Pizer, 'Decentralization in the EU Emissions Trading Scheme and Lessons for Global Policy' (2007) 1(1) Review of Environmental Economics and Policy 112, 122.
[120] Erik Haites and Xueman Wang, 'Ensuring the Environmental Effectiveness of Linked Emissions Trading Schemes Over Time' (2009) 14 Mitigation and Adaption Strategies for Global Change 465, 475.
[121] William Baumol and Wallace Oates, *The Theory of Environmental Policy* (2nd edn, Cambridge University Press 1988) 23.

acknowledgement of the materiality of efficiency as a guiding policy principle.[122] It is important that this guiding policy principle should not detract, however, from the core underlying environmental objective and there is a need for continued vigilance to ensure that this objective remains the core focus of linkage-oriented policymaking.

Beyond allocative efficiency, direct linkage should also produce price equalisation between linked schemes as a consequence of allowance fungibility across schemes. Moreover, linkage is likely to reduce competitive distortions and limit the scope for carbon leakage. Linkage cannot, of course, in the absence of complete coverage eradicate carbon leakage, but a developing network of direct linkages would reduce opportunities for carbon leakage. A larger carbon market, both in terms of allowances and participants, is likely to reduce transaction costs and increase market liquidity. Anger has suggested that "[f]rom an efficiency perspective, a desirable future climate policy regime represents a joint trading system that enables international emissions trading between ETS companies and governments under a post-Kyoto agreement".[123] Moreover, he has estimated that certain linking configurations could cut EU compliance costs by as much as 60%.[124] Whilst studies diverge on the precise reductions in compliances costs which linkage could deliver, Flachsland, Marschinski and Egenhofer have concluded that "no system will be worse off after linking than it was before".[125]

However, whilst linkage should theoretically yield cost savings, on an individual basis, linkage will also create winners and losers. The distributional

[122] Harriet Bulkeley and Peter Newell, *Governing Climate Change* (2nd edn, Routledge 2015) 31.
[123] Neils Anger, 'Emissions Trading Beyond Europe: Linking Schemes in a Post-Kyoto World' (2008) 30 Energy Economics 2028, 2046.
[124] Implementation of linkages with Canada, Japan and former USSR states, could reduce total EU compliance costs by more than 60%": ibid 2046.
[125] Christian Flachsland, Robert Marschinski and Ottmar Edenhofer, 'To Link or Not to Link: Benefits and Disadvantages of Linking Cap-and-Trade Schemes' (2009) 9(4) Climate Policy 358, 360.

impacts of linkage, for example, will be uneven and not all regulated entities will benefit from linkage. In fact, whether an individual firm is a net loser or winner may depend on a number of more specific factors beyond the implementation of linkage itself including their marginal abatement costs, whether they are in the higher-cost or lower-cost linked scheme, and the method of allowance allocation.[126] At the outset net buyers in the lower price system will be worse off post-linking as prices rise to stabilise with the higher price system.[127]

Such distributional concerns are also not confined to individual firms. Linkage could inadvertently create perverse incentives for a national regulator to over-allocate allowances so as to increase their expected economic benefits from linkage. The consequences of such a game-theoretic approach would, of course, extend beyond the economic implications considered and potentially undermine the environmental integrity of the framework. However, Flachsland, Marschinski and Egenhofer believe that such an outcome is unlikely given the reputational damage and threat of import quotas or other penalties which would result.[128] A partner emissions trading scheme could also ultimately de-link if such concerns materialised in practice.[129]

4.4.3 Political Implications

Whilst there are a number of fundamental economic considerations which result from linkage, significant political implications are also engaged. It is helpful, from an analytical perspective, to primarily compartmentalise between

[126] Ranson and Stavins (n 70) 290.
[127] Jaffe, Ranson and Stavins (n 33) 801.
[128] Flachsland, Marschinski and Edenhofer, 'To Link or Not to Link' (n 125) 362.
[129] Pizer and Yates (n 33) 144.

implications which are economic or political in nature.[130] Many implications, such as the price of allowances – which raises potential political feasibility implications beyond the more obvious economic considerations – defy easy classification and may appropriately fall within both classes.[131] The preferences of policymakers concerning allowance prices involves both economic and political considerations (amongst others) and the convergence of a common allowance price across linked schemes is likely to result in implications which can be understood as both economic and political. In addition, it is also possible to define the issue of converging allowance prices as a key determinant of linkage, since such a dynamic will have been anticipated by prospective linkage partners in advance and is likely to have been ascribed a value by policymakers prior to and during linkage negotiations. For example, as is explored in Chapter 7, it would not be unreasonable for a country with a relatively high domestic emissions price, such as South Korea, to have legitimate reservations about the implementation of direct linkage with a candidate partner scheme, such as the EU ETS, in circumstances where the prevailing price in that scheme was much lower.[132] Direct linkage, in such conditions, would result in the importation into South Korea of a considerable number of emissions allowances with corresponding financial flows to the EU, consequences which, it is reasonable to expect, would raise manifold economic and political implications.[133]

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[130] A categorisation consistent with the approach of other scholars: for example, see Zetterberg (n 114) and Flachsland, Marschinski and Edenhofer, 'To Link or Not to Link' (n 125).

[131] Beyond this admittedly broad classification, there may be particular regional considerations or industrial considerations within a jurisdiction. It is possible to define the former as falling, broadly, within the scope of political considerations, whilst the latter may reasonably be considered within the orbit of economic considerations.

[132] Christian Flachsland, Robert Marschinski and Ottmar Edenhofer, 'Global Trading Versus Linking: Architectures for International Emissions Trading' (2009) 37 Energy Policy 1637, 1643.

[133] Similar concerns were evident in advance of an anticipated EU-Australian linkage: "[w]ith the EU carbon price remaining low, what is certain is that if the price does not increase to the budget prediction of $29 per tonne by 1 July 2015, Australia will likely have a $6.3 billion deficit in the carbon price revenue for that year".
See Kathyn Walker, 'This Little Aussie went to the Market… Australia Enters the International Carbon Market Without a Price Floor' [2012] National Environmental Law Review 43, 44.

Successful implementation of direct linkage is likely to require policymakers to compromise over (potentially) competing objectives and (potentially) conflicting design features, whilst achieving an appropriate balance between "leaving each government with sovereignty over its own system while providing linking partners adequate authority to influence those changes in linked systems that would materially affect their own system".[134] As such, a key political implication of linkage is a reduction in regulatory control since policymakers could not introduce material changes to a domestic scheme without consultation with (and, more likely, the consent of) direct linkage partners. Given this political implication, linkage has been characterised as producing "a form of shared sovereignty, which will imply some loss of control over aspects of mitigation policy".[135] As Meléndez-Ortiz has candidly recognised, the gains of direct linkage also come with, what some scholars and policymakers may construe as, a political cost, "most evidently a loss of regulatory control".[136] Assessing the political implications of pooling regulatory control in the context of emissions trading is a value-laden endeavour. Bodansky and colleagues, for example, have observed that "linkage may provide regulatory stability because it may be more difficult to introduce changes in an emission-reduction scheme when those changes require coordination with other countries with linked systems".[137] As a consequence, the prospect of more stable settings for climate policy could produce favourable interactions beyond linkage by reducing uncertainty for industry and providing a

[134] Jaffe and Stavins (n 60) 52.
[135] Ross Garnaut, *The Garnaut Climate Change Review: Final Report* (Cambridge University Press 2008) 11.
[136] Hawkins and Jegou (n 24) viii.
[137] Daniel Bodansky, Seth A Hoedl, Gilbert E Metcalfe and Robert N Stavins, 'Facilitating Linkage of Climate Policies Through the Paris Outcome' (2016) 16(8) Climate Policy 956, 958.

predictable regulatory context for investment in low-carbon technological research and development.

Therefore, direct linkage elevates emissions trading beyond the domestic sphere to a bilateral (and potentially multilateral) scale and, as such, provides a stronger signal of a jurisdiction's long-term climate policy commitments.[138] In practice, direct linkage will equalise carbon prices and reduce competitive distortions, implications which are intrinsically political as well as economic in nature.[139] However, as is evaluated in this thesis, implementation of linkage between emissions trading schemes requires careful analysis by scholars and policymakers and is likely to prove complex in practice, particularly since critical design features of one scheme may not be present in other potential partner schemes.[140] More generally, as this research demonstrates, the evolution of carbon markets to date has revealed emissions trading to be a complex instrument, often nestled in diverse governance arrangements, and the product of considerable political bartering. Emissions trading is not a de-regulatory tool, but instead requires intense administrative activity.[141] Indeed, the creation of carbon markets through government intervention is an innately regulatory endeavour and Lederer is correct to observe that such markets depend on "public state regulation for their existence and on good regulation for their daily functioning."[142] As Section 2.2.2 recognised, emissions trading is not an end in itself, but is instead a regulatory tool to advance the underlying environmental objective.[143]

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[138] Flachsland, Marschinski and Edenhofer, 'To Link or Not to Link' (n 125) 362.
[139] Zetterberg (n 114) 21.
[140] Metcalfe and Weisbach (n 36) 127.
[141] Lee (n 4) 146.
[142] Markus Lederer, 'Market Making via Regulation: The Role of the State in Carbon Markets' (2012) 6 Regulation & Governance 524, 537.
[143] Peter Zapfel and Matti Vainio, 'Pathways to European Greenhouse Gas Emissions Trading: History and Misconceptions' (2002) Fondazione Eni Enrico Mattei Working Paper Series 85/2002, 21.

It has been suggested that, in the short-term, for most existing or planned emissions trading schemes, the primary focus should be to create a functioning domestic scheme that could enable linkage in the future, rather than designing explicitly to facilitate linkage.[144] It is understandable that there will be a political emphasis on ensuring that a domestic emissions trading scheme launches and operates effectively given that the negative political implications of such high-profile policy failure would be significant, but also because the success of any subsequent direct linkage is conditional on well-functioning component schemes.[145] The fact that Australia and the United States, both identified as candidate linkage partners of the EU, proved unwilling to pursue development of a national emissions trading scheme demonstrates the political challenges inherent in building a global carbon market through linkage. Potential partner schemes are likely to proceed cautiously and policymakers may prefer to observe test phases of any new potential candidate scheme in order to appraise its performance before detailed exploration of direct linkage.[146] However, it is also clear that unless a scheme develops with some appreciation of linkage, the subsequent process of incremental implementation of direct linkage is likely to involve significant challenges particularly if conflictive design features have developed.[147]

Instead, some commentators have suggested, with reference to the EU and Norway as an example, that direct linkage should be explored as early as possible between schemes since it is "because schemes are in their formative phases, not in spite of it that [it] is an ideal time to set the foundation for …

[144] Chaturvedi (n 56) 109.
[145] Dellink, Jamet, Chateau and Duval (n 66) 227.
[146] Flachsland, Marschinski and Edenhofer, 'Global Trading Versus Linking' (n 132) 1643.
[147] Haug, Frerk and Santikarn (n 1) 20.

carbon market links".[148] The model of linkage by degrees, elaborated in Section 4.3.2(iii), envisions pathways to set such foundations by facilitating, from the earliest stages, incremental alignment of schemes' key design features. By conceptualising linkage as a spectrum which includes the promotion, without unnecessary delay, of regulatory dialogue to prevent the emergence of conflictive design features, linkage by degrees also incorporates within its scope the process by which the outcome (of a global network of direct linkages between schemes) is achieved. The relevance of early engagement with such a process should not be underestimated given that "the need to harmonise programs in advance" has been identified by some scholars as the "greatest obstacle to linking".[149] Chapter 5 engages with this concern by evaluating the modalities of linkage. Through identification and elaboration of the necessary criteria for successful linkage, Chapter 5 charts a potential pathway towards direct linkage and offers a perspective on how to structure such linkage.

4.5 Conclusion

With the growth in recent years of emissions trading schemes worldwide, there has been increased interest in the feasibility of implementing linkages between schemes. As the prospect of a comprehensive multilateral regime governing emissions trading has diminished, policymakers and scholars have instead focused on the challenges of creating an international carbon trading architecture from the bottom-up by linking emissions trading schemes. It has been suggested that "[u]nless there is a radical change of circumstances a

[148] Jackson Ewing, 'Beating Climate Change Through Innovative Carbon Markets in Northeast Asia' (2016) Asia Society Policy Institute 17 October 2016 <http://asiasociety.org/policy-institute/beating-climate-change-through-innovative-carbon-markets-northeast-asia> accessed 14 April 2017.
[149] Pizer and Yates (n 33) 145.

'global deal' leading to the creation of a world-wide cap-and-trade system will remain a political utopia".[150] This is particularly so given that the Paris Agreement has recently entered into force and, as such, "the creation of a second international framework is now a forlorn hope".[151]

However, rather than waiting for evolution of the post-Paris Agreement architecture, various transnational, national, and sub-national entities have developed independent, regional carbon-trading schemes.[152] Scholarly emphasises on the capacity of *only* a global deal to deliver a world-wide network of emissions trading schemes risks undervaluing the potential scope for incrementalist progress towards direct bilateral and multilateral linkages between emissions trading schemes. A global deal is not the only way, nor is it – in the present context – as unpacked in Chapter 3, the most likely path to create a globally linked emissions trading framework.

The concept of linkage is also undergoing redefinition. Whilst the classic definition of linkage denoted formal linkage between emissions trading schemes where allowances generated in one scheme are surrendered for compliance purposes in another linked scheme, it is also possible to instead reframe linkage as an incremental process, much like the development of climate governance architecture more generally. Linkage by degrees captures this dynamic and recognises that direct linkage is better considered as the objective of an incremental process facilitating the gradual de minimis alignment of schemes' design features.

The EU's experience with emissions trading, as explored in Chapter 2, has provided a "useful laboratory for considering the political, economic, and

[150] Behr and Witte (n 68) 47.
[151] Luke Kemp, 'US-Proofing the Paris Climate Agreement' (2017) 17(1) Climate Policy 86, 98.
[152] Pizer and Yates (n 33) 142.

administrative challenges that would be faced by a global trading system".[153] However, creating the necessary building blocks to facilitate incremental linkage of the EU ETS with emerging emissions trading schemes beyond the EU will require close coordination to ensure compatibility of critical design features. Of course, "not all linkages are created equal".[154] As this Chapter has elaborated, linkages may be one-way or two-way and direct or indirect. This adds a further layer of complexity to the already complicated challenge of governing emissions trading. Whilst bottom-up linkages between emissions trading schemes may be considered as reflecting the feasible rather than the optimal, the significance of such linkages in the establishment of a global carbon market is much more apparent when considered as elements of a building blocks approach advancing incremental evolution of an effective and expandable carbon market.

Movement towards convergence is likely to prove gradual, as linkage by degrees envisages, but the EU's choice of leadership model in seeking to export the Union's emissions trading blueprint is likely to prove material to the success (or otherwise) of this endeavour. As Chapter 2 demonstrated, for the EU to maximise its influence it will need to reassess the normative-based leadership model which has dominated the Union's approach to climate negotiations in favour of a more leadiator-oriented model which reconciles the EU's climate norms with a strategic and pragmatic focus on building bridges between partners. Andrei has noted that the EU ETS, being large and relatively well-developed, has often been seen as playing the role of docking station with most other emissions trading schemes as "takers" of the design features of the EU.[155] Indeed, this proved to be the case with the integration of Norway with the EU ETS. The emerging Swiss-EU relationship also reinforces the conclusion

[153] Kruger, Oates and Pizer (n 119) 130.
[154] Jaffe, Ranson and Stavins (n 33) 795.
[155] Zetterberg (n 114) 45.

that smaller states are more likely to be willing to adapt their rules to facilitate linkage with the EU.[156]

The future development of the EU ETS is closely entwined with international climate policy. As some scholars have sensibly recognised, the process of establishing linkage with other trading schemes could ultimately require changes in the design of the EU ETS.[157] Whilst this may prove particularly challenging for the EU, the potential dividends of linkage are significant and, as this Chapter has demonstrated, deepening carbon markets should reduce transaction costs and increase efficiency. Fundamentally, the implementation of direct linkage does not require that candidate partner schemes share identical design features but rather, as Roßnagel has explained, that "the systems should be similar enough for the objectives of one system not to be compromised by differences in the design of another system".[158] Chapter 5 builds on this conception of direct linkage by defining and evaluating which design features constitute what will be introduced as core convergence criteria and the challenges of and modalities for translating negotiated linkage compromises into viable and durable arrangements.

[156] Seppänen and colleagues (n 93) 55.
[157] Wråke, Burtraw, Löfgren and Zetterberg (n 30) 20.
[158] Roßnagel (n 33) 405.

CHAPTER 5

DIRECT LINKAGE:

THE CONTRIBUTION OF CORE CONVERGENCE CRITERIA

5.1 Introduction

The concept of linkage is now emerging as a central theme in the governance of emissions trading. The transformation of emissions trading in the EU from "seemingly politically impossible to practical implementation" in less than a decade is perhaps the most remarkable feature of the ascent of emissions trading as an EU regulatory tool.[1] However, from the outset it had also been recognised that by the elaboration and maturity of the EU ETS, the Union might well become the international standard setter and acquire an influential governance role through controlling the most important international regulatory effort to limit greenhouse gases. The then Environment Commissioner, Stavros Dimas, said as much, observing that the EU ETS is "going to be the prototype for the world to imitate".[2] To date, there has been little substantive synchronisation of the EU ETS with other emerging regional trading schemes. The notable exception to this has been the full integration of EFTA Member States with the EU ETS, a development which is not entirely surprising given the pre-existing heightened culture of harmonisation between the EU and EFTA Member States in a range of policy fields.[3]

[1] Markus Wråke, Dallas Burtraw, Åsa Löfgren and Lars Zetterberg, 'What Have We Learnt from the European Union's Emissions Trading System?' (2012) 41 Ambio: A Journal of the Human Environment 12, 13.
[2] Jørgen Wettestad and Torbjørg Jevnaker, 'The EU's Quest for Linked Carbon Markets: Turbulence and Headwind' in Todd L Cherry, Jon Hovi and David M McEvoy (eds), *Toward a New Climate Agreement: Conflict, Resolution and Governance* (Routledge 2014) 266, 268.
[3] As elaborated in Section 4.3.3.

The key challenge now lies in assessing how the modalities of implementing linkage between the EU ETS and other regional emissions trading schemes could be achieved *in the absence* of such a pre-existing harmonisation culture. This is particularly so given that a single global infrastructure to facilitate emissions trading has proven a "practical impossibility".[4] Fundamental to this task is identification and evaluation of the design features which are fundamental to successful linkage and the challenges of translating negotiated compromises into legally viable and durable linkage arrangements. As Chapter 4 has explored, the process of linkage does not require that linked schemes are perfectly synchronised in all respects, but rather that any partner scheme must be sufficiently similar to ensure that the objectives of one scheme are not compromised by differences in the design of another scheme.

Chapter 2 has emphasised that this thesis advances a perspective of economic incentivisation which is instrumentalist in nature: that the market can be used effectively for economic efficiency purposes to achieve carbon reduction objectives which are pre-determined by the state. The allure of market trading is not based on any ideological attraction to the instrument's market features, but rather that the proper implementation of emissions trading in practice holds out the prospect of advancing the desired decarbonisation objective. Given the urgency of the underlying climate science,[5] it is also critical that governance innovations in the realm of climate law are rooted in reality. To that end, it is increasingly clear that the prevailing realpolitik of climate change politics strongly

[4] William A Pizer and Andrew J Yates, 'Terminating Links Between Emissions Trading Programs' (2015) 71 Journal of Environmental Economics and Management 142, 143.

[5] For example, "16 of the 17 warmest years on record [have occurred] since 2001. Not only was 2016 the warmest year on record, but eight of the 12 months that make up the year – from January through September, with the exception of June – were the warmest on record for those respective months." See NASA, 'NASA, NOAA Data Show 2016 Warmest Year on Record Globally', Press Release (18 January 2017) <https://www.nasa.gov/press-release/nasa-noaa-data-show-2016-warmest-year-on-record-globally> accessed 14 April 2017.

suggests that "cap and trade will remain an aspect of the global response to climate change".[6] The recognition of this reality as a political fact requires that policymaking should appropriately take account of it. The governance limitations – and responsibilities to properly integrate these limitations in policymaking – imposed by Nelsonian knowledge of the presence and permanence of carbon markets in climate governance should not be overlooked.[7] As Dirix and colleagues have correctly emphasised, "it is highly doubtful that any proposed alternative [to emissions trading] could be put in place in time given the current climate of political inaction".[8]

This political reality has important implications for climate governance generally by limiting the range of policy options which have a realistic prospect of implementation. More specifically, this thesis is informed by the recognition that carbon markets are – and will remain – a central and enduring feature of any future climate governance landscape. Consequently, preparing for linkage by: first, fully understanding and deconstructing the implications of linkage, as Chapter 4 has explored; and second, by assessing the necessary convergence criteria for linkage and the modalities of linkage, as evaluated in this Chapter, are key research themes which require careful exposition beyond this thesis in the months and years ahead. Whilst much will be learned from the full implementation of the EU's first direct linkage in a not dissimilar learning-by-doing experimentalist theme to that which animated the early life of the EU ETS, it is also clear that the

[6] Michele Betsill and Matthew J Hoffmann, 'The Contours of "Cap and Trade": The Evolution of Emissions Trading Systems for Greenhouse Gases' (2011) 28(1) Review of Policy Research 83, 87.
[7] "It is dishonest for a man deliberately to shut his eyes to facts which he would prefer not to know. If he does so, he is taken to have actual knowledge of the facts to which he shut his eyes. Such knowledge has been described as 'Nelsonian knowledge'": *Twinsectra Limited v Yardley and Others* [2002] UKHL 12 LR 6 [112] (Lord Millett).
[8] Jo Dirix, Wouter Peeters, Johan Eyckmans, Peter Tom Jones and Sigrid Sterckx, 'Strengthening Bottom-Up and Top-Down Climate Governance' (2013) 13(3) Climate Policy 363, 375.

design and operation of the EU ETS for the past decade is instructive for other countries considering implementation of a carbon emissions trading scheme.

This Chapter is structured in two Sections. Section 5.2 explores the key design features of the EU ETS and defines and elaborates core convergence criteria which are considered as fundamental to successful implementation of direct linkage. It is emphasised that the core convergence criteria are non-negotiable in the sense that the dilution of these features of the EU ETS could compromise the environmental integrity of emissions trading. Section 5.3 identifies and critically evaluates the legal pathways by which direct linkage may be implemented, including the contribution of private law. This Chapter concludes by locating consideration of the prospects and modalities of linkage in the context of the incrementalist building blocks vision of constructing climate governance identified in Chapter 3.

5.2 Defining Core Convergence Criteria

The implementation of linkage between two emissions trading schemes entails significant challenges. As a threshold question, there may be normative barriers of the kind explored in Chapter 2 which initially resulted in a certain European allergy, invariably described as "norm entrapment", to the very concept of market trading as a climate governance tool.[9] Beyond this, however, the specific operationalisation of linkage requires that fundamental design features are compatible between linked schemes. Therefore, the maintenance of a minimal degree of convergence between emissions trading schemes is not only

[9] See Chapter 2 generally and Loren Cass, 'Norm Entrapment and Preference Change: The Evolution of the European Union Position on International Emissions Trading' (2005) 5(2) Global Environmental Politics 38 and Frank Schimmelfennig, 'The Community Trap: Liberal Norms, Rhetorical Action, and the Eastern Enlargement of the European Union' (2001) 55(1) International Organization 47.

necessary to ensure the operability of the scheme, but more fundamentally it is critical to ensure that the underlying environmental objective is not compromised. If design features of a scheme diverge too significantly from those of a linked partner scheme, market risks could develop concerning the stability of the linkage relationship and diminish investor confidence in the medium to long-term sustainability of linkage (and potentially emissions trading more generally).[10] In a departure from the current literature, this thesis seeks to identify the design features of an emissions trading scheme which constitute core convergence criteria and more specifically this Chapter defines and evaluates these criteria before considering mechanics to operationalise linkage.

5.2.1 The Necessity for Core Convergence Criteria

The cross-compatibility of certain fundamental design features across all linked schemes – construed as core convergence criteria in this thesis – is not optional but integral to the very functioning of any internationalised vision of emissions trading beyond the EU. The EU's Seventh Environment Action Programme provides that the EU ETS will "continue to be a central pillar of Union climate policy beyond 2020" but, given the increasingly fragmented climate governance landscape, troubling questions could emerge should the EU fail to attract a linkage partner during the current Phase III (which runs until 2020).[11] So far the EU has built its climate policy on the assumption that major trading partners will, over time, implement comparable policies and has retained a steadfast

[10] David Burtraw, Karen Palmer, Clayton Munnings, Paige Weber and Matt Woerman, 'Linking by Degrees: Incremental Alignment of Cap-and-Trade Markets' (2013) Resources for the Future Discussion Paper 04/2013.

[11] Decision No 1386/2013/EU of the European Parliament and of the Council of 20 November 2013 on a General Union Environment Action Programme to 2020 'Living well, within the limits of our planet' [2013] OJ L354/171 (Seventh Environment Action Programme), annex para 33.

commitment to this vision.[12] For example, the Seventh Environment Action Programme confirms that "the Union should pursue and further intensify climate change partnerships with strategic partners".[13] However, whilst international interest in the EU ETS has continued unabated, progress towards a substantive direct linkage has failed to move beyond conceptual exploratory talks. Concerns could emerge regarding the long-term survival of emissions trading as a purely EU experiment, particularly if radically alternative approaches develop in other jurisdictions.

As trading schemes emerge beyond the EU, there is now a fundamental need for early dialogue regarding core convergence criteria, particularly since the incremental alignment and wider adoption of key design features of emissions trading schemes could provide a routemap towards an international emissions trading framework. The EU can pro-actively engage in this process by embracing the leadiator leadership model explored in Chapter 2. By widely disseminating the lessons learned from the EU ETS – experiences which are particularly important given the fragmented trajectory of the global regime – the EU could influence the design features of planned and emerging schemes elsewhere.[14] This will require the EU to move beyond the normatively-entrenched approach which has dominated the Union's posture to climate negotiations to date. Instead, the EU will need to demonstrate a willingness to embrace multi-speed governance initiatives such as focusing on facilitating docking stations in emissions trading infrastructure of the kind explored in Chapter 3.

[12] Wråke, Burtraw, Löfgren and Zetterberg (n 1) 20.
[13] Seventh Environment Action Programme, annex para 99.
[14] Joseph Kruger, Wallace Oates and William A Pizer, 'Decentralization in the EU Emissions Trading Scheme and Lessons for Global Policy' (2007) 1(1) Review of Environmental Economics and Policy 112, 130.

Yet the EU must also uphold and protect the environmental integrity of the EU ETS. Navigating a route between promoting incremental progress, where possible, whilst adhering to the fundamental objective of environmental integrity will prove challenging for the EU. However, the EU can only secure the underlying environmental rationale for adopting emissions trading by making it clear that schemes which wish to link to the EU ETS must be consistent with defined core convergence criteria. As acknowledged in Chapter 4, the emerging literature regarding linkage by degrees offers such a prospect. This Chapter explores and evaluates the critical design features considered as constituting core convergence criteria: key elements which, in the absence of compatibility, far from furthering successful international emissions trading could instead undermine the credibility of this regulatory approach.

Linkage by degrees charts an incrementalist pathway towards direct linkage by fostering gradual compatibility between different trading schemes. It is possible that the commitment of potential partner schemes to a shared over-arching decarbonisation objective will translate into a degree of organic complementarity. There is some tentative evidence of this: Sterk and Schüle have noted that "some emerging regional schemes are broadly compatible with the EU ETS".[15] Yet other scholars have cautioned against misplaced complacency that complementary emissions schemes will organically evolve and instead emphasise that "if a global carbon market remains a priority… it is crucial to start early with the establishment of frameworks and procedures to promote harmonisation of critical design issues".[16] The fostering and maintenance of the necessary degree of complementarity in the form of the core convergence criteria

[15] Wolfgang Sterk and Ralf Schüle, 'Advancing the Climate Regime Through Linking Domestic Emission Trading Systems' (2009) 14 Mitigation and Adaption Strategies for Global Change 409, 413.
[16] Andreas Türk, Michael Mehling, Christian Flachsland and Wolfgang Sterk, 'Linking Carbon Markets: Concepts, Case Studies and Pathways' (2009) 9 Climate Policy 341, 355.

is not likely to result from the alignment of a common environmental commitment alone, but will instead require continuing close coordination between regulatory authorities. As such, synchronisation of the core convergence criteria is construed in this thesis as a process, rather than an event.

5.2.2 The Threshold for Identifying Core Convergence Criteria

The threshold for classification of a design feature as a core convergence criterion is inextricably linked to the fundamental carbon reduction objective which underpins emissions trading. Consequently, this thesis argues that the governing rule for identification of core convergence criteria must require that any divergence between schemes' design features which could ultimately compromise the environmental integrity objective is unacceptable.

Additional principles to govern consideration of how and whether to implement linkage between trading schemes, beyond environmental integrity, have been identified in the literature. For example, Mace and Anderson, have identified three additional principles comprising institutional capacity, economic efficiency, and equity.[17] They acknowledge environmental integrity as critical and interpret this principle as requiring that the linked trading schemes should not lead to fewer emissions reductions than if the schemes continued to operate independently. However, the additional principles of institutional compatibility, economic efficiency, and equity – whilst certainly of relevance in *guiding* trading schemes towards linkage – should not prove *determinative* in assessing whether linkage is appropriate. Whilst Mace and Anderson's research represents perhaps

[17] MJ Mace and Jason Anderson, 'Legal and Design Issues Arising in Linking the EU ETS with Existing and Emerging Emissions Trading Schemes' (2009) 6(2) Journal for European Environmental and Planning Law 197, 217.

the most comprehensive analysis to date exploring the implementation of linkage, this thesis departs from their analytical model by reconstructing the framework to implement linkage around a core objective of environmental integrity. By building on the instrumentalist rationale for emissions trading elaborated in Chapter 2, this thesis emphasises the supremacy of environmental integrity as a governing rule, not merely as one guiding principle amongst many. As such, the institutional compatibility considerations identified by Mace and Anderson may be more properly construed as ancillary to the governing rule and could, under certain conditions, prove necessary to ensure the maintenance of environmental integrity.[18] In such scenarios, however, environmental integrity remains the touchstone governing rule. Meanwhile, questions concerning economic efficiency are factors for each potential partner scheme to assess consistent with the complex potential implications of linkage considered in Chapter 4. However, it is difficult to envisage circumstances in practice where one emissions trading scheme would seriously consider, much less implement, linkage in the absence of mutual economic efficiency gains.[19]

The importance and influence of equity and fairness in constructing climate governance arrangements should not be understated and presents challenges for policymakers beyond the discrete context of emissions trading. There often exists an asymmetric power relationship between the importer and the exporter of environmental policies, usually in the form that the "weaker" actor

[18] For example, it is possible that the absence of a sufficiently robust institutional framework could undermine the environmental integrity of the EU ETS, but this ultimately translates into a concern regarding the environmental rigour of the scheme, even if institutional capacity may be the source of such a potential environmental deficiency.

[19] As Chapter 4 recognised, whilst it is practically impossible for separate trading schemes to treat participants exactly equally in economic terms, when viewed as a whole trading should lead to overall gains for each scheme, even if some individual participants or sectors may lose: see Kruger, Oates and Pizer (n 14) 122.
Jaffe, Ranson and Stavins make a similar point: "[W]hile yielding overall cost savings, linking can create both winners and losers": see Judson Jaffe, Matthew Ranson and Robert N Stavins, 'Linking Tradable Permit Systems: A Key Element of Emerging International Climate Policy Architecture' (2009) 36 Ecology Law Quarterly 789, 801.

wishes to gain resources from the "stronger" actor who can then impose access conditions, including the importation of a particular policy.[20] This political reality reflects the fundamentally unequal nature of international relations. Indeed, as Tucker observed, "[t]he history of the international system is a history of inequality par excellence".[21] Yet the nature of climate change, both with regards to the uneven historic responsibility for emissions and the likely uneven distribution of the consequences of such catastrophic climate change, presents very real and challenging questions concerning equity and fairness. Such inequalities are discernible in regional relationships too. There are, for example, inequalities in the diffusion of environmental regulatory practices within the EU and Kern, Jörgens and Jänicke have noted that "policy innovations initiated by smaller [EU] countries often determine behaviour *only* when larger and more influential countries like Germany or France adopt them as was the case with the diffusion of CO^2/energy taxes".[22] This is not to diminish the importance of principles of equity and fairness in climate law generally and emissions trading specifically, but rather to emphasise the importance of progress towards incrementally constructing an effective climate governance architecture by identifying minimum thresholds for establishing linkages.[23]

It is also possible – and perhaps even likely – that the implementation of direct linkage will not involve the direct export of the EU ETS as currently designed. Instead, the EU may need to demonstrate a spirit of compromise in

[20] Kerstin Tews, 'The Diffusion of Environmental Policy Innovations' in Gerd Winter (ed), *Multilevel Governance of Global Environmental Change: Perspectives from Science, Sociology and the Law* (Cambridge University Press 2011) 227, 229.
[21] Robert Tucker, *The Inequality of Nations* (Basic Books 1977) 8, but Tucker's perspectives regarding the futility of efforts to rebalance the international system are more contentious.
[22] Kristine Kern, Helge Jörgens and Martin Jänicke, 'The Diffusion of Environmental Policy Innovations: A Contribution to the Globalisation of Environmental Policy' (2001) Social Science Research Centre for Berlin (WZB) Discussion Paper FS II 01 – 30, 23 (emphasis added).
[23] Indeed, the importance of research exploring this aspect of climate law and, particularly, the implications of equity and fairness is fundamental in the search for durable governance arrangements.

approaching the prospects of linkage, particularly given that the future development of the EU ETS is inextricably connected to international climate policy. It is important to recognise that the design features of other emissions trading schemes are likely the products of internal political agreements of the kind which the EU itself had to wrestle with, as explored in Chapter 2. As internal design feature choices (and compromises) may have been critical to achieving internal political agreement, subsequent adjustment of such features may prove particularly difficult.[24] However, as other scholars have acknowledged, it is conceivable that the process of implementing linkage may even require modifications to the design of the EU ETS.[25]

Theoretically, the suggested governing rule of environmental integrity advanced in this research is sound. It is reflective of the instrumentalist justification for emissions trading articulated in Chapter 2 and finds favour in the literature. As Christoff has succinctly emphasised: "[t]he fundamental objective of carbon emissions trading is to contribute meaningfully and effectively to the central objective… to avert dangerous climate change".[26] The governing rule of environmental integrity requires that linked trading schemes should not lead to fewer emissions reductions than if the EU ETS (and proposed partner scheme) continued to operate independently. Moreover, this rule encompasses institutional compatibility considerations in circumstances where such concerns could impact upon maintaining the environmental integrity of the EU ETS. Whilst the vision of a framework of internationally linked trading systems is central to this thesis, it is critically important that this quest does not sacrifice the core

[24] Pizer and Yates (n 4) 145.
[25] Wråke, Burtraw, Löfgren and Zetterberg (n 1) 20.
[26] Peter Christoff, 'Can the Invisible Hand Adjust the Thermostat? Carbon Emissions Trading and Australia' in Tim Bonyhady and Peter Christoff (eds), *Climate Law in Australia* (The Federation Press 2007) 82, 83.

environmental objective on the altar of political expediency. Therefore, linkage in the absence of compliance with the core convergence criteria should not occur.[27] Such an approach is not without risk: by holding firm to the rule of environmental integrity, the EU ETS could be locked out of early attempts to construct a network of globally linked schemes.[28] Whilst this concern is real and must not be viewed complacently, there is an over-arching obligation on the EU to ensure that the very raison d'être for adopting emissions trading as the Union's climate tool of preference is not compromised by efforts to more rapidly construct a climate governance framework. In fact, this concern underscores the centrality of the incrementalist perspective advanced in Chapter 3 and the positive influence of linkage by degrees in advancing such gradual convergence.

The governing EU legislation, the EU ETS Directive, is proposed as the starting point to define core convergence criteria.[29] The directive, consistent with established EU climate policy, explicitly promotes linkage. Article 25(1) specifically provides that agreements "*should* be concluded with third countries listed in Annex B to the Kyoto Protocol which have ratified the Protocol to provide for the mutual recognition of allowances between the Community scheme and other greenhouse gas emissions trading schemes".[30] However, this endorsement is not unconditional. Article 25(1)(a), as inserted by Directive 2009/29/EC, limits the scope of such linkage to "compatible mandatory greenhouse gas emissions trading systems with absolute emissions caps established in any country or in sub-federal or regional entities".[31] Article 25(1)(a) may be construed as both

[27] Importantly, such compliance is a *continuing* process and should be subject to regular review.
[28] Alyssa Gilbert, 'Linking Carbon Markets: The Climate Change Silver Buller?' (2009) 20(6) Energy and Environment 901, 916.
[29] Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC, as amended [2003] OJ L273/32 (EU ETS Directive).
[30] EU ETS Directive, art 25(1) (emphasis added).
[31] ibid art 25(1)(a) (emphasis added).

expansive and constraining. For example, for the first time it is legislatively confirmed that the range of potential partners for the EU ETS could include schemes with diverse geographic coverage and not merely national schemes. This raises the prospect of identifying appropriate linkage partners beyond the state at both sub-national and regional levels and represents a significant expansion of the text of the original directive which had instead restricted such linkages to "third countries". It may be surmised that an influential factor prompting this amendment had been the emergence of regional emissions trading schemes in the United States, particularly given continued Congressional inertia regarding a federal scheme.[32]

5.2.3 The Core Convergence Criteria

This Section will establish and define the proposed core convergence criteria which must be present before direct linkage is implemented. It is important to recall that this is not a quest for perfectly identical schemes, but rather a process of ensuring that the necessary de minimis degree of alignment is present before formal direct linkage is operationalised.[33] Whilst linkage by degrees towards the implementation of direct linkage does not presume to provide a normatively superior alternative to a global agreement creating an international cap-and-trade system, the listless nature of climate negotiations to date demonstrates the need to achieve measurable progress, where possible, beyond the multilateral context. The core convergence criteria advanced in this thesis hold out the prospect of achieving tangible progress and securing the manifold advantages of linkage

[32] Matthew Paterson, 'Selling Carbon: From International Climate Regime to Global Carbon Market' in John Dryzek, Richard Norgaard and David Schlosberg (eds), *The Oxford Handbook of Climate Change and Society* (Oxford University Press 2011) 611, 618.
[33] Burtraw and colleagues (n 10) 10.

explored in Chapter 4, whilst simultaneously embedding the necessary protections to safeguard the governing environmental integrity objective.

5.2.3(i) Absolute Emissions Cap

The text of Article 25(1)(a) provides the first core convergence criterion: any potential partner scheme must impose an absolute emissions cap. More generally, however, Article 25(1)(a) restricts linkage to only "compatible" trading systems. Whilst it is possible to conclude that the presence of an absolute emissions cap represents one such determinant of compatibility, it is unclear from the legislative language if this was intended to constitute the only criterion of compatibility. A teleological interpretation of the text, as has been favoured by the ECJ,[34] would surely suggest that any definition of compatibility must extend beyond the presence or absence of an absolute emissions cap alone. As this Chapter emphasises, it is necessary to define additional core convergence criteria which, if absent, could undermine the integrity of the EU ETS.

The Seventh Environment Action Programme committed the EU to mandatory reductions of greenhouse gas emissions of 20% compared to 1990 levels or a more ambitious target of 30% reductions provided that other developed countries committed to comparable emissions reductions and that developing countries adequately contributed according to their responsibilities

[34] For example, in the seminal case, *Van Gend en Loos*, the ECJ emphasised that it is necessary to consider "the spirit, the general scheme and the wording". In the *CILFIT* case the ECJ affirmed that "every provision of Community law must be placed in its context and interpreted in the light of the provisions of EC law as a whole, regard being had to the objectives thereof and to its state of evolution at the date on which the provision in question is to be applied."
See Case C-283/ 81 *Srl CILFIT and Lanificio di Gavardo SpA v Ministry of Health* [1982] ECR 252, para 20. For a scholarly perspective on the ECJ's embrace of the teleological approach, see Nial Fennelly, 'Legal Interpretation at the European Court of Justice' (1996) 20(3) Fordham International Law Journal 656.

and respective capabilities.[35] This target was subsequently raised, with the approval of the European Council in October 2014, to an objective of achieving at least a 40% reduction on greenhouse gas emissions within the EU by 2030 compared to 1990 levels, a commitment which the EU has since included as part of the Union's Paris Agreement intended obligations.[36]

However, even within the EU the importance of absolute caps in governing emissions trading was not initially appreciated with sufficient clarity. It is important to recall that the process of implementing a single EU-wide cap was far from straightforward: indeed, it was slow and litigious. For example, the first two phases of the EU ETS revealed concerning discrepancies regarding emissions caps, particularly since such caps were fixed by Member States through individual National Allocation Plans ("NAPs") with varied levels of ambition across the Union.[37] Whilst the Commission had the power to reject NAPs proposed by Member States, the Commission's efforts to do so were circumscribed by a number of successful Member State challenges before the Court of First Instance. The Court ruled, for example, that it was not open to the Commission to substitute a Member State's allocation methods or data with the Commission's own preferred approach.[38] As Chapter 3 elaborated, the Amending Directive remedied this, providing for enhanced harmonisation by replacing national Member State caps with a single EU-wide cap. As a result, for the first time the cap across the EU (and Norway, Liechtenstein, and Iceland) in 2013 represented a single cap, rather than the aggregate of Member States' individual caps.[39]

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[35] Seventh Environment Action Programme, recital 10.
[36] European Council, Conclusions of 23 and 24 October 2014, EUCO 169/14 para 2.1.
[37] As Grubb and Neuhoff have noted, the emissions projections contained in Member States' NAPs were developed using a variety of techniques and assumptions.
See Michael Grubb and Karsten Neuhoff, 'Allocation and Competitiveness in the EU Emission Trading Scheme: Policy Overview' (2006) 6(1) Climate Policy 7.
[38] Case T-183/07 *Poland v. Commission* [2009] ECR II-03395 and Case T-263/07 *Estonia v. Commission* [2009] ECR II-03463.
[39] The cap was set at 2,084,301,856 allowances.

Under Article 9 of the EU ETS Directive, the cap will decrease during each year of Phase III by a linear factor of 1.74% of the average total quantity of allowances issued annually during Phase II. In absolute terms, this equates to an annual reduction in allowances of 38,264,246. Due to this cap calibration, emissions from fixed installations will be 21% lower in 2020 than in 2005. Moreover, Article 9 mandates the Commission to review the operation of the linear factor before 2020 with a view to the adoption of a decision by 2025.

The operation of this decreasing cap mechanism is fundamental to the fabric of the EU ETS and the absolute emissions cap requirement in Article 25(1) is best understood as a commitment to preserve the functionality of this cap. Given the tortuous history which has led to the creation of a single EU-wide cap, ensuring that this cap is not compromised is critical to the functioning of the EU ETS. Moreover, the absolute quality of the cap underpins the environmental credibility of the EU ETS which, as Andrei has recognised, is necessary "in order to have the societal license to operate".[40] For example, the EU ETS Directive permits only very limited intervention in the market in "the event of excessive price fluctuations".[41] Consequently, if for more than six consecutive months the allowance price is more than three times higher than the average price during the preceding two years, then measures may be adopted to allow Member States to either bring forward auctioning of some future year allowances or to auction up to 25% of remaining allowances in the new entrants reserve. It is clear, however,

[40] Lars Zetterberg, *Linking the Emissions Trading Systems in EU and California* (FORES: Swedish Environmental Research Institute 2012) 46.
For a more nuanced discussion of the concept of "social licenses" in the context of environmental law, see: Neil Gunningham, Robert A Kagan and Dorothy Thornton, 'Social License and Environmental Protection: Why Businesses Go Beyond Compliance' (2004) 29(2) Law & Social Inquiry 307.
[41] Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC [2003] OJ L273/32 (EU ETS Directive), as amended, art 29a.

that in such a scenario the environmental integrity of the EU ETS is preserved since any intervention must operate within the overall absolute cap framework.

Consequently, the presence of cost-containment measures, such as “price ceilings”, in a potential linkage partner scheme could seriously undermine the operability of the EU ETS. After implementation of direct linkage, in circumstances where allowances were fungible between the EU ETS and the partner linked scheme, the release of additional allowances in a partner scheme if a price threshold was breached, would also result in the importation of that price ceiling into the EU ETS. In general, linkage will result in a mixing of design features and any extra released allowances would enjoy complete fungibility between linked partner schemes. Ultimately, there is a significant risk that such cost-containment measures could render the EU’s absolute emissions cap obsolete.

The full extent of distortions on the EU ETS is difficult to precisely measure since the gravity of such distortions will depend on several factors including how any price ceiling is implemented and market factors in the linked partner trading scheme. For example, the potential increase in the supply of allowances exported to the EU ETS is limited to the supply of permits in the linked scheme: this suggests that the greater the number of allowances in circulation in the linked scheme, then the more material the distortive effects of a price ceiling on the EU ETS. Any release of additional allowances in a linked scheme will also affect the revenue accruing to that government (presuming that the additional allowances are auctioned at the trigger price) and this creates perverse incentives for releasing additional allowances. It is likely, however, that the presence of such an incentive alone – quite distinct from the compromising environmental effects – would raise considerable concerns and would, even in the absence of Article

25(1), constitute a serious obstacle to linkage in the absence of an absolute emissions cap.

It is important to note that these concerns are quite distinct from debates surrounding structural reform of the EU ETS and, in particular, Decision 2015/1814 which prevents the release of 300 million allowances and 600 million allowances which otherwise were due for auctioning in 2019 and 2020 respectively.[42] Such backloading of auctions does not detrimentally affect the maintenance of the absolute cap and the environmental integrity of the EU ETS – far from being compromised – is more likely to be strengthened by such regulatory action. However, legitimate concerns exist regarding the potentially unhelpful signals which such intervention sends to market participants. At a time when "[i]nvestors are clamouring for stable settings for climate policy",[43] intrusive market intervention potentially creates perverse market expectations by turning the market into a betting game on the next intervention by public authorities. This could prove unhelpful in the medium-term and, in the context of linkage, it is unlikely that the Commission (or any emissions trading governing authority) would agree to a framework permitting unilateral market intervention by a linkage partner. The British Government has taken the view that "any intervention in the EU ETS… should be a one-off"[44] and regulatory intervention in the marketplace, if more frequent, would raise reasonable concerns for – and could potentially deter – any prospective linkage partner. Yet the Commission retains an important role as the ultimate backstop regulator: the EU ETS is not an exercise in free

[42] Decision No 2015/1814/EU of the European Parliament and of the Council of 6 October 2015 concerning the establishment and operation of a market stability reserve for the Union greenhouse gas emission trading scheme and amending Directive 2003/87/EC [2015] OJ L 264/1, recital 8 and art 1(2).
[43] Frank Jotzo, 'Why Europe's Carbon Price is Wrong for Us' *The Sydney Morning Herald* (Sydney, 19 July 2013) <http://www.smh.com.au/federal-politics/political-opinion/why-europes-carbon-price-is-wrong-for-us-20130718-2q74q.html> accessed 14 April 2017.
[44] UK Department of Energy and Climate Change, 'Impacts of Back-Loading or Permanently Retiring EU ETS Allowances' <https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/65583/6819-impacts -backloading-retiring-euets-allow.pdf> accessed 14 April 2017.

market environmentalism.[45] Consequently, whilst it is not inappropriate for the Commission to intervene, such intervention must be limited, infrequent, and demonstrably justified in the circumstances.

The prohibition contained in Article 25(1) enjoys broad support in the literature. Gilbert has emphasised that the environmental stringency of individual schemes is "absolutely key in determining the success or failure of a linking initiative",[46] whilst Fischer's research suggests that "[w]ithout some policy of adjustment or a switch to a fixed cap, allowing trade between a rate-based emissions program and a cap-and-trade program will tend to lead to an expansion of overall emissions".[47] Sterk and Schüle have observed that "[o]ne of the main advantages of cap-and-trade emission trading is the ability to precisely define the environmental outcome… [but] price caps and safety valves crack the cap".[48] Meanwhile, Goers and Pflüglmayer have described the potential consequences of establishing a linkage of the EU ETS with a scheme without an absolute emissions cap as "disabling ecological effectiveness" and, on the basis of this reason, have suggested exclusion of Alberta's emissions trading scheme from further consideration as a potential linkage partner.[49]

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[45] cf Markus Lederer, 'Market Making via Regulation: The Role of the State in Carbon Markets' (2012) 6 Regulation & Governance 524 with Terry Anderson and Donald Leal, *Free Market Environmentalism* (Palgrave Macmillan 2001).
As Gunningham and Grabosky have recognised, with respect to free market environmentalism, "for government to simply walk away and leave environmental protection to unfettered market forces… is really no solution at all": see Neil Gunningham and Peter Grabosky, *Smart Regulation: Designing Environmental Policy* (Oxford University Press 1998) 70.

[46] Gilbert (n 28) 914.

[47] Carolyn Fischer, 'Combining Rate-Based and Cap-and-Trade Emissions Policies?' (2003) 3(S2) Climate Policy S89, S101.

[48] Sterk and Schüle (n 15) 419.
As a practical matter, Sterk and Kruger have elaborated: "[T]hrough linking a system without price controls to a system with price control mechanisms, the former would effectively cede control over its allowance price and emissions to the latter. It does not seem likely that the former would be willing to pursue such a policy". See Wolfgang Sterk and Joseph Kruger, 'Establishing a Transatlantic Carbon Market' (2009) 9(4) Climate Policy 389, 397.

[49] Sebastian Goers and Barbara Pflüglmayer, 'Post-Kyoto Global Emissions Trading: Perspectives for Linking National Emissions Trading Schemes with the EU ETS in a Bottom-Up Approach' (2012) 3 Low Carbon Economy 69, 74.

The Alberta emissions trading scheme, which has been in operation since 2007 aims to achieve an annual reduction of energy intensity by 12%, but it does not impose an absolute cap. Indeed, under the Alberta scheme it is possible that emissions could increase, as long as any such increase is justified by an increase in production or GDP and the emissions remain below the relative target. Perversely, entities under the scheme with relative targets may even have good reason to increase their emissions since they will receive additional allowances the more they produce, whereas entities in a scheme with a fixed cap must confront higher costs for any increase of emissions. Any such phenomenon in a linked context would inflate the amount of allowances available in the EU ETS and it is no surprise that the literature warns against the EU negotiating "'lowest common denominator agreements' in environmental terms".[50]

The choice of a design architecture characterised by relative targets (or otherwise modest targets) reflects a political choice expressive of a scheme's level of climate governance ambition and puts a premium on "shielding the participants from costs ahead of the environmental objective".[51] Such divergence, perhaps most evident in technical design features such as the presence or absence of an absolute cap, raise broader concerns regarding the comparable ambition – and resulting likely compatibility – of the climate policies of candidate linkage schemes. Without sufficiently ambitious environmental targets set by public regulation there remains a risk that "an efficient servant will become an unjust and unsustainable master".[52] In any event, the prohibitive language of Article 25(1) means that there is no scope for linkage where a partner scheme

[50] Gilbert (n 28) 916 and Christian Flachsland, Robert Marschinski and Ottmar Edenhofer, 'Global Trading Versus Linking: Architectures for International Emissions Trading' (2009) 37 Energy Policy 1637, 1645.
[51] Sterk and Schüle (n 15) 428.
[52] Herman Daly, 'Free Market Environmentalism: Turning a Good Servant into a Bad Master' (1992) 6(2) Critical Review 171, 173.

does not provide for an absolute emissions cap, but it is also clear that any analysis of compatibility must extend beyond the presence or absence of an absolute emissions cap in a partner scheme.

5.2.3(ii) Mandatory Trading

In addition to the absolute cap requirement, Article 25(1) further requires that any candidate linking scheme must be "mandatory". The distinction between what Lövbrand and Stripple have categorised as "compliance markets" and "voluntary markets" is critical.[53] Whilst both forms of markets may contain absolute caps, compliance markets are mandatory, in the sense of Article 25(1), by a public regulatory underpinning, whereas voluntary markets are based on private law and do not rely on public regulation to generate demand. The fact that these markets exhibit organic growth without any government mandate is arguably one of the most interesting and surprising features of the emerging emissions trading landscape.[54] Prior to its closure in 2010, the Chicago Climate Exchange ("CCX") was the world's largest voluntary cap-and-trade system with US$309 million transacted in 2008 alone.[55] The CCX was based on member firms making voluntary, albeit contractually binding, emissions reduction commitments.[56] As such, it was not underpinned by public law, but it provides a prime example of sovereignty free actors' governance experimentation, as explored in Chapter 3.

[53] Eva Lövbrand and Johannes Stripple, 'Disrupting the Public-Private Distinction: Excavating the Government of Carbon Markets Post-Copenhagen' (2012) 30(4) Environment and Planning C Government and Policy 658, 662.
[54] Scott Deatherage, *Carbon Trading Law and Practice* (Oxford University Press 2011) 64.
[55] Tyson Dyck, 'Missing Linkages: Canada, Cap-and-Trade and the International Climate Architecture' (2009) 8(1) Canadian International Lawyer 1, 3.
[56] However, clearly such exchanges made on the CCX were governed by federal and state contract law and as such the word "voluntary" may be something of a misnomer. Falkner has used the term "mixed" to describe many private governance initiatives in the environmental sphere and it is suggested that this better reflects the fragmenting and opening of climate governance arrangements.
See Robert Falkner, 'Private Environmental Governance and International Relations: Exploring the Links' (2003) 3(2) Global Environmental Politics 72.

Interestingly, whilst the CCX implemented unilateral direct linkage with the EU ETS of the kind described in Chapter 4, given the CCX's voluntary nature there was little prospect – from the EU's perspective – of this maturing into bilateral direct linkage. The CCX initially permitted its participants to surrender up to 1,000 EUAs for CCX compliance purposes, but after the dramatic drop in EUA prices during Phase I, the CCX decided that EUAs would no longer be accepted.

Voluntary schemes may also exist as part of a strategic process towards implementation of mandatory trading.[57] For example, the UK launched a limited voluntary emissions trading scheme in 2002, the first of its kind, before the UK's participation in mandatory trading in the EU ETS. The rationale for and emergence of voluntary markets provides salient insights into the complex influences driving the decarbonisation agenda and the diverse governance landscape elaborated in Chapter 3. Indeed, when considered under an orthodox economics or corporate behaviour lens, the emergence of such markets seems counter-intuitive and almost illogical. Yet as consumer awareness surrounding climate change has developed, demand for action by consumer product and services companies to reduce carbon emissions or to offset them has grown dramatically.[58] The fact that climate science has gradually moved from a discipline openly contested to one which has now secured a settled consensus has also contributed to moving carbon reduction measures to the centre ground of political and policy debates.[59] Economic analyses demonstrating that the costs

[57] Betsill and Hoffmann have noted that voluntary markets may also represent an example of "where ambitious goals (mandatory regulation) have to be scaled back in the face of political opposition": see Betsill and Hoffmann (n 6) 95.
[58] Deatherage (n 54) 65.
[59] Naomi Oreskes, 'The Scientific Consensus on Climate Change: How Do We Know We're Not Wrong?' in Joseph DiMento and Pamela Doughman (eds), *Climate Change: What It Means for Us, Our Children, and Our Grandchildren* (MIT Press 2007) 65.
This consensus has travelled further in some contexts than in others: Brad Cooper, 'Climate Science, Like Evolution Before: A Kansas Legislative Controversy' *The Wichita Eagle* (Wichita, 1 March 2013) <http://www.kansas.com/2013/03/01/2697018/climate-science-like-evolution.html> accessed 14 April 2017.

of reducing carbon emissions are far lower than the unpredictable and potentially vast costs of catastrophic climate change have also contributed to the emergence, within a corporate context, of a new orthodoxy which is more responsive to the realities of climate science.[60] Moreover, corporate management think strategically and opportunistically about climate change as one of many issues within the market environment.[61] Shareholders and investors are also putting increasing pressure on corporate management to focus on carbon reduction.[62] This is less influenced by altruistic environmental concerns and is more likely the product of a growing recognition that ignoring the potential risks would be fiscally irresponsible.[63] This confluence of factors has influenced the emergence of a new "climate capitalism" which, whilst especially evident within mandatory compliance markets, also extends beyond those confines to the evolution of voluntary markets.[64]

The contribution of voluntary markets in shaping the climate governance landscape may be substantial beyond operating as a testing ground for industry in advance of the implementation of mandatory trading. For example, Peters-Stanley and Yin have observed that "[w]hat the voluntary markets lack in size,

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[60] As noted in Section 2.2.3, Stern estimated that whilst the costs of mitigation were in the region of 1-2% of global GDP during the next few decades, the costs of inaction were more likely between 5-20% of global GDP: Nicholas Stern, *A Blueprint for a Safer Planet: How We Can Save the World and Create Prosperity* (Vintage 2010) 90-94.

[61] Andrew J Hoffmann, 'Examining the Rhetoric: The Strategic Implications of Climate Change Policy' (2002) 9(4) Corporate Environmental Strategy 329, 331.

[62] Consider, for example, the Exxon Mobil shareholder revolt in 2008 which saw 19 institutional investors with 91 million shares worth $8.6 billion table a motion (albeit unsuccessfully) requesting that Exxon address climate change risks and opportunities.

[63] Felicia Jackson, *Conquering Carbon: Carbon Emissions, Carbon Markets, and the Consumer* (New Holland Publishers Ltd 2009) 59.

[64] The term is Newell and Peterson's and does not endorse a "blind faith in capitalism to adequately address climate change". Instead, the authors capture the corporate behavioural changes, including the development of voluntary markets, which suggest that the foundations of a decarbonised economy are emerging: see Peter Newell and Matthew Peterson, *Climate Capitalism: Global Warming and the Transformation of the Global Economy Consumer* (Cambridge University Press 2010) 1-11.
This perspective is highly contentious (as is the use of economic incentivisation more generally in environmental regulation, as was explored in Chapter 2). Böhm, Misoczky and Moog have argued that carbon markets "are unlikely to transform capitalist dynamics in ways that might foster a more sustainable global economy": see Steffen Böhm, Maria Ceci Misoczky and Sandra Mogg, 'Greening Capitalism? A Marxist Critique of Carbon Markets' (2012) 33(11) Organisation Studies 1617.

they make up for in flexibility – spinning off innovations in project finance, monitoring, and methodologies that also influence regulatory market mechanisms".[65] The voluntary markets have been credited with spawning their own standards, registries, and project types beyond the scope of existing compliance market mechanisms. As a result, it has been acknowledged that governments have increasingly turned to voluntary carbon market mechanisms, particularly with respect to standards and registries, to inform the development of compliance markets.[66] Such diverse and experiential nodes of governance are consistent with the multi-level governance landscape charted in Chapter 3 and illustrate the complexity of the climate governance mosaic. Yet, as Chapter 3 also emphasised, the maintenance of complementarity in a world awash with different regulatory approaches raises significant governance challenges. Climate governance experimentation is shaping responses to climate change, but voluntary carbon markets have also been characterised as "buyer-beware" markets attracting significant criticism based on perceived lax quality control, a concern which is intimately connected with questions of monitoring, reporting and verification, considerations which are evaluated in detail in Section 5.2.3(iv).[67]

From the perspective of Article 25(1), voluntary emissions trading schemes present serious challenges to the EU ETS. To be a suitable partner for linkage the candidate trading scheme should demonstrate a clear commitment to emissions trading in the medium to long term. From the perspective of a well-functioning market capable of delivering some degree of certainty to its participants, linkage would be enormously risky if a scheme had no clarity on a

[65] Molly Peters-Stanley and Daphne Yin, *Maneuvering the Mosaic: State of the Voluntary Carbon Markets 2013* (Forest Trends' Ecosystem Marketplace and Bloomberg New Energy Finance 2013) 5.
[66] ibid.
[67] Deepanshi Chaudhry, 'A Brief Study of Voluntary Carbon Markets, Recent and Future Trends with Special Focus on India' (July 2008) <http://www.researchgate.net/publication/228311270_A_Brief_Study_of_Voluntary_ Carbon_Markets_Recent_and_Future_Trends_with_Special_Focus_on_India> accessed 14 April 2017.

succession plan. Whilst this would also be the case in compliance markets with an early expiration date and no clear commitment in succeeding years beyond such a date, the innately provisional nature of voluntary markets adds further doubt about the durability of any linkage arrangement. Market participants would likely be concerned about the permanence of any link which would diminish the liquidity of allowances generated in the linked scheme, prevent the full fungibility of allowances, and impede the proper functioning of any linkage. Clearly, in such circumstances, Article 25(1) is correct to consider the "mandatory" element of a candidate scheme as a prerequisite to linkage and, for the purposes of this research, it is appropriate to classify it as a core convergence criterion.

5.2.3(iii) Borrowing

Emissions trading schemes which permit borrowing allowances from future trading phases could pose particular risks for the environmental integrity of the EU ETS. Borrowing during the life of a compliance phase is implicitly permitted in the EU ETS by virtue of the regulatory lag-time between satisfaction of the previous year's compliance obligations and the allocation of the next year's allowances. For example, allowances are allocated by 28 February of each year,[68] whilst allowances must be surrendered equal to the total (verified) emissions to satisfy with the previous calendar year's trading period by 30 April each year.[69] As a result, it is possible for a firm to surrender allowances allocated by 28 February for compliance purposes with the preceding year's trading period. The EU ETS Directive does not so much specifically sanction the permissibility

[68] EU ETS Directive, art 11(2).
[69] ibid, art 9a(2).

of borrowing as it does facilitate such borrowing to a limited degree. As such, borrowing *per se* does not represent a core convergence criterion and it is clear that the structure of the EU ETS provides scope for borrowing, albeit within narrow confines. Article 25(1) is silent with respect to any reference to borrowing and the structure of such a facility in a candidate partner scheme. However, borrowing between trading phases within the EU ETS is not permitted. As such, allowances generated during Phase II which ended in 2012 could not be surrendered for compliance with obligations arising during Phase III.

However, unconstrained borrowing could impede achievement of the carbon reduction objectives of the EU ETS to such an extent as to be incompatible with the EU's environmental target.[70] The ability of market actors in one scheme to borrow against periods with an unfixed length, or periods for which allocations have not yet been specified, would seriously undermine the EU's penalties for non-compliance and potentially undercut the environmental integrity of the EU ETS.[71] Türk, Mehling, Flachsland and Sterk have characterised borrowing as a cost-containment measure akin to the operation of price ceilings and have warned that allowing "high rates of borrowing from future commitment periods can lead to delays in GHG abatement".[72] Paradoxically, Boemare and Quirion have noted that permitting high rates of borrowing may even inflate future abatement costs. Such a scenario could increase political pressure to later relax emission caps, thereby imperilling the medium to long-term stability of the environmental integrity objective.[73] Borrowing may also encourage participants with high abatement costs to delay expensive investment in clean technologies

[70] Emilie Alberola and Julien Chevallier, 'European Carbon Prices and Banking Restrictions: Evidence From Phase I (2005–2007)' (2009) 30(3) Energy Journal 51.
[71] Mace and Anderson (n 17) 219.
[72] Türk, Mehling, Flachsland and Sterk (n 16) 349.
[73] Catherine Boemare and Philippe Quirion, 'Implementing Greenhouse Gas Trading in Europe: Lessons from Economic Literature and International Experiences' (2002) 42(2) Ecological Economics 213.

by borrowing allowances from future periods, a scenario which would then concentrate emissions in earlier periods. Chevallier has cautioned that in this way unrestricted borrowing could seriously aggravate environmental harm through the concentration of emissions in the earlier years of a trading phase.[74] In order to maintain the environmental effectiveness of linked schemes, borrowing must be subject to restrictive provisions, the precise limits of which will necessarily involve close cooperation between the Commission and the competent regulatory authority of the candidate linkage partner.

5.2.3(iv) Monitoring, Reporting and Verification of Emissions ("MRV")

The EU has emphasised that the "complete, consistent, transparent and accurate monitoring and reporting of greenhouse gas emissions are fundamental for the effective operation of the [EU ETS]".[75] This reflects Articles 14 and 15 of the EU ETS Directive which address the MRV of emissions data. The need for greater EU uniformity with respect to MRV became clear during Phases I and II. The original language of the EU ETS Directive had given "considerable flexibility to both installations and to Member States".[76] During the pilot phase Kruger and Egenhofer acknowledged the "high level of decentralization and the significant degree of discretion for Member States"[77] and recognised that this might well pose a challenge in achieving the degree of consistency required to provide trust in the scheme's MRV rules. Kruger and Pizer identified the crux of the problem:

[74] Julien Chevallier, 'Banking and Borrowing in The EU ETS: A Review of Economic Modelling, Current Provisions and Prospects for Future Design' (2012) 26(1) Journal of Economic Surveys 157, 172.
[75] Commission Regulation (EU) No 601/2012 of 21 June 2012, on the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC of the European Parliament and of the Council [2012] OJ L181/30, recital 1.
[76] Kruger, Oates and Pizer (n 14) 124.
[77] Joseph Kruger and Christian Egenhofer, 'Confidence Through Compliance in Emissions Trading Markets' (2006) 6(2) Sustainable Development Law and Policy 2, 6.

"[l]eft unresolved is the question of who will resolve inconsistencies if different Member State governments or the third-party verifiers they hire vary in their interpretations of EU monitoring or verification guidelines".[78] Yet, in the context of the EU, perhaps this should not be surprising. Significantly different legal systems, enforcement cultures, and administrative capabilities across the EU have created a variable geometry regarding implementation. The former Soviet bloc Member States have historically had weaker environmental institutions and the importance of capacity building was recognised early in the pre-accession phase.[79] Such concerns were not eased by the initial failure of Slovakia to draft a satisfactory NAP prior to the start of the pilot phase, whilst the NAPs of Poland and the Czech Republic failed to meet the Commission's deadline. However, concerns regarding administrative capacity were not only confined to the then recent accession states. Doubts were also expressed regarding the ability of the Spanish authorities to translate policy support for stringent monitoring into effective climate action.[80]

Achieving consistency, however, is a permanent challenge for the EU and it is not surprising that this has equally proven the case in the context of emissions trading generally and MRV particularly. However, incremental harmonisation has become the tried and tested route map. Woerdman, Roggenkamp and Holwerda have observed that "[i]n little over ten years the EU ETS has developed from a scheme that fundamentally put the Member States in the driving seat to one that

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[78] Joseph Kruger and William A Pizer, 'Greenhouse Gas Trading in Europe: The New Grand Policy Experiment' (2004) 36(8) Environment 8, 15.

[79] See generally David Bailey and Lisa de Propris, 'A Bridge Too Phare? EU Pre-Accession Aid and Capacity Building in the Candidate Countries' (2004) 42(1) Journal of Common Market Studies 77.
In an environmental law context, Blackman and Harrington have described some of the challenges which Poland encountered in enforcing its air emissions fee system.
See Allen Blackman and Winston Harrington, 'The Use of Economic Incentives in Developing Countries: Lessons from International Experience with Industrial Air Pollution' (2000) 9(1) Journal of Environment and Development 5.

[80] J David Tàbara, 'Spain: Words that Succeed and Climate Policies that Fail' (2003) 3(1) Climate Policy 19.

acknowledges the need to have effective market supervision for markets to really work".[81] As Chapter 3 explored, multi-level governance is often more unsettled and complex, but Regulation 601/2012 (which concerns monitoring and reporting) promotes harmonisation.

The prospects of direct linkage, however, significantly sharpens concerns regarding MRV. For example, differences in cultures of enforcement and administrative capacity among EU Member States is "only a fraction of what exist if one were to compare the EU as a whole to, say, Russia or China".[82] Whilst many commentators have encouraged developing countries and others with potentially weaker legal and economic institutions to embrace market mechanisms,[83] an uneven approach to MRV could create unfair competitive advantages for firms in states with less robust enforcement regimes and discolour the metric by which progress towards the carbon reduction objective is measured. The capacity to conceal or obstruct progress, thereby endangering the environmental integrity of the EU ETS, is of sufficiently serious concern to warrant the inclusion of MRV as a core convergence criterion. Unlike other criteria, however, assessing MRV requires a value determination along a continuum of compliance. As linkage is likely to happen in an incrementalist manner, this creates space for dialogue and discussion regarding MRV and how best to ensure that both the EU and any candidate linking scheme can have confidence in each other's approaches to MRV. Setting a threshold for linkage, from an MRV perspective, is the most sensible way to satisfy this convergence criterion.

[81] Edwin Woerdman, Martha Roggenkamp and Marijn Holwerda, 'Multi-Level Governance in EU Climate Law' in Edwin Woerdman, Martha Roggenkamp and Marijn Holwerda (eds), *Essential EU Climate Law* (Edward Elgar Publishing 2015) 274, 286.
[82] Kruger, Oates and Pizer (n 14) 128.
[83] For example, see Ruth Bell and Clifford Russell, 'Environmental Policy for Developing Countries' (2002) 18(3) Issues in Science and Technology 63 and A Blackman and W Harrington (n 79).

Progress concerning MRV compatibility is, of course, only one theme in the search for a suitable architecture to integrate diverse trading schemes into a more coherent global framework. Peer review of the EU's experience with MRV should promote learning and foster the gradual dissemination of best practice, particularly as progress towards linking emissions trading schemes is likely to remain fragmented and multi-speed.[84] Carbon trading practitioners have observed that policymakers in emerging emissions trading schemes are often "keen to learn from the EU" and policy diffusion through learning offers real opportunities for the EU to emphasise the importance of early discussions regarding MRV compatibility.[85] The maintenance of a zone of compatibility, which necessarily entails the avoidance of emerging conflictive design features and the promotion of complementarity,[86] must be a key focus for scholars and EU policymakers in the years ahead. This is particularly so given that, irrespective of the broader multilateral treaty-making context, progress towards direct linkage of regional and national emissions trading schemes is likely to continue and deepen.

5.2.3(v) Equivalent Rules Governing the Fungibility of Offsets

The EU ETS and other emissions trading schemes currently in operation, such as South Korea's emissions trading scheme ("KETS"),[87] permit participating entities to surrender credits purchased from offset projects for domestic

[84] Such experimentalism is not merely an external 'export' feature of emissions trading. It is also increasingly a feature of EU regulatory reform: see Ingmar von Homeyer, 'Emerging Experimentalism in EU Environmental Governance' in Charles Sabel and Jonathan Zeitlin (eds), *Experimental Governance in the European Union* (Oxford University Press 2010) 121.
[85] Betsill and Hoffmann (n 6) 100.
[86] As Chapter 3 identified, à la Young, it is important to ensure that as climate governance becomes the province of multiple actors and stakeholders, this does not lead to the development – much less entrenchment – of conflicting norms and critical design features.
[87] Younghun Choi, 'Emissions Trading System – South Korea ETS' in ICIS, *Carbon Markets Almanac 2016: Global Developments & Outlook* (Reed Business Information Ltd 2016) 54.

compliance purposes. The CDM is the primary originator of such offset credits, but it is also the potential focal-point for indirect linkage, as identified in Chapter 4. As the CDM – in the context of indirect linkage – is evaluated in Chapter 6, issues concerning both the quantity and quality of offsets are considered in more detail in that Chapter.

The use of offset credits has materialised as a stable feature of the carbon trading landscape, but there is significant potential for material divergence in the rules governing their use. This is particularly important under conditions of direct linkage where allowances and credits are fungible since unrestricted trading between directly linked schemes necessarily permits offsets generated in one scheme to enter linked partner scheme(s), even if this was inconsistent with the partner scheme's rules recognising offset credits. It would remain open to the EU to impose quantitative or qualitative restrictions on credits recognised by a linkage partner or to apply an exchange rate, but neither option entirely resolves the supply-and-demand dynamics which would result from the continuing circulation of such credits in the linked partner scheme. There is a risk that non-equivalence in rules governing fungibility of carbon credits could materially impact pricing in linked schemes and ultimately disrupt the operation of a scheme's absolute cap.[88] As such, rules governing the fungibility of offset credits are inextricably connected to preserving the environmental integrity of an emissions trading scheme.

Consequently, it is appropriate to categorise the implementation and maintenance of equivalent rules governing the fungibility of offset credits as a core convergence criterion. The relevance of offset credits and importance of classifying rules governing their fungibility as a core convergence criterion is

[88] Moreover, as Sterk and Kruger have noted, there may be serious political repercussions from such commingling of credits and allowances in the absence of cross-compatibility: see Sterk and Kruger (n 48) 395.

particularly evident by surveying the current diversity of approaches regarding their recognition. Draft legislation for a federal trading scheme in the US, such as the Waxman-Markey proposals and the Boxer-Lieberman-Warner proposals, had envisaged permitting the use of offset credits generated from carbon sinks and domestic offset initiatives, both of which are not recognised for compliance purposes in the EU ETS. The KETS, on the other hand, adopts a particularly restrictive approach by only recognising offsets generated domestically.[89] The Commission has acknowledged the importance of offset recognition compatibility by observing that the EU should seek "common ground" with the US and other countries "[t]o ensure a coherent transition".[90]

5.3 Devising an Architecture to Implement Direct Linkage

5.3.1 Overview

The identification of core convergence criteria is fundamental to determine the degree of compatibility necessary to harmoniously implement direct linkage. The definition and elaboration of core convergence criteria does not, however, impose or prescribe a superior or specific pathway towards direct linkage. Instead, as emphasised in Chapter 4, linkage by degrees construes the implementation of direct linkage as an incremental process. Given that the design of an institutional architecture promoting and supporting linkage is not preset, policymakers must instead engage in dialogue to develop frameworks to accommodate direct linkage. As Chapter 3 has acknowledged, climate governance has become the

[89] Choi (n 87) 56.
[90] Commission, 'Building a Global Carbon Market: Report Pursuant to Article 30 of Directive 2003/87/ EC and Commission – Towards a Comprehensive Climate Change Agreement in Copenhagen' (Communication) COM (2009) 676 final, 11.

province of multiple actors with governance experimentation occurring in multiple areas and at multiple scales. Given this empirical reality of governance processes simultaneously occurring in multiple places and distributed across differing levels of social organisation, the focus of researchers and policymakers must shift, as Young has emphasised, to "allocating specific tasks to the appropriate level of social organisation and then taking steps to ensure that cross-scale interactions produce complementary rather than conflicting actions".[91]

The identification of core convergence criteria is consistent with "tak[ing] steps to ensure cross-scale interactions produce complementary rather than conflicting actions", as such a process involves defining design features which are considered critical to advancing complementarity. In this sense, the principle of promoting complementarity requires consideration of appropriate architectures to either guard against conflictive actions or, more ambitiously, to actively nurture and facilitate complementarity and ultimately direct linkage. For analytical purposes, it is possible to distinguish a *simple*-complementarity school from a *strong*-complementarity school.[92] For the former, complementarity is essentially defined by the absence of conflict between multiple trading schemes irrespective of parallel progress towards coordination and enhancement between each scheme, much less linkage by degrees. However, the latter is more demanding: it considers that real complementarity envisages progress towards the development and implementation of direct linkage. This does not require

[91] Oran R Young, 'Institutional Interplay: The Environmental Consequences of Cross-Scale Interactions' in Elinor Ostrom, Thomas Dietz, Nives Dolšak, Paul C Stern, Susan Stonich and Elke U Weber (eds), *The Drama of the Commons* (National Academies Press 2002) 263, 266.

[92] In this context, this approach builds on the analogous bifurcation which Grossman and Leblond have made in the context of European financial integration. Whilst recognising that the recent history of financial integration in the EU can generally be considered a success story, the authors draw a distinction between a *simple*-integration school and a *strong*-integration school. For the former, integration is essentially defined by increasing cross-border financial flows of any kind, whereas the latter is more demanding: it considers that real integration must entail convergence not only of prices and rates, but also of business models, governance, refinancing practices and so on.
See Emiliano Grossman and Patrick Leblond, 'European Financial Integration: Finally the Great Leap Forward' (2011) 49(2) Journal of Common Market Studies 413, 419.

abandoning the flailing multilateral vision, but rather re-imagining the construction of a global governance arrangements as an incremental process of scaling-up.

Such debate is already underway with respect to viable frameworks for configuring climate governance generally. This research contributes to this discussion by reconstructing this debate within the more discrete context of governing emissions trading. The process of expanding (or what may, perhaps, critically be conceived as exporting) emissions trading requires achieving a fine balance between maximising avenues for broader participation in emissions trading initiatives, whilst ensuring that such expanded participation does not undermine environmental integrity. Governing emissions trading in an incremental fashion whilst recognising the inherently multi-level governance landscape within which emissions trading experimentation is evolving – as explored in Chapter 3 – is arguably emerging as a practically superior platform to achieve governance progress, if perhaps not the normatively ideal approach.[93] Some scholars have gone further: Victor, House and Joy, whilst conceding that bottom-up harmonisation of emissions trading may be "painfully slow and sprawling",[94] have advanced such an approach as "the only way to build credible institutions that are essential for markets".[95] Such an approach would signal a departure from the long-established principle in multilateral climate negotiations that "nothing is agreed until everything is agreed", a principle which has facilitated grand bargains to be struck based on a complex web of concessions across a range of issues.[96] Yet developing and deepening institutions to promote incremental harmonisation through the bottom-up formation of frameworks with

[93] Robert Falkner, Hannes Stephan and John Vogler, 'International Climate Policy After Copenhagen: Towards a "Building Blocks" Approach' (2010) 1(3) Global Policy 252.
[94] David Victor, Joshua House and Sarah Joy, 'A Madisonian Approach to Climate Policy' (2005) 309 Science 1820, 1821.
[95] ibid.
[96] Falkner, Stephan and Vogler (n 93) 260.

gradual global coverage offers a viable route towards advancing strong complementarity. This is particularly the case in the context of emissions trading and linkage by degrees could unlock multi-speed incrementalist pathways towards more viable and effective governance arrangements. This Section proceeds to consider and unpack the legal mechanics by which linkage by degrees could mature into direct linkage.

5.3.2 International Treaty

A legislative preference for how direct linkage should be constructed is evident in Article 25(1) of the EU ETS Directive which specifies that "*agreements* should be concluded with third countries". Whilst expressing an explicit preference for the implementation of linkage via bilateral agreement with third countries, the language of Article 25(1) is not otherwise prohibitive insofar as it does not prevent alternative approaches to the implementation of direct linkage. However, there are certainly clear advantages to such a treaty-making approach, particularly given that treaties are one of the recognised sources of international law. Consequently, the violation of obligations under a treaty constitute a breach of international law, incurring state responsibility and the possibility of sanctions which are often defined in the treaty itself as part of a negotiated compliance mechanism. The certainty of commitments provided by treaties, however, also means that treaty-making is inevitably time-consuming and fraught with complexity. An international treaty need not provide for wholesale harmonisation of emissions trading schemes, but could instead represent a mutual recognition agreement specifying the conditions for recognition of each candidate partner's schemes allowances by the other scheme(s). A bilateral mutual recognition

agreement could provide the vehicle for enshrining the core convergence criteria elaborated in Section 5.2.3. Mutual recognition of the criteria would permit the EU to acknowledge the "equivalence", "compatibility", or "acceptability" of the linked scheme's allowances and regulatory system. In policy spheres beyond climate governance, mutual recognition agreements are common: for example, in international trade, such agreements ensure that incoming products and services are "safe".[97] This is achieved by the host state assuring itself that the regulatory regime of the partner state is substantially equivalent to the host state's regulatory system. This thesis advances that substantial equivalence, in the context of direct linkage, is achievable through conformity with the core convergence criteria. It is, however, open to the Commission to creatively assess how compliance with the core convergence criteria by any candidate linkage partner is achieved and maintained.

A bilateral agreement could be flexibly drafted to accommodate incremental expansion. In this way, such an agreement could mature over time into a multilateral arrangement by facilitating broader accession.[98] This resonates with Petsonk's call that climate governance arrangements provide docking stations which facilitate and incentivise access.[99] In the context of linkage agreements, a docking station could include provisions welcoming the participation in the agreement's linked carbon market of any state (or regional or subnational entities) willing to comply with the core convergence criteria. The formal nature and transparency of international treaties has resulted in some scholars expressing a normative preference for such an approach to linkage with

[97] Kalypso Nicolaidis and Gregory Shaffer, 'Managed Mutual Recognition Regimes: Governance Without Government' (2005) 68 Law and Contemporary Problems 263.
[98] Mace and Anderson (n 17) 231.
[99] Annie Petsonk, '"Docking Stations:" Designing a More Welcoming Architecture for a Post-2012 Framework to Combat Climate Change' (2009) 19 Duke Journal of Comparative and International Law 433.

Mehling forecasting that they are "likely to be the instrument of choice for a future linking agreement".[100] However, an international treaty may not represent the best legal route towards linkage with all candidate partner schemes. For example, although the EU had explored the prospects of forging a link with the Californian Emissions Trading Scheme, legal questions exist concerning California's competence under American federal law to enter into an international agreement.[101] For example, it has been suggested that, insofar as international treaties are concerned, the scope of the US constitutional prohibition is wide and encompasses all binding international arrangements "regardless of title, designation, or form".[102] For the EU, the upshot is that the legislatively preferred method of facilitating direct linkage by means of an international agreement may, in the case of some candidate partner schemes, prove either legally impossible or too politically challenging.[103] An international treaty may represent an approach which maximises legal certainty, however, it is not the only legal route to advance direct linkage whilst also securing the core convergence criteria.

5.3.3 Political Cooperation Agreements

It is possible to promote compatibility with the core convergence criteria through political cooperation agreements. The degree of certainty provided by such a route is more ambiguous than with an international treaty. An informal network of

[100] Michael Mehling, 'Bridging the Transatlantic Divide: Legal Aspects of Links Between Regional Carbon Markets in Europe and the United States' (2007) 7 Sustainable Development Law and Policy 46, 47. Goers and Pflüglmayer are less committal instead suggesting that a "decentralised system [of] bilateral and/or multilateral treaties *might* be the main mechanism for meeting the necessary regulation [of emissions trading]": see Goers and Pflüglmayer (n 49) 75.
[101] Article I of the US Constitution prohibits any State of the Union from entering into a "treaty, alliance, or confederation" or from entering "without the Consent of Congress. . . into any Agreement or Compact. . . with a foreign Power".
[102] Robert Dalton, 'United States' in Duncan Hollis, Merritt Blakeslee and Benjamin Ederington (eds), *National Treaty Law and Practice* (Brill Press 2005) 765.
[103] Mehling (n 100) 50.

loose cooperation agreements could advance linkage by degrees through fostering information exchange and the dissemination of lessons learned from practice, a process which – given the experience of the EU ETS – the EU is uniquely positioned to promote.[104] Such informal cooperation is already developing in the form of the International Carbon Action Partnership (ICAP). The ICAP explicitly states that it is a "forum to discuss relevant questions on the design, compatibility, and potential linkage of regional carbon markets".[105] Such efforts may be properly construed as examples of linkage by degrees and represent early stages in an incrementalist pathway towards deepening complementarity. Such an approach emphasises linkage as a continuum, rather than a single event, a perspective which builds on and further develops Burtraw and colleagues' vision of linkage by degrees as "incremental alignment… through which the implication of differing program designs can be anticipated and addressed".[106] It is also necessarily a continuing process beyond the implementation of direct linkage, since the linkage partnership will require ongoing monitoring and review to ensure compliance with the core convergence criteria.

Political cooperation agreements may also promote more concrete and fixed convergence. A more formal way of structuring such linkage is the conclusion of a Memorandum of Understanding ("MoU"). Whilst an MoU may document a desired line of action, it lacks the binding power of a legal commitment.[107] Nonetheless, this approach has already proven effective in the sphere of emissions trading. The Regional Greenhouse Gas Initiative ("RGGI") in

[104] As Wråke and colleagues have observed: "The initial years of the EU ETS have provided a large-scale testing ground for trading a new environmental commodity" and that "[t]he lessons learned are diverse and not all experiences are positive": see Wråke, Burtraw, Löfgren and Zetterberg (n 1) 13.
[105] International Carbon Action Partnership, "Political Declaration" <https://icapcarbonaction.com/partnership/political-declaration> accessed 14 April 2017.
[106] Burtraw and colleagues (n 10) 9.
[107] Mehling (n 100) 47.

the United States is a cooperative effort by ten US North-eastern and Mid-Atlantic states to limit GHG emissions. Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island and Vermont are all signatory states to an MoU which defines the core elements of the common trading system. Participation in the RGGI is based on adherence to the MoU, whilst reform of the RGGI is also achieved through similar political cooperation agreements. However, each state's local statutory and administrative law provides the public regulatory underpinning for emissions trading.

Such an approach, involving reciprocal commitments which are enshrined in domestic legislation by each linkage partner, could ensure compliance with the core convergence criteria, whilst also providing a high degree of confidence to linkage partners of collective commitment to such compliance. Each linked trading scheme would retain separate administrative infrastructures, including its own registry system, but there is no reason to suspect that such an approach would undermine the environmental integrity of the EU ETS. Lingering market concerns regarding the capacity of one scheme to unilaterally amend or terminate linkage without the prior consent of its trading partner could result in a more cautious reception by market participants. However, direct linkage implemented through such political cooperation agreements are not necessarily ill-equipped to preserve the core convergence criteria and otherwise promote effective and viable climate governance arrangements.

5.3.4 Private Law

The EU's medium to long-term vision is the creation of an integrated network of linked trading schemes, but for market participants the more immediate corporate objective is to develop a fungible carbon allowance that trades as freely and widely as possible. There are a number of benefits for such fungible allowances, not least of which is enhanced liquidity which facilitates improved risk diversification and management. As Deatherage has observed, certain allowances may possess a more "charismatic" quality which translates into higher prices.[108] For example, carbon credits from avoided deforestation or reforestation have attracted a higher value in the voluntary markets due to the perceived public relations, advertising, and branding advantages associated with such credits. Of course, as Section 5.2.3(ii) emphasises, the structural distinctions between compliance and voluntary markets are such that it would not be desirable for the EU ETS to establish direct linkage with a voluntary market.

In the absence of formal direct linkage, however, market participants could use private law to create a bridge between otherwise separate trading schemes by establishing modalities for the conversion of allowances.[109] As Mehling has observed, an example of this could involve a system of private brokers which leverage arbitration opportunities.[110] Such arrangements are legally viable since the EU ETS does not impose restrictions on account ownership. Whilst admittedly there is an important distinction between trade in allowances and actual transfer – the latter of which is usually limited to market participants – private transactions across trading schemes are already occurring. In fact, such transactions were

[108] Deatherage (n 54) 258.
[109] Mehling (n 100) 48.
[110] ibid.

one of the earliest corporate innovations in carbon trading and pre-date the launch of the EU ETS. In 2002, for example, Royal Dutch Shell and Elsam, Denmark's largest electricity generator, swapped emission allowances which had been issued by the UK and Danish governments respectively, even though the allowances were not formally interchangeable.[111] Royal Dutch Shell had operations in both Denmark and the UK, both of which were the only two EU Member States with emissions trading schemes at that time. Whilst Elsam had no carbon regulated operations in the UK, its excess Danish permits were due to expire when that country's scheme ended in 2003. Therefore, Elsam decided to trade its surplus allowances for Royal Dutch Shell's longer-lasting UK allowances which it could then sell at a later time on the London market. Whilst neither the volume nor financial value of this deal were particularly significant, the deal provided the first evidence that cross-scheme transfer of allowances was possible in the absence of any formal direct linkage.

This innovation should not be surprising: market trading is a dynamic regulatory instrument which reflects and relies on interplays between diverse actors within the incorporeal networks of commodity and capital markets. Indeed, as Meckling has aptly observed, "like no other environmental policy, carbon trading moves environmental policy into the heart of the world economy: the energy and financial systems".[112] As such, economic incentivisation approaches generally and emissions trading in particular are far removed from traditional conceptions of environmental regulation which tend to focus more on "a bipartite process involving government and business, with the former acting in the role of

[111] Datamonitor, 'Shell/Elsam: Playing Carbon Swapsies' (Datamonitor, 9 May 2002) <http://www.datamonitor.com/store/News/shellelsam_playing_carbon_swapsies?productid=08600740-5FF7-4EDD-B464-EC41B7E7C 558> accessed 14 April 2017.

[112] Jonas Meckling, *Carbon Coalitions: Business, Climate Politics, and the Rise of Emissions Trading* (MIT Press 2011) 167.

regulator and the latter as a regulatee".[113] Innovations such as private law-facilitated intra-scheme allowance transfers are illustrative of the diversity of governance experimentation in climate law and demonstrate the contribution of sovereignty free actors, as explored in Chapter 3, to shaping climate governance architectures.

5.4 Conclusion

This thesis advances a philosophy of linkage which is confident of the contribution of emissions trading to developing durable and viable climate governance arrangements. The diversity and complexity of emissions trading initiatives presents both opportunities, through learning-by-doing experimentalist innovations, but also very real challenges in the form of preserving and advancing complementarity. It has been observed that a crucial concern in climate governance is whether a bottom-up system will be able to meet the climate change challenge in an adequate manner without a centralised organisation.[114] This question is particularly relevant in the context of linkage. This Chapter, through defining and elaborating core convergence criteria, has argued that the implementation of direct linkage is desirable, viable and would contribute to developing durable climate governance institutions to govern emissions trading.

Any detailed evaluation of the modalities of direct linkage, however, also requires consideration of the legal pathways available to implement such linkage. Whilst international treaty-making affords greater stability and coherence to what may otherwise prove an unsettled incremental path towards an international

[113] Neil Gunningham and Darren Sinclair, *Leaders and Laggards: Next-Generation Environmental Regulation* (Greenleaf Publishing 2002) 193.
[114] Goers and Pflüglmayer (n 49) 79.

carbon market, the delays that this approach could entail provide sufficient reason to also consider more creative mechanisms to advance linkage. As Türk and colleagues have observed, "it is crucial to start early with the establishment of frameworks and procedures to promote harmonisation of critical design measures".[115] Political cooperation agreements, underpinned by a jurisdiction's domestic law, provide an avenue to nurture the development of direct linkage through linkage by degrees. If the EU is to advance its "ambition to become the world's benchmark in combating climate change with the EU ETS at the core of its strategy",[116] flexible and cooperative engagement will prove necessary to develop and deepen climate governance institutions, whilst remaining steadfast to preserving the environmental integrity of the EU ETS.

[115] Türk, Mehling, Flachsland and Sterk (n 16) 355.
[116] Geert van Calster, 'Against Harmonisation – Regulatory Competition in Climate Change Law' [2008] Carbon and Climate Law Review 89, 89.

CHAPTER 6

INDIRECT LINKAGE:

INCREMENTAL GOVERNANCE AND THE CDM

6.1 Introduction

In 2004 the EU adopted Directive 2004/101/EC which introduced a link between the EU ETS and other carbon abatement mechanisms sanctioned under the Kyoto Protocol.[1] At the time the Commission explained that linkage with Kyoto's flexibility mechanisms would "not only provide a cost-effective means for EU-based industries to cut their emissions but also create additional incentives for businesses to invest in emission reduction projects elsewhere".[2] As such, the Linking Directive represented the first tentative steps towards expansion of the EU ETS.

It is perhaps unsurprising that, given the conceptual origins of emissions trading explored in Chapter 2, the genesis of the flexibility mechanisms was American pressure as a pre-condition to signing the Protocol.[3] The United States had emphasised the importance of flexibility in achieving emissions reduction commitments during the first climate negotiations in 1991 under the auspices of the UN.[4] The importance of facilitating such flexibility was further emphasised by the American delegation (and the delegations of other countries, such as Norway) during subsequent negotiations and the resulting UNFCCC provided that Annex

[1] Directive 2004/101/EC of the European Parliament and of the Council of 27 October 2004 amending Directive 2003/87/EC establishing a scheme for greenhouse gas emission allowance trading within the Community, in respect of the Kyoto Protocol's project mechanisms [2004] OJ L338/18 (Linking Directive).
[2] Commission, *EU Emissions Trading: An Open Scheme Promoting Global Innovation to Combat Climate Change* (EU Commission 2005) 3-4.
[3] Michael Grubb, Duncan Brack and Christian Vrolijk, *The Kyoto Protocol: A Guide and Assessment* (Earthscan 1999) 75-89.
[4] ibid.

I countries could meet their emissions reductions goals "individually or jointly".[5] This language spawned the concept of "flexibility mechanisms", introduced under the Kyoto Protocol in the form of the CDM and Joint Implementation, and effectively created a legal framework facilitating inter-jurisdictional collaboration beyond the boundaries of Annex I countries.

The inclusion of flexibility mechanisms in the final text, however, was far from assured. As Werksman has observed, proposals with reference to project-based joint implementation between Annex I and non-Annex I Parties had ranged from "absolute prohibitions on joint implementation (Iran), to proposals that would have limited joint implementation to Annex I Parties only (EU), to a more detailed elaboration on the conditions under which Parties would be entitled to participate in project-based joint implementation (US)".[6] Moreover, some national delegations during Kyoto negotiations, particularly Japan and the United States, unsuccessfully sought to introduce an expansive understanding of "flexibility" which would permit countries to meet their emissions reduction targets in subsequent commitment periods, if they could not meet them within the first commitment period.[7] Given this diversity of flexibility proposals, it is perhaps little wonder then that the CDM was initially greeted as the "Kyoto Surprise".[8]

This Chapter explores the contribution of the CDM to the incrementalist bottom-up vision of emissions trading governance which this thesis advances. Section 6.2 is structured with three sub-sections. Section 6.2.1 locates the CDM as the dominant offset mechanism to have emerged under the Kyoto architecture and provides an overview of the mechanism's operation in practice. Section 6.2.2

[5] 1992 United Nations Framework Convention on Climate Change 1771 UNTS 163, art 4(2)(b).
[6] Jacob Werksman, 'The Clean Development Mechanism: Unwrapping the "Kyoto Surprise"' (1998) 7(2) Review of European Community and International Environmental Law 147, 151.
[7] Jaume Saura Estapà, 'Flexibility Mechanisms in the Kyoto Protocol: Constitutive Elements and Challenges Ahead' (2004) 34(1) Revue Générale de Droit 107, 119.
[8] Werksman (n 6) 151, referring to remarks by Ambassador Raul Estrada y Oyuela, 'From Kyoto to Buenos Aires: Technology Transfer and Emissions Trading', Columbia University, New York, 24 April 1998.

evaluates the CDM's contribution to the development of linkage and the success with which the mechanism has performed this function before considering the implications of this experience for the trajectory of emissions trading governance. The CDM remains a controversial mechanism and Section 6.2.3 unpacks and considers the dominant critiques before evaluating deficiencies in both the design and operation of the mechanism as currently constructed.

Section 6.3 explores reconstruction of the CDM in view of the acknowledged criticisms. Section 6.3.1 considers the unilateral reforms which the EU has implemented regarding CERs and locates this reform agenda within the broader climate leadership context which the EU has sought to carve out. Section 6.3.2 advances recommendations which focus on the normative function and operation of the CDM in a post-Kyoto framework. The implications of the Paris Agreement are considered and the CDM is reconceptualised as a transitional instrument to facilitate graduated participation in arrangements with carbon reduction commitments, whilst functional recommendations for reform are advanced to address contentious elements of the mechanism's design and operation. This Chapter concludes by reconsidering the potential contribution of a reformed CDM to the incremental governance of emissions trading.

6.2 Deconstructing the CDM

6.2.1 Overview

As Chapter 4 has elaborated, it is possible to construct a global network of linkages indirectly by connecting emissions trading schemes to a shared offset mechanism, such as the CDM. In such circumstances, indirect linkages are forged when two schemes, A and B, which are not otherwise directly linked to

each other, are separately linked to a third system. The emergence of indirect linkages between different emissions trading schemes, in the view of some scholars, had been envisaged as "a foregone conclusion".[9] Indeed, although restrictions governing the use of offsets may vary from one scheme to another – a core convergence criterion for the purposes of direct linkage – all trading schemes to date have employed offsets in some capacity.[10]

Whilst the CDM is not the only offset programme in existence, it is certainly the most significant. As of 31 March 2017, over 7,835 projects have been approved since operationalisation of the CDM and more than 3.75 billion offset credits have been issued.[11] In essence, the CDM provides a market mechanism to allow Annex I countries to obtain offset credits which contribute, under Article 12 of the Protocol, to satisfying their domestic compliance obligations. Article 12(2) of the Kyoto Protocol further envisages that the CDM should facilitate the transfer of cleaner technologies to transitioning or developing countries. The key underlying rationale for the CDM – that of economic efficiency – is also consistent with the theoretical underpinning for emissions trading more generally, as explored in Chapter 2.

The validity of the CDM's underlying economic rationale is important since, as Fankhauser and Hepburn have emphasised, the cost-effectiveness qualities of any particular approach to reducing emissions is likely to prove "critical to the success or failure of climate policy".[12] The tortuous process of international climate negotiations, encompassing potentially fatal events such as the rejection

[9] Timo Behr and Jan Martin Witte, *Towards a Global Carbon Market: Potential and Limits of Carbon Market Integration* (Global Public Policy Institute 2009) 45.
[10] Richard Newell, William Pizer and Daniel Raimi, 'Carbon Markets 15 Years After Kyoto: Lessons Learned, New Challenges' (2013) 27(1) Journal of Economic Perspectives 123, 137.
[11] Clean Development Mechanism, 'CDM Insights: Project Activities' (31 December 2016) <https://cdm.unfccc.int/Statistics/Public/CDMinsights/index.html> accessed 14 April 2017.
[12] Samuel Fankhauser and Cameron Hepburn, 'Designing Carbon Markets, Part II: Carbon Markets in Space' (2010) 38 Energy Policy 4381, 4382.

of the Kyoto Protocol by the United States and Canada's subsequent withdrawal from the Protocol, provide ample evidence that the international community's collective willingness to pay is limited. Indeed, the will to act remains only very weakly developed in many countries.[13] Consequently, the allure of the CDM's core promise – the potential to unlock cost-effective carbon mitigation opportunities by maximising geographical flexibility – is not surprising. This promise is also consistent with the global nature of the climate change problem, since the territorial source of emissions (or reductions) is, from an environmental perspective at least, irrelevant.[14] In practice, this has allowed the CDM to search out low-cost projects which have a high climate change impact. The identification of such projects, as Grubb and colleagues have noted, underscores the strength of a market-based approach: the capacity to "identify low-cost emission reduction opportunities that may otherwise be overlooked".[15]

6.2.2 The CDM as a Vehicle Facilitating Linkage

The potential of the CDM to foster linkage is a critical consideration with respect to its contribution to governing emissions trading.[16] The core convergence criteria set out in Chapter 5 are designed to ensure a minimum degree of compatibility, consistent with the principle of environmental integrity, for the purposes of implementing direct linkage. However, there is the distinct possibility that in practice the criteria could, in the short-term, impede prompt progress towards

[13] Stephen Gardiner, 'Saved by Disaster? Abrupt Climate Change, Political Inertia, and the Possibility of an Intergenerational Arms Race' (2009) 40(2) Journal of Social Philosophy 140, 143.
[14] Saura Estapà (n 7) 118: importantly, this should not overlook or diminish the presence of other highly relevant principles in climate governance such as equity.
[15] Michael Grubb, Tim Laing, Thomas Counsell and Catherine Willan, 'Global Carbon Mechanisms: Lessons and Implications' (2011) 104 Climatic Change 539, 554.
[16] For example, Joseph Aldy and Robert N Stavins, 'The Promise and Problems of Pricing Carbon: Theory and Experience' (2012) 21(2) Journal of Environment and Development 152.

deepening viable emissions trading governance arrangements. The CDM is not a vehicle to implement direct bilateral (or multilateral) linkage, in the sense that the mechanism is not a cap-and-trade scheme and does not require the surrender of allowances for compliance purposes.[17] Moreover, nor is the CDM an emissions reduction tool: instead, it is a voluntary market-based instrument which is otherwise reliant on the commitments of Annex I countries to advance the broader decarbonisation objective underpinning the Kyoto Protocol.

This has important implications for the role of the CDM in governing emissions trading and, in particular, the maintenance of environmental integrity. For example, without substantial and ambitious domestic carbon reduction commitments, the CDM could potentially contribute to an increase in global carbon emissions. Consistently, the proportion of CERs permitted for compliance purposes is inversely related to the degree of carbon reduction initiatives which must be undertaken domestically within any linked cap-and-trade scheme, such as the EU ETS.[18] Consequently, it is important that the role of the CDM remains carefully circumscribed to ensure that its contribution is supplemental to domestic carbon reduction action.

The Marrakesh Accords, which operationalised the CDM, specifically provide that "the use of the [CDM] shall be supplemental to domestic action and that domestic action shall thus constitute a significant element of the effort made by each Party included in Annex I to meet its quantified emission limitation and reduction commitments".[19] Whilst the Marrakesh Accords did not define the

[17] As Chapter 5 has explained the implementation of direct bilateral linkage is dependent on compliance with the core convergence criteria which, inter alia, requires the presence of a mandatory cap in any candidate partner scheme.

[18] CER use across the EU has been varied: whilst German EU ETS participants can use up to 22% in CDM credits, Slovakian EU ETS participants can only use up to 7%.
See Alexander Vasa and Karsten Neuhoff, *The Role of CDM Post-2012* (Climate Policy Initiative and Climate Strategies 2011) 7.

[19] Marrakesh Accords, I(J), para 1.

degree of "domestic action" required, this has been elaborated internally within the EU. During Phase II Member States retained discretion to decide the rules relating to the usage of CERs. Consequently, each Member State individually determined the percentage of offsets allowed (as a percentage of total allowances). The range of flexibility varied markedly between Member States from 0% in Estonia to 20% in neighbouring Lithuania (and Germany and Spain).[20] Moreover, seven Member States (Germany, Spain, Italy, France, Poland, the UK and the Czech Republic) accounted for over 75% of total use across the EU.[21] The Commission has since moved to harmonise the use of offsets.[22] As a result, the exact amount eligible for use per operator until 2020 depends on whether or not the operator is a new entrant, but existing operators may only use CERs either up to the amount allowed in the period from 2008 to 2012 or to an amount corresponding to a maximum of 11% of its allocation in the period from 2008 to 2012, whichever is higher.[23]

The principle that implementation of direct bilateral linkage requires compatibility with the core convergence criteria defined in Chapter 5 is central to this thesis, but beyond this, it is appropriate to explore the potential contribution of the CDM to advancing indirect linkage and linkage by degrees. As Chapter 4 has explained, indirect linkage occurs in circumstances where two schemes are not linked to each other, but are instead separately linked to a third scheme. In such circumstances, indirect linkage could promote incremental progress towards a more coherent climate governance framework by facilitating convergence in the allowance price between cap-and-trade schemes indirectly

[20] Raphael Trotignon, 'Combining Cap-and-Trade with Offsets: Lessons from the EU-ETS' (2009) 12(3) Climate Policy 273, 276.
[21] ibid.
[22] Commission Regulation (EU) No 1123/2013 of 8 November 2013 on determining international credit entitlements pursuant to Directive 2003/87/EC of the European Parliament and of the Council [2013] OJ L299/32.
[23] ibid, art 1(1).

linked via the CDM. Indeed, the potential of the CDM to accommodate and positively encourage the evolution of a framework of indirect linkages should not be under-estimated. Jaffe, Ranson and Stavins have observed that the CDM represents "key operational elements of the de facto global climate policy architecture".[24] Whilst lacking the comprehensiveness of a system of multilateral direct linkages, a network of indirect linkages could still bring multiple advantages, including enhanced market depth and liquidity, cost savings, and strengthening international collaboration in climate governance. Moreover, as Meng has emphasised, "nudging the world gradually towards global capped trading" must be a priority in climate governance and the CDM is favourably positioned to contribute to advancing this objective.[25]

More broadly, as will be emphasised in this Chapter, the CDM could facilitate widened and enhanced participation in climate governance arrangements.[26] In this sense, the contribution of the CDM may be better viewed as representing an important staging post in the transition towards a broader and more rigorous carbon trading framework. If normatively reconfigured and operationally reconstructed as such, the CDM could provide a more dynamic function as an engine promoting linkage by degrees. As articulated in Chapter 4, whilst the aspiration of incremental climate governance advanced in this thesis is a global network of interconnected emissions trading schemes, the *process* by which this evolves may also properly be accommodated within the definition of linkage. The future potential contribution of the CDM requires repositioning the mechanism as a more fluid instrument which can provide a durable contribution to the governance of emissions trading, rather than as a static regulatory fixture

[24] Judson Jaffe, Matthew Ranson and Robert Stavins, 'Linking Tradable Permit Systems: A Key Element of Emerging International Climate Policy Architecture' (2009) 36 Ecology Law Quarterly 788, 802.
[25] Kyle Meng, 'Creating a Cleaner CDM' (Carbon Finance, 16 September 2007) 16, 17.
[26] Jaffe, Ranson and Stavins (n 24) 802.

with a fastened participant pool. As discussed in Section 6.3.2, this will involve, in different ways, both scaling-up and scaling-down the CDM. This also requires renewed focus on how to enhance opportunities in the emerging carbon market infrastructure to facilitate and incentivise the participation of countries to dock in, as Petsonk has put it, to the market.[27] This is not to suggest marginalisation of the CDM, but rather that it is important to recognise concerning deficiencies regarding the current structure of the mechanism, an issue unpacked and evaluated in Section 6.3. Instead, re-evaluation of the normative role of the CDM (or any successor mechanism) is advanced in this Chapter. The mechanism is reconceptualised as an instrument to promote widening access to market-based climate governance and provide pathways to foster graduated participation in such governance.

6.2.3 Excavating the Critiques

The CDM has been the subject of significant criticism which ranges from ethically-based objections to the intrinsic market nature of the mechanism to concerns which have focused on perceived flaws in the operation of the mechanism in practice. This Section identifies and assesses the key prevailing critiques of the CDM before this Chapter considers how to reconstruct the CDM. The implications of the Paris Agreement for the CDM are then considered with a view towards exploring how the critiques could inform reconstruction of the mechanism. It is not the purpose of this Section to exhaustively itemise and discuss each and every criticism of the CDM which has emerged in the literature: such a task would

[27] Annie Petsonk, '"Docking Stations:" Designing a More Welcoming Architecture for a Post-2012 Framework to Combat Climate Change' (2009) 19 Duke Journal of Comparative and International Law 433.

be beyond the scope of this thesis. It is, however, important to assess the CDM's core deficiencies in order to evaluate how reconstruction of the mechanism could enhance its contribution to climate governance.

6.2.3(i) Revisiting the Ethical Objections to Market-Based Instruments

Market-based mechanisms are increasingly acknowledged in climate governance as a "necessary component in the policy toolbox".[28] However, as Chapter 2 elaborated, a considerable volume of criticism continues to challenge the perceived intrusion of economic principles into environmental value determinations.[29] Constituencies critical of the potential contribution of economic-incentivised approaches exist beyond scholarly debate and, as Marcu has observed, during the Paris negotiations some parties demonstrated an "ideological opposition … to include any provision that referred to markets or could be seen as facilitating markets in the Paris Agreement".[30] Such criticism is a reminder that the case for market trading enjoys uneven support and proponents of emissions trading must justify their approach with increasing clarity. However, continued critical examination of emissions trading in practice is welcome and important, particularly since "carbon markets on the scale, ambition, and planetary importance of those currently emerging have never been seen before".[31]

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[28] Luke Redmond and Frank Convery, 'The Global Carbon Market-Mechanism Landscape: Pre and Post 2020 Perspectives' (2015) 15(5) Climate Policy 647, 648.
[29] Robyn Eckersley, 'Markets, the State, and the Environment: An Overview' in Robyn Eckersley (ed), *Markets, the State and the Environment: Towards Integration* (Macmillan 1995) 12.
[30] Andrei Marcu, 'Carbon Market Provisions in the Paris Agreement (Aricle 6)' (2016) Centre for European Policy Studies Special Report No 128 January 2016, 1 <https://www.ceps.eu/publications/carbon-market-provisions-paris-agreement-article-6> accessed 14 April 2017.
[31] Fankhauser and Hepburn (n 12) 4386.

A consistent theme in the literature reveals a philosophical opposition to the role of economic incentivisation generally (and market trading specifically) in the realm of environmental protection. Such criticisms are less based on contesting the effectiveness of emissions trading, but rather the normative rationale for emissions trading. Goodin's critique, for example, challenges the concept of economic instruments by drawing an analogy with the medieval Church's sale of religious indulgences.[32] He has admonished "environmental indulgences" as the "sale of the unsaleable",[33] challenging what he characterises as the presumptuous right that "any human being [can] grant indulgences on behalf of Mother Nature".[34] The notion that an environmental wrong may be rendered right merely by payment, in Goodin's view, presents further grounds for objection. As he has explained:

> "The problem with green taxes or pollution charges or permits… is that they seem to say, 'It is okay to pollute provided you pay', when the proper message is instead, 'It is wrong to pollute, even if you can afford to pay'".[35]

It is this failure to stigmatise pollution in moral terms which many scholars critical of economic instruments find deeply unsettling.[36] Humphreys has expressed the concern that "[a] certain quotient of environmental harm is so fundamental to the economy that it is not visible as 'harm' at all: it is to be contained and directed rather than avoided".[37]

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[32] Significantly, Goodin also recognised that "environmentalists ought to be realists... [t]hey ought not go tilting at windmills": see Robert Goodin, 'Selling Environmental Indulgences' (1994) 47(4) Kyklos 573, 592.
[33] ibid 579.
[34] ibid 578.
[35] Ibid 582.
[36] Steven Kelman, *What Price Incentives?: Economists and the Environment* (Praeger 1981).
[37] Stephen Humphreys, 'Climate Justice: The Claim of the Past' in Anna Grear and Conor Gearty (eds), *Choosing a Future: The Social and Legal Aspects of Climate Change* (Edward Elgar Publishing 2014) 134, 145.

As Dryzek has acknowledged, for some scholars "[n]o matter how attractive economic prescriptions may be in instrumental terms, even to committed environmentalists, they help constitute a discourse, and a world, which those according higher priority to citizenship, democratic and ecological values find unattractive".[38] Consequently, it is important to distinguish such philosophical critiques about the contribution of market-based instruments in climate governance generally from more particular substantive reservations concerning the functioning of the CDM. The CDM, for example, has been described as facilitating "cheap carbon dumps",[39] "resource-wasting and corruption-inducing",[40] and an "attempt to provide a new system of legitimation and accumulation that enable the status quo of capitalism to continue".[41] This distinction does not diminish the import of the philosophical challenge to the increasing centrality of economic instruments in climate governance, nor does it suggest that philosophically-based objections are entirely disconnected from broader questions concerning the successful functioning of economic instruments. Dobson, for example, has argued that economic-incentivisation models of climate governance are unlikely to unlock the fundamental and substantive changes in behaviour that a sustainable society requires.[42]

Yet, as Hepburn has cautioned, "critics of market-based approaches often struggle to articulate a credible and politically feasible alternative".[43] The urgency

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[38] John S Dryzek, *The Politics of the Earth: Environmental Discourses* (3rd edn, Oxford University Press 2013) 142.
[39] Larry Lohmann, 'Carbon Trading: A Critical Conversation on Climate Change, Privatisation and Power' (2006) No 46 Development Dialogue, 357.
[40] Willem Buiter, 'Carbon Offsets: Open House for Waste, Fraud and Corruption' (FT.com blog: Maverecon, 23 July 2007) <http://blogs.ft.com/maverecon/2007/07/carbon-offsets-html/#axzz2zNh1Cn2P> accessed 14 April 2017.
[41] Steffen Böhm and Siddhartha Dabhi, 'Upsetting the Offset: An Introduction' in Steffen Böhm and Siddhartha Dabhi (eds), *Upsetting the Offset: The Political Economy of Carbon Markets* (MayFlyBooks 2009) 9, 21.
[42] Andrew Dobson, *Citizenship and the Environment* (Oxford University Press 2003). Dobson instead argues that ecological citizenship is an underexplored route to environmental sustainability.
[43] Cameron Hepburn, 'International Carbon Finance and the Clean Development Mechanism' in Dieter Helm and Cameron Hepburn (eds), *The Economics and Politics of Climate Change* (Oxford University Press 2009) 409, 420.

of climate change science requires action to deepen climate governance, where possible, with a view to developing viable and durable governance arrangements and it is not clear that there is any "obvious alternative [to emissions trading] that can be quickly adopted and function as a common EU policy".[44] Moreover, advancing a central role for emissions trading in addressing climate change does not imply the uncontested normative superiority of such a regulatory approach, but rather advocates the more modest, yet crucial, claim that the market can be deployed in an instrumentalist manner to effectively secure carbon reduction objectives mandated by the state. The creation of an emissions trading market by government intervention is not an end itself, but is instead a technical tool to effectively and efficiently advance an environmental target.[45] Nonetheless, criticisms such as those of Splash, who has warned of the creation of a "powerful institutional structure which has many vested interests",[46] are reminders of the challenges which carbon markets must overcome and the importance of continuing regulatory vigilance beyond market dynamics.[47]

6.2.3(ii) Environmental Integrity

Concerns regarding the environmental integrity of the CDM have been raised in the literature based on the suspicion that "some proportion of the credited activity would have happened even without the CDM".[48] In this respect, a recurring criticism of the CDM has focused on the risk of perverse incentivisation. One

[44] Jørgen Wettestad, 'The EU Emissions Trading System: Frontrunner in Trouble' in Geert van Calster, Wim Vandenberghe and Leonie Reins (eds) *Research Handbook on Climate Change Mitigation Law* (Edward Elgar Publishing 2015) 451, 474.
[45] Peter Zapfel and Matti Vainio, 'Pathways to European Greenhouse Gas Emissions Trading: History and Misconceptions' (2002) Fondazione Eni Enrico Mattei Working Paper Series 85/2002, 21.
[46] Clive Splash, 'The Brave New World of Carbon Trading' (2010) 15(2) New Political Economy 169, 191.
[47] Markus Lederer, 'Market Making via Regulation: The Role of the State in Carbon Markets' (2012) 6 Regulation & Governance 524, 537.
[48] Hepburn (n 43) 415.

classic case study, for example, has centred on projects reducing HFC-23 emissions. Such emissions are an extremely damaging greenhouse gas – approximately 14,800 times more potent than carbon dioxide – and mitigation efforts are certainly desirable.[49] As early as 2007, the largest volume of credits, almost 30% of the entire CDM market, had come from capturing and destroying HFC-23.[50] This should have been a welcome development, but cutting HFC-23 emissions is a relatively inexpensive process and concerns were raised that the significant dividends which were possible under the CDM had created perverse incentives to generate more HFC-23.[51] Wara concluded that it would have been more efficient to simply finance the additional costs of technologically upgrading the plants.[52] He estimated that this would have cost approximately €100 million, considerably less than the €4.7 billion credits generated,[53] whilst Schneider suggested a suite of options, including the creation of an independent intermediary or multilateral institution to fund HFC-23 destruction projects.[54]

Scholars have also acknowledged, however, that it is far from clear that fitting the necessary equipment to remove HFC-23 from industrial projects would have happened without some incentive to do so.[55] Indeed, by incentivising opportunities for emissions reductions that had not otherwise been prioritised, much less mitigated, the CDM was merely doing precisely that which it was designed to do.[56] The CDM Executive Board has since amended its rules to

[49] The IPCC's estimate of the global warming potential of HF C-23 increased from 11,700 to 14,800: see IPCC, 'Climate Change 2014 Synthesis Report Summary for Policymakers' (2014) IPCC: Fifth Assessment Report (AR5), 129 <http://ipcc.ch/pdf/assessment-report/ar5/syr/AR5_SYR_FINAL_SPM.pdf> accessed 14 April 2017.
[50] Michael Wara, 'Measuring the Clean Development Mechanism's Performance and Potential?' (2007) 55(6) UCLA Law Review 1759, 1787.
[51] Lambert Schneider, 'Perverse Incentives Under the CDM: An Evaluation of HFC-23 Destruction Projects' (2011) 11 Climate Policy 851.
[52] Michael Wara, 'Is the Global Carbon Market Working?' (2007) 445 Nature 595, 596.
[53] ibid.
[54] Schneider (n 51) 861.
[55] Grubb, Laing, Counsell and Willan (n 15) 557.
[56] ibid 560.

reduce the risk of perverse incentives by excluding new green-field HFC-23 projects and Commission Regulation 550/2011, also adopted as a result of these perverse incentivisation concerns, prohibits the use of CERs generated by projects involving the destruction of either HFC-23 or nitrous oxide.[57]

Concerns continue to focus on whether the deficiencies revealed by the discrete circumstances of HFC-23 destruction may have broader applicability beyond the scope of these projects. Central to such concerns is the obligation, imposed by Article 12.5(c) of the Kyoto Protocol, that reductions in emissions must be "additional to any that would occur in the absence of the certified project activity".[58] This requirement, framed as the concept of "additionality", has proven particularly taxing in practice. Theoretically, CER credits for projects under the CDM should be allocated only where it is demonstrated that emissions reductions will be achieved relative to a hypothetical "no project" baseline. The process of determining the appropriate allocation of credits requires calculation with reference to a theorised baseline, but the construction of this baseline necessarily involves a counterfactual assessment of a hypothetical business-as-usual alternative scenario. As a result, determining the presence or absence of additionality, which is only ever possible by reference to this theorised alternative, is necessarily speculative and highly complex. Whilst this assessment is challenging, the process is further complicated by the potentially uneasy alignment of interests which exists: both the generator of credits and the buyer has an incentive to facilitate the approval of projects and the maximisation of

[57] Commission Regulation (EU) No 550/2011 of 7 June 2011 on determining, pursuant to Directive 2003/87/EC of the European Parliament and of the Council, certain restrictions applicable to the use of international credits from projects involving industrial gases [2011] OJ L149/1, art 1.
[58] 1997 Kyoto Protocol to the United Nations Framework Convention on Climate Change 2303 UNTS 148, art 12.5(c).

credits issued. Consequently, a real risk of perverse incentivisation to manipulate what is an unobserved and essentially unobservable baseline exists.

The additionality requirement has proven one of the more challenging aspects of implementing the CDM in practice. Indeed, some critical studies have suggested that as many as 40% of all CDM projects have been non-additional.[59] Grubb and colleagues have conducted an expert survey to study estimates of the extent of additionality in different project classes and identified "an extraordinary range of opinion ranging from deep scepticism to a broad view that… almost all approved projects are likely to be genuinely additional".[60] Whilst the precise percentage of projects characterised by questionable assessments of additionality remains open to debate, there is a consensus in the literature that *some* proportion of all projects do not adhere to the additionality requirement.

Such concerns have given rise to observations that "market participants [are] behav[ing] strategically to generate credits for activities that do not merit them".[61] Lohmann has gone further, challenging the very concept of additionality:

> "There is no such thing as 'additionality' or 'non-additionality', and thus no standard that either market participants or regulators could use either to clarify the accounting rules or to prevent scamming".[62]

Given the centrality of additionality in the text of Article 12, the Executive Board – the decision-making authority which oversees the CDM – has striven to develop procedures for ascertaining and evaluating the presence of such additionality. As the Executive Board makes such assessments on a project-by-project basis this

[59] Schneider (n 51) 862.
[60] Grubb, Laing, Counsell and Willan (n 15) 567-571.
[61] Wara, 'Measuring the Clean Development Mechanism's Performance and Potential?' (n 50) 1804.
[62] Larry Lohmann, 'Regulation as Corruption in the Carbon Offset Markets' in Steffen Böhm and Siddhartha Dabhi (eds), *Upsetting the Offset: The Political Economy of Carbon Markets* (MayFlyBooks 2009) 175, 180.

has resulted in a series of methodologies to determine the degree of emissions reductions and additionality delivered by different kinds of projects. To date over a hundred different methodologies to assess additionality have been approved with many still pending.[63] Perhaps unsurprisingly, this assessment process has itself since been criticised as "tangled in red tape"[64] and "verifying the unverifiable".[65]

Assessing additionality remains a "tricky exercise in establishing a credible counterfactual"[66] and presents a challenging friction which Grubb and colleagues have characterised as the "additionality paradox": the more cost-effective the project, the more uncertain the additionality.[67] Moreover, this requirement had been identified as a potential problem early in the life of the CDM,[68] so it is particularly concerning that the inherent complexity of the process has now imbued the CDM with an esoteric flavour which is at best unhelpful by undermining confidence in the contribution of market-based mechanisms to climate governance and at worst potentially a vehicle for carbon fraud.

6.2.3(iii) Sustainable Development

A further complexity which has complicated effective and transparent operation of the CDM is the requirement under Article 12.2 of the Kyoto Protocol that offset projects must assist non-Annex I countries "in achieving sustainable development". Whilst it was never envisaged that the CDM would only assist

[63] Grubb, Laing, Counsell and Willan (n 15) 557.
[64] John Browne, 'Beyond Kyoto' (2004) 83(4) Foreign Affairs 20, 31.
[65] Buiter (n 40).
[66] Donald MacKenzie, 'Makings Things the Same: Gases, Emission Rights and the Politics of Carbon Markets' (2009) 34 Accounting, Organizations and Society 440, 445.
[67] Grubb, Laing, Counsell and Willan (n 15) 558.
[68] Saura Estapà (n 7) 136.

Annex I countries in complying with their carbon reduction targets, Article 12.2 does not contain either an express or implied hierarchy of purposes.

The concept of sustainable development is intended to "embrace the idea of ensuring that future generations inherit an Earth which will support their livelihoods in such a way that they are no worse off than generations today".[69] The formulation framed by the World Commission on Environment and Development (Brundtland Commission) in 1987 is perhaps the most widely recognised to date: "Development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs".[70] As such, sustainable development seems to focus on the future.[71] The Johannesburg Declaration 2002 reaffirmed a collective responsibility to promote and strengthen the interdependent and mutually reinforcing pillars of sustainable development, economic development, social development and environmental protection at the local, national, regional and global levels.[72] At the Rio+ 20 conference, sustainable development was conceptualised as comprising three mutually reinforcing dimension: environmental protection, social development, and economic development.[73]

Whilst the Rio+ 20 dimensions captures the essence of sustainable development and identifies the nexus between environmental protection, economic development, and social development, key questions remain unanswered. It is unclear, for example, how sustainable development should be

[69] David Pearce and Giles Atikinson, 'The Concept of Sustainable Development: An Evaluation of its Usefulness Ten Years After Brundtland' (1998) 134(3) Swiss Journal of Economics and Statistics 251.
[70] World Commission on Environment and Development, *Our Common Future* (Oxford University Press 1987) 8.
[71] Pravesh Aggarwal and Rupesh Aggarwal, 'Examining Perspectives and Dimensions of the Clean Development Mechanism: A Critical Assessment vis-à-vis Developing and Least Developed Countries' (2017) 59(1) International Journal of Law and Management 1, 6.
[72] Johanneburg Declaration, in United Nations Report of the World Summit on Sustainable Development, Johannesburg, UN Doc A/CONF.199/20 (2002), para 5.
[73] 2012A/CONF.216/L1, United Nations, Rio de Janeiro, Brazil, 20-22 June 2012.

measured; the appropriate models to operationalisation it; and, the implications of implementing it. The inchoate nature of the concept has made it difficult to implement in practice and efforts to operationalise it have generated "a new set of 17 Sustainable Development Goals (SDGs), with 169 targets and potentially many more indicators".[74] It is perhaps little wonder then that Bosselmann has observed that the concept "resists definition and avoids the hard questions, which is precisely why it has become so popular among governments".[75] Some scholars have sought to provide structure and clarity to the concept in an effort to reduce the ambiguities surrounding it. Pearce and Atkinson, for example, have developed a bifurcated classification, categorising sustainability as either weak sustainability or strong sustainability. Weak sustainability provides that any form of capital (which may, for example, include natural capital) may be run down provided that proceeds are reinvested in some other form of capital, such as human capital or social capital.[76] On the other hand, strong sustainability implies the non-substitutability of natural capital. However, strong sustainability may also be interpreted as requiring either the preservation of the environment in all its forms, as favoured by Beckerman,[77] or alternatively conservation of some overall natural capital stock within which there may be substitution or conservation of critical non-substitutable stocks.[78]

Neither the Kyoto Protocol nor the Paris Agreement engages with, much less clarifies, the innately ambiguous nature of sustainable development. The lack of an agreed definition for the concept has created troublesome questions

[74] Jorge E Viñuales, Joanna Depledge, David M Reiner and Emma Lees, 'Climate Policy After the 2015 Paris Climate Conference' (2017) 17(1) Climate Policy 1, 2.
[75] Klaus Bosselmann, 'Losing the Forest for the Trees: Environmental Reductionism in the Law' (2010) 2(8) Sustainability 2424, 2435.
[76] Pearce and Atkinson (n 69) 253.
[77] Wilfred Beckerman, *Small Is Stupid: Blowing the Whistle on the Greens* (Duckworth Publishing 1995) 135-137.
[78] Pearce and Atkinson (n 69) 257.

for the operation of the CDM with some scholars suggesting that the challenge is particularly profound. Pearson, for example, has argued that the problem lies with the architecture of the CDM, as the "first mandate to help reduce Kyoto compliance costs is all but making impossible the fulfilment of its second mandate to promote sustainable development".[79] The implications of such conflict at the heart of Article 12.2 are significant: the sustainable development dimension of the CDM has not been incorporated into the market dynamics of the mechanism and, consequently, "contributions to sustainable development have no monetary value under the CDM".[80] This raises existential questions about the viability of such a sustainable development objective, particularly in circumstances where it is so fundamentally disconnected from the surrounding architecture of the mechanism, a consideration explored in Section 6.3.3.

Moreover, the host country determines whether or not a proposed CDM project advances sustainable development. This means that the concept will continue to defy precise definition and whether sustainable development is (or is not) present in any particular project is a matter for each country to determine. Developing countries have generally favoured such individualised country-specific interpretations of sustainable development, principally as a result of concerns that developed countries and companies might otherwise seek to "impose projects that were contrary to the development interests of host countries".[81] The Marrakesh Accords required countries to establish Designated National Authorities (DNAs) tasked with evaluating and approving proposed CDM projects and determining whether projects will assist in achieving sustainable

[79] Ben Pearson, 'Market Failure: Why the Clean Development Mechanism Won't Promote Clean Development' (2007) 15(2) Journal of Cleaner Production 247.
[80] Harro van Asselt and Joyeeta Gupta, 'Stretching Too Far? Developing Countries and the Role of Flexibility Mechanisms Beyond Kyoto' (2009) 28(2) Stanford Environmental Law Journal 311, 352.
[81] Grubb, Laing, Counsell and Willan (n 15) 541.

development.[82] As the South African DNA explicitly emphasises, "[t]he CDM procedures leave the definition of what sustainable development means as a sovereign decision of each developing country".[83] This has contributed to a further balkanised understanding of sustainable development and, given the ill-defined nature of the concept, it seems inevitable that further definitional fragmentation will develop as both criteria and assessment practices diverge.

The South African definition, for example, requires "the integration of social, economic and environmental factors into planning, implementation and decision making so as to ensure that development serves present and future generations".[84] Significantly, the South African Constitution contains language which emphasises the importance of sustainable development, whilst falling short of providing a constitutional right to it.[85] As such, it seems reasonable to assume that the presence of constitutional and statutory anchors for sustainable development in South Africa create a very different legal landscape for the assessment of CDM projects, as compared with other developing countries. In China, for example, "there are no explicit social and economic guidelines of sustainable development for CDM projects".[86] This has understandably led some scholars to observe that the sustainability criteria applied by countries hosting CDM projects "usually lack specificity, transparency, and stringency".[87]

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[82] Conference of the Parties to the UNFCCC, Seventh Session, Marrakesh, Morocco, 29 October – 10 November, 2001, *Modalities and Procedures for a Clean Development Mechanism, as Defined in Article 12 of the Kyoto Protocol*, UN Doc FCCC/CP/2001/13/Add.2, Decision 17/CP7.
[83] South Africa Designated National Authority, Department of Minerals and Energy, South Africa, 'Sustainable Development Criteria for Approval of Clean Development Mechanism Projects by the Designated National Authority of the CDM' (Designated National Authority, Department of Minerals and Energy, 14 October 2004) <http://www.energy.gov.za/files/esources/kyoto/Web%20info/Annex%203%20SA%20Sustainable%20Development%20Criteria.pdf> accessed 14 April 2017.
[84] National Environmental Management Act, 107 of 1998 (South Africa) s 1.
[85] Louis Kotzé, 'Sustainable Development and the Rule of Law for Nature: A Constitutional Reading' in Christina Voigt (ed), *The Rule of Law for Nature: New Dimensions and Ideas in Environmental Law* (Cambridge University Press 2013) 130, 138.
[86] Sukumar Ganapati and Liguang Liu, 'Sustainable Development in the Clean Development Mechanism: The Role of Designated National Authority in China and India' (2009) 52(1) Journal of Environmental Planning and Management 43, 53.
[87] Aggarwal and Aggarwal (n 71) 9.

The unbounded scope now afforded to individual countries to form divergent sustainable development determinations risks undermining the maintenance of cross-complementarity in climate governance. There is also evidence which casts doubts on the sustainable development qualities of many CDM projects approved by DNAs.[88] Disch has evaluated the merits of 122 CDM projects with respect to 15 sustainable development metrics across a diverse pool of developing countries, including China, India, Peru, Brazil, Malaysia, and South Africa.[89] He discovered that Peru, exceptionally amongst the countries studied, adopted an approach to project approval characterised by on-site visits and interviews with local stakeholders.[90] Each of the other five countries confined their analysis to desk-based sustainability checks. Disch concluded that all of the host countries' frameworks for CDM project approval, with the notable exception of Peru, fell short of ensuring a sustainable development benefit.[91] Separately, Sutter and Parreño have concluded that CDM projects "may be far from delivering their claims to promoting sustainable development",[92] whilst Baumert has recommended that "policy interventions of the kind precluded by [current] CDM rules"[93] may be required to genuinely assist developing countries in achieving sustainable development.

It seems quite clear that the elephant in the room remains the lack of any definitional clarity regarding what sustainable development requires (at the very least, in the context of the CDM) and how to objectively, with some degree of

[88] For example, Pearson has suggested that an offshore oil production facility in Vietnam and two coal mines in China claimed over 17 million CER credits for "capturing and using the methane released as part of their operations": see Pearson (n 79) 249.
[89] David Disch, 'A Comparative Analysis of the 'Development Dividend' of Clean Development Mechanism Projects in Six Host Countries' (2010) 2(1) Climate and Development 50.
[90] ibid 54.
[91] ibid.
[92] Christoph Sutter and Juan Carlos Parreño, 'Does the Current Clean Development Mechanism (CDM) Deliver its Sustainable Development Claim? An Analysis of Officially Registered CDM Projects' (2007) 84 Climatic Change 75, 89.
[93] Kevin Baumert, 'Participation of Developing Countries in the International Climate Change Regime: Lessons for the Future' (2006) 38 George Washington International Law Review 365, 387.

confidence, measure it. After analysing 400 CDM projects in the waste management sector, Siebel and colleagues concluded that "[m]ost projects do not bridge the two objectives of CDM projects", a reality which only reinforces concerns which had emerged since the earliest days of the CDM.[94] Their suggested reform – "the need for an international standard for sustainability assessment additional to national definition" – is a timely reminder that the CDM, as presently constituted, simply cannot provide assurance of projects' claimed sustainable development qualities.[95] In the absence of reform, rather than maintaining the fiction that the CDM's architecture delivers both emissions reductions and sustainable development, it may be preferable to acknowledge that the CDM, in its current structure, cannot successfully fulfil this dual objective.[96] Section 6.3.3 revisits this theme, within the context of the Paris Agreement, to explore potential pathways to enhance clarity regarding the concept and its climate governance contribution.

6.2.3(iv) Geographic Concentration of Projects

The Kyoto Protocol is silent concerning any expectations, much less obligations, regarding the regional distribution of CDM projects with the binary Annex I/non-Annex I categorisation instead prevailing as the core distinction. The Marrakesh Accords, however, established the operational technicalities for the functioning of the CDM and explicitly envisaged an "equitable geographic distribution of clean development mechanism project activities at regional and subregional levels".[97]

[94] Maarten Alexander Siebel, Vera Susanne Rotter, Agnes Nabende and Joyeeta Gupta, 'Clean Development Mechanism: A Way to Sustainable Waste Management in Developing Countries' (2013) 65 Österr Wasser-und Abfallw 42, 45.
[95] ibid.
[96] Birthe Vichit Petersen and Kamille Bollerup, 'The Clean Development Mechanism and Its Failure in Delivering Sustainable Development' (2012) 8(1) Interdisciplinary Journal of International Studies 74, 85.
[97] Conference of the Parties to the UNFCCC, Seventh Session, Marrakesh, Morocco, 29 October – 10

Nonetheless, the issue of promoting equitable regional distribution of CDM project activities has remained a recurring concern, particularly since CDM projects have been highly concentrated in only a few advanced developing countries. As of 2014, China, India and Brazil hosted 6613 projects in the pipeline which accounted for approximately 74% of all projects and of expected annual CERs, whilst least developed countries (LDCs) hosted just 105 CDM projects in the pipeline (1.2%).[98] China has attracted the lion's share of foreign investment opportunities created by the CDM and alone generates almost 60% of all CERs.[99]

The drivers behind this geographic bias are complex and extend beyond the architecture of the CDM. For example, developing the national governing procedures required under the CDM raises considerable administrative challenges and the complexity of the CDM project cycle and high transaction costs which are entailed make it comparatively more difficult for poor countries.[100] The development of a domestic environment conducive to fostering CDM investment is also a difficult and resource-intensive effort which simply may not make sense for some countries.[101] However, irrespective of these multi-faceted drivers, the outcome has been the development of a market mechanism which little resembles the equitable distribution vision of the Marrakesh Accords.

Such skewed distributional flows have been evident from the earliest days of the CDM. Indeed, the near total absence of African countries from the offset credits market was identified as far back as 2007, with only notable exceptions of South Africa, the Maghreb countries, and a few sub-Saharan countries, a pattern

November, 2001, *Modalities and Procedures for a Clean Development Mechanism, as Defined in Article 12 of the Kyoto Protocol*, UN Doc FCCC/CP/2001/13/Add.2, Decision 17/CP7.

[98] Paula Castro, *Climate Change Mitigation in Developing Countries: A Critical Assessment of the Clean Development Mechanism* (Edward Elgar Publishing 2014) 27.

[99] Vichit Petersen and Bollerup (n 96) 81.

[100] Castro (n 98) 5.

[101] Aaron Cosbey, Deborah Murphy, John Drexhage and John Balint, *Making Development Work in the CDM: Phase II of the Development Dividend Project* (International Institute for Sustainable Development 2006) 28.

described then as "particularly striking".[102] Whilst this pattern is consistent with prevailing foreign direct investment ("FDI") flows, it is no less disquieting. FDI preferences reflect broader conditions which are influential to the overall investment climate including political stability, institutional capacity, and macro-economic security, but it is disappointing that many of the poorest nations which have been unable to attract flows of FDI have also been unable to attract significant investment interest in CDM projects.[103]

The extent of the impact of DNAs in the process of attracting CDM investment has yet to be fully evaluated. However, a number of countries have expanded the role of their DNAs beyond that of evaluating and approving proposed CDM projects. Additional functions including outreach initiatives to promote and actively attract CDM investment and proactive engagement in the assessment of projects with the proposing entity demonstrates an attentive and strategic approach to maximising financing under the CDM. Such an approach is in marked contrast with jurisdictions which have instead treated the role of the DNA as merely an appendage to an existing process, such as environmental impact assessment. For example, the Ugandan DNA, whilst now located within the Ministry of Water and Environment,[104] was originally outsourced to a private agency.[105] It is clear that current institutional capacity is uneven across potential CDM host countries, yet it is likely that the internal priority afforded to promoting and developing CDM projects is directly related to that country's prospects of enhanced CDM investment.[106] Whilst it is hardly reasonable to expect China and

[102] Franck Lecocq and Philippe Ambrosi, 'The Clean Development Mechanism: History, Status, and Prospects' (2007) 1(1) Review of Environmental Economics and Policy 134, 146.
[103] Jane Ellis, Harald Winkler, Jan Corfee-Morlot and Frédéric Gagnon-Lebrun, 'CDM: Taking Stock and Looking Forward' (2007) 35(1) Energy Policy 15, 19.
[104] CDM Executive Board, 'Designated National Authorities: Uganda' <https://cdm.unfccc.int/DNA/view.html?CID=222> accessed 14 April 2017.
[105] Ellis, Winkler, Corfee-Morlot and Gagnon-Lebrun (n 103) 21.
[106] ibid.

Fiji to have similar CDM profiles, the failure of the CDM to fulfil in practice the "equitable geographic distribution" expectation of the Marrakesh Accords remains a serious concern.[107]

This concern has been articulated at the highest levels of the international community, as demonstrated by the intervention of the then UN Secretary General, Kofi Annan, by pioneering the "Nairobi Framework", an initiative aimed at strengthening Africa's position in obtaining CDM projects.[108] This initiative, however, has so far failed to significantly redress the gross geographic imbalance.[109] Studies have found that, despite the enhanced technical assistance provided to LDCs under the Nairobi Framework, CDM investment continues to gravitate towards countries, such as South Africa, which already enjoy a more favourable investment climate.[110] Changing this landscape will prove difficult and provides a salient reminder of the challenges afflicting the CDM in its current guise and the importance of exploring options for reform, a process which the EU has pioneered and which is examined in Section 6.3.1.

The development of a privileged class of countries in CDM investment has profoundly undermined the capacity of the CDM to realise its full potential of broadening participation in climate governance. In advance of the Paris negotiations, many scholars questioned whether a point had now been reached where newly industrialised countries' responsibilities should instead be reconsidered with a view to encouraging the adoption of binding carbon reduction commitments.[111] The prospect of an incrementally evolving international climate

[107] Cosbey, Murphy, Drexhage and Balint (n 101) 26.
[108] Castro (n 98) 27.
[109] ibid.
[110] Alfred Byigero, Joy Clancy and Margaret Skutsch, 'CDM in Sub-Saharan Africa and the Prospects of the Nairobi Framework Initiative' (2010) 10 Climate Policy 181, 188.
[111] Concerns have also arisen regarding grossly CDM investment patterns *within* developing countries: for example, "the distribution of CDM projects across India's states is not equal, with a strong bias towards more economically prosperous states": see Maria da Graça Canto Muniz, 'India's Carbon Governance: The Clean Development Mechanism' (2013) 1(1) Journal on Food, Agriculture, and Society 5, 11.

governance framework is central to this thesis. However, as currently constructed, the CDM fails to fully exploit the potential to advance this vision. The significant financial transfer flows delivered to newly industrialised countries under the CDM has potentially undermined incremental progress towards a more rigorous emissions trading architecture based on carbon reduction commitments. As this Section has illustrated, there have also been concerning regulatory deficiencies in the CDM. Section 6.3 explores and critiques the EU's proposals to reform the CDM before evaluating the potential implications of the Paris Agreement.

6.3 Reconstructing the CDM

6.3.1 Unilateral EU Regulation of Offsets

The Chairman of the Kyoto Conference observed that whilst he facilitated the approval of the CDM he "did not like it" and did not "understand how commitments can be implemented jointly if only one of the Parties involved is committed to limit or reduce emissions".[112] Perhaps unsurprisingly, the EU's integration of the CDM with the EU ETS was also conditional. Article 11a(9) of the EU ETS Directive expressly permitted the imposition of restrictions on "specific credits from project types" and the Linking Directive amended the EU ETS Directive to prohibit the use of CERs generated from nuclear, land-use, and forestry projects.[113]

The distorted geographic concentration of CDM investment has also been a focus for reform by the EU, in the form of Articles 11a(4) and (5) of the EU ETS Directive, as inserted by the Amending Directive. Then Commissioner for Climate

[112] Lecocq and Ambrosi (n 102) 135.
[113] EU ETS Directive, art 11a(3).

Action, Connie Hedegaard, explained that it was evident that some CDM projects "raise concerns relating to their environmental integrity, value-for-money, and geographical distribution".[114] Articles 11a(4) and 11a(5) of the EU ETS Directive imposes a default prohibition on the use of new-project CERs beyond 2013, unless they are from least developed countries ("LDCs") or can be swapped for CERs from LDCs.[115] Whilst the impact of this prohibition has been overtaken by market developments,[116] the EU's unilateral approach underscores the Union's emphasis on broadening access to the CDM.

The prospect of 'monetising' CERs via the EU ETS had been the main driver of investment in CDM projects and the effects of the EU's unilateral changes have already proven substantial.[117] After peaking at €25 in mid-2008 and fluctuating around €10 – €15 per metric ton for most of 2009 until 2011,[118] CER prices fell steadily and by April 2017 had fallen to €0.25.[119] The EU's introduction of limitations on the use of CERs has likely been the dominant reason for this dramatic collapse and market observers have suggested that the estimated volume of CERs now exceeds total anticipated demand until 2020.[120]

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[114] Commission, 'Emissions Trading: Commission Welcomes Vote to Ban Certain Industrial Gas Credit' (DG Climate Action, 21 January 2011) <http://ec.europa.eu/clima/news/articles/news_2011012101_en.htm> accessed 14 April 2017.

[115] The definition of LDCs employed by the EU relates to the list of LDCs as defined by the Committee for Economic Development and endorsed by the Economic and Social Council of the United Nations. This list is updated every three years according to specific criteria.
See Commission, 'Definition of Least Developed Countries in the context of Article 11a(4) of Directive 2009/29/EC of the European Parliament and of the Council of 23 April 2009, amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community' <https://ec. europa.eu/clima/sites/clima/files/ets/markets/docs/def_ ldc_en.pdf> accessed 14 April 2017.

[116] Since the onset of the financial crisis, allowances prices have collapsed. For example, during 2014 and 2015 the price of an allowance oscillated between €5 and €7.

[117] MacKenzie (n 66) 443.

[118] Dinakar Sethuraman and Natalie Obiko Pearson, 'Carbon Credits Becoming 'Junk' Before 2013 Ban Closes Door: Energy Markets' (Bloomberg, 7 December 2011) <http://www.bloomberg.com/news/2011-12-06/carbon-credits-becoming-junk-before-2013-ban-closes-door-energy-markets.html> accessed 14 April 2017.

[119] Vertis Environmental Finance, 'Carbon Prices' <http://www.vertis.com/> accessed 14 April 2017.

[120] Point Carbon, 'CER Prices to 2020 to Stay Below Issuance Cost', Forecast April 2014 (Thomson Reuters, 14 April 2014) <http://www.pointcarbon.com/research/research/1.4844717?&ref=searchlist> accessed 14 April 2017.

6.3.2 Reforming the CDM

The unilateral reforms introduced by the EU go some measure towards addressing serious deficiencies in the operation of the CDM.[121] However, a more fundamental question remains regarding the long-term role of the CDM (and any successor mechanism), particularly whether the mechanism should be considered as a permanent feature of the climate governance landscape. There is a compelling case to be made for reconstructing the CDM as a transitional tool, a perspective consistent with the EU's emphasis on prioritising the inclusion of LDCs in climate mitigation efforts. Under such an approach, advanced developing countries could graduate from the CDM by adopting more stringent domestic carbon reduction commitments.

6.3.2(i) The CDM as a Transitional Instrument

The context surrounding negotiation of the Kyoto Protocol presented conditions where, for many developing countries, whilst an offset system such as the CDM proved satisfactory, the application of binding reduction commitments would have been unacceptable. However, the current context within which the CDM must be reconsidered, particularly with respect to national contributions to global carbon emissions, has radically changed. Since the Kyoto Protocol was adopted, emissions have been reduced in the Global North, while rising by some 160% in the South.[122] Nearly two-thirds of global emissions for 2010 originated from just ten countries, with the shares of China (23.8%) and the United States (17.7%) far

[121] Aldy and Stavins (n 16) 172.
[122] Steinar Andresen, Jon Birger Skjærseth, Torbjørg Jevnaker and Jørgen Wettestad, 'The Paris Agreement: Consequences for the EU and Carbon Markets?' (2016) 4(3) Politics and Governance 188, 189.

surpassing those of all others, whilst India is now the world's third largest greenhouse gas emitter having tripled its carbon dioxide emissions from fuel combustion between 1990 and 2011.[123] India's emissions alone are forecast to increase by almost 2.5% between 2008 and 2035.[124] Questions of carbon responsibility are influenced by a number of factors, including the "framing" of the problem of climate change. Indeed, the way in which the issue is framed inevitably impacts upon the range of perceived legitimate or equitable options available. Consequently, whilst the framing of climate change as one of historic responsibility has tended to dominate and underpins the now fundamental climate governance principle of common but differentiated responsibilities, the reality of rapidly escalating carbon emissions from advanced developing countries requires a more nuanced application of this principle.[125]

In such a context, the role of the CDM is arguably open to normative re-evaluation, an undertaking which is particularly timely in light of the recent entry into force of the Paris Agreement. The CDM has provided an important step towards a global carbon market by creating capacity, clarifying concepts, and initiating a certain level of data collection.[126] Moreover, it has also proven effective as a tool to globalise the issue of climate change and has contributed to increasing international acceptance of the importance of regulating carbon. Building on these experiences, Elgie has identified the potential of offset trading to facilitate evolution towards a more stringent emissions trading scheme and has

[123] International Energy Agency, 'CO_2 Emissions from Fuel Combustion Highlights' 20 (IEA 2012) <http://www.iea.org/co2highlights/co2highlights.pdf> accessed 14 April 2017.
[124] ibid 23.
[125] The American National Academies have noted that: "[c]umulatively, since 1751, at the level of individual countries, the United States has been by far the largest emitter of carbon, while the USSR is the second largest emitter (based on data from 1830-1991)." Even under an historic framing of climate change responsibility, China is now the third largest emitter.
See National Academies, *America's Climate Choices: Panel on Informing Effective Decisions and Actions Related to Climate Change* (National Academies Press 2010) 29-30.
[126] Vasa and Neuhoff (n 18) 8.

identified three contexts where offset trading could positively contribute to such a transition: (i) where institutional capacity is under-developed; (ii) where there is resistance to a proposed cap-and-trade scheme; and (iii) where a period of learning-by-doing is needed to develop an effective cap-and-trade scheme.[127] As such, the development of a web of indirect linkages facilitated by the CDM, quite aside from the specific advantages explored in Chapter 4, could also advance an incremental process of linkage by degrees by facilitating wider adoption of more rigorous emissions trading commitments.

As such, there is space within the emerging mosaic of climate governance initiatives to advocate the continued presence of a scaled-down and reformed CDM. The mechanism could be viewed less as an end in itself, but rather as an instrument to incrementally transition participants towards the adoption of more rigorous climate governance arrangements. In this sense, Vasa and Neuhoff have cautioned that if the CDM is maintained in its current form it could disincentivise the implementation of more stringent cap-and-trade schemes by advanced developing countries.[128] The restrictions implemented by the EU substantially address this concern by limiting participation in the CDM to LDCs. The reforms are also consistent with the EU's vision of promoting the creation of an OECD-wide market as a precursor to gradual development of a much broader international carbon market.[129] However, in order to enhance the environmental rigour of developing climate governance frameworks, it is necessary for "emerging economies such as China and India [to] rapidly indicate that they are

[127] Stewart Elgie, 'Carbon Offset Trading: A Leaky Sieve or Smart Step?' (2007) 17(3) Journal of Environmental Law and Practice 235, 261.
[128] Vasa and Neuhoff (n 18) 2.
[129] Commission, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, 'International Climate Policy Post-Copenhagen: Acting Now to Reinvigorate Global Action on Climate Change' (Communication) COM (2010) 86 final, 12.

ready to play their part".[130] Stabilising carbon emissions at an acceptable level will simply prove impossible if advanced developing countries avoid the implementation of meaningful carbon mitigation measures.[131]

As Section 6.3.3 considers further, the nature and scope of the CDM or successor mechanism is only partially elaborated by the Paris Agreement. Given this, so long as there is no definite end to the CDM (particularly given the potential for a related successor mechanism), it is instead necessary to incentivise advanced developing countries' engagement with domestic emissions reduction initiatives. The introduction of a "sunset clause", as advocated by Meng, by either setting quantitative limits for the total amount of CERs issued by advanced developing countries or by devising a deadline on all new CER issuance by such countries, as has now been implemented by the EU, would substantially advance the carbon reduction objective of climate governance initiatives.[132]

6.3.2(ii) Reinvigorating a Scaled-Down CDM

Whilst there is a continuing role for a scaled-down offset mechanism, the deficiencies identified in Section 6.2.2 require careful consideration. It is particularly important that long-standing concerns regarding questionable additionality and limited sustainable development impacts are urgently

[130] da Graça Canto Muniz (n 111) 6.
Similarly, Maraseni has emphasised that "[t]hese countries [countries with the highest number of CDM projects] need to shoulder the responsibility of emissions reduction to a far more genuine level than at present".
See Tek Narayan Maraseni, 'Evaluating the Clean Development Mechanism' in Timothy Cadman (ed), *Climate Change and Global Policy Regimes: Towards Institutional Legitimacy* (Palgrave Macmillan 2013) 96, 108.
[131] As Stern has elaborated: "Even if emissions from developed regions (defined in terms of Annex I countries) could be reduced to zero in 2050, the rest of the world would still need to cut emissions by 40% from BAU to stabilize at 550 ppm CO_2e. For 450 ppm CO_2e, this rises to almost 80%".
See Nicholas Stern, *The Economics of Climate Change: The Stern Review* (Cambridge University Press 2007) 234.
[132] Meng (n 25) 17.

addressed. As Lecocq and Ambrosi have observed, additionality constitutes "a weak link" in the CDM.[133] Non-additionality presents a serious problem for the EU ETS and, more broadly, the environmental integrity of any emerging global climate governance framework. In the context of the EU ETS, the use of non-additional CERs contributes to increasing global emissions and diverts investment flows more properly intended for genuine emissions reduction projects to non-additional projects.

Meng has suggested modification of the CDM (or any successor mechanism) to structure a "value-added" component to the generation of CERs.[134] He has defined value-added as "when a certain percentage of all CERs transacted between an Annex I country and a major developing country is either permanently retired or withheld from the carbon market".[135] For example, every 100 tonnes of reduction made by a CDM project (assuming full additionality) would instead generate 90 CERs with the discount representing an enhanced environmental benefit. Given the innate difficulties which have been raised by translating the theoretical concept of additionality to practice, such an approach merits serious consideration.

The introduction of a precautionary value-added component – or what may also be construed as an "environmental premium" – would not fully resolve the challenge of evaluating additionality. However, given that achieving a scientifically accurate assessment of additionality is impracticable, the incorporation of such an environmental premium could provide substantial progress towards redressing the current additionality imbalance. Indeed, assessing additionality will remain "an imperfect art with an unavoidable trade-off

[133] Lecocq and Ambrosi (n 102) 149.
[134] Meng (n 25) 17.
[135] ibid.

between administrative costs and the level of assurance",[136] but a value-added component could facilitate future iterative readjustments should further enhancement of the discount prove prudent. By facilitating a variation in the value-added component to reflect CERs country of origin, such an approach could also advance a normative reconstruction of the CDM as a transitional tool for developing countries. This normative reconfiguration of the purpose of the CDM could simultaneously encourage progress towards greater implementation of cap-and-trade schemes by advanced developing countries.

The uneven contribution of the CDM to sustainable development, as examined in Section 6.2.2(iii), has been a persistent cause of concern and remains the focus of sustained criticism. Indeed, the Herculean nature of determining and applying with any degree of confidence comparable standards for assessing sustainable development, as envisaged under Article 12.2, is indicative of a more intrinsic problem. It is particularly concerning, however, that there may even have been instances where CDM projects have undermined the objective of sustainable development "with the tacit approval of national CDM approval bodies".[137] Yet, as Murphy and colleagues have observed, "developing countries… are careful to safeguard their sovereign right to define what constitutes sustainable development in the national context".[138] The difficulties surrounding the objective of sustainable development are not limited to variable application between host countries. Such an approach, whilst sanctioned by the Marrakesh Accords, was always assured to produce different interpretations and, consequently, outcomes.

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[136] Grubb, Laing, Counsell and Willan (n 15) 558.
[137] Axel Michaelowa, 'Failures of Global Carbon Markets and CDM?' (2011) 11 Climate Policy 839.
[138] Deborah Murphy, Aaron Cosbey and John Drexhage, 'Market Mechanisms for Sustainable Development in a Post-2012 Climate Regime: Implications for the Development Dividend' in Karen Holm and Olsen Jørgen Fenhann (eds), *A Reformed CDM – Including new Mechanisms for Sustainable Development* (UNEP Risø Centre 2008) 9, 10.

However, the sustainable development objective has also been "poorly executed",[139] since it is "not incorporated into [the mechanism's] core incentive structure".[140] Consequently, it is unlikely that the sustainable development qualities of any potential CDM investment form an integral part of project planning. Whilst the introduction of an internationally agreed standard for sustainable development would represent a welcome improvement by providing a de minimis degree of harmonisation, the challenge of operationalising any agreed definition would persist. The architecture of the CDM simply does not incorporate an incentive structure to implement, much less advance, the objective of sustainable development since in practice any additional sustainable development-related project costs do not generate additional CERs.

In view of this structural deficiency, recommendations for reform of the CDM (or any successor mechanism) have often focused on restructuring or de-coupling the twin objectives of Article 12.2. Torvanger and colleagues, for example, have advocated development of a two-track mechanism with one track focusing on the traditional offset dimension of assisting countries with achieving compliance with domestic reduction commitments and a new second track which is exclusively focused on delivery of sustainable development outcomes.[141] Such reform would signal a significant departure from the current structure of the CDM by integrating, for the first time, sustainable development incentives into the incentive fabric of the mechanism. Since there can be little doubt that the failure of the CDM to attribute a price premium to sustainable development has been a key factor in the marginalisation of this objective,[142] the introduction of a second

[139] Nathan Hultman and colleagues, 'How Can the Clean Development Mechanism Better Contribute to Sustainable Development?' (2009) 38(2) Ambio: A Journal of the Human Environment 120, 122.
[140] ibid.
[141] Asbjørn Torvanger, Manish Kumaar Shrivastava, Nimisha Pandey and Silje Tørnblad, 'A Two-Track CDM: Improved Incentives for Sustainable Development and Offset Production' (2013) 13(4) Climate Policy 471.
[142] An observation particularly evident in the literature: see Sutter and Parreño (n 92) and Christoph Olsen

track could prove transformative in redressing this design defect. Yet the implementation of such reform in practice is likely to prove challenging since "the primary requirement for implementing a sustainable development track is a *common, internationally devised, definition of sustainable development*".[143] As Section 6.2.3(iii) explained, consensus on a universal definition, much less criteria operationalising such a definition, has proven elusive and it is unlikely such resistance will diminish given the emphasis which developing countries have placed on interpreting sustainable development through a national lens.

However, perhaps a more fundamental question is whether it is normatively desirable to reconfigure the CDM based primarily upon the structure imposed by Article 12.2. It has been suggested, for example, that if the CDM continues to function as a project-based market mechanism, then sustainable development "will only ever be a rhetorical flourish".[144] The failure, from the outset, to incorporate sustainable development within the mechanism's incentivisation architecture suggests that sustainable development benefits were considered secondary.[145] In the absence of radical reconstruction of the CDM, it may make more sense for policymakers to instead focus on improving the existing market dynamics of the CDM by ensuring that it maximises viable opportunities to widen access to the carbon market and the important financial flows which are generated by such participation – financial flows which could then contribute to nationally-oriented sustainable development plans.

A re-evaluation of the function of sustainable development in the CDM does not diminish the importance of the principle of sustainable development in

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and Juan Carlos Fenhann, 'Sustainable Development Benefits of Clean Development Mechanism Projects: A New Methodology for Sustainability Assessment Based on Text Analysis of the Project Design Documents Submitted for Validation' (2008) 36(8) Energy Policy 2819.

[143] Torvanger, Shrivastava, Pandey and Tørnblad (n 141) 472 (emphasis added).

[144] Pearson (n 79) 251.

[145] Vichit Petersen and Bollerup (n 96) 83.

climate governance. Instead, such a reassessment challenges the normative structure imposed by the inclusion of sustainable development as an objective of the CDM, particularly as the architecture of the mechanism ensured that it was ill-equipped to effectively promote this objective. The current context, with replacement of the Kyoto Protocol by the Paris Agreement in 2020, provides a timely opportunity to review the status of sustainable development in the CDM (or successor mechanism). Quite possibly, it is neither in the interests of the mechanism nor the objective of sustainable development to maintain the current explicit link between both, particularly in circumstances where the present relationship is one of rhetoric, rather than substance. Maintaining the CDM in its current form diminishes confidence in emerging climate governance arrangements and is likely impeding progress towards the evolution of a more rigorous international emissions trading framework. A reconstructed CDM which prioritises the participation of LDCs and provides a pathway towards integration, commensurate with capacity, in a broader carbon trading framework could make a material contribution to the emerging climate governance landscape.

6.3.3 Post-Paris: A New Mechanism or "Reborn CDM"?[146]

The Paris Agreement has received a mixed reception.[147] As Chapter 1 acknowledged, whilst the Paris Agreement entered into force on 4 November 2016, the future of the Agreement remains uncertain. Unlike the Kyoto Protocol, the Paris Agreement does not define absolute and economy-wide emission

[146] Marcu (n 30) 18.

[147] Kinley has welcomed the Agreement observing that "[w]ith the adoption of the Paris Agreement, and the directional signal provided by the long-term goal, we can now look forward to … a new sustainable growth model that is becoming a virtuous circle of action": see Richard Kinley, 'Climate Change After Paris: From Turning Point to Transformation' (2017) 17(1) Climate Policy 9, 11.
Meanwhile, Viñuales and colleagues have been more cautious, describing ambiguities within the Agreement as "worrying": see Viñuales, Depledge, Reiner and Lees (n 74) 1.

reduction targets, nor does it require industrialised countries to take on binding carbon reduction obligations.[148] It has been observed that "[w]ith the Paris Agreement, international negotiations have now officially given up on any attempt to categorize countries and allocate specific emission reduction targets".[149] Instead, the Agreement provides a "politically acceptable structure and process through which *all* countries can play their part and tighten their commitments over time".[150] For the purposes of this Chapter, analysis of the Paris Agreement will focus specifically on the Agreement's implications for the CDM.

Given previous multilateral negotiations, it was likely that issues surrounding the future of the CDM, particularly the prospect of a successor mechanism, would feature prominently in any post-Kyoto arrangements. It has been observed, for example, that there was broad consensus in international talks on the need for perpetuation of the CDM in any post-2012 climate change regime.[151] However, Article 6 of the Paris Agreement, which addresses the contribution of markets (and incidentally, non-market contributions) was "one of the last issues to be agreed".[152] Marcu has attributed this to a number of factors including the desire of some countries to delay agreement on markets to trade against other issues which were important to them; lateral connections with other provisions of the draft; and, the perceived, as well as very real, importance of environmental integrity.[153]

Article 6.4 establishes "a mechanism" which, it has been observed, is "intended to build upon the experience with the Clean Development Mechanism

[148] Anne-Marie Slaughter, 'The Paris Approach to Global Governance' (Project Syndicate, 28 December 2015) <https://www.project-syndicate.org/commentary/paris-agreement-model-for-global-governance-by-anne-marie-slaughter-2015-12> accessed 14 April 2017.
[149] Charlotte Streck, Paul Keenlyside and Moritz von Unger, 'The Paris Agreement: A New Beginning' (2016) 13 Journal for European Environmental and Planning Law 3, 27.
[150] Viñuales, Depledge, Reiner and Lees (n 74) 7 (emphasis original).
[151] Murphy, Cosbey and Drexhage (n 138) 18.
[152] Marcu (n 30) 1.
[153] ibid.

and Joint Implementation".[154] Article 6.4 further elaborates that the mechanism will be supervised by a body established by the Parties to the Agreement. The accompanying COP decision to the Paris Agreement provides a detailed work programme to define the modalities and procedures of the mechanism.[155] However, Article 6.4 identifies the four key aims of "a mechanism … to contribute to the mitigation of greenhouse gas emissions and support sustainable development":

> (a) to promote the mitigation of greenhouse gas emissions while fostering sustainable development;
> (b) to incentivise and facilitate participation in the mitigation of greenhouse gas emissions by public and private entities authorised by a Party;
> (c) to contribute to the reduction of emission levels in the host Party, which will benefit from mitigation activities resulting in emission reductions that can also be used by another Party to fulfil its nationally determined contribution;
> (d) to deliver an overall mitigation in global emissions.

Some scholars have described the mechanism envisaged under Article 6.4 as the Sustainable Development Mechanism (SDM),[156] while others have observed that it is "likely to be very similar to the CDM".[157] At the time of writing, the precise nature of the instrument remains to be defined.

Through Decision 1/CP.21 the Parties to the Paris Agreement decided on a "work programme" to be undertaken in preparation for the full implementation

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[154] Torbjørg Jevnaker and Jørgen Wettestad, 'Linked Carbon Markets: Silver Bullet, or Castle in the Air?' (2016) 6 Climate Law 142, 150.
[155] Decision 1/CP.21.
[156] Jevnaker and Wettestad (n 154) 150.
[157] Axel Michaelowa, 'The Sustainable Development Mechanism Under the Paris Agreement – Cornerstone of a Global Carbon Market or Dead End Street?' in ICIS, *Carbon Markets Almanac 2016: Global Developments & Outlook* (Reed Business Information Ltd 2016) 14, 14.

of the Paris Agreement. Under this work programme, further development of the successor mechanism has been assigned to the Conference of the Parties to the Paris Agreement (CMA) and the Subsidiary Body for Scientific and Technological Advice (SBSTA) of the UNFCCC.[158] It has been speculated that the CMA may yet "approve a reborn CDM (CDM+) and accept the argument that [the CDM] is the 'mechanism' referred to in paragraph 6.4".[159]

The language of Article 6 suggests important similarities between the CDM and the successor mechanism. The successor mechanism is envisaged as operating under the authority and guidance of the CMA and Article 6.4 provides that it shall be supervised by a body designated by the CMA. This is consistent with the framework governing the CDM and, in particular, the role of the CDM Executive Board. The presence – perhaps even enhanced importance – of the concept of sustainable development in Article 6 is consistent with the CDM. It is notable that reference is made to sustainable development twice in Article 6: the nature of the successor mechanism is defined with reference to sustainable development, whilst "fostering sustainable development" (together with "promot[ing] the mitigation of greenhouse gas emissions") is identified within its first aim. As this Chapter has emphasised, the operationalisation of sustainable development in relation to the CDM has proven particularly unsatisfactory, a theme which, in the context of the successor mechanism, is revisited in the concluding paragraph of this Section. It is also significant that the accompanying COP decision, outlining a detailed work programme with respect to the successor mechanism, also includes a reference to additionality.[160]

[158] Decision 1/CP.21, para 36 and para 37.
[159] Marcu (n 30) 18. For purposes of consistency, the term "successor mechanism" is adopted in this thesis.
[160] Decision 1/CP.21, art 37(d).

It is too early to determine with precision the nature of the successor mechanism, but there is a strong possibility that it could share many similarities with the CDM, particularly with regard to design features and, relatedly, with respect to its likely function within a broader climate governance framework. With respect to the latter, scholars have suggested that the successor mechanism may "play the part that the CDM played in the past of creating an indirect link between carbon markets through offsetting".[161] Yet the text of Article 6 also creates potential for the successor mechanism to diverge from the CDM as currently constructed. First, there is no distinction between developing and developed countries in Article 6 which suggests that any country could be: (i) a host country and (ii) a country which may use the output (ie likely credits) generated under the successor mechanism. Second, the fourth aim of the successor mechanism "is to deliver an overall mitigation in global emissions" which suggests that, unlike the CDM, *avoided* emissions growth alone will not suffice.

These changes potentially signal a point of departure from the current CDM and could have very real implications for how the successor mechanism evolves. For example, it is unclear whether or how the lack of distinction between developing and developed countries will be operationalised. Article 6.6 mandates that the CMA "ensure that a share of the proceeds from activities under the mechanism … is used to cover administrative expenses as well as to assist developing country Parties that are particularly vulnerable to the adverse effects of climate change to meet the costs of adaption".[162] Given the absence of host country eligibility criteria, it is possible that the successor mechanism could facilitate broader coverage, yet Article 6.6 strongly suggests that the Parties'

[161] Jevnaker and Wettestad (n 154) 150.
[162] Paris Agreement, art 6.6.

intention is to refocus financial flows generated under the mechanism towards countries "particularly vulnerable to the adverse effects of climate change". Similarly, Article 6 does not restrict access to the product of the successor mechanism. Marcu has suggested that many countries "felt that while they may not need, or want, to use the [mechanism's] output at this time, in an increasingly constrained post-2020 climate change regime, they would want to keep all options open".[163]

Section 6.3.2(ii) considered whether a reconstructed CDM prioritising the participation of LDCs could form a core component of the emerging climate governance landscape and it is clear that the Paris Agreement is not inconsistent with such a prospect, even if the language of Article 6 does not prioritise LDCs and is instead more open-ended regarding participation.[164] Participation coverage preferences are likely to emerge in the coming months and years as the modalities and procedures of the successor mechanism are elaborated by the CMA and the SBSTA.[165] However, the Agreement does not necessarily prevent the development and implementation of modalities and procedures to prioritise LDCs' participation as project hosts. Indeed, this approach would be particularly consistent with Article 6.6. Moreover, configuring any successor mechanism in this manner would advance the vision articulated in Section 6.3.2 which, whilst endorsing the continued contribution of a reconstructed mechanism, also emphasised the dual purposes of prioritising the participation of LDCs and

[163] Marcu (n 30) 17.
[164] Rajamani has observed that "[t]he Paris Agreement provided egalitarian coverage of all areas", but significantly there is considerable variance of legal obligations across the issue areas: see Lavanya Rajamani, 'The 2015 Paris Agreement: Interplay Between Hard, Soft, and Non-Obligations' (2016) 28 Journal of Environmental Law 337, 358.
[165] Through Decision 1/CP.21, the Parties to the Paris Agreement decided on a "work programme" to be undertaken in preparation to the full implementation of the Paris Agreement. Further development of the successor mechanism has been assigned to the SBSTA.

promoting graduated integration (commensurate with capacity) within a more rigorous carbon trading framework.

Before concluding analysis of the implications of the Paris Agreement for the CDM, it is appropriate to briefly revisit the concept of sustainable development. As identified at the outset of this Section, sustainable development occupies a prominent position within the text of Article 6. It is ominous that the "embedded dysfunctionality" of the dual objective at the core of the CDM survives (and may even have been enhanced) in the Paris Agreement.[166] As Marcu has observed "[d]ifferent interpretations of sustainable development lead to a sense of arbitrariness and subjectivity in decision-making".[167] This concern has been extensively explored in Section 6.2.3(iii) and it is unnecessary to retrace those steps but, in light of the Paris Agreement, the proposal of Torvanger and colleagues to adopt a two-track mechanism is a particularly attractive option.[168] Given the dual focus of Article 6.4 "to contribute to the mitigation of greenhouse gas emissions *and* support sustainable development", there is an urgent need for the CMA and SBSTA to consider anew creative approaches to provide substantive content to the concept of sustainable development.[169] Such reform could, for the first time in the context of the CDM, move the concept beyond the realm of rhetoric by integrating sustainable development incentives into the fabric of the mechanism. The present process of elaborating the Article 6.4 mechanism has provided the CMA and SBSTA with a timely opportunity to reflect on the case for reform based on the substantial regulatory experience of the CDM over the past decade. The degree to which this mechanism can accommodate flexibility awaits further clarification by the CMA and SBSTA but, based on the text of Article

[166] Vichit Petersen and Bollerup (n 96) 84.
[167] Marcu (n 30) 14.
[168] Torvanger, Shrivastava, Pandey and Tørnblad (n 141) 471.
[169] Paris Agreement, art 6.4 (emphasis added).

6.4, there is no reason to interpret the reference to "a mechanism" as prohibiting the emergence of more than one pathway within it and, as such, accommodating a two-track mechanism.

6.4 Conclusion

The CDM, whilst hailed as "a masterpiece of compromise",[170] has proven a highly controversial component of the climate governance landscape. This is not without good cause. Suspicions concerning questionable assessments of additionality and a convoluted articulation of sustainable development have bedevilled the functioning of the mechanism. Yet, as van Asselt has acknowledged, "whilst the CDM has received its fair share of criticism, it is undeniable that it has clearly contributed to expanding low carbon investments in developing countries".[171]

The CDM is evidently fulfilling one of its twin objectives: assisting Annex I countries in achieving compliance with their reduction commitments. Moreover, the market-based nature of the mechanism has facilitated the identification of low-cost emission reduction opportunities, so-called "low hanging fruit", which – without the financial incentivisation provided by the CDM – may otherwise have been overlooked. Moreover, there is little evidence to suggest that developed countries have deliberately used the mechanism to evade domestic action.[172] The CDM has broadened the experience of developing countries with economic instruments and contributed to building the current consensus favouring a long-term role for market-based instruments in climate governance. Carbon trading

[170] Hugh Wilkins, 'What's New in the CDM?' (2002) 11(2) Review of European Community and International Environmental Law 144.
[171] Harro van Asselt, *The Fragmentation of Global Climate Governance: Consequences and Management of Regime Interactions* (Edward Elgar Publishing Limited 2014) 20.
[172] Grubb, Laing, Counsell and Willan (n 15) 554.

continues to reveal flaws and the CDM is no exception to this but, as explored in Chapter 3, the innately experimentalist nature of the present multi-level climate governance endeavour – particularly, the quest to promote and maintain complementarity across trading markets – facilitates reflection and iterative improvement. Moreover, when the CDM was negotiated, linkage to the EU ETS could hardly have been foreseen.[173] Perhaps the most significant achievement of the CDM has been proof of concept confirmation that diverse linked market-based climate governance arrangements are feasible.

However, the CDM or successor mechanism now requires both scaling-up and scaling-down. Whilst the mechanism has proven its potential by integrating advanced developing countries in carbon mitigation efforts, the benefits for LDCs have been marginal. Advanced developing countries have been subsidised through the mechanism, but this has also created a disincentive for such countries to adopt more rigorous emissions reduction initiatives. Unsurprisingly, as Paterson has observed, "developing countries… [have] been increasingly enthusiastic about using the CDM to attract investment".[174] This dynamic is unsustainable, particularly in circumstances where the current development pathways of advanced developing countries risks eclipsing even the most ambitious emissions cuts which developed countries might achieve.[175]

It is critical that international negotiators and policymakers urgently work towards a scaled-down and modified mechanism with a particular focus on LDCs, whilst at the same time scaling-up the ambition of current advanced developing countries by promoting graduation to a broader climate governance regime

[173] da Graça Canto Muniz (n 111) 13.
[174] Matthew Paterson, 'Selling Carbon: From International Climate Regime to Global Carbon Market' in John Dryzek, Richard Norgaard and David Schlosberg (eds), *The Oxford Handbook of Climate Change and Society* (Oxford University Press 2011) 614, 617.
[175] Andresen, Skjærseth, Jevnaker and Wettestad (n 122) 189.

predicated on emissions reductions. This requires creative approaches to incentivise and maximise participation in emissions reduction initiatives.[176] Petsonk's suggestion, considered in Chapter 3, to structure docking stations within climate governance frameworks to provide and promote space to facilitate participation in carbon reduction and mitigation efforts could materially contribute to this evolving climate governance jigsaw.[177]

The Paris Agreement did not define a structured graduation to a framework premised upon binding emissions reduction commitments and it seems that the CDM or successor mechanism is likely to remain a component of the emerging governance architecture, both as a potential partner for current and emerging cap-and-trade schemes and as an important transitional staging post towards a more comprehensive emissions trading framework. The CDM has demonstrated both the opportunities and challenges involved in ensuring market-based instruments deliver a sustained contribution to climate governance. Given this contribution, there is clearly potential for the CDM or successor mechanism to continue to "build a base of regulatory experience, break down resistance, and provide learning-by-doing" in developing countries, but its role must be more carefully circumscribed.[178] In order to achieve a smooth transition between the mechanisms provided under the Kyoto Protocol and the Paris Agreement, there is considerable merit in using the CDM as the core of the successor mechanism.[179]

[176] This could involve the allocation of surplus allowances to transitioning countries: see Sheila Olmstead and Robert Stavins, 'Three Key Elements of a Post-2012 International Climate Policy Architecture' (2012) 6(1) Review of Environmental Economics and Policy 65.
[177] Petsonk (n 27).
[178] Elgie (n 127) 267.
[179] Michaelowa, 'The Sustainable Development Mechanism Under the Paris Agreement' (n 157) 15.

CHAPTER 7

IMPLEMENTATION OF THE CORE CONVERGENCE CRITERIA: A CASE STUDY OF EU ETS-KETS DIRECT LINKAGE

7.1 Introduction

The international legal framework within which direct linkage must be considered is in a state of transition. The Kyoto Protocol has not yet ended, whilst the architecture under the Paris Agreement which will replace it has not been fully defined. The Kyoto Protocol now only covers a small fraction of global greenhouse gas emissions.[1] The continued commitment of the EU to the Protocol has undoubtedly been its most significant success. It was particularly innovative for the Kyoto Protocol to include emissions trading as a favoured mechanism and, as Chapter 2 has considered, this innovation greatly influenced the EU's adoption of the EU ETS.[2] In many respects the Paris Agreement is a very different species, but its content has also been shaped by both the Kyoto Protocol and the regulatory experimentation which the Protocol facilitated.

This Chapter theorises the implementation of the core convergence criteria defined in Chapter 5 by exploring the potential for direct linkage between the EU ETS and South Korea's emissions trading scheme ("KETS"). Since the Kyoto Protocol will pass into climate governance history in 2020, any enduring analysis of the potential for direct linkage between emissions trading schemes must have regard to the emerging architecture of the Paris Agreement. As

[1] Matthew Ranson and Robert N Stavins, 'Linkage of Greenhouse Gas Emissions Trading Schemes: Learning from Experience' (2016) 16(3) Climate Policy 284, 296.
[2] Matthew J Hoffmann, *Climate Governance at the Crossroads: Experimenting with a Global Response After Kyoto* (Oxford University Press 2011) 128.

Chapter 6 has demonstrated, the Paris Agreement confirmed the continuing contribution of market-based instruments to climate governance in the form of a successor mechanism to the CDM. Section 7.2 extends this analysis by broadening consideration of the Paris Agreement beyond the context of the CDM to examine its implications for direct linkage. It is beyond the focus of this research to consider every strand of the Paris Agreement and its diverse implications for climate governance. However, it is crucial to examine the Agreement's signals and implications insofar as they relate to the future prospects of linkage.

Section 7.3 introduces the central focus of this Chapter, the case study of the KETS, and considers why South Korea may prove a prescient, if unexpected, direct linkage partner for the EU. After several years of debate and discussion, South Korea became the first Asian country to pass legislation implementing a national greenhouse gas emissions trading scheme.[3] The launch of the KETS in 2015, anchored within a political environment which envisages emissions trading beyond 2020, could provide the stable climate settings which have been absent in the climate policy of many potential linkage partners.[4]

Section 7.4 analyses the critical design features of the KETS and reveals that, whilst there is a surprising degree of pre-existing compatibility with the EU ETS, there are also both significant differences and areas where there are risks of potential regulatory divergence. It is inevitable that emissions trading schemes are tailored to specific application with each scheme designed to achieve certain policy preferences reflective of domestic circumstances.[5] Choices about some

[3] Changmin Yoo, 'Emission Trading: South Korea Steams Ahead' (Autumn 2012) Global Carbon 16, 17.
[4] Wolfgang Sterk and Joseph Kruger, 'Establishing a Transatlantic Carbon Market' (2009) 9(4) Climate Policy 389.
[5] Ipshita Chaturvedi, 'One Scheme to Bind Them All? Should Emissions Trading Schemes Be Linked?' (2014) 17 Asia Pacific Journal of Environmental Law 91, 106.

design features, such as allowance allocation methodology, may have been critical to achieving the necessary internal political consensus to implement emissions trading and any subsequent adjustment or compromise may be particularly sensitive.[6]

The implementation of direct linkage requires the presence of a de minimis degree of alignment consistent with advancing the underlying environmental objective. Section 7.5 applies the core convergence criteria, as defined in Chapter 5, within the context of potential direct linkage between the EU ETS and KETS. The degree to which the design of the KETS provides scope for direct linkage is critically explored before this Chapter concludes by offering a perspective on how this analysis contributes to the existing literature. As such, Chapter 7 builds on the theoretical exposition of linkage developed in Chapter 4 and Chapter 5 and offers important insights into the prospects of direct linkage between the EU ETS and the KETS, the world's two largest carbon emissions trading schemes.

7.2 Direct Linkage in a Post-Paris Agreement Landscape

7.2.1 Overview

On 4 November 2016, the Paris Agreement successfully entered into force.[7] At the time of writing, the Agreement has been ratified by 147 of the 197 Parties to the UNFCCC.[8] Welcomed by some scholars as a "bold move toward public problem solving on a global scale",[9] others have instead dismissed it as

[6] William A Pizer and Andrew J Yates, 'Terminating Links Between Emissions Trading Programs' (2015) 71 Journal of Environmental Economics and Management 142, 145.
[7] Article 21.1 of the Paris Agreement provides the mechanics for the Agreement entering into force. It sets forth an entry threshold of 55 Parties depositing their ratification instrument with the depositary (the Secretary General of the United Nations) accounting in total for at least an estimated 55% of total greenhouse gas emissions.
[8] United Nations, 'Paris Agreement – Status of Ratification' (April 2017) <http://unfccc.int/paris_agreement/items/9444.php> accessed 14 April 2017.
[9] Anne-Marie Slaughter, 'The Paris Approach to Global Governance' (Project Syndicate, 28 December

"doublespeak…. [and] meaningless".[10] The Agreement comes 18 years after the signing of the Kyoto Protocol and represents the culmination of over six years of fractious multilateral negotiations. As international diplomatic efforts are now channelled towards the implementation process, the Agreement may yet succeed in re-energising what had otherwise become a lethargic multilateral process. The Agreement will replace the Kyoto Protocol when the Protocol's second commitment period comes to an end in 2020 and ensures that there is a stable, though skeletal, international framework for climate governance from 2020 and beyond.

The Paris Agreement marks a point of divergence from the governance framework of the Kyoto Protocol. The inclusive and voluntary approach which the Paris Agreement signals by extending non-legally binding commitments to all countries is a profound departure from the "now out-of-favour approach of the Kyoto Protocol with its legally binding targets for a narrower group of countries".[11] As such, the Paris Agreement does not continue the distinction in the Kyoto Protocol of countries with and without emission reduction commitments. Developed countries, particularly the United States, had long pressed for such an evolution. The American Special Climate Envoy, for example, commenting in advance of the Paris negotiations, emphasised that it was "unacceptable in our view … to use fixed 1992 categories to determine who is expected to do what in a new agreement taking effect nearly 30 years later and intended to define the course of climate diplomacy for decades to come".[12] In its place – and the core

2015) <https://www.project-syndicate.org/commentary/paris-agreement-model-for-global-governance-by-anne-marie-slaughter-2015-12> accessed 14 April 2017.

[10] Clive Splash, 'Climate Policy After the 2015 Paris Climate Conference' (2016) 13(6) Globalizations 928, 931.

[11] Jorge E Viñuales, Joanna Depledge, David M Reiner and Emma Lees, 'Climate Policy After the 2015 Paris Climate Conference' (2017) 17(1) Climate Policy 1, 6.

[12] Todd Stern, United States Special Envoy for Climate Change, 'The Shape of a New International Climate Agreement' (Speech at the Delivering Concrete Climate Change Action: Towards 2015 Conference, London, 22 October 2013) <http://www.chathamhouse.org/sites/files/chathamhouse/public/

of the mitigation provisions of the Paris Agreement – is the concept of "nationally determined contributions" (NDCs).

Whilst the concept of NDCs had featured in earlier multilateral climate negotiations, having first appeared during the nineteenth session of the Conference of the Parties (COP 19) in Warsaw, the term had largely been viewed as a policy concept lacking legal definition.[13] Negotiations in advance of and during the Paris summit, however, focused on remodelling NDCs as a distinct legal concept. Parties had submitted intended NDCs in advance of the Paris negotiations and the Agreement builds on this process. Article 3 of the Paris Agreement defines "nationally determined contributions" as "ambitious efforts" which "will represent a progression over time, while recognising the need to support developing country Parties".[14] NDCs are further operationalised by Article 4.9 which requires Parties to adapt their NDCs every five years, whilst Article 4.2 envisages that "the efforts of all Parties will represent a progression over time". In accordance with Article 4.12, all NDCs "communicated by Parties shall be recorded in a public registry maintained by the secretariat".

Significantly, NDCs are not legal obligations and, in a radical shift from the architecture of Kyoto, the Paris Agreement does not incorporate binding emission reduction commitments. Instead, the reporting and accounting procedures constitute legal obligations and it is the novelty of this approach, blending legal commitments with softer political language, which has led Rajamani to describe the Paris Agreement as an "unusual agreement… contain[ing] a carefully calibrated mix of hard, soft and non-obligations, the boundaries between which

Meetings/Meeting20Transcripts/ 221013stern.pdf> accessed 14 April 2017.

[13] Charlotte Streck, Paul Keenlyside and Moritz von Unger, 'The Paris Agreement: A New Beginning' (2016) 13 Journal for European Environmental and Planning Law 3, 11.

[14] Paris Agreement (13 December 2015) in UNFCCC, Report of the Conference of the Parties on its Twenty-First Sessions [hereinafter COP Report and session number], Addendum, at 21, UN Doc. FCCC/CP/2015/10/Add.1 (29 January 2016) [Paris Agreement], art 3. The Agreement is annexed to Decision 1/CP21 of the Conference of the Parties.

are blurred".[15] The Agreement confers trust into process and assessment procedures to stimulate mitigation efforts, rather than reliance on mandatory provisions with specific enforceable and binding commitments.[16] As such, the accounting and reporting procedures are likely to prove critical to the success (or otherwise) of the NDC process. The Agreement heralds the beginning of a new phase in international climate collective action and it undoubtedly represents a profound departure from the clearly defined architecture of Kyoto.

The Paris Agreement could also potentially nurture the development of a flexible framework facilitating multi-speed pathways towards deepening and strengthening climate action, a quality which has been recognised as the Agreement's core strength.[17] Consequently, whilst it has been suggested that, with the Paris Agreement climate negotiators have "officially given up on any attempt to … allocate specific emission reduction targets",[18] an equally valid perspective might instead emphasise that the focus has changed to facilitating multiple climate governance pathways. As this research has emphasised, the prospect of a comprehensive universalist agreement with ambitious and binding targets, the so-called "big bang" approach, has proven an increasingly distant and illusory prospect.[19] The Paris Agreement is more rooted in prevailing political realities and its careful architecture, informed by previous rounds of failed international climate negotiations, could provide a more realistic approach to developing durable climate governance arrangements.[20]

[15] Lavanya Rajamani, 'The 2015 Paris Agreement: Interplay Between Hard, Soft, and Non-Obligations' (2016) 28 Journal of Environmental Law 337, 358.
[16] Streck, Keenlyside and von Unger (n 13) 5.
[17] Slaughter (n 9).
[18] Streck, Keenlyside and von Unger (n 13) 5.
[19] Daniel Bodansky and Elliot Diringer, *The Evolution of Multilateral Regimes: Implications for Climate Change* (Pew Center on Global Climate Change 2010) 13.
[20] Robert Falkner, 'The Paris Agreement and the New Logic of International Climate Politics' (2016) 92(5) International Affairs 1107, 1125.

7.2.2 Paris Agreement Implications for Direct Linkage

For the purposes of this research, it is important to focus analysis of the Paris Agreement on the potential implications for direct linkage. Such analysis must involve consideration of the extent to which the Paris Agreement is likely to promote or diminish the development of direct linkages, particularly as between the EU ETS and other existing and emerging trading schemes. This is a perilous undertaking not only because much of the language of the Agreement envisages (and requires) further elaboration by the Parties, but also given the unsettled political landscape.[21]

As Chapter 1 has acknowledged, the future of the Paris Agreement remains distinctly uncertain. In particular, as this research neared completion, President Trump announced his administration's intention to re-negotiate or withdraw the United States from the Agreement.[22] With the EU having subsequently ruled out any prospect of re-opening negotiations, the US administration's timeframe to initiate withdrawal remains to be clarified.[23] Moreover, the Agreement also requires significant practical outworking with "many elements of the Agreement need[ing] to be fleshed out, including rules, modalities, and guidelines."[24] Nonetheless, whilst acknowledging these limitations, it is crucial to consider the potential influence which the Paris Agreement could exert on the development and implementation of direct linkage

[21] The recent announcement by President Trump of his administration's intention to withdraw from the Agreement is a case in point.
[22] US Presidency, 'Statement by President Trump on the Paris Climate Accord: 1 June 2017' (White House: Speeches and Remarks) <https://www.whitehouse.gov/the-press-office/2017/06/01/statement-president-trump-paris-climate-accord> accessed 1 June 2017.
[23] Council, 'Climate Change: The Council Reaffirms that the Paris Agreement is Fit for Purpose and Cannot be Renegotiated' (Press Releases and Statements, 19 June 2017) <http://www.consilium.europa.eu/press-releases-pdf/2017/6/ 47244660916_en.pdf> accessed 19 June 2017.
[24] Daniel Bodansky, 'The Paris Climate Change Agreement: A New Hope?' (2016) 110 The American Journal of International Law 269, 291.

beyond 2020. Whilst the Kyoto Protocol continues to govern the international climate regime until then, recent months have shown that authority forgets a dying treaty. International climate negotiations have swiftly moved forward to focus on developing the details of the Paris Agreement, much of which "remain to be negotiated and… require Parties to revisit potentially contentious issues and agree on specificities".[25]

Bodansky and colleagues have observed that the Paris Agreement had the potential to influence the prospect of linkages in four distinctly different ways.[26] First, the Agreement could discourage linkage by prohibiting the transfer of mitigation contributions between countries thereby preventing countries from counting international transfers towards their NDC. Second, the Paris Agreement could remain silent on the permissibility of linkage which would have created a degree of legal uncertainty as to the status of such international transfers. Third, the Agreement could expressly authorise linkage à la Kyoto (as Chapter 3 explored), but without providing the mechanics for the operationalisation of linkage, as examined in Chapters 4 and 5. Fourth, the Paris Agreement could establish institutional arrangements and rules to actively facilitate linkage. The gravity of the implications for the future viability of linkage depends largely upon the location of the Paris Agreement within this spectrum. This research has emphasised the imprimatur which the Kyoto Protocol provides for the use of market instruments in climate governance and the legal certainty which this delivers until 2020. The Protocol's explicit support for market trading was influential in the EU's decision to implement the EU ETS and prohibition by the Paris Agreement on the transfer between countries of mitigation contributions

[25] Streck, Keenlyside and von Unger (n 13) 6.
[26] Daniel Bodansky, Seth A Hoedl, Gilbert E Metcalfe and Robert N Stavins, 'Facilitating Linkage of Climate Policies Through the Paris Outcome' (2016) 16(8) Climate Policy 956, 961.

could – and, likely, would – have fatally undermined any future prospect of direct linkage.

The Paris Agreement, however, has not departed from the existing consensus favouring a role for market-based initiatives in climate governance. Instead, the language of the Agreement confirms the continuation of such a consensus.[27] As Chapter 6 explored, Article 6.4 provides for a successor mechanism to the CDM. It remains to be seen whether this mechanism will represent an entirely new mechanism or a "revamped CDM".[28] Beyond this innovation, the prominent inclusion of market approaches throughout Article 6 "giv[es] them a renewed role in international efforts to combat climate change".[29]

Consequently, before this Chapter directs attention towards the KETS and assesses the prospects of direct linkage with the EU ETS, it is appropriate to first build on the analysis of Article 6 in the preceding Chapter by considering the remaining market-based innovation which Article 6 introduces: the concept of "internationally transferred mitigation outcomes" ("ITMOs").[30] Article 6.2 provides that the:

> "Parties shall, where engaging on a voluntary basis in cooperative approaches that involve the use of *internationally transferred mitigation outcomes* towards nationally determined contributions, promote sustainable development and ensure environmental integrity and transparency, including in governance, and shall apply robust accounting to ensure, inter alia, the avoidance of double

[27] The text of Article 6 did not enjoy unanimous support and "a small number of states, led by Bolivia, strongly opposed such a provision": see Bodansky (n 24) 307.
[28] Torbjørg Jevnaker and Jørgen Wettestad, 'Linked Carbon Markets: Silver Bullet, or Castle in the Air?' (2016) 6(1-2) Climate Law 142, 150.
[29] Richard Kinley, 'Climate Change After Paris: From Turning Point to Transformation' (2017) 17(1) Climate Law 9, 11.
[30] Paris Agreement, art 6.1.

> counting, consistent with guidance adopted by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement".[31]

Before focusing on the concept of ITMOs, it is notable that sustainable development is referenced within this provision. The criticisms concerning definitional ambiguity, which have already been explored in detail in Chapter 6, remain particularly relevant. Moreover, such criticisms have garnered a surprising coalition with scholars opposed to the application of market-based instruments in the sphere of environmental regulation also increasingly suspicious of the proliferation of the concept.[32] In fact, beyond Article 6, the Paris Agreement is replete with references to sustainable development: the term appears 12 times in the text of the first 10 articles.

Negotiations in advance of the Paris Agreement concerning the design of future market approaches, their scope, and their function had struggled to reach consensus. Indeed, it has been suggested that the resulting "awkward terminology" of Article 6.2 is reflective of the underlying "cumbersome atmosphere" of the negotiations considering the future of market-based approaches.[33] As a consequence, however, the language defining ITMOs is vague and the concept awaits further elaboration by the Body for Scientific and Technological Advice (SBSTA) and the Conference of the Parties to the Paris Agreement (CPA).[34] At the time of writing, it is difficult to forecast with confidence how elaboration and implementation of the concept will be achieved.

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[31] ibid (emphasis added).
[32] Splash (n 10) 929.
[33] Streck, Keenlyside and von Unger (n 13) 16.
[34] Decision 1/CP.21, para 37, mandates the SBSTA to develop guidance and the CPA to adopt such guidance to ensure, amongst others, transparent governance and "robust accounting" to avoid double counting.

It is clear, however, that the Paris Agreement explicitly envisages "cooperative approaches that involve the use of ITMOs towards NDCs".[35] Therefore, linkage as one such form of cooperative approach is implicitly acknowledged by the Paris Agreement. It is unfortunate that there appears to have been insufficient consensus at Paris to further develop the content of Article 6. However, whilst the careful balancing of language in Article 6 is consistent with the high-level nature of the Agreement, the history of carbon trading to date also shows that the "development and agreement of the technical rules governing market-mechanisms' operations is a slow process".[36] The operationalisation of ITMOs will not be straightforward and, as with the language of the Agreement more generally, "the process of elaboration will reveal the degree to which the Paris Agreement reflects a new political equilibrium or merely papered over long-standing differences."[37]

Yet, based on the text of Article 6, it is possible to identify key themes likely to inform the development of cooperative approaches generally and, in particular, the operationalisation of ITMOs. Article 6.1 "recognises" that Parties may "choose to pursue voluntary cooperation in the implementation of their NDCs".[38] It is a particularly broad provision and envisages that some Parties may choose to cooperate – but are not required to do so – in the implementation of their NDCs. Importantly, the provision does not provide permission to cooperate, but rather "recognises" that Parties may choose to do so, a distinction which Marcu has suggested was "important to many Parties which felt that such permission was not necessary, as it is already present in Article 3 of the UNFCCC".[39]

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[35] Paris Agreement, art 6.2.
[36] Luke Redmond and Frank Convery, 'The Global Carbon Market-Mechanism Landscape: Pre and Post 2020 Perspectives' (2015) 15(5) Climate Policy 647, 663.
[37] Bodansky (n 24) 318.
[38] Article 6.1, Paris Agreement.
[39] Andrei Marcu, 'Carbon Market Provisions in the Paris Agreement (Aricle 6)' (2016) Centre for European Policy Studies Special Report No 128 January 2016, 4 <https://www.ceps.eu/publications/carbon-market-

As envisaged by Article 6.2, ITMOs represent one such form of "cooperative approach", albeit one which the Parties clearly considered sufficiently deserving of explicit recognition within the text of the Agreement. ITMOs may prove to be, as Bodansky has put it, "the new jargon for *emissions trading* and other mechanisms to *link* national climate policies".[40] However, it is also clear that there is potential for certain ITMOs to fall outside the scope of Article 6, if it is determined that the cooperative approaches do not "promote sustainable development", "ensure environmental integrity and transparency" and "apply robust accounting". The lack of definitional clarity regarding how to implement each requirement and the applicable standards required to discharge each are concerning. As such, early CMA negotiations to provide clarification to assure countries (and market participants) how to ensure compliance with Article 6.2 is an urgent priority.

Whether an ITMO represents a new category of international carbon allowance is also unclear. Some commentators have welcomed ITMOs as a new class of carbon commodity,[41] whilst other scholars have drawn attention to "'innovative thinking' by stakeholders which would make an ITMO into a new type of international unit".[42] Given the lack of clarity and ambiguous language of Article 6.2, the CMA will need to develop procedures to define activities which create ITMOs. This could necessitate the creation of new international units and ITMO could merely refer to the process under which such units are created.

provisions-paris-agreement-article-6> accessed 14 April 2017.

[40] Bodansky (n 24) 307 (emphasis added).
Other scholars are less convinced that the true nature of of ITMOs is already clear with Streck and colleagues observing that Article 6.2 "leaves some guesswork as to what the nature of such 'outcomes' might be": see Streck, Keenlyside and von Unger (n 13) 16.

[41] Ash Sharma, 'Carbon Markets Firmly Back on the Agenda' (International Institute for Sustainable Development, Sustainable Development Goals Knowledge Hub, 21 January 2016) <http://sdg.iisd.org/commentary/guest-articles/carbon-markets-firmly-back-on-the-agenda/?rdr=climate-l.iisd.org> accessed 14 April 2017.

[42] Marcu (n 39) 7.

Alternatively, it is possible that ITMOs could assume the character of a specific international unit, similar to the current function of CERs under the Kyoto Protocol. The development of a new ITMO unit should not prove problematic in practice, since it would be relatively uncomplicated to assign a unit generated under the EU ETS (or any national emissions trading scheme) a serial number when it is first transferred internationally – the point at which it could be construed as an ITMO – which would ensure that the allowance is then securely tracked to minimise the risk of double counting.[43]

Consequently, in the context of direct linkage between emissions trading schemes under the auspices of Article 6.2, an allowance transferred from one scheme to another could be construed as a form of ITMO. This could either refer to the *process* of transfer between schemes or the *allowance* which is being transferred. Under either construction, however, it is evident that the text of Article 6.2 and the concept of ITMOs could exert a positive influence in the coming years on the development and linkage of emissions trading schemes. The mandate provided by the Paris Agreement for market trading, for example, could potentially re-energise domestic policymakers to explore implementation of national emissions trading schemes. Indeed, some scholars are interpreting Article 6 as "open[ing] the way for a renewed international carbon market that, rising from the ashes of the Kyoto Protocol's flexible mechanisms, will likely perform better".[44] It is also particularly notable that over half of the Parties to the Paris Agreement indicated their intention to use or consider the use of market-based instruments from international, regional or domestic schemes.[45] It remains too early to assess

[43] ibid.
[44] Elisa Calliari, Aurora D'Aprile and Marinella Davide, 'Paris Agreement: Strengths and Weaknesses behind a Diplomatic Success' (2016) Fondazione Eni Enrico Mattei (FEEM): Review of Environment, Energy and Economics 3 May 2016 <http://re3.feem.it/getpage.aspx?id=8421> accessed 14 April 2017.
[45] Bodansky (n 24) 307.

the extent to which the Paris Agreement will spur growth in market trading initiatives and incentivise the development of linkage between trading schemes.

At the outset of this Section, it was observed that Bodansky and colleagues considered that the Paris Agreement had the potential to influence the prospect of linkage in four different ways, the third of which noted that the Agreement could expressly authorise linkage à la Kyoto, but without providing the mechanics for the operationalisation of linkage.[46] The Paris Agreement has indeed provided such assurances by confirming the continuing contribution of market instruments to climate governance beyond 2020 and explicitly envisaging the prospect of linkage through the concept of ITMOs. The Agreement does not establish a carbon market, but it provides the necessary legal framework to allow Parties to develop and link their own markets. By establishing a legal framework beyond 2020 within which it is possible to develop and implement linkage, the Paris Agreement could provide a degree of stability to the international architecture governing emissions trading.[47]

7.3 The KETS: Why South Korea?

Since the launch of the EU ETS in 2005, the EU has considered the prospect of linkage with a number of countries.[48] As Chapter 2 considered, the United States had been the initial focus of EU linkage ambitions.[49] However, the contested nature of climate policy (and science) within political discourse in the United States has overshadowed progress and continues to cast doubt on the prospect

[46] Bodansky, Hoedl, Metcalfe, Stavins (n 26) 961.
[47] But, as noted in Chapter 1, recent events have introduced further uncertainty, particularly concerning the United States' likely withdrawal from the Agreement.
[48] Jørgen Wettestad and Torbjørg Jevnaker, 'The EU's Quest for Linked Carbon Markets: Turbulence and Headwind' in Todd L Cherry, Jon Hovi and David M McEvoy (eds), *Toward a New Climate Agreement: Conflict, Resolution and Governance* (Routledge 2014) 266.
[49] Sterk and Kruger (n 4) 397.

of an American emissions trading scheme emerging in the medium-term. This is not unique to the United States and, as Young has observed, "changes in the composition of governments can bring to power officials who did not participate in the creation of a regime and have little interest in fulfilling obligations undertaken by their predecessors".[50] Similar such "political swings" in a number of countries have made it less predictable at the time of writing to identify a candidate scheme for linkage with the EU ETS.[51] For example, Australia had initially embraced the prospect of linkage with the EU ET,[52] but a change in government resulted in a change in climate policy. Australia has since rolled back on this commitment and the prospects of an Australian emissions trading scheme in the medium-term are bleak.[53] So it was with Australia, but so too has it been with climate policy in a number of countries beyond the EU.[54] In fact, as Wettestad and Jevnaker have recognised "the development of emissions trading globally has progressed slowly [and] there have simply not been that many candidates for the EU to approach for linking purposes".[55]

South Korea is perhaps an unlikely bedfellow for the EU. As a non-Annex I country, it was not obliged to adopt an emissions reduction commitment under the Kyoto Protocol. As Section 7.2 acknowledged, the Paris Agreement does not continue with the Kyoto Protocol's distinction between countries with and without emissions reduction commitments. Instead, the Paris Agreement envisages that

[50] Oran R Young, 'Institutional Interplay: The Environmental Consequences of Cross-Scale Interactions' in Elinor Ostrom and others (eds), *Multi-Level Governance* (National Academies Press 2002) 263, 277.
[51] Bodansky, Hoedl, Metcalfe and Stavins (n 26) 959.
[52] Implementation of the proposed linkage had originally been envisaged to take effect by July 2015. Commission, 'Linking EU ETS with Australia: Commission Recommends Opening Formal Negotiations' (DG Climate Action: Newsroom 21 January 2013) <http://ec.europa.eu/clima/news/articles/news_2013012401_en.htm> accessed 14 April 2017.
[53] Latika Bourke, 'Emissions Trading "Never Coming Back in Any Form" Under Coalition, Says Greg Hunt' *The Sydney Morning Herald* (Sydney, 30 October 2014) <http://www.smh.com.au/federal-politics/political-news/emiss ions-trading-scheme-never-coming-back-in-any-form-under-coalition-says-greg-hunt-2014102911dzhh.html> accessed 14 April 2017.
[54] Canada's withdrawal from the Kyoto Protocol provides another salient example.
[55] Wettestad and Jevnaker (n 48) 275.

all countries contribute to climate governance through engagement in carbon abatement or mitigation initiatives, even if the scale of ambition of each country will vary, consistent with the principle of common but differentiated responsibilities and respective capabilities ("CBDR-RC"). As other scholars have recognised, the annex structure of the UNFCCC and the Kyoto Protocol "never perfectly reflected the principle of CBDR-RC".[56] In fact, South Korea is a case in point, as it has been in the somewhat unique position of remaining a non-Annex I country even after joining the OECD in 1996.[57] The country's developmental path from one of the poorest in the early 1960s to the world's eleventh largest economy by 2015 has been described as "unprecedented".[58]

South Korea's carbon emissions have also rocketed during this period. In its 2006 Environmental Policy Review, the OECD Environmental Programme criticised South Korea for having among the highest intensities of energy use in the OECD and only a 5% goal for renewables by 2011.[59] By 2015, South Korea had the seventh highest carbon emissions in the world and an emissions growth rate of 3.9%, the highest amongst OECD members.[60] As such, the country has been described as "stand[ing] at the line that divides developing and developed countries" and provides the classic example of a rapidly developing non-Annex I country with surging emissions, but without any binding reduction commitment under the Kyoto Protocol.[61] South Korea is not alone in occupying this position,[62]

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[56] Bodansky (n 24) 298.
[57] Sun-Jin Yun, Dowan Ku and Jin-Yi Han, 'Climate Policy Networks in South Korea: Alliances and Conflicts' (2014) 14(2) Climate Policy 283, 284.
[58] Randall Jones, 'Korea's economy: Finding a New Momentum' (2016) OECD Observer October 2016 <http://oecdobserver.org/news/fullstory.php/aid/5649/Korea_s_economy:_Finding_a_new_momentum.html> accessed 14 April 2017.
[59] Miranda A Schreurs, 'Multi-Level Governance and Global Climate Change in East Asia' (2010) 5 Asian Economic Policy Review Law 88, 92.
[60] Kyae Lim Kwon, 'South Korea's Emission Trading System: Challenges, Prospects and Lessons for Canada' (2015) Asia Pacific Foundation of Canada's (APF Canada) Canada-Asia Agenda 20 April 2015 <https://www.asiapacific.ca/news/apf-canada-releases-report-south-koreas-emissions-trading> accessed 14 April 2017.
[61] Yun, Ku and Han (n 57) 284.
[62] Mexico has remained a non-Annex I country despite joining the OECD in 1994.

but the presence of such anomalies under the Kyoto architecture reinforce concerns regarding the inadequacy of fixing targets based only on historic emissions, rather than also having regard to present emissions and projected future emissions.

Despite not being required to do so under the Kyoto Protocol, the South Korean government has voluntarily promoted carbon mitigation initiatives, most notably through the launch of the KETS in 2015. Implementation of the KETS may have been an anticipatory move to pre-empt criticism of the country's emissions pathway[63] and an effort to "to develop green businesses before international competitors and to spur job growth."[64] However, in a domestic context, the development and implementation of the KETS still proved a "tough sell".[65] Business and industrial leaders publicly voiced opposition to the KETS based on concerns regarding "the economic burden and decline of competitive power".[66] The Korean Chamber of Commerce and the Federation of Korean Industries, for example, argued that the government should only launch an emissions trading scheme once China and Japan agreed to domestic action to similarly impose a price on carbon.[67] The industrial sectors' primary motivation had been the potential adverse effects of a decline in South Korea's competitiveness, but this argument also engaged a climate governance concern that stringent emissions reduction measures in South Korea might only increase the risk of carbon leakage in neighbouring competitor countries, in the absence of similar regulatory initiatives in those countries.

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[63] Kwon (n 60).
[64] Peter Sopher, 'Emissions Trading around the World: Dynamic Progress in Developed and Developing Countries' [2013] Carbon and Climate Law Review 306, 311.
[65] Hyungna Oh, Junwon Hyon and Jin-Oh Kim, 'Korea's Approach to Overcoming Difficulties in Adopting the Emission Trading Scheme' (2017) Climate Policy 1, 1 (forthcoming).
[66] Jin-Yi Han and Sun-Jin Yun, 'Policy Networks Among Actors Concerning the Introduction of the Greenhouse Gas Emissions Trading Scheme in Korea Based on Social Network Analysis' (2011) 20(2) Korean Policy Studies Review 81, 85.
[67] Oh, Hyon and Kim (n 65) 11.

Significantly, there is evidence of an emerging societal and political consensus in South Korea which recognises the challenge of climate change: approximately 97% of South Koreans acknowledge climate change as a fact, whilst over 90% consider it a serious problem.[68] Given the lack of consensus in a number of potential linkage partners, as recognised in Section 7.2.1, the consensus which is developing in South Korea may be of particular interest to European policymakers. The KETS finally launched on 1 January 2015 with the scheme covering 525 businesses and public institutions which account for approximately two thirds of the country's annual greenhouse gas emissions.[69] The KETS is now the world's second largest carbon market after the EU ETS.[70]

As Chapter 4 has identified and explored, there are a number of economic and political implications of linkage and this Chapter does not reconsider and itemise each such implication. However, the generic implications of linkage explored in Section 4.4 remain relevant to the specific context of direct linkage between the EU ETS and the KETS. Before progressing to consider the design of the KETS in detail, it is helpful to identify and explore implications which may be otherwise unique to the KETS or of particular material relevance in assessing direct linkage with the scheme. As Section 4.3.3 has recognised, anticipated implications may also properly be construed as determinants of linkage. Consequently, consideration of implications particularly relevant to the KETS context is likely to provide helpful insights into why South Korea is a particularly appropriate and interesting case study.

Economic implications warrant particular attention. The EU ETS is more than three times the size of the KETS and, theoretically, access to the EU ETS

[68] Yun, Ku and Han (n 57) 296.
[69] Kwon (n 60).
[70] ibid.

should provide South Korean market participants with enhanced abatement opportunities. In advance of the launch of the KETS, there had been an expectation that low-cost abatement options in the power and industry sectors could contribute to a high allowance price with some analysts predicting that allowances prices in the KETS would be "the highest in the world".[71] As of 20 June 2016, KETS allowance prices were trading in the secondary market at approximately ₩17,000 (€12.97).[72] By comparison, allowance prices in the EU ETS have rarely breached €6.00 throughout the first half of 2016 and were trading at €5.86 on 20 June 2016.[73]

Since the KETS is a significant market in its own right, it is likely that it would exert a material influence on the price of allowances. It is reasonable to expect that post-linkage price convergence would likely lead to an increase in the current price of allowances in the EU ETS, even if the precise materiality of any such increase is difficult to accurately determine. Consistently, the "continued upward allowance price momentum" of KETS allowances further suggests that the KETS will not be a passive price-taker.[74] This is likely to prove particularly attractive to EU policymakers: indeed, scholars have speculated that direct linkage with the KETS could even form "part of the solution to the EU's problem with low carbon prices".[75]

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[71] Stian Reklev, 'South Korea Releases Tough CO_2 Caps on Utilities, Industry' Reuters (28 May 2014) <http://uk.reuters.com/article/southkorea-carbon-idUKL3N0OE1TO20140528> accessed 14 April 2017.
[72] International Carbon Action Partnership, 'Korea Emission Trading Scheme' (2017) International Carbon Action Partnership ETS Detailed Information 9 January 2017 <https://icapcarbonaction.com/en/?option=com_etsmap&task=export&format=pdf&layout=list&systems%5B%5D=47> accessed 14 April 2017.
For purposes of consistency, the exchange rate of ₩1310.22 = €1.00, the mid-market rate on 20 June 2016, is used throughout this Chapter: see XE.com, 'Current and Historical Rate Tables: South Korean Won' <http://www.xe.com/currencytables/? from=KRW&date=2016-06-20> accessed 14 April 2017.
[73] European Energy Exchange (EEX), 'Market Data: European Emission Allowances' <https://www.eex.com/en/ market-data/environmental-markets/spot-market/european-emission-allowances#!/2016/06/20> accessed 14 April 2017.
[74] Younghun Choi, 'Emissions Trading System – South Korea ETS' in *ICIS Carbon Markets Almanac 2016: Global Developments & Outlook* (Reed Business Information Ltd 2016) 54, 56.
[75] Sonja Hawkins and Ingrid Jegou, 'Linking Emissions Trading Schemes: Considerations and Recommendations for a Joint EU-Korean Carbon Market' (2014) International Centre for Trade and Sustainable Development Global Platform on Climate Change, Trade and Sustainable Energy – Climate Change Architecture Series Issue No 3 March 2014, 39 <https://www.ceps.eu/publications/carbon-market-

Different considerations are clearly relevant from a South Korean perspective. South Korean policymakers could, for example, have concerns regarding the EU's historical problem of low allowance prices and may question whether this issue has been adequately addressed. It was reported in early 2013 that continuing price instability in the EU ETS had "unsettled" other countries, including South Korea, which had otherwise been inspired by the EU ETS.[76] Nonetheless, the potential economic implications of direct linkage with the EU for South Korea include the significant twin advantages of a reduction in allowance price and increased liquidity, both of which would contribute to reducing compliance costs for domestic South Korean entities whilst improving the resilience of the KETS to external shocks.

From an EU perspective, particularly in the context of the EU's climate leadership aspirations, considered in Chapter 2, there are attractive political implications. Implementation of direct linkage with the KETS would provide the clearest external endorsement yet of the EU ETS. As the "pièce de résistance of the EU's climate change policy",[77] the future of the EU ETS is fundamental to achieving the Union's ambitious carbon reduction objectives. In order to achieve a 40% reduction in greenhouse gas emissions by 2030 from 1990 levels, it is envisaged that the EU ETS will deliver the deepest contribution with reductions in the EU ETS and non-EU ETS sectors, respectively, amounting to 43% and 30% by 2030 compared to 2005.[78] Successful implementation of direct linkage between the EU ETS and the KETS would validate the EU's confidence in emissions trading. Moreover, direct linkage with the KETS would also provide

provisions-paris-agreement-article-6> accessed 14 April 2017.
[76] Wettestad and Jevnaker (n 48) 274.
[77] Nicolas de Sadeleer, 'Salvaging the Carbon Market: Will the Phoenix Rise from the Ashes?' (2016) 13(2) Journal for European Environmental and Planning Law 133, 134.
[78] European Council, 'Conclusions 23 and 24 October 2014' EUCO 169/14, para 2.1 <http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ec/145397.pdf> accessed 14 April 2017.

proof of concept that successful implementation of linkage beyond the EU's immediate orbit is technically possible and send a positive signal to other countries (and sub-national entities) considering adoption of emissions trading.

7.4 The Design of the KETS

7.4.1 The Framework Governing the KETS

South Korea's journey towards emissions trading began at the 2009 Copenhagen climate negotiations at which its government pledged to reduce the country's emissions by 30% below business as usual levels by 2020. Described as "one of the brighter spots" of a conference largely otherwise overshadowed by the failure to produce a replacement to the Kyoto Protocol,[79] South Korea's announcement was also particularly surprising given that some economic studies had suggested such an ambitious target could reduce the country's GDP growth rate by 1.5% per annum until 2020.[80]

After announcing this reduction commitment, the South Korean government adopted domestic legislation, the Framework Act on Low Carbon and Green Growth 2010 ("Framework Act"). Described by South Korean legal scholars as the "first and highest legal base for green growth and implementation of the KETS",[81] Article 46 of the Framework Act provides that the "government may utilise market functions in accomplishing the national greenhouse gas reduction target and operate a cap-and-trade scheme".[82] The Framework Act

[79] Kwon (n 60).
[80] ibid.
[81] Oh, Hyon and Kim (n 65) 3.
[82] Korea Legislation Research Institute (KRLI) Legislative Translation Centre, 'Statutes of the Republic of Korea' <http://elaw.klri.re.kr/eng_service/main.do> accessed 14 April 2017.
Translations provided by the KRLI are not official versions and thus are not equally authentic to the original version in Korean.

provided the legal basis for the introduction of an emissions trading scheme with subsequent legislation specifying the design and structure of the KETS: the Act on the Allocation and Trading of Greenhouse-Gas Emissions Permits 2012 ("KETS Act")[83] and its associated Enforcement Decree ("Decree").[84] The KETS Act was passed by the National Assembly in May 2012 with near-unanimous support.[85]

Key aspects of the operation of the KETS, including the cap and allocation formula, are not elaborated within the KETS Act. Instead, Article 5(1) of the Act provides that "[t]he Government shall establish a plan to allocate national emission allowances for each commitment period by no later than six months prior to the beginning of each commitment period in order to effectively achieve national greenhouse-gas reduction targets" ("Allocation Plan").[86] The process of determining and allocating allowances is left to the bounded discretion of the government. Mandatory language in Article 5(1) – "shall include the following" – requires the government to ensure that the Allocation Plan contains certain specific directions which, inter alia, includes "[m]atters regarding the standards for the allocation of emission permits for each compliance year and the amount allocated for each compliance year"[87] and "[m]atters regarding the standards and methods for the allocation of emission permits to business entities eligible for allocation".[88]

Unlike the EU ETS – where the process of allowance allocation, including the methodology and linear reduction in allowances over the course of the

[83] Act on the Allocation and Trading of Greenhouse Gas Permits 2012 (Act No 11419, 14 May 2012), hereafter referred to as the "KETS Act".
[84] Enforcement Decree of the Act on the Allocation and Trading of Greenhouse Gas Permits (Presidential Decree No 24180, 15 November 2012), hereafter referred to as the "Decree".
[85] Yoo (n 3) 17.
[86] KRLI Legislative Translation Centre (n 82).
[87] KETS Act, art 5(1)5.
[88] ibid art 5(1)6.

commitment period, was enshrined in legislation – the KETS Act instead affords a substantial degree of discretion to the executive to make such determinations. In addition to the Allocation Plan, Article 4 of the KETS Act provides that "[t]he Government shall establish a ten-year master plan for the emissions trading system every five years, which shall define the objectives of, and basic direction for, medium to long-term policies on the emissions trading system" ("Master Plan").[89] The first Master Plan, which applies from 2015 until 2024, was approved by the South Korean government in January 2014.[90] The Master Plan provides assurance and certainty to market participants about the direction of the KETS over the specified ten year period, whilst the Allocation Plan is a more functional component within the KETS.

It is particularly notable that the fundamental legislative principles underpinning the KETS, as contained in Article 3 of the KETS Act, explicitly contemplate linkage. Article 3(5), for example, recognises the importance of regulatory complementarity with a view to facilitating linkage by providing that "the Government shall implement policies in conformity with international standards, considering the link with international carbon markets".[91] Given the language of Article 3(5), it is reasonable to conclude that the legislation envisages that the prospect of future linkage is a consideration which should inform the design and development of the KETS. The four remaining fundamental principles require the government to (i) comply with the principles set forth in the UNFCCC and relevant protocols and consider international negotiations on climate change; (ii) consider the impact of an emissions trading system on the international competitiveness of economic sectors; (iii) make the most of market mechanisms to achieve

[89] KRLI Legislative Translation Centre (n 82).
[90] Oh, Hyon and Kim (n 65) 4.
[91] KETS Act, art 3(5).

national greenhouse gas reduction targets effectively; and, (iv) ensure that emission permits are traded in a fair and transparent manner in accordance with general trading rules.[92]

Whilst the KETS Act specifies five fundamental principles, the legislation is clear in advancing a single purpose: "to achieve national targets for reducing greenhouse gas effectively by introducing a system for trading greenhouse gas emission permits through market mechanisms".[93] Importantly, this purpose is consistent with the spirit of the rule of environmental integrity (as elaborated in Chapter 5) which provides that linked trading schemes should not lead to fewer emissions reductions than if the EU ETS continued to operate independently. It is also important to observe that the language of Article 1 is consistent with the instrumentalist philosophy advanced in this thesis for deploying market trading.

7.4.2 Design Feature of the KETS

In 2011 the South Korean Government launched a national Energy Target Management System (TMS) which was effectively the forerunner to the KETS.[94] The TMS covered over 450 emitters and energy consumers from across a range of industrial sectors and required participating entities to annually submit data on their greenhouse gas emissions. Each entity was then subsequently assigned an emissions reduction target for the next year. Oh and colleagues have observed that the "KETS was designed to be harmonised with the TMS which passed its characteristics on to the KETS".[95] Significantly, the TMS created learning opportunities for both the South Korean government and participating entities to

[92] KETS Act, art 3(1) – art 3(4).
[93] KETS Act, art 1.
[94] Hawkins and Jegou (n 75) 15.
[95] Oh, Hyon and Kim (n 65) 8.

gain experience *in advance* of the launch of the KETS.[96] For example, the collection of verified emissions data since 2011 contributed to reducing the risk of allowance over-allocation during the first phase of the KETS, a problem which has bedevilled the EU ETS, particularly during its pilot phase. The TMS also provided valuable practical opportunities for regulatory experience with monitoring, reporting and verification (MRV) which has facilitated participating entities' transition towards emissions trading.[97]

7.4.2(i) Coverage

The KETS applies to any facility with annual emissions exceeding 25,000 tons of comparable CO_2 equivalents (tCO_2e) or to any company which emits more than 125,000 tCO_2e.[98] All six greenhouse gases are within the scope of the KETS and Article 23(1) of the Decree provides the basis for structuring allowances across all gases by specifying that "[a] greenhouse gas shall be traded by converting it into [tCO_2e] … and converting one [tCO_2e] into one emission permit."[99] Whilst emissions trading schemes, including the EU ETS, more usually focus exclusively on entities' direct emissions, the KETS has been described as "unique" insofar as it extends coverage to both direct and indirect emissions.[100] The inclusion of indirect emissions has been influenced by conditions which are somewhat peculiar to the South Korean economy: first, the proportion of indirect emissions in South Korea is particularly high (20%); and second, electricity prices in South

[96] This contrasts with the pilot phase of the EU ETS: "'learning by doing' is an important in-built feature of the EU ETS Directive": see Farhana Yamin, *Climate Change and Carbon Markets: A Handbook of Emission Reduction Mechanisms* (Earthscan 2005) xviii.
[97] Oh, Hyon and Kim (n 65) 8.
[98] KETS Act, art 8(1).
[99] KRLI Legislative Translation Centre (n 82).
[100] Oh, Hyon and Kim (n 65) 8.

Korea are low relative to other comparable countries.[101] Whilst the coverage of indirect emissions is likely to further incentivise companies to improve energy efficiency, this also represents a departure from the approach adopted by the EU ETS. However, based on the core convergence criteria advanced in Chapter 5, there is no reason to believe that the inclusion of indirect emissions in the KETS should present an insurmountable obstacle to linkage. The integration of indirect emissions may, however, prove more administratively burdensome by adding a layer of complexity to reporting and compliance procedures. This potentially engages concerns relating to MRV processes, a distinct core convergence criterion as defined in Section 5.2.3(iv) and a consideration evaluated in Section 7.5.5.

7.4.2(ii) Cap-Setting

As is the case with the EU ETS, the imposition of a cap is an essential feature of the KETS. In a manner resonant of the EU's fractious experience of cap-setting, as discussed in Chapter 3, the process of devising a cap in South Korea also proved a contentious undertaking. Indeed, a coalition of over 500 companies requested an increase in the total cap as late as December 2014, just one month prior to the scheme's scheduled launch.[102] As Chapter 4 has elaborated, a cap may be calculated in absolute or relative terms. Whilst an absolute cap operates by relying on total emissions reduction targets, a relative cap instead uses intensity targets expressed as emissions per unit of output or input.

[101] ibid.
[102] Kwon (n 60).

Whilst both the EU ETS and the KETS are designed as mandatory absolute cap-and-trade schemes, the absolute cap in the KETS is further structured into sectoral caps. This is not unlike the EU's approach during Phases I and II when the EU-wide cap was effectively the sum of individual absolute caps as contained in National Allocation Plans (NAPs). In practice, NAPs also tended to sub-divide a Member State's national cap sector-by-sector.[103] In an important divergence from the approach adopted during Phases I and II in the EU ETS, the KETS sector caps have been determined in a top-down manner *after* calculation of the absolute national cap thereby ensuring the integrity of the overall absolute cap. The South Korean government currently envisages the abolition of sector caps for Phase II of the KETS (2018-20), a revision which has been welcomed by some scholars as a "major improvement" given that sector caps can raise concerns regarding potential fairness amongst different industrial sectors.[104]

7.4.2(iii) Allowance Allocation

In what represents a substantial divergence from the design of the EU ETS, Article 3(5) of the Decree envisages that adjustments to the allocation of allowances are permissible if one of two circumstances occurs: (i) due to a sudden change in a domestic or international economic situation, technological advancement, and unexpected sudden change in domestic power demand; or, (ii) when necessary to revise an allocation plan according to the outcome of international negotiations on climate change.[105]

[103] As had been the case in Germany: see German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, 'National Allocation Plan for the Federal Republic of Germany 2005-2007' 31 March 2004 <http://www.bmub.bund.de/fileadmin/bmu-bmport/files/english/pdf/application/pdf/nap_kabi_ en.pdf> accessed 14 April 2017.
[104] Oh, Hyon and Kim (n 65) 9.
[105] KRLI Legislative Translation Centre (n 82).

Such a readjustment can take two forms. In exceptional circumstances, significant changes to the broader economic context would permit an increase in the total volume of emission allowances. The second scenario, under Article 21 of the Decree, is much more limited and permits an individual participating entity to apply for an allowance allocation increase. The conditions for granting an Article 21 application are circumscribed and such an application will only succeed if the participating entity can demonstrate that its emissions have exceeded its allocation allowance as a result of one of three defined circumstances: (i) due to the establishment and expansion of facilities or acquisition of or merger with some places of business which were unpredicted at the time emission permits are allocated;[106] (ii) due to a change in the range of products or a revision to the business plan which was unpredicted at the time emission permits were allocated;[107] or, (iii) in the case of a power-generating facility only, due to the government's request for increased power generation.[108]

The first and third circumstances seem reasonably focused, but a less than stringent interpretation of the second condition could result in a more expansive application of Article 21. The requirement of an unexpected change in product line or business plan tends to suggest an objective standard of assessment. In practice, however, this is likely to require a fact-intensive inquiry by the regulator likely involving consideration of the foreseeability of any such changes to the product line or business plan. It is doubtful whether language apt to such broad interpretation is helpful, especially since Article 21 permits intrusive (and potentially disruptive) intervention by the regulator in the KETS to an extent that should otherwise be unnecessary for the market's proper functioning. Revision of

[106] KETS Act, art 21(1).
[107] ibid art 21(3).
[108] ibid art 21(5).

a participating entity's allowance allocation is not permitted in the EU ETS and the presence of such allocation flexibility within the KETS raises potential questions with respect to the core convergence criteria which are considered in Section 7.5.1.

Similar to the approach adopted by the EU, implementation of the KETS has been structured into three phases (Phase I: 2015-17; Phase II: 2018-20; and, Phase III: 2021-25) with the national emissions cap lowered during each successive phase.[109] The KETS allocation methodology will also evolve from exclusive grandfathering to part-auctioning across the three phases in a manner not unlike the progression to auctioning which has occurred in the EU ETS. Article 13 of the Decree provides that participating entities will receive 100% of emission allowances for free during Phase I and 97% of emission allowances for free during Phase II.[110] During Phase III at least 10% of allowances will be allocated through auctioning.[111] Consequently, compared to the EU's more ambitious progression towards auctioning as the dominant method of allocation by 2020, the KETS Act is proceeding much more cautiously in transitioning towards auctioning as the primary method of allocation.[112] Allocation methodology is a sensitive issue, particularly in the early years of implementation of an emissions trading scheme. South Korean commentators have observed that concerns regarding the allocation of free permits and the ratio of auctioning to grandfathering could "rapidly trigger critical public debate and controversy".[113] Whilst this is not a uniquely South Korean concern, it nonetheless provides a salient reminder of the challenges of emissions trading in practice and the

[109] Kwon (n 60).
[110] Decree, art 13(1) and art 13(2), respectively.
[111] ibid art 13(3).
[112] In the EU ETS 70% of allowances will be auctioned by 2020 which will incrementally increase to 100% by 2027.
[113] Yoo (n 3) 17.

compromises which may prove both appropriate and necessary in the initial phases to sustain a consensus supportive of the initiative.

Whilst variations in allocation methodology between linked schemes could engage state aid concerns and would likely feature in the context of linkage negotiations, from the perspective of environmental integrity, allocation differentiation is not inherently problematic. A comparatively generous allocation methodology in one scheme may, however, suggest a degree of divergence in environmental ambition between the two schemes. The EU, however, has already acknowledged the permissibility of allocation differentiation within the EU ETS. For example, whilst allowances to the power sector have been allocated by auctioning since 2013, some Member States have been permitted to avail of a derogation for installations deemed poorly integrated in the European electricity grid (and which have been operational or under construction by 31 December 2008). A further derogation is also possible if the installation provides more than 30% of national electricity in an EU Member State with a relatively low GDP (such as Poland and other Central and Eastern European countries).[114] Under either derogation, installations may continue to receive up to 70% of all allowances free of charge with grandfathering only declining to zero by 2020.[115] Whilst variable allocation geometry is likely to arise as an issue for discussion during linkage negotiations, given that the EU has already demonstrated its tolerance of allocation differentiation, it should not be considered as a prerequisite for direct linkage.

[114] EU ETS Directive, as amended, art 10c(1).
[115] ibid.

7.4.2(iv) Market Stabilisation Measures

Article 23 of the KETS Act provides the designated regulator of the KETS, "the competent authority",[116] with quite far-reaching powers of intervention to stabilise the market should certain scenarios arise. Article 23 specifies the circumstances which must be present to permit such intervention, whilst Article 30 defines the forms of market intervention which are permissible. Such stabilisation measures are likely designed to reassure market participants that the government is committed to supporting the smooth functioning of the market, but the degree of intervention which the KETS Act permits is striking in its breadth. Consequently, such provisions raise serious questions with respect to direct linkage, a consideration which is evaluated in Section 7.5.1.

Article 23 of the KETS Act specifies the three circumstances under which market stabilisation powers may be engaged. Article 23(1)1 of the KETS Act, in conjunction with Article 30(1) of the Decree, provides that if the price of emission permits were to increase threefold, for six consecutive months, the average price during the immediately preceding two years, this would constitute a basis for market intervention by the competent authority.[117] Article 23(1)2 provides a second ground: if the average price increases more than twofold compared to the average allowance price of the past two years because the trade volume increased more than twofold in a one month period compared to the average monthly volume during the immediately preceding two years.[118] The third and

[116] Decree, art 6(2) specifies that the competent authority is the Minister of Environment.
[117] KETS Act, art 23(1)1 provides that "[i]f the price of emission permits exceeds, for six consecutive months, the average price during the immediately preceding two years at a *rate prescribed by Presidential Decree*" (emphasis added).
"Rate prescribed by Presidential Decree is then defined in Article 30(1) of the Decree as follows: "Rate prescribed by Presidential Decree" in Article 23(1)1 of the Act *means three times*" (emphasis added).
[118] Hawkins and Jegou (n 75) 17.
Similar to the legislative construction establishing the first market stabilisation threshold the KETS Act, art 23(1)2 must be read in conjunction with the Decree, art 30(2).

final threshold permitting market intervention by the government is triggered if "the average emission price of the last one month is lower than 60% of the average emission price of the immediately preceding two years".[119]

If any of the three specified market circumstances has occurred, then the government *may* intervene in the market and Article 23(2) of the KETS Act, in conjunction with Article 30(6) of the Decree, specifies the five market stabilisation measures which the government has at its disposal: (i) auction up to 25% of permits from the KETS reserve; (ii) set a maximum or minimum limit for the holding of allowances by each participant; (iii) increase or reduce the borrowing limit; (iv) increase or reduce the offset limit; or (v) set the highest or lowest price. As the foregoing demonstrates, the legislation permits substantial market intervention albeit only in defined circumstances. This affords the competent authority an extraordinarily broad scope to "control significant spikes in allowance prices, but also to contain price crashes".[120] Such sweeping market intervention powers – and the scope for the independent exercise of such powers by the competent authority – engages very real concerns in the context of direct linkage.

Moreover, the presence of such wide-ranging market intervention powers is less consistent with the fundamental principle "to implement policies in conformity with international standards, considering the link with international carbon markets", since the presence of such powers and the capacity for their independent exercise by the South Korean competent authority is likely to complicate international collaboration.[121] It is not clear, for example, that the presence of such intervention powers in the legislation has appropriately "consider[ed] the link with international carbon markets", as required by the

[119] KETS Act, art 23(1)3 in conjunction with the Decree, art 30(3).
[120] Hawkins and Jegou (n 75) 17.
[121] KETS Act, art 3(5).

fundamental principle. The implications for direct linkage are evaluated further in Section 7.5.1.

7.4.2(v) Use of Offsets

The KETS legislation permits participating entities to submit credits which have been generated via carbon offset programmes in partial satisfaction of their compliance obligations. Significantly, the legislative framework is informed by and to a large extent relies on the international framework governing the CDM, as has been explored in Chapter 6. This provides a salient example of climate governance interaction between international and national frameworks and is a reminder of Bothe's perspective that the "regulatory approach chosen by the UNFCCC and the Kyoto Protocol is characterised by a division of tasks between various levels".[122] For example, Article 38(3) of the Decree provides that "[w]hen the competent authority certifies greenhouse gas reductions *obtained through a CDM project referred to in Article 12 of the Kyoto Protocol to the UNFCCC*, it shall take necessary measures to prevent unjust enrichment from double sale".[123] Under Article 29(3) of the KETS Act, the competent authority is permitted to "set the maximum number of offset emission permits that may be otherwise surrendered and place a restriction on the effective period of offset emission permits".[124] This is further clarified by Article 38(4) of the Decree which provides that a participating entity may surrender offset credits to cover up to 10% of its compliance obligations, but the precise limit is left to be determined by the Allocation Plan.

[122] Michael Bothe, 'The United Nations Framework Convention on Climate Change: An Unprecedented Multilevel Regulatory Challenge' (2003) 63 Heidelberg Journal of International Law 239, 242.
[123] KRLI Legislative Translation Centre (n 82) (emphasis added).
[124] ibid.

The necessity for such quantitative limits on the use of offset credits is not without controversy and it has been suggested that it "may be necessary to increase the percentage of offset credits that companies can use to meet their emissions reduction targets in the future".[125] In addition, offset credits which have been generated through "an external project performed in any foreign nation shall not exceed 50% of the limit".[126] In this respect, the South Korean government has been evaluating approaches to integrate offset credits generated from CDM projects in North Korea and, in particular, "whether it is possible to register a North Korean carbon credits entity as a company in [South] Korea".[127] Such interactions could facilitate closer climate governance engagement across the Korean peninsula and would be particularly welcome in the context of promoting complementary climate governance initiatives.

The recognition of offset credits, however, has implications beyond the KETS and it is reasonable to expect that rules governing the fungibility of such credits would be an important consideration in any linkage negotiations with the EU. The relevance of this is heightened by the fact that the EU, at the time of writing, does not envisage permitting the use of offset credits beyond 2020.[128] In the context of this research, equivalence of rules governing the fungibility of offset credits has been recognised as a core convergence criterion and the potential direct linkage implications are evaluated in Section 7.5.5.

[125] Kwon (n 60).
[126] Decree, art 38(4).
[127] FN News, 'North Korean Carbon Credits Are Also Traded in the Domestic Emission Market' *FN News* (28 January 2015) <http://www.fnnews.com/news/201501281002544968> accessed 14 April 2017.
[128] Commission, 'Green Paper: A 2030 framework for climate and energy policies' (Communication) COM (2013) 0169 final, para 3.2 and Commission, 'Use of International Credits' (DG Climate Action: EU ETS) <https://ec.europa.eu/clima/policies/ets/credits_en> accessed 14 April 2017.

7.4.2(vi) Ensuring Compliance

South Korea's experience with the TMS has meant that the process of implementing rigorous MRV processes has been more seamless than might otherwise have been the case. The compliance framework, established under the KETS Act and Decree, has been described as "robust"[129] and requires that a participating entity "prepare a report on the amount of greenhouse gas emissions actually produced by it during a compliance year in a measurable, reportable, and verifiable manner".[130] Article 31(1) of the Decree specifies mandatory content which must be incorporated within this report. In addition, Article 31(2) of the Decree provides that the report prepared by the participating entity must be accompanied by a "verification report of a verifying institution … to the competent authority by electronic means."[131]

Article 33(1) of the KETS Act provides that "[i]f emission permits surrendered by a business entity … are less than greenhouse gas emissions certified … the competent authority may impose a penalty surcharge not exceeding three times the average market price of emission permits for the pertinent compliance year … within the maximum ₩100,000 per ton of carbon dioxide for the shortfall".[132] As there is no legislative requirement to surrender the shortfall in allowances, there is a potential risk that the maximum penalty of ₩100,000 (€76.32) will function as a price ceiling. This is a singularly significant feature of the KETS, particularly since analyst forecasts of the likely eventual KETS allowance price have exceeded this cap.[133] As Section 7.3 elaborated,

[129] Hawkins and Jegou (n 75) 17.
[130] KETS Act, art 24(1).
[131] KRLI Legislative Translation Centre (n 82).
[132] ibid.
[133] Hawkins and Jegou (n 75) 17.

KETS allowances were trading in the secondary market on 20 June 2016 at approximately ₩17,000 (€12.97). Whilst this suggests that the penalty of three times the market allowance price is still considerably lower than the ₩100,000 threshold, the presence of a price containment feature in the KETS framework is a factor which, in the context of direct linkage, requires further evaluation.[134] If, for example, market prices surged to double that of 20 June 2016, then the penalty cap of ₩100,000 would rapidly emerge as the default compliance option, a distortion which would propagate in any linked scheme.

7.5 Application of the Core Convergence Criteria to the KETS

This research advances that, in a climate governance landscape characterised by diverse experimentation, (direct) linkage could provide multi-speed pathways to incrementally develop and deepen institutions governing emissions trading. This may prove particularly relevant as implementation of the Paris Agreement unfolds. It has been suggested that the Agreement "provide[s] a new momentum to the development of carbon markets and the process of linking them".[135] However, in a manner similar to the architecture of the Kyoto Protocol, the Paris Agreement only delivers the framework within which to construct linkage.[136] The Agreement does not provide the mechanics to implement direct linkage, nor the structures to govern such linkage. Instead, the Paris Agreement "offers guidance to markets being crafted, managed, and linked around the world", rather than attempting to create an international market or a global carbon price.[137]

[134] International Carbon Action Partnership (n 72).
[135] Jevnaker and Wettestad (n 28) 151.
[136] As Bothe observed with respect to Kyoto: "[it] only contains very general rules on instruments, next to none on emissions trading". See Bothe (n 122) 248.
[137] Jackson Ewing, 'Beating Climate Change Through Innovative Carbon Markets in Northeast Asia' (2016) Asia Society Policy Institute 17 October 2016 <http://asiasociety.org/policy-institute/beating-climate-change-through-innovative-carbon-markets-northeast-asia> accessed 14 April 2017.

The prospect of positioning the KETS as one component of an emerging network of emissions trading schemes, a vision consistent with that articulated by EU policymakers, has been welcomed by some commentators.[138] Indeed, as the chairman of the Korea Exchange (KRX), the designated exchange for trading KETS allowances,[139] has observed: "From the mid to long-term perspective, we will … improve the system by making the most of our experience and knowledge [and] we will grow the KRX emissions market into an internationally competitive market".[140] In the context of a theoretical direct linkage between the EU ETS and the KETS, this Section will evaluate the practical application of the five core convergence criteria defined in Section 5.2.3.

7.5.1 Absolute Emissions Cap

The EU ETS Directive expressly requires that any potential linkage partner scheme contains an absolute emissions cap.[141] This requirement is best understood, within the broader context of increasing EU climate governance ambition, as a mechanism to ensure that the EU ETS delivers the Union's domestic emissions reduction commitments. In the context of potential direct linkage, it is significant that the KETS has also been designed as a cap-and-trade scheme with an absolute quantity limit on emissions which is progressively reduced over time.[142] As such, the inclusion of an absolute emissions cap in the KETS should "simplify linkage with the EU ETS by making it technically less

[138] cf Kwon (n 60) with Jos Delbeke, 'The Emissions Trading Scheme (ETS): The Cornerstone of the EU's Implementation of the Kyoto Protocol' (2006) 1(2) European Review of Energy Markets 1, 13.
[139] In January 2014, under the KETS Act, art 22(1) the Ministry of Environment, as the competent regulator, designated the Korea Exchange (KRX) as the sole market for secondary KETS trading.
[140] Park Se-jung, 'Choi Kyung-soo Chairman of Korea Exchange: "Emissions Market Grows with Long Breath"' *Digital Times* (Seoul, 12 January 2015) <http://www.dt.co.kr/contents.html?article_no=2015011202109958780005> accessed 14 April 2017.
[141] EU ETS Directive, as amended, art 25(1)(a).
[142] KETS Act, art 1(4).

complex".[143] As the presence of an absolute emissions cap in any candidate partner scheme is an express requirement of Article 25(1)(a), it is clear that it would not be legally possible for the EU to implement direct linkage with a partner scheme unless that scheme contained an absolute emissions cap.

The KETS cap of 1,687 million tCO_2e during Phase I (2015-2017) includes both indirect emissions and reserves.[144] The inclusion of reserves is particularly significant given the presence of price containment measures within the KETS framework. For example, if legislation governing the KETS had permitted the release of allowances *additional* to those calculated within the cap, then the integrity of the cap itself – and, by extension, the environmental integrity of the KETS – could be seriously undermined. As Section 7.4.2(iv) has recognised, the KETS Act permits regulatory intervention in the market for stabilisation purposes.[145] The presence of market intervention provisions, whilst potentially reassuring to South Korean market participants, could prove particularly problematic in the context of linkage negotiations with the EU. As Ahrens has observed, the EU "continues to reject any form of price management and decided to manage supply more effectively through its recently decided Market Stability Reserve".[146] The price containment measures within the KETS are not a breach of the absolute emissions cap but, as Fankhauser and Hepburn have acknowledged, it is important that policymakers in both systems have similar levels of expectations.[147]

[143] Hawkins and Jegou (n 75) 40.
[144] Whilst legislation governing the KETS uses the term "commitment period", for the purposes of analysis with the EU ETS the term "phase", as employed within the EU context, is used throughout.
[145] KETS Act, art 23.
[146] Jan Ahrens, 'Price Management in Emissions Trading Systems' in ISIC, *Carbon Markets Almanac 2016: Global Developments & Outlook* (Reed Business Information Ltd 2016) 4, 5.
[147] Samuel Fankhauser and Cameron Hepburn, 'Designing Carbon Markets, Part II: Carbon Markets in Space' (2010) 38 Energy Policy 4381, 4384.

Unlike extension of the EU ETS to EFTA Member States, the KETS represents a substantial market in its own right and, having witnessed the EU's problems with price volatility, South Korean policymakers may be reluctant to "give up flexibility with regard to market stabilisation measures".[148] South Korean reservations in this respect should not be under-estimated, particularly as commentators have observed that the South Korean government was "alarmed … by the price volatility that has prevailed in the European carbon market" and that this specific concern informed design of the KETS.[149] This is a salient reminder that direct linkage is unlikely to simply consist of the exportation of the design features of the EU ETS to a candidate partner scheme. Instead, as Section 5.2.2 emphasised, it is likely that the EU will also have to demonstrate a spirit of compromise in its approach to direct linkage with potential partner schemes. EU policymakers cannot reasonably expect, as Gilbert has cautioned, "that a country will simply, without regard to national concerns, adopt another country's emissions trading scheme".[150]

Nonetheless, if direct linkage between the EU ETS and the KETS is to prove durable, it would not be unreasonable on the part of the EU to expect that regulatory consultation should take place – and potentially EU consent should be required – before any exercise of market stabilisation powers by the South Korean regulator post-implementation of direct linkage. In practice, this may mean that for South Korean policymakers "[t]he concessions and loss of regulatory control over its own scheme have to be weighed against the potentially

[148] Hawkins and Jegou (n 75) 44.
[149] Anders Nordeng, Joo-jin Kim, Jin Kim and Thomas Winkehner, 'Dialogue: What Now for South Korea's Emissions Trading Scheme?' (2016) Carbon Pulse 5 July 2016 <http://carbon-pulse.com/22019/> accessed 14 April 2017.
[150] Alyssa Gilbert, 'Linking Carbon Markets: The Climate Change Silver Buller?' (2009) 20(6) Energy and Environment 901, 919.

significant benefits the country could achieve through linkage with the EU ETS".[151]

As Section 7.4.2(iii) identified, the KETS legislation permits revision of a participating entity's allowance allocation in certain specified circumstances. The most flexible of the three permitted conditions under which such an application may be approved is that there has been an unexpected change in product line or business plan. The Decree seems to require an objective assessment of whether the alleged change is "unexpected".[152] For the purposes of clarifying the implications of any revisions to the total allowance allocation, Article 21(7) of the Decree confirms that any "[e]mission permits additionally allocated … shall arise from reserve emission permits". This provides crucial reassurance that the environmental integrity of the absolute emissions cap of the KETS is unaffected by any individual revisions to a participating entity's allowance allocation. Whilst the necessity for the presence of such allocation readjustment powers remains questionable, the fact that the absolute emissions cap is secure ensures that the environmental integrity of any linked partner scheme is not endangered. Consequently, whilst allocation differentiation raises potential equity concerns amongst participating entities and could give rise to a perception that there is a transfer of wealth (through free allocations), there is no reason to think that such variations alone would – in the absence of disturbing the absolute emissions cap – undermine environmental integrity across directly linked schemes.

[151] Hawkins and Jegou (n 75) 44.
[152] Decree, art 21(3), but it must be cautioned that further empirical research is necessary to understand precisely how the regulator is implementing this requirement in practice.

7.5.2 Mandatory Trading

In addition to the absolute cap requirement, Article 25(1) of the EU ETS Directive limits direct linkage partner eligibility to "mandatory" schemes. In this respect, Lövbrand and Stripple's categorisation of emissions trading schemes as "voluntary markets" and "compliance markets" is helpful.[153] As Section 5.2.3(ii) has clarified, voluntary markets are based on private law and do not rely on public regulation to generate demand. Compliance markets, on the other hand, are "mandatory" in the sense that they rely on public regulation for their existence and functioning.

The KETS Act specifies that any facility with annual emissions exceeding 25,000 tCO_2e or any company which emits more than 125,000 tCO_2e is required to participate in the KETS.[154] If an entity satisfies either metric, then participation in the KETS is mandatory. Moreover, the legislation does not provide discretion to the executive to exempt an entity in circumstances where Article 8(1) would otherwise require its participation in the KETS. Whether an entity has reached the threshold for inclusion in the KETS is also subject to ongoing review with Article 9(1) of the KETS Act providing that "[t]he competent authority may designate and publicly announce business entities that *newly* fall under Article 8(1)1 *during a commitment period* due to the establishment of a new facility or the alteration or expansion of a facility."[155] In addition, Article 8(1)2 of the KETS Act provides that an entity which is not otherwise required to participate in the KETS may apply to do so ("voluntarily participating business entity"). A degree of

[153] Eva Lövbrand and Johannes Stripple, 'Disrupting the Public-Private Distinction: Excavating the Government of Carbon Markets Post-Copenhagen' (2012) 30(4) Environment and Planning C Government and Policy 658, 662.
[154] KETS Act, art 8(1).
[155] KETS Act, art 9(1) (emphasis added).

flexibility is afforded to such entities by the Decree which provides that a voluntarily participating business entity is permitted to choose to opt-out of subsequent phases.[156] In this sense, Sopher is accurate to classify KETS participants as "fall[ing] under two categories: voluntary and mandatory".[157] However, there can be no doubt that the KETS is a "mandatory" scheme within the meaning of Article 25(1) of the EU ETS Directive: participation is clearly required where a business entity satisfies either of the metrics set out in the KETS Act.

As coverage under the KETS extends to all six greenhouse gases, a separate question could arise for South Korea as to whether it considers the scope and coverage of the EU ETS too limited. This does not present an obstacle to the implementation of direct linkage in the sense that coverage broader than that of the EU ETS is not inconsistent with the core convergence criteria. The inclusion of multiple gases and indirect emissions could, however, raise MRV considerations and these are evaluated separately in Section 7.5.4. From the perspective of the EU, it is unlikely that the inclusion of additional greenhouse gases would obstruct direct linkage. Australia, for example, had intended to cover methane emissions within its proposed emissions trading scheme and this was not identified as a potential problem by the EU during linkage negotiations.[158] For South Korea, political pressure could arise if domestic industry resists direct linkage with the EU ETS in circumstances where certain South Korean entities are covered by the KETS, but their EU competitors in equivalent sectors are not. Of course, the underlying competition rationale would persist in such circumstances irrespective of the implementation of direct linkage. For example,

[156] Decree, art 6(7).
[157] Sopher (n 64) 311.
[158] Hawkins and Jegou (n 75) 41.

an EU competitor is not additionally advantaged by linkage, nor is a South Korean entity further disadvantaged.[159] In this sense, broader coverage of emissions is less consequential for the purposes of direct linkage.

7.5.3 Borrowing

Under the EU ETS borrowing of allowances between years within the same phase is implicitly recognised since allowances are allocated by 28 February each year,[160] whilst participating entities are not required to surrender allowances for the preceding compliance year until 30 April.[161] Consequently, a firm may legitimately surrender allowances allocated in February for the purpose of compliance with the preceding year's trading period. In light of these provisions, as Section 5.2.3(iii) has elaborated, permission to borrow in a candidate linkage partner scheme is not considered a core convergence criterion. Instead, this core convergence criterion is concerned with *unconstrained* borrowing in a potential partner scheme and the material risk that such borrowing could adversely and significantly undermine the environmental integrity of the EU ETS.[162]

Hawkins and Jegou have observed that "[s]trong similarities exist with regard to the rules for temporal trading under the EU ETS and the KETS".[163] Both schemes permit unrestricted banking of allowances to the following year and both facilitate borrowing, but limit such borrowing to within the same trading phase. The trading phases for the EU ETS and KETS are not aligned, but the limitation on borrowing within each phase is important as it prevents unconstrained

[159] Instead, the KETS entity may, post-linkage, see lower compliance costs given the differentiation in price between KETS and EU ETS allowances.
[160] EU ETS Directive, art 11(2).
[161] ibid art 9a(2).
[162] Emilie Alberola and Julien Chevallier, 'European Carbon Prices and Banking Restrictions: Evidence From Phase I (2005–2007)' (2009) 30(3) Energy Journal 51.
[163] Hawkins and Jegou (n 75) 19.

borrowing. In the case of the EU ETS, for example, borrowing is constrained by the entity's allowance allocation for the following compliance year, whilst under the KETS borrowing is explicitly limited to not more than 10% of a participating entity's allowance requirement.[164] However, the South Korean government is reviewing the 10% borrowing restriction, a decision likely influenced by the experience of the first year of KETS trading and, in particular, analyst forecasts that there was "a gap of some 5-10 million allowances that need[s] to be covered by offsets and/or by borrowing from the 2016 allocations".[165] At the time of writing, the government is considering an increase in the annual permissible borrowing limit from 10% to 20%.[166]

Since the EU's implicit permission that a participating entity may borrow from its allocation allowance for the following compliance year does not incorporate any quantitative restrictions, direct linkage with the KETS would permit the propagation of the EU's less stringent borrowing rules into KETS.[167] Whilst South Korean policymakers could raise concerns regarding this, recent developments indicating that the South Korean government is considering increasing the borrowing cap to 20% instead suggests that the difference in approach to borrowing between the two schemes is diminishing. Perfect uniformity between schemes' rules governing borrowing is not necessary for the successful implementation of direct linkage and South Korea's more rigorous provisions suggests that there is a close alignment between the EU and South Korea on the importance of the instrumentalist rationale for emissions trading.

[164] Article 28(3) of the KETS Act provides that "[t]he maximum emission permits that may be borrowed … shall be prescribed by Presidential Decree", whilst Article 36(2) of the Decree defines "maximum" as "10% of emission permits to be surrendered".
[165] Nordeng, Kim, Kim and Winkehner (n 149).
[166] ibid.
[167] Hawkins and Jegou (n 75) 3.

7.5.4 Monitoring, Reporting and Verification of Emissions ("MRV")

An uneven approach to MRV by the competent regulator of a direct linkage partner scheme could create unfair competitive disadvantages for EU-based entities. Unreliable or deficient MRV processes, however, could have more serious consequences by obfuscating or even obstructing progress towards achieving the EU's emissions reduction commitments, thereby jeopardising the environmental integrity of the EU ETS. For this reason, rigorous MRV is considered a sufficiently serious consideration to warrant classification as a core convergence criterion. For the purposes of assessment as a core convergence criterion, Section 5.2.3(iv) defined MRV as requiring EU policymakers to make a value determination along a continuum of compliance.

The MRV frameworks governing the EU ETS and the KETS respectively have been described as "comparable".[168] This is perhaps less surprising given that scholars have observed that "details of the EU ETS were studied thoroughly by South Korean policymakers …. [and that] the KETS has been designed to be … compatible with international standards".[169] Such an approach is consistent with the KETS fundamental principle which envisages the implementation of policies which are in conformity with international standards.[170] As Section 7.4.2(vi) has explained, KETS participating entities are required to self-report their greenhouse gas emissions. The emissions data must also be confirmed through submission of an independent verification report. Under the EU ETS, participating entities are also required to submit their verified emissions (by 31 March) before subsequently submitting sufficient allowances to cover these

[168] Hawkins and Jegou (n 75) 19.
[169] Oh, Hyon and Kim (n 65) 9.
[170] KETS Act, art3(5).

emissions (by 30 April). The detailed MRV principles and technical processes are elaborated in the Monitoring and Reporting Regulation[171] and the Accreditation and Verification Regulation.[172]

Whilst the MRV frameworks governing the EU ETS and the KETS respectively are robust and transparent, the frameworks are not identical. The EU's successful implementation of direct linkage between the EU ETS and Norway, however, has demonstrated that MRV provisions need not be identical. For example, the Norwegian emissions trading scheme requires participating entities to monitor and report their emissions on an annual basis, as is also required in the EU ETS and the KETS, but the Norwegian scheme does not require independent verification of entities' emissions data.[173] Instead, it is open to the Norwegian regulator, on a case-by-case basis, to "decide that the emissions report from an operator shall be verified by an independent third party before it is submitted".[174] The absence of a mandatory requirement for independent verification was not considered material by EU policymakers and did not obstruct the implementation of direct linkage.

Whilst the MRV provisions within the KETS legislative framework are robust and equivalent to the MRV approach adopted by the EU, the accompanying penalty regime in the KETS, in cases of non-compliance, is much less reassuring. As Section 7.4.2(vi) explained, Article 33(1) of the KETS Act sets the penalty per tCO_2e at three times the average market price of an allowance

[171] Commission Regulation (EU) No 601/2012 of 21 June 2012 on the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC of the European Parliament and of the Council [2012] OJ L181/30.
[172] Commission Regulation (EU) No 600/2012 of 21 June 2012 on the verification of greenhouse gas emission reports and tonne-kilometre reports and the accreditation of verifiers pursuant to Directive 2003/87/EC of the European Parliament and of the Council [2012] OJ L181/1.
[173] Chapter 4 (§16), Act of 17 December 2004 No 99 Relating to Greenhouse Gas Emission Allowance Trading and the Duty to Surrender Emission Allowances.
See Norwegian Government, 'Acts and Regulations' <https://www.regjeringen.no/en/dokumenter/greenhouse-gas-emission-trading-act/id172242/> accessed 14 April 2017.
[174] ibid Chapter 4 (§17).

during that particular compliance year up to a maximum of ₩100,000 (€76.32). Under the KETS framework, however, a defaulting participating entity is not required to surrender the allowance shortfall in addition to paying the penalty. This approach represents a substantial and concerning divergence from the EU ETS framework in at least three important respects.

First, the penalty for non-compliance under the EU ETS has increased from €40 per tCO_2e in Phase I to €100 per tCO_2e since Phase II and is therefore approximately 25% higher than that imposed by the KETS. Second, non-compliant participating entities in the EU ETS remain obliged to surrender the allowance shortfall in the subsequent compliance year. Third, the practical consequence of imposing a maximum penalty of ₩100,000 (€76.32), without requiring the delinquent participating entity to also surrender the missing allowances, is that the ₩100,000 penalty cap functions as a price ceiling. The implementation of direct linkage in such circumstances would result in the propagation of the ₩100,000 price ceiling into the EU ETS, a development which could ultimately undermine the environmental integrity of the EU ETS. Therefore, whilst the MRV architecture is sufficiently rigorous to be compatible with the EU ETS, in circumstances where a participating entity is non-compliant with its allowance obligations the penalty framework under the KETS is inadequate and could materially endanger the environmental integrity of the EU ETS.

By not requiring delinquent participating entities to surrender their shortfall in allowances, South Korea has effectively created an option to pay a fixed fee of ₩100,000 for each tCO_2e emitted in place of surrendering an emissions allowance.[175] In current market conditions, the option of a fixed fee of ₩100,000

[175] MJ Mace and Jason Anderson, 'Legal and Design Issues Arising in Linking the EU ETS with Existing and Emerging Emissions Trading Schemes' (2009) 6(2) Journal for European Environmental & Planning Law 197, 218.

is undesirable: as observed in Section 7.3, KET allowances were trading at ₩17,000 (€12.97) on 20 June 2016, whilst EU ETS allowances were trading at €5.86 on the same date. However, if allowance prices in the KETS were to increase to ₩100,000 (and beyond), then the maximum penalty mechanism would operate to permit total emissions to exceed the total number of allowances.[176] In practical terms, this is tantamount to releasing additional emission allowances equivalent in number to the total amount already allocated during the compliance year. Consequently, if the KETS allowance price exceeds ₩100,000, it is reasonable to assume that market participants will choose to pay the fixed penalty of ₩100,000 for each tCO_2e emitted and sell allowances to EU-based participating entities at a price in excess of ₩100,000. As allowances in the KETS are overwhelmingly allocated for free, there is an additional risk of perverse incentivisation since any sale of allowances to EU ETS participating entities for more than ₩100,000 would deliver a windfall to KETS participating entities.

Consequently, the structure of the penalty regime established under the KETS legislative framework is not within a zone of compatibility with the EU ETS and, as such, is inconsistent with the MRV core convergence criterion. There is a further substantial risk that the penalty regime could, in practice, breach the principle of an absolute emissions cap and contravene Article 25(1)(a) of the EU ETS Directive. As such, EU policymakers should (and, it is suspected, would) insist that the KETS penalty framework incorporate a requirement for non-compliant participating entities to surrender the allowance shortfall in addition to paying any monetary penalty. This amendment would be sufficient to prevent the introduction of a price ceiling.

[176] KETS Act, art 33(1).

The ₩100,000 (€76.32) maximum penalty for non-compliance represents an approximate 25% discount per excess tCO_2e in comparison with the €100 penalty imposed on non-compliant participating entities within the EU ETS. However, it is important to recall, as explained in Section 5.2.3, that the core convergence criteria are not designed to synchronise perfectly identical schemes, but rather to promote the necessary de minimis degree of alignment to allow successful implementation of direct linkage. Therefore, it is not unreasonable to expect that the EU should also be willing to demonstrate a spirit of compromise with respect to variations in non-critical design features. At the time of writing, there is little basis to conclude that the variation in the penalties imposed on non-compliant participating entities in the EU ETS and the KETS, respectively, would breach the core convergence criteria.[177]

This research construes direct linkage as a dynamic process and it is possible that extraordinary external events, such as severe exchange rate fluctuations, could materially disrupt the preceding analysis. For example, if the value of the South Korean won collapsed compared to the euro, this would have serious implications for the stability of the common carbon price across the linked EU ETS-KETS network. Direct linkage is not a single one-time event and, as Gilbert has recognised, "[f]urther challenges will emerge once a meta-scheme is in place, such as adequate governance to ensure market confidence".[178] As Chapter 5 emphasised, it is important to understand linkage as a continuing process which extends beyond the implementation of direct linkage and necessitates ongoing monitoring and regulatory dialogue to ensure compliance with the core convergence criteria.

[177] Hawkins and Jegou (n 75) 48.
[178] Gilbert (n 150) 916.

7.5.5 Equivalent Rules Governing the Fungibility of Offset Credits

In the context of EU ETS-KETS direct linkage, offset credits recognised by either scheme would be fungible across both schemes. As such, offset credits recognised in one scheme could enter the linked partner scheme even in circumstances where that scheme's recognition rules might otherwise prohibit such credits. As Section 7.4.2(v) has observed, the KETS permits recognition of offsets, but imposes both qualitative and quantitative restrictions. The Decree provides that a participating entity may surrender offset credits to cover up to 10% of its compliance obligations, but credits generated from overseas projects are not recognised for compliance purposes until 2020.[179] Legislative priority is instead afforded to domestic offset credits, termed Korean Offset Credits ("KOCs"), issued for local offset projects (which may or may not also retain CDM status).[180] Post-2020, offset credits which have been generated through "an external project performed in any foreign nation shall not exceed 50% of the limit".[181] Commentators have observed that to date "most offset credits are known to have been issued for emission reductions within local CDM projects …. [and a] similar outcome is expected throughout 2015–2017".[182]

During Phase II (2008 – 2012) of the EU ETS participating entities were permitted to surrender offset credits for up to 13.4% of their emissions cap. The offset limits during Phase III (2013-2020) vary by installation type and may be alternatively (i) the limit authorised in Phase II; (ii) 11% of free Phase II allocations or (iii) 4.5% of verified Phase III emissions.[183] The Commission's announcement

[179] Decree, art 38(4).
[180] Choi (n 74) 58.
[181] Decree, art 38(4).
[182] Choi (n 74) 59.
[183] Commission Regulation (EU) No 1123/2013 of 8 November 2013 on determining international credit entitlements pursuant to Directive 2003/87/EC of the European Parliament and of the Council [2003] OJ L299/32, art 1.

that the Union's 2030 reduction target of 40% percent below 1990 levels will be "achieved through domestic measures alone (ie without the use of international credits)" casts doubt over the future fungibility of offset credits in the EU ETS.[184] This is particularly significant given that the future of the CDM – or any successor mechanism – depends on sources of demand.[185] The 2030 Framework on Climate and Energy, the context within which the Commission's announcement was made, is less explicit on the future contribution of international offset credits to the EU ETS, instead only stating that "[f]uture access to international credits after 2020 will need to be assessed".[186]

Consequently, whilst the EU has not settled on definitive post-2020 rules governing the fungibility of offset credits, a much more restrictive environment seems highly likely. This provides less regulatory space for the development of indirect linkage to the CDM or any successor mechanism and, as Schröter has observed, "leaves the CDM with an uncertain future".[187] However, if the CDM or any successor mechanism cannot be reconstructed, as advocated in Chapter 6, then it may be prudent for the EU to impose limitations on the fungibility of credits generated from international offset projects. The degree to which EU ETS and KETS rules governing the fungibility of offset credits in a post-2020 context will be equivalent is not yet clear. At present, both schemes favour a more cautious approach to the recognition of offsets. This suggests that there is strong alignment between the two schemes on the principle of prioritising domestic reduction initiatives. Indeed, policymakers in both schemes have emphasised the

[184] Commission, 'Questions and Answers on 2030 Framework on Climate and Energy' (Memo 22 January 2014) <http://europa.eu/rapid/press-release_MEMO-14-40_en.htm> accessed 14 April 2017.
[185] Judith Schröter, 'The Clean Development Mechanism System Description' in ICIS, *Carbon Markets Almanac 2016: Global Developments & Outlook* (Reed Business Information Ltd 2016) 88, 90.
[186] Commission, 'Green Paper: A 2030 Framework for Climate and Energy Policies' (Communication) COM (2013) 0169 final, para 3.2.
[187] Schröter (n 185) 90.

importance of achieving domestic (or "real") emissions reductions.[188] At present, the KETS only recognises offset credits generated from domestic offset projects and it remains unclear whether the South Korean government will link to the CDM or successor mechanism. Meanwhile, the EU ETS Directive has prohibited the use of new-project offset credits in the EU ETS registered after 2012 unless those credits have been sourced from least developed countries ("LDCs").[189]

As of April 2017, the only offset credits which are recognised by the KETS (ie domestically generated) are not recognised by the EU ETS; whilst the only credits recognised by the EU ETS (ie LDC generated) are not recognised by the KETS. It is important not to overstate this distinction. As the climate governance landscape evolves towards 2020, there will be greater certainty concerning the future of the CDM or its successor mechanism. At present, South Korea and the EU are committed to only marginal or no use of offset credits post-2020 and this policy alignment provides a strong basis to pursue dialogue to ensure equivalence between schemes' rules governing the fungibility of offset credits.

7.6 Implications of Analysis

To date there have been few examples in practice of the implementation of direct linkage between emissions trading schemes. However, it has been suggested that this limited history indicates that successful direct linkage efforts "tend to be

[188] Yoo (n 3) 17 and European Commission, 'Green Paper: A 2030 Framework for Climate and Energy Policies' (Communication) COM (2013) 0169 final, para 3.2.

[189] South Korea, the world's eleventh economy, is not an LDC.
The definition of LDCs employed by the EU relates to the list of LDCs as defined by the Committee for Economic Development and endorsed by the Economic and Social Council of the United Nations. This list is updated every three years according to specific criteria.
See European Commission, 'Definition of Least Developed Countries in the context of Article 11a(4) of Directive 2009/29/EC of the European Parliament and of the Council of 23 April 2009, amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community' <https://ec.europa.eu/clima/sites/clima/files/ets/markets/docs/def_ ldc_en.pdf> accessed 14 April 2017.

characterised by similarity in design and by prior economic and political ties".[190] The successful implementation of linkage with Norway is often cited as the prime example. However, it is also possible to characterise the circumstances under which linkage between the EU and Norway was established as unique.[191] Indeed, some see it as "an integration of the Norwegian scheme into the EU ETS".[192] In the coming years, it is difficult to envisage such favourable conditions for the EU to explore direct linkage with the possible exceptions of Switzerland and the UK after its withdrawal from the Union.

South Korean policymakers have carefully studied the EU ETS which likely explains why, as Oh and colleagues have observed, "[s]imilarities between the EU ETS and the KETS are easily found".[193] The preceding analysis in this Chapter supports this assessment. This research has found that critical design features, as reflected in the core convergence criteria, are generally either already compatible, such as the absolute cap and mandatory nature of both schemes, or are converging, such as both schemes' emphases on the promotion of domestic emissions reductions rather than the use of credits generated from international offset projects.

Beyond the core convergence criteria, South Korea's proactive climate governance policies seem to enjoy sustained political support with the National Assembly passing the KETS Act almost unanimously (148-0 vote, with three abstentions).[194] There is also evidence of an emerging societal consensus recognising climate change as a serious issue.[195] Whilst some domestic industrial

[190] Jevnaker and Wettestad (n 28) 151.
[191] Or at least "rare" as Betsill and Hoffmann have suggested: see Michele Betsill and Matthew J Hoffmann, 'The Contours of "Cap and Trade": The Evolution of Emissions Trading Systems for Greenhouse Gases' (2011) 28(1) Review of Policy Research 83, 100.
[192] Hawkins and Jegou (n 75) 32.
[193] Oh, Hyon and Kim (n 65) 9.
[194] Kwon (n 60).
[195] Yun, Ku and Han (n 57) 296.

sectors have challenged the KETS, it is notable that the South Korean government has maintained a positive outlook with commentators observing that policymakers "hope to link up with other regional and more distant carbon markets that may provide South Korea with more economic opportunities".[196] A settled commitment to rigorous climate governance is not a core convergence criterion. It is, after all, always open to sovereign jurisdictions to change their minds about climate policies and consequently, linkage is not immutable.[197] Yet in a landscape where national climate policies are often characterised by discord rather than consensus, the observations of Park and colleagues that "it is almost impossible to conceive of a case when the South Korean government discards the [then proposed] emissions trading system" should prove particularly reassuring to EU policymakers.[198] The search for a candidate partner scheme for the EU ETS has often seemed a Sisyphean undertaking, but South Korea potentially offers the prospect of a partner with stable climate settings with whom the EU can negotiate.

Direct linkage with the KETS is an attractive proposition, yet such linkage negotiations could take on a different dynamic than the EU's past experience of linkage. With Norway, for example, the EU was able to successfully require harmonisation from the Norwegian government.[199] The context of EU-Norway linkage suggests that "smaller states are more likely to be willing to adapt their rules to facilitate linking".[200] However, the KETS is the second largest carbon emissions trading scheme in the world and its size implies that South Korea could exert a material influence on the carbon price in a linked EU ETS-KETS market.

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[196] Kwon (n 60).
[197] Pizer and Yates (n 6) 151.
[198] Hojeong Park and Won Kyung Hong, 'Korea's Emissions Trading Scheme and Policy Design Issues to Achieve Market-Efficiency and Abatement Targets' (2014) 75 Energy Policy 73, 82.
[199] Hawkins and Jegou (n 75) 44.
[200] Sampo Seppänen and colleagues, *Demand in a Fragmented Global Carbon Market: Outlook and Policy Options* (Norden 2013) 55.

It is reasonable to suspect that this factor will influence South Korean policymakers' approach to any linkage negotiations with the EU and, ultimately, the country's willingness to compromise.

Direct linkage with the KETS would send an important signal about the EU's commitment to international climate governance cooperation. The successful conclusion of linkage negotiations with South Korea would also endorse the Union's embrace of its emerging role as a "leadiator" – "a leader-cum-mediator that work[s] with rather than against the changing geopolitical context of climate change".[201] As such, it makes sense for the EU to actively embrace a flexible vision of incrementally evolving emissions trading governance arrangements by exploiting opportunities to advance the EU ETS as a central component in bilateral climate partnerships. The negotiation of a well-functioning direct linkage with the KETS would provide tangible reassurance that the EU's leadiator role has matured and is becoming a stable feature of climate governance.[202]

The initiation of a process of linkage by degrees which, as Section 4.3.2(iii) explained, could envisage the incremental alignment of key design features of emissions trading schemes prior to the potential introduction of direct linkage has much to recommend it.[203] Such an approach, consistent with the emerging decentralised framework of the Paris Agreement, recognises that a global framework governing emissions trading is more likely to emerge incrementally through the gradual de minimis alignment of schemes' design features along a

[201] As considered in Section 2.4.3 and see Karin Bäckstrand and Ole Elgström, 'The EU's Role in Climate Change Negotiations: From Leader to "Leadiator"' (2013) 20(10) Journal of European Public Policy 1369, 1381.
[202] Sebastian Oberthür and Lisanne Groen, 'The European Union and the Paris Agreement: Leader, Mediator, or Bystander' (2017) 8(1) Wiley Interdisciplinary Reviews: Climate Change 1, 6.
[203] David Burtraw, Karen Palmer, Clayton Munnings, Paige Weber and Matt Woerman, 'Linking by Degrees: Incremental Alignment of Cap-and-Trade Markets' (2013) Resources for the Future Discussion Paper 04/2013, 9.

spectrum of convergence. Such a process could initially focus on transparent dialogue between EU and South Korean policymakers to openly discuss ambitions, priorities, and barriers.[204] For example, the EU has not definitively determined rules governing the fungibility of offset credits in the EU ETS beyond 2020. Consequently, to promote complementarity where possible, it would be prudent for EU and South Korean policymakers to discuss and consider their respective schemes' post-2020 approaches to the fungibility of offset credits. Such early dialogue could, for example, pre-empt the potential emergence of conflicting rules. The present negotiations on the elaboration of the Paris Agreement also provides a fortuitous opportunity for EU and South Korean policymakers to develop a deeper understanding of their respective schemes and potentially provides a forum for the EU to enhance its leadiator credentials by agreeing mutually beneficial EU-South Korean emissions trading policy preferences to then jointly upload to the emerging international architecture.

7.7 Conclusion

This Chapter opened by considering the implications of the Paris Agreement for the development of direct linkages. The Agreement confirms the continuing contribution of market instruments to climate governance beyond 2020 and, through the concept of ITMOs, implicitly endorses the prospect of linkage. By providing a framework to facilitate the development of carbon markets, the Agreement ensures that "market mechanisms… are firmly back on the agenda as an instrument for climate action".[205] This had been far from assured in the

[204] Hawkins and Jegou (n 75) 45.
[205] Sharma (n 41).

wake of the Copenhagen negotiations with some scholars predicting the demise of market trading.[206] The Paris Agreement accommodates the development of multiple and multi-speed routes towards enhanced climate action and it is within this context of multi-level climate governance that the prospect of direct linkage between the EU ETS and KETS must be considered.[207]

South Korea is perhaps not an obvious climate governance partner for the EU, but many of the EU's more likely climate governance allies remain mired in policy uncertainty.[208] Since 2010 successive South Korean administrations have embraced climate governance initiatives, such that the KETS is now moored as a stable and critical component of South Korean climate policy.[209] The EU has also demonstrated "significant leadership by example, by being a front-runner in climate policy".[210] Indeed, it has been observed that the EU's experience with emissions trading influenced the design of the KETS and provided practical policy formation advantages for South Korean policymakers by "avoiding mistakes that may arise … and learning lessons from an existing scheme in practice".[211] As this Chapter has demonstrated, it is evident that there is already a significant degree of alignment between the critical design features of the EU ETS and the KETS.

The implementation of direct linkage will involve compromise for both the EU and South Korea. The EU's experience of direct linkage to date suggests that the Union is a reluctant importer of a potential partner scheme's design features. However, the KETS represents a significant carbon market in its own right and,

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[206] David Campbell, Matthias Klaes and Christopher Bignell, 'After Cancun: The Impossibility of Carbon Trading' (2010) 29 University of Queensland Law Journal 163.
[207] Bodansky, Hoedl, Metcalfe and Stavins (n 26) 957.
[208] For example, Betsill and Hoffmann have drawn attention to the "increasingly polarised [climate] politics in countries like the United States, Canada, and Australia": see Betsill and Hoffmann (n 191) 86.
[209] There have been three presidents during this period and the KETS has remained a stable feature of South Korea's climate policy: Lee Myung-bak (2008 – 2013); Park Geun-hye (2013 – 2016); and Hwang Kyo-ahn (2016 – present): see Oh, Hyon and Kim (n 65) 2.
[210] Jo Dirix, Wouter Peeters, Johan Eyckmans, Peter Tom Jones and Sigrid Sterckx, 'Strengthening Bottom-Up and Top-Down Climate Governance' (2013) 13(3) Climate Policy 363, 370.
[211] Oh, Hyon and Kim (n 65) 9.

after the failure of previous negotiations with Australia, direct linkage with the KETS holds out the prospect of establishing the EU's first intercontinental linkage. In such circumstances, some concessions on the part of the EU, such as flexibility towards the varying coverage of the KETS, as considered in Section 7.4.2, could contribute to producing a measured basis for direct linkage. However, it is impossible to overlook the fact that there are also critical design features where much more detailed discussion and negotiation will be necessary particularly, for example, South Korea's penalty regime and market stabilisation powers. Preserving the environmental integrity of the EU ETS must remain the central consideration in any prospective direct linkage negotiations concerning the KETS (and any other potential partner schemes in the future). EU policymakers will have to carefully reflect, with an appropriate degree of modesty, on the potential gains, risks, and compromises that direct linkage with the KETS requires.

The incremental alignment of key design features of the KETS and the EU ETS through the model of linkage by degrees advanced in Chapter 4 could provide a pathway towards direct linkage. Linkage is not synonymous with direct linkage alone and a deliberate process of linkage by degrees might initially prioritise dialogue in the earlier stages on preventing the emergence of conflictive design features within each scheme, such as rules governing the fungibility of offset credits. Discussions could then consider potentially more challenging questions, such as the penalty regime and market stabilisation powers enabled by the KETS legislative framework. Framing linkage in this way, as a spectrum which nurtures – without any further delay – the development of deepening complementarity offers a better model to harness the potentially critical role of linkage in the incremental establishment of a global carbon market.

CHAPTER 8

CONCLUSION

8.1 Confronting the Challenge of Climate Change

The challenge of climate change has emerged as one of the more intractable and complex global problems of the 21st century.[1] Successive scientific studies have confirmed that "warming of the climate system is unequivocal and since the 1950s, many of the observed changes are unprecedented over decades to millennia".[2] In 1988, the Intergovernmental Panel on Climate Change (IPCC) was created by the United Nations Environment Program and the World Meteorological Association and was tasked with providing member governments with state of the art assessments of "the science, the impacts, and the economics of – and the options for mitigating and/or adapting to – climate change."[3] The IPCC has concluded that more than half of the observed increase in global average surface temperature from 1951 to 2010 is attributable to anthropogenic factors.[4] Indeed, "all but a tiny handful of climate scientists" recognise that human activities are a significant cause of the Earth's warming climate.[5] Yet there

[1] Climate change is arguably the most intractable and complex problem of our age, but some scholars have observed that a dozen other risk factors, including habitat loss and lack of access to safe water and sanitation, contribute more to global mortality and the global burden of disease: Indur M Goklany, 'Is Climate Change the "Defining Challenge of our Age"' (2009) 20(3) Energy & Environment 279.
[2] Intergovernmental Panel on Climate Change (IPCC), 'Climate Change 2014 Synthesis Report Summary for Policymakers' (2014) Intergovernmental Panel on Climate Change: Fifth Assessment Report (AR5), 2 <http://ipcc.ch/pdf/assess ment-report/ar5/syr/AR5_SYR_FINAL_SPM.pdf> accessed 14 April 2017.
[3] Intergovernmental Panel on Climate Change (IPCC), 'Climate Change 2001 Report: Scientific Basis (2001) Intergovernmental Panel on Climate Change: Third Assessment Report (AR3), 2 <https://www.ipcc.ch/ipccreports/tar/> accessed 14 April 2017.
[4] IPCC 'Climate Change 2014 Synthesis Report Summary for Policymakers', (n 2) 5.
[5] Naomi Oreskes, 'The Scientific Consensus on Climate Change: How Do We Know We're Not Wrong?' in Joseph DiMento and Pamela Doughman (eds), *Climate Change: What It Means for Us, Our Children, and Our Grandchildren* (MIT Press 2007) 65.

continues to remain "a mismatch between the apparent seriousness of the problem and our collective institutional response".[6]

Governing climate change presents significant challenges. As Section 1.1 observes, the uniquely transnational nature of the problem reinforces the complexity of the challenge of developing an effective climate governance framework. Indeed, many of the factors which make global climate change unique also make it complex.[7] It is little surprise then that scholarly attention increasingly focuses on understanding and assessing the effectiveness of emerging modes of climate governance. This thesis contributes to this research agenda by offering a detailed appraisal of linkage, one such institutional arrangement which offers the prospect of enhancing climate governance through promoting complementarity with the EU ETS and fostering the incremental evolution of a global climate governance architecture.

8.2 The March of Emissions Trading

Whilst there are several defining characteristics of climate law, it has been observed that a main characteristic is "the extraordinary reliance on economic policy instruments as the principal means of influencing greenhouse gas emissions" and that "no field of environmental law relies more on economic mechanisms".[8] However, the dominance of economic instruments, particularly emissions trading, within EU climate policy was far from assured. As Section 2.3 explores, the EU ETS developed due to the failure of the EU to agree on a carbon

[6] Stephen Gardiner, 'Saved by Disaster? Abrupt Climate Change, Political Inertia, and the Possibility of an Intergenerational Arms Race' (2009) 40(2) Journal of Social Philosophy 140, 143.
[7] Maria Carmen Lemos and Arun Agrawal, 'Environmental Governance and Political Science' in Megali A Delmas and Oran R Young (eds), *Governance for the Environment: New Perspectives* (Cambridge University Press 2009) 69, 90.
[8] Benjamin J Richardson, 'Climate Law and Economic Policy Instruments: A New Field of Environmental Law' (2004) 1 Environmental Liability 1, 1.

tax and the non-ratification of the Kyoto Protocol by the United States. Given the EU's initial opposition to emissions trading as a climate governance tool, the Union's later acceptance and adoption of market trading represented a profound normative readjustment.[9]

It is also important to recognise emissions trading as one policy response in a governance landscape "awash with different approaches".[10] This evolving and fluid governance landscape is akin to Black's vision of decentred regulation as "regulation in many rooms" with regulatory experimentation often involving multi-sited, marketised, and transnational forms of governance.[11] As such, this thesis engages with one dimension of this unsettled climate governance landscape: the potential governance contribution of linkage. This research also recognises the prevailing realpolitik of climate governance which strongly indicates that "cap and trade will remain an aspect of the global response to climate change".[12] With China having unveiled plans to launch a national emissions trading scheme[13] and over half of the Parties to the Paris Agreement indicating an intention to use or consider the use of market-based instruments,[14] it is evident that, for many jurisdictions, emissions trading has already emerged as "the instrument of choice in combating climate change".[15]

However, emissions trading is an economic idea that is also having a "tremendous influence" on how sovereignty free actors respond to the challenge

[9] See generally Section 2.3.3.
[10] Matthew J Hoffmann, 'Global Climate Change' in Robert Falkner (ed), *The Handbook of Global Climate and Environment Policy* (John Wiley & Sons Ltd 2016) 3, 12.
[11] Julia Black, 'Decentring Regulation: Understanding the Role of Regulation and Self-Regulation in a 'Post-Regulatory' World' (2001) 54 Current Legal Problems 103, 104.
[12] Michele Betsill and Matthew J Hoffmann, 'The Contours of "Cap and Trade": The Evolution of Emissions Trading Systems for Greenhouse Gases' (2011) 28(1) Review of Policy Research 83, 87.
[13] Stian Reklev, 'China National ETS Launch Likely in Second Half of 2017' Carbon Pulse (15 March 2016) <http://carbon-pulse.com/17057/> accessed 14 April 2017.
[14] Daniel Bodansky, 'The Paris Climate Change Agreement: A New Hope?' (2016) 110 The American Journal of International Law 269, 307.
[15] Geert van Calster, 'Against Harmonisation – Regulatory Competition in Climate Change Law' [2008] Carbon and Climate Law Review 89, 89.

of global climate change.[16] This is consistent, as Section 3.4.4 explores, with broader trends in global environmental governance and, in particular, the increasing prominence of an intricate public-private nexus in which private and public authorities are cooperatively reshaping the parameters of global policy-making.[17] Indeed, it has even been suggested by some scholars that environmental governance structures are "[being] driven by non-state actors".[18] Whilst the international framework may remain a "lodestar for climate action",[19] innovative regulatory experimentation with emissions trading is occurring across scales involving a range of state and sovereignty free actors. The Chicago Climate Exchange (CCX), launched in 2003, was the first greenhouse gases emissions trading scheme in the United States and was established as a voluntary market with both public actor and private actor participants. Similarly, as Section 5.3.4 discusses, in 2002 Royal Dutch Shell and Elsam, Denmark's largest electricity generator, swapped emission allowances which had been issued by the UK and Danish governments respectively, even though there was no formal linkage arrangement in place between the two countries. Both the CCX and the Royal Dutch Shell-Elsam swap instead relied on private law.

The ascendance of market trading as a key tool for addressing climate change has been rapid and experimentation with market-based measures is now a global phenomenon.[20] However, the EU ETS remains the most significant emissions trading scheme to date in terms of coverage, trading volumes, and financial flows. As Chapter 6 explores, several less developed countries have

[16] Jonas Meckling, *Carbon Coalitions: Business, Climate Politics, and the Rise of Emissions Trading* (MIT Press 2011) 45.
[17] Robert Falkner, 'Private Environmental Governance and International Relations: Exploring the Links' (2003) 3(2) Global Environmental Politics 72, 84.
[18] Frank Biermann and Philipp Pattberg, 'Global Environmental Governance: Taking Stock, Moving Forward' (2008) 33 Annual Review of Environment and Resources 277, 280.
[19] Harro von Asselt and Stefan Bößner, 'The Shape of Things to Come: Global Climate Governance After Paris' [2016] Carbon and Climate Law Review 47, 60.
[20] Betsill and Hoffmann (n 12) 84.

"docked in" to the wider carbon market infrastructure through participation in the CDM, even though substantial concerns exist regarding the geographic concentration of such projects and the associated financial flows.[21] Moreover, before adoption of the EU ETS Directive in 2003, some European countries had already pioneered the development of domestic emissions trading schemes.[22] For example, the Danish Parliament approved a bill on CO_2 quotas for electricity production in 1999, whilst in 2002 the UK Government endorsed and financially supported the Emissions Trading Group, a pilot scheme developed by an association of business actors. As Section 5.3.3 acknowledges, the Regional Greenhouse Gas Initiative ("RGGI") in the United States, launched in 2009, represents a cooperative effort by ten northeastern and mid-Atlantic states to limit greenhouse gas emissions. The ten participating states developed a Memorandum of Understanding defining the core elements of the common trading scheme. A detailed survey of each emissions trading scheme in operation is beyond the scope of this research: sixty-four Parties to the Paris Agreement, in advance of the negotiations, submitted intended nationally determined contributions (NDCs) confirming their planned use of market-based measures, whilst a further twenty-five Parties signalled that they were considering using markets.[23] This trend confirms Sopher's assessment that "policymakers in a growing number of jurisdictions – *in both developed and developing countries* – are adopting market-based measures to limit carbon pollution".[24]

The concerns raised in the literature with respect to the *design* of such emissions trading schemes beyond the EU are important to this research and

[21] See generally Section 4.3.2(iii) and Annie Petsonk, '"Docking Stations:" Designing a More Welcoming Architecture for a Post-2012 Framework to Combat Climate Change' (2009) 19 Duke Journal of Comparative and International Law 433, 437.
[22] As discussed in Section 2.3.2.
[23] Bodansky (n 14) 307.
[24] Peter Sopher, 'Emissions Trading Around the World: Dynamic Progress in Developed and Developing Countries' [2013] Carbon and Climate Law Review 306, 306 (emphasis original).

raise questions concerning the risk of significant regulatory divergence. Sterk and Schüle, for example, have cautioned that "emerging systems are probably going to be designed *very differently* from the EU ETS".[25] Regulatory experimentation with emissions trading provides important lessons through developing best practices and revealing design deficiencies. For example, it has been observed that South Korean policymakers "studied thoroughly" the EU ETS whilst designing South Korea's Emissions Trading Scheme (KETS).[26] Yet, in the context of direct linkage, the potential development of conflictive critical design features is especially concerning and emphasises the importance of the core convergence criteria defined in Chapter 5. Fostering complementarity between emissions trading schemes and pre-emptively preventing the emergence of conflict between schemes' critical design features will prove a continuing challenge. The development of effective and durable climate governance arrangements requires more than the management of multiple schemes at several scales, each isolated from one another. Instead, as Chapter 3 has emphasised, there is a need to ensure that cross-scale interactions produce complementary rather than conflicting actions.

8.3 A New Approach to Climate Leadership

The EU ETS has emerged as the "cornerstone" of EU climate policy.[27] Significant expansion of the scheme has occurred since its launch in 2005, including

[25] Wolfgang Sterk and Ralf Schüle, 'Advancing the Climate Regime Through Linking Domestic Emission Trading Systems' (2009) 14 Mitigation and Adaption Strategies for Global Change 409, 413 (emphasis added).
[26] Hyungna Oh, Junwon Hyon and Jin-Oh Kim, 'Korea's Approach to Overcoming Difficulties in Adopting the Emission Trading Scheme' (2017) Climate Policy 1, 13 (forthcoming).
[27] *Arcelor Atlantique and Lorraine and Others v Commission* (Case C-127/07) [2008] ECR I-9895, Opinion of AG Maduro, para 2.
As Section 1.6.2 acknowledged, an extensive survey of every aspect of EU climate policy would not further the key research themes of this thesis and significant climate policy developments, such as the Renewable

incorporation of the accession states of east and central Europe and extension of the EU ETS to include international aviation and shipping is in progress.[28] Throughout this period, the EU's approach to climate governance has been heavily influenced by the Union's ambition to shape the evolving international framework. Indeed, as Andresen and colleagues have observed, "EU interest in exercising international climate leadership [has] pushed EU internal policy development".[29] To this extent, the prospect that the EU ETS could form the nucleus of a global trading architecture has remained a constant policy theme. Yet evidence of the EU's leadership in the sphere of climate governance is less consistent.

The scholarly debate which Section 2.4 explores concerning the EU's climate leadership ambitions provides a salient reminder that the EU's approach to climate governance is heavily contested within the literature. The construction of the EU as a "normative Empire" with the capacity to "enforce" its norms beyond its frontiers[30] contrasts starkly with the assessments of other scholars concerning the limitations of "normative, rigid and euro-centric" leadership.[31] This thesis endorses the leadiator model advanced by Bäckstrand and Elgström as offering the potential to reconcile the EU's normative organising principles with the Union's ability to "build bridges between partners that are further apart from each other than from the EU".[32] As Section 2.4.3 explains, such a model is more

Energy Directive, and their contribution to enhancing climate governance are beyond the scope of this research.

[28] Directive 2008/101/EC of the European Parliament and of the Council of 19 November 2008 amending Directive 2003/87/EC so as to include aviation activities in the scheme for greenhouse gas emission allowance trading within the Community [2009] OJ L8/3 (Aviation Emissions Directive).

[29] Steinar Andresen, Jon Birger Skjærseth, Torbjørg Jevnaker and Jørgen Wettestad 'The Paris Agreement: Consequences for the EU and Carbon Markets' (2016) 4(3) Politics and Governance 188, 193.

[30] Zaki Laïdi, 'The Normative Empire. The Unintended Consequences of European Power' (2008) Garnet Policy Brief 6/2008, iv <http://www.sciencespo.fr/ceri/en/garnetpolicybriefs> accessed 14 April 2017.

[31] Alisa Herrero and Hanne Knaepen, 'Run-up to 2015: A Moment of Truth for EU External Climate Action' (2014) No 67 European Centre for Development Policy Management Briefing Note, 3 <http://ecdpm.org/wp-content/uploads/BN67-Run-up-2015-moment-truth-for-EU-external-climate-action1.pdf> accessed 14 April 2017.

[32] Karin Bäckstrand and Ole Elgström, 'The EU's Role in Climate Change Negotiations: From Leader to

consistent with the changed geopolitical realities since negotiation of the Kyoto Protocol and better reflects the EU's status today as a "medium-sized power in climate politics".[33] In the coming years, it is likely that the success or otherwise of the Union's efforts to advance durable climate governance arrangements will depend on the EU's use of its "entire external governance toolbox effectively".[34] As such, it is highly doubtful whether a strategy of normatively guided unilateral leadership would materially influence the emerging climate governance architecture, much less successfully upload the EU's climate policy preference of creating a global emissions trading market.[35]

However, it is not only the EU's external climate leadership model which is undergoing transition. The UK's likely departure from the Union and potential withdrawal from the EU ETS could have far-reaching implications for EU climate policy.[36] Hepburn and Teytelboym have suggested that the departure of the UK would represent "the loss of a leading advocate for ambitious and economically rational climate action".[37] In recent years, some Member States have been "increasingly assertive in expressing their opposition to strengthening EU climate policy" and this trend enhances the risk that the departure of the UK could weaken the ambition of EU climate policy.[38] The technical process of unravelling British

"Leadiator"' (2013) 20(10) Journal of European Public Policy 1369.

[33] Sebastian Oberthür, 'Global Climate Governance After Cancun: Options for EU Leadership' (2011) 46(1) The International Spectator 5, 10.

[34] Katja Biedenkopf and Claire Dupont, "A Toolbox Approach to the EU's External Climate Governance" in Astrid Boening, Jan-Frederik Kremer and Aukje van Loon (eds) *Global Power Europe – Volume 1: Theoretical and Institutional Approaches to the EU's External Relations* (Springer-Verlag Berlin Heidelberg 2013) 181, 196.

[35] Sebastian Oberthür and Lisanne Groen, 'The European Union and the Paris Agreement: Leader, Mediator, or Bystander' (2017) 8(1) Wiley Interdisciplinary Reviews: Climate Change 1, 6 and Ole Elgström and Jakob Skovgaard, 'Previewing Paris 2015: The EU's "Leadiator" Role in Future Climate Change Negotiations' 2014 Georgetown Journal of International Affairs <http://journal.georgetown.edu/previewing-paris-2015-the-eus-leadiator-role-in-future-climate-change-negotiations/> accessed 14 April 2017.

[36] Rachel Parkes, 'Brexit: A Storm in a Teacup?' (2016) 17(5) Renewable Energy Focus 188, 189.

[37] Cameron Hepburn and Alexander Teytelbohm, 'Climate Change Policy After Brexit' (2017) 33(S1) Oxford Review of Economic Policy S144, S150.

[38] Carolina B Pavese and Diarmuid Torney, 'The Contribution of the European Union to Global Climate Change Governance: Explaining the Conditions for EU Actorness' (2012) 55 Revista Brasileira de Política Internacional 125, 138.

participation in the EU ETS would present a highly complex regulatory challenge with some commentators warning that such an eventuality could prove "chaotic" for the scheme.[39] It remains difficult to envisage circumstances where continued UK participation in the EU ETS would not be in the mutual best interests of both the UK and the EU, but new arrangements will need to be defined to accommodate such continued participation by a (then) non-Member State. The potential role of linkage in facilitating continued UK involvement in the EU ETS serves to underscore the heightened contemporary relevance of this research.

8.4 Reform of the EU ETS and the Paris Agreement

The EU ETS represents the second "grand policy" experiment with trading a new environmental commodity, after the US sulphur dioxide trading scheme of the 1990s.[40] The success and sustainability of the EU ETS derives from the simplicity of the principle upon which it is based: a gradually decreasing absolute cap which ensures defined emissions reductions within regulated sectors during each trading phase.[41] The EU continues to advance a comparatively ambitious climate policy. The Union's climate and energy objectives, as contained in the Europe 2020 Strategy, commit the EU to reducing greenhouse gas emissions by at least 20% compared to 1990 levels; increasing to 20% the share of renewable energy sources in the EU's final energy consumption; and increasing energy efficiency

[39] Peter Zaman, Nicholas Rock and Adam Hedley, 'The Potential Impact of Brexit on the EU ETS and Future UK Climate Policy' (2016) Reed Smith 30 June 2016 <https://www.reedsmith.com/The-potential-impact-of-Brexit-on-the-EU-Emission-Trading-System-and-future-UK-climate-policy-06-30-2016/> accessed 14 April 2017.
[40] Robert Stavins, 'What Can We Learn from the Grand Policy Experiment? Lessons from SO_2 Allowance Trading' (1998) 12(3) Journal of Economic Perspectives 69 and Joseph Kruger and William A Pizer, 'Greenhouse Gas Trading in Europe: The New Grand Policy Experiment' (2004) 36(8) Environment 8.
[41] Nicolas de Sadeleer, 'Salvaging the Carbon Market: Will the Phoenix Rise from the Ashes?' (2016) 13(2) Journal for European Environmental and Planning Law 133, 137.

by 20%.[42] Moreover, since 2014 the European Council has committed the EU to achieving a deeper reduction in emissions of at least 40% by 2030 compared to 1990 levels.[43]

The EU ETS has emerged as the Union's primary policy to advance emissions reductions, but as Chapter 2 has emphasised, the implementation of emissions trading in the EU has been a learning-by-doing experimentalist innovation. An over-allocation of allowances bedevilled the scheme during Phases I and II when Member States retained allocative responsibility, whilst the financial crisis depressed market demand and further exacerbated the problem of excessive allowances.[44] The EU has responded to these challenges by introducing Decision 1359/2013 which permits backloading, a technique through which the Commission may alter the timetable for the release of allowances to the market.[45] In addition, Decision 2015/1814 prevents the release of 900 million allowances which were due for auctioning during 2019 and 2020[46] and introduces a mechanism by which allowance allocations will be reduced further in the years ahead.[47]

At the time of its launch, the EU ETS represented a "major novelty"[48] in the Union's approach to environmental regulation and it was acknowledged by senior Commission officials at the time that "for the months and years to come,

[42] Decision No 406/2009/EC of the European Parliament and of the Council of 23 April 2009 on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020 [2009] OJ L140/136, art 8.
[43] European Council, Conclusions of 23 and 24 October 2014, EUCO 169/14, para. 2.1.
[44] Commission Regulation (EU) No 176/2014 of 25 February 2014 amending Regulation (EU) No 1031/2010 in particular to determine the volumes of greenhouse gas emission allowances to be auctioned in 2013-20 [2014] OJ L56/11, recital 3.
[45] Decision No 1359/2013/EU of the European Parliament and of the Council of 17 December 2013 amending Directive 2003/87/EC clarifying provisions on the timing of auctions of greenhouse gas allowances [2013] OJ L343/1.
[46] ibid, recital 8 and art 1(2).
[47] ibid, recital 5 and art 1(5). From 2019 an amount of allowances corresponding to 12% of the number of allowances in circulation will be deducted in each subsequent year from the volumes to be auctioned. These allowances are placed in reserve.
[48] Jos Delbeke, 'The Emissions Trading Scheme (ETS): The Cornerstone of the EU's Implementation of the Kyoto Protocol' (2006) 1(2) European Review of Energy Markets 1, 13.

the EU will be on the steep end of the learning curve as regards emissions trading".[49] The EU ETS and the concept and contribution of market-based instruments to climate governance continues to attract controversy and criticism. Yet, as Dirix and colleagues have argued, it would be "counter-productive to plead for a climate policy tabula rasa [as] [i]t is highly doubtful that any proposed alternative [to emissions trading] could be put into place given the current climate of political inaction".[50] Critics of market-based regulation have argued that such instruments do not stigmatise pollution in moral terms[51] and even imply that a certain quotient of environmental harm is so fundamental to the economy that it need not be avoided, but rather contained and directed.[52] For example, in the specific context of emissions trading, it has been suggested that such schemes "will only ensure continued investment in fossil fuel technologies… and distract policymakers from the substantial and systemic changes that might actually slow climate change".[53]

However, critics of market-based approaches have often struggled to articulate credible and politically feasible alternatives[54] and Wettestad is correct to caution that, in an EU context, there are "no obvious alternatives that can be quickly adopted and function as common EU policy".[55] Moreover, the significant contribution of the EU ETS to EU climate policy should not be overlooked. The

[49] Farhana Yamin, *Climate Change and Carbon Markets: A Handbook of Emission Reduction Mechanisms* (Earthscan 2005) xviii.
[50] Jo Dirix, Wouter Peeters, Johan Eyckmans, Peter Tom Jones and Sigrid Sterckx, 'Strengthening Bottom-Up and Top-Down Climate Governance' (2013) 13(3) Climate Policy 363, 375.
[51] Steven Kelman, *What Price Incentives? Economists and the Environment* (Praeger 1981).
[52] Stephen Humphreys, 'Climate Justice: The Claim of the Past' in Anna Grear and Conor Gearty (eds), *Choosing a Future: The Social and Legal Aspects of Climate Change* (Edward Elgar Publishing 2014) 134, 145.
[53] Brittany A Harris, 'Repeating the Failures of Carbon Trading' (2014) 23(3) Pacific Rim Law & Policy Journal 753, 791.
[54] Cameron Hepburn, 'International Carbon Finance and the Clean Development Mechanism' in Dieter Helm and Cameron Hepburn (eds), *The Economics and Politics of Climate Change* (Oxford University Press 2009) 409, 420.
[55] Jørgen Wettestad, 'The EU Emissions Trading System: Frontrunner in Trouble' in Geert van Calster, Wim Vandenberghe and Leonie Reins (eds) *Research Handbook on Climate Change Mitigation Law* (Edward Elgar Publishing 2015) 451, 474.

EU ETS has normalised the regulation of carbon,[56] contributed to delivering substantial reductions in the Union's emissions,[57] and provided "invaluable information" concerning the challenges of implementing and operating an emissions trading scheme in practice.[58] Policymakers beyond the EU, such as the architects of the KETS, have drawn lessons from the EU's experiences and, in this respect, the EU ETS has also "affected the design of these initiatives".[59]

With China's launch of a national emissions trading scheme widely anticipated and Phase IV of the EU ETS due to commence in 2021, there is reason to believe that the contribution of emissions trading to climate governance could increase further in the years ahead. Article 6 of the Paris Agreement implicitly acknowledges the contribution of market-based regulatory approaches and renews the imprimatur which the Kyoto Protocol conferred on emissions trading.[60] Whilst the Agreement does not create a global trading framework, it could provide momentum to the development of carbon markets and the prospects for linkage between them. For example, as Section 7.2.2 explains, Article 6.2 of the Agreement introduces the new concept of "internationally transferred mitigation outcomes" (ITMOs), an innovation which could evolve as a framework "for emissions trading and other mechanisms to *link* national climate policies".[61] In this respect, the elaboration and implementation of the concept of ITMOs in the coming period by the Body for Scientific and Technological Advice (SBSTA) and the Conference of the Parties to the Paris Agreement (CPA) will

[56] Maria Lee, EU Environmental Law, Governance and Decision-Making (2nd edn, Hart Publishing 2014) 146.
[57] By 2015 total EU greenhouse gas emissions were already 23% below 1990 levels.
[58] Markus Wråke, Dallas Burtraw, Åsa Löfgren and Lars Zetterberg, 'What Have We Learnt from the European Union's Emissions Trading System?' (2012) 41 Ambio: A Journal of the Human Environment 12, 20.
[59] Biedenkopf and Dupont (n 34) 192.
[60] Andrei Marcu, 'Carbon Market Provisions in the Paris Agreement (Aricle 6)' (2016) Centre for European Policy Studies Special Report No 128 January 2016, 4 <https://www.ceps.eu/publications/carbon-market-provisions-paris-agreement-article-6> accessed 14 April 2017.
[61] Bodansky (n 14) 307.

prove especially important,[62] particularly since emissions trading schemes are likely to continue emerging in "fragmented and piecemeal ways".[63]

It is difficult to distinguish the potential implications of the Paris Agreement for the EU ETS specifically, as distinct from its influence on the broader climate governance framework, particularly since creating a global carbon market has been and remains a key objective of EU climate policy. In this respect, the future development of the EU ETS is closely connected to the surrounding international climate policy framework. However, as Chapter 3 has emphasised, climate governance is active in multiple places simultaneously at different levels of social organisation and involving actors beyond the state.[64] Consequently, whilst the Paris Agreement's implicit endorsement of market-based measures confirms, from an international legal perspective, the approach which the EU has embraced, it remains important to recognise that the Paris Agreement represents only one avenue among many in the climate change "regime complex".[65]

8.5 Revisiting the Fundamentals of Linkage

8.5.1 Conceptualising Linkage

This thesis does not advance pathways towards convergence for *all* climate governance initiatives. Such an endeavour would require detailed analyses of climate policies beyond the scope of this research. For many years, the literature on global climate governance had predominantly focused on the search for an

[62] Decision 1/CP.21, para 37, mandates the SBSTA to develop guidance and the CPA to adopt such guidance to ensure, amongst others, transparent governance and "robust accounting" to avoid double counting.
[63] Andresen, Skjærseth, Jevnaker and Wettestad (n 29) 192.
[64] Michele M Betsill, 'Regional Governance of Global Climate Change: The North American Commission for Environmental Cooperation' (2007) 7(2) Global Environmental Politics 11, 13.
[65] Robert Keohane and David Victor, 'The Regime Complex for Climate Change' (2011) 9(1) Perspectives on Politics 7.

optimal level of climate policy with a strong preference towards the formation of international regimes.[66] As the parameters of international climate action grew more uncertain, particularly after the failure to achieve agreement at Copenhagen, increasing scholarly emphasis instead shifted to exploring the complex climate governance landscape as it is already unfolding. This research contributes to this burgeoning literature by offering a framework to advance complementarity in a specific but nevertheless highly important sphere of climate governance.

It is helpful to recall that Section 4.2 set forth four key considerations to explain the contemporaneous relevance of linkage to climate governance scholarship and the limitations of the understanding of linkage advanced in this research. First, that the multiplicity of different emissions trading schemes has given rise to a "major concern" in climate governance: whether the proliferation of such regulations will ultimately produce an effective global climate governance framework.[67] Second, since it is increasingly recognised that any global trading infrastructure is more likely to develop from the bottom-up rather than from the top-down, the importance of promoting and preserving complementarity between such schemes is emerging as a critical regulatory consideration. This research, through defining core convergence criteria for direct linkage, engages with the concern in the literature succinctly captured by Falkner and colleagues that "[p]reventing a collapse into a decentralised, purely bottom-up, approach is of critical importance".[68] Third, the multiple benefits which economic theory suggests linkage could offer. Such economic considerations are particularly

[66] Martin Jänicke, Miranda Schreurs, Klaus Töpfer, 'The Potential of Multi-Level Global Climate Governance' (2015) Institute for Advanced Sustainability Studies Potsdam Policy Brief 2/2015 <http://www.environmentaljustice.de/digital_policy_brief_2_150921_en.pdf>.
[67] Jacqueline Peel, Lee Godden and Rodney Keenan, 'Climate Change Law in an Era of Multi-Level Governance' (2012) 1(2) Transnational Environmental Law 245, 250.
[68] Robert Falkner, Hannes Stephan, and John Vogler, 'International Climate Policy After Copenhagen: Towards a "Building Blocks" Approach' (2010) 1(3) Global Policy 252, 261.

significant given that public willingness to pay has been shown to be limited and the costs of mitigation are substantial.[69] Consequently, the cost-effectiveness of climate policies is a highly material consideration. Fourth, that further research should consider not only linkage in the context of market trading as is advanced in this thesis, but also investigate governance arrangements *beyond* the orbit of emissions trading to include, for example, other economic instruments such as carbon taxes.

The classic definition of linkage, as advanced in the literature, denotes the recognition by the regulatory authority of one emissions trading scheme of allowances (or emission reduction credits) generated by an external scheme for the purposes of compliance with the participating entity's domestic emissions reduction obligations.[70] Variations of this definition such as Gilbert's perspective explicitly provide that schemes "need not be restricted to national trading schemes alone".[71] A more expansive reframing of linkage has been advanced by Metcalfe and Weisbach to include "policies that allow regional or national carbon regimes to interact in such a way as to narrow or eliminate differences in the marginal cost of abatement between different regions or countries".[72] As Section 4.3.1 emphasises, this research builds on the conceptualisation of linkage offered by Burtraw and colleagues which extends the definition of linkage to include the *process* of incremental alignment of design features across trading schemes or linkage by degrees.[73] Consequently, the understanding of linkage defined and

[69] Samuel Fankhauser and Cameron Hepburn, 'Designing Carbon Markets, Part I: Carbon Markets in Time' (2010) 38 Energy Policy 4363, 4364.
[70] For example, see Judson Jaffe, Matthew Ranson and Robert N Stavins, 'Linking Tradable Permit Systems: A Key Element of Emerging International Climate Policy Architecture' (2009) 36 Ecology Law Quarterly 789, 791.
[71] Alyssa Gilbert, 'Linking Carbon Markets: The Climate Change Silver Bullet?' (2009) 20(6) Energy and Environment 901, 902.
[72] ibid 113.
[73] David Burtraw, Karen Palmer, Clayton Munnings, Paige Weber and Matt Woerman, 'Linking by Degrees: Incremental Alignment of Cap-and-Trade Markets' (2013) Resources for the Future Discussion Paper 04/2013, 1.

applied in this thesis conceptualises linkage as a spectrum which incorporates direct linkage, indirect linkage, and linkage by degrees. Under this framing, linkage is a process rather than a single one-time event. Since emissions trading schemes form part of a complex and fluid climate governance landscape, expansion of the definition of linkage to incorporate linkage by degrees provides an analytic framework within which to locate and critique innovations in the evolving carbon market infrastructure, such as the CDM. This approach endorses Petsonk's perspective that the emerging market trading architecture should facilitate "docking stations", spaces in the infrastructure inviting new participants to "dock in" to the market.[74] Consistently, the detailed reconstruction of the CDM in Section 6.3 focuses on how a reformed CDM could facilitate wider adoption of more rigorous emissions trading commitments.

8.5.2 Environmental Integrity and the Core Convergence Criteria

This research identifies environmental integrity as the governing rule which informs the identification of core convergence criteria for direct linkage. This is consistent with the instrumentalist understanding of emissions trading which this thesis advances. It is important to recall that this conceptualisation does not endorse Anderson and Leal's vision of a minimally regulated free market as a vehicle to enhance environmental protection.[75] Instead, this thesis recognises the valuable contribution of market trading to advancing climate policy objectives which continue to be determined by the state.[76] In this sense, market trading is

[74] Annie Petsonk, '"Docking Stations:" Designing a More Welcoming Architecture for a Post-2012 Framework to Combat Climate Change' (2009) 19 Duke Journal of Comparative and International Law 433, 437.
[75] Terry Anderson and Donald Leal, 'Free Market Versus Political Environmentalism' (1992) Harvard Journal of Law and Public Policy 297.
[76] Eckard Rehbinder, 'Ecological Contracts: Agreements Between Polluters and Local Communities' in Gunther Teubner, Lindsay Farmer and Declan Murphy (eds), *Environmental Law and Ecological*

not an instance of private free market governance, but rather an economic instrument subject to continued public regulation and designed to harness market forces to advance a specified environmental objective.

This thesis advances a definition of environmental integrity which requires that linked trading schemes should not lead to fewer emissions reductions than if the EU ETS (and candidate partner scheme) continued to operate independently.[77] It is acknowledged that, for the purposes of linkage negotiations, commitment to such an understanding of environmental integrity is not without risk. There is, for example, the possibility that the EU could be locked-out of some potential linkage opportunities by the necessity of holding firm to the principle of environmental integrity. However, it is crucial that the EU ETS is not decoupled from the ecological context which it is designed to protect and enhance. Instead, by establishing environmental integrity as the governing rule underpinning direct linkage collaboration, the approach advanced in this research ensures that the objective of reducing emissions – the very rationale for implementation of market trading in the first place – is afforded the necessary degree of protection.

Consequently, to secure the environmental integrity of the EU ETS in the context of direct linkage, it is necessary that there is cross-compatibility of certain fundamental design features across all linked schemes. As Section 5.2.4 elaborates, these fundamental design features are defined as core convergence criteria. As a matter of EU law, Article 25(1)(a) of the EU ETS Directive restricts the scope of linkage to "compatible mandatory greenhouse gas emissions trading systems with absolute emissions caps established in any country or in sub-federal or regional entities".[78] However, the requirements of an absolute cap and

Responsibility: The Concept and Practice of Ecological Self-Organization (John Wiley & Sons 1994) 147.

[77] As Section 1.4 identifies and Section 5.2.2 elaborates.

[78] Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council

mandatory trading are critical design features of an emissions trading scheme without which the principle of environmental integrity could not be secured. The explicit inclusion of these critical design features as necessary under EU law does not impact the underlying intrinsic importance of these features to preserving environmental integrity. In this sense, defining core convergence criteria must extend beyond compliance with the EU ETS Directive by identifying and defining those design features which are deemed necessary to preserve the environmental integrity of the EU ETS. The remaining three criteria are instructive in this respect, as each is informed and guided by the concern of protecting the environmental integrity of the EU ETS, but are not requirements imposed by the EU ETS Directive.

However, as Section 5.2.3 cautions, it is also important to recall that the core convergence criteria are not designed to promote perfectly identical schemes. Instead, the focus of the core convergence criteria is ensuring that the necessary de minimis degree of alignment is present before formal direct linkage is operationalised. Indeed, the implementation by the EU of direct linkage between the EU ETS and Norway further demonstrates this: unlike the EU ETS, the Norwegian emissions trading scheme does not require independent verification of participating entities' emissions data.[79] This divergence did not bring the Norwegian scheme outside a zone of compatibility with the EU ETS. Practical implementation of the core convergence criteria will require the EU to demonstrate a willingness to compromise in the pursuit of direct linkage, whilst not sacrificing the critical design features of the EU ETS. This research does not

Directive 96/61/EC, as amended [2003] OJ L273/32 (EU ETS Directive).

[79] Chapter 4 (§16), Act of 17 December 2004 No 99 Relating to Greenhouse Gas Emission Allowance Trading and the Duty to Surrender Emission Allowances.
See Norwegian Government, 'Acts and Regulations' <https://www.regjeringen.no/en/dokumenter/greenhouse-gas-emission-trading-act/id172242/> accessed 14 April 2017.

suggest that such a path will prove straightforward,[80] but without securing the underlying environmental integrity objective, direct linkage could not reliably contribute to the incremental construction of more effective and durable climate governance arrangements.

8.5.3 Outlook

The possibility of the EU potentially negotiating its most significant direct linkage to date with a country which had previously been a Member State of the EU was a most unlikely one at the outset of this research. Yet the very real likelihood of Brexit heightens the significance of the core convergence criteria defined in this research.[81] Given that the UK may depart an emissions trading scheme which it was influential in creating, there should be less risk of incompatibility with the core convergence criteria. However, as this research has consistently emphasised, compatibility with the core convergence criteria is not a single one-time event, but a continuing process which raises governance challenges beyond the formal implementation of direct linkage between partner schemes. For example, the EU and UK legal systems are likely to diverge post-Brexit given that the UK Government has committed to "bring[ing] an end to the jurisdiction of the Court of Justice of the European Union in the UK".[82] Maintaining complementarity in the coming years, particularly with the prospect of revisions to the EU ETS in advance

[80] As Section 5.2.2 acknowledges.
[81] There are multiple definitions of Brexit, including the *process* of withdrawing from the EU and the specific *event* of withdrawal by the UK from the EU. The OED Online, for example, defines Brexit in a much more general sense as: "The (proposed) withdrawal of the United Kingdom from the European Union, and the political process associated with it": 'Brexit, n' (*OED Online*, 19 December 2016) <www.oed.com/view/Entry/54763375> accessed 14 April 2017.
[82] Department for Exiting the European Union, *The United Kingdom's Exit From and New Partnership with the European Union* (White Paper, Cm 9417, 2017) para 2.3.

of the commencement of Phase IV in 2021, will require very careful regulatory dialogue (of the kind outlined in Section 4.3.1).

Linkages between schemes are not immutable.[83] Indeed, Pizer and Yates observe that "once two jurisdictions create a compliance link between their emissions trading programs, policymakers must decide whether, when, and how to address the possibility of delinking".[84] For example, Australia's emissions trading scheme and its proposed linkage to the EU ETS was repealed even before it was implemented, an experience which highlights the importance of stable climate policy settings, as Section 7.3 emphasises in the context of the KETS. The prospect of potential future divergence post-linkage, however, remains an understudied challenge of linkage and re-emphasises that linkage is a dynamic process. The relevant authorities – political and administrative – must collaborate closely to ensure that the complementarity achieved through implementation of the core convergence criteria is preserved.

The opportunities of linkage, as broadly construed in this research, are immense. Instead of an increasingly fragmented approach, under which jurisdictions and regions progress towards their emission reduction targets in isolation, linkage holds out the prospect of reducing mitigation costs, enhancing liquidity, and fostering convergence in carbon prices.[85] As defined in this thesis, particularly with respect to environmental integrity, linkage is a tool to promote more rigorous incremental climate governance arrangements. For example, the vision of a reinvigorated, but scaled-down CDM, as Section 6.3.2(ii) elaborates, conceptualises the CDM as a transitional instrument to enable graduated carbon

[83] As Section 4.3.1 and Section 7.6 acknowledges.
[84] William A Pizer and Andrew J Yates, 'Terminating Links Between Emissions Trading Programs' (2015) 71 Journal of Environmental Economics and Management 142, 156.
[85] Rob B Dellink, Stéphanie Jamet, Jean Chateau and Romain Duval, 'Towards Global Carbon Pricing: Direct and Indirect Linking of Carbon Markets' (2014) 2013 OECD Journal: Economic Studies 209, 210.

reduction commitments. Indeed, China's experience as a major host country for CDM projects and its present pathway towards development of a national emissions trading scheme suggests that there is scope to re-characterise the CDM (or any successor mechanism) as an opportunity for developing countries to build a base of regulatory experience and provide learning-by-doing before implementation of more rigorous domestic emissions reduction action.

As Paterson has remarked, there is a "good chance that the whole of the OECD will be covered by an emissions trading system in the near future",[86] but the pace of progress over the course of the past decade has been slow.[87] The increasing centrality of market-based instruments in climate governance is not a product of state action alone. Indeed, as Meckling has observed, "[u]nlike any other policy instrument, carbon trading has mobilized a wide range of actors from industry and the environmental community".[88]

The successful implementation of direct linkage between the EU ETS and KETS is an attractive proposition and would send an important signal about the EU's commitment to climate governance collaboration. The respective schemes represent the largest and second largest carbon emissions trading markets in the world and present opportunities for both the EU and South Korea. Direct linkage with the KETS would likely contribute to improving price stability across the linked markets and, given the size of the KETS, could materially and positively affect the common allowance price. For South Korea, linkage to the EU ETS holds out the prospect of introducing a significantly wider range of abatement opportunities

[86] Matthew Paterson, 'Selling Carbon: From International Climate Regime to Global Carbon Market' in John Dryzek, Richard Norgaard and David Schlosberg (eds), *The Oxford Handbook of Climate Change and Society* (Oxford University Press 2011) 611, 620.
[87] Jørgen Wettestad and Torbjørg Jevnaker, 'The EU's Quest for Linked Carbon Markets: Turbulence and Headwind' in Todd L Cherry, Jon Hovi, and David M McEvoy (eds), *Toward a New Climate Agreement: Conflict, Resolution and Governance* (Routledge 2014) 266, 273.
[88] Meckling (n 16) 201.

for South Korean firms, whilst enhancing the stability and resilience of the KETS to political weakening in the future.[89]

8.6 Concluding Remarks

The primary aim of this thesis has been to define and evaluate the contribution and modalities of linkage, with a particular focus on direct linkage, between the EU ETS and other emissions trading schemes. The kaleidoscopic range of instruments and institutions now applicable to climate governance, as Chapter 3 acknowledges, includes an array of multi-level regulatory initiatives, involving state and "sovereignty free actors", alongside treaties addressing climate change.[90] Given this multiplicity of climate governance initiatives, linkage may seem a discrete and detached focus for study. However, the understanding of linkage developed and applied in this thesis conceptualises linkage as a spectrum which promotes, without unnecessary further delay, the development of deepening complementarity between emissions trading schemes.[91] As such, this research – particularly through the identification and elaboration of the core convergence criteria defined in Chapter 5 – advocates the promotion of fluid modalities to harness the contribution of linkage and advance the incremental evolution of arrangements to govern the emerging global carbon market.

At the outset, this thesis set out to break new ground by evaluating, in the specific context of the EU ETS, the concept and modalities of implementing

[89] In South Korea, such political dismantling may be less relevant: 97% of South Koreans acknowledge climate change as a fact, whilst over 90% consider it a serious problem: Sun-Jin Yun, Dowan Ku and Jin-Yi Han, 'Climate Policy Networks in South Korea: Alliances and Conflicts' (2014) 14(2) Climate Policy 283, 296.
[90] James N Rosenau, *Turbulence in World Politics: A Theory of Change and Continuity* (Princeton University Press 1990) 36.
[91] David Burtraw, Karen Palmer, Clayton Munnings, Paige Weber and Matt Woerman, 'Linking by Degrees: Incremental Alignment of Cap-and-Trade Markets' (2013) Resources for the Future Discussion Paper 04/2013, 9.

linkage. It was emphasised that this research located the EU ETS as one climate governance initiative within a landscape of diverse multi-level governance experimentation. As Section 3.6 elaborates, this thesis does not advance multi-level governance as a normatively superior governance model. Instead, the contribution of multi-level governance is recognised as providing the analytical tools to (i) describe and (ii) better understand the shifting climate governance landscape. By defining core convergence criteria considered necessary for the implementation of direct linkage and subsequently theorising the application of the criteria in the context of direct linkage between the EU ETS and KETS, this thesis speaks to the debate on incremental climate governance and advances an original contribution to the literature exploring the management of institutional interactions.

Chapter 1 identifies four key points of originality advanced by this thesis. First, by introducing and emphasising linkage by degrees in Chapter 4 as offering a viable multi-speed framework towards an enhanced climate governance architecture, this research signifies a departure from the traditional approach of equating climate governance with multilateral treaty-making.[92] Second, through elaboration of the core convergence criteria in Chapter 5, this thesis has constructed scaffolding to assess the compatibility of emissions trading schemes with the EU ETS. Third, through analysis of the EU's leadership ambitions and deficiencies in Chapter 2 and recognition of the multi-level governance context within which climate action is occurring in Chapter 3, this thesis has contributed a synthesised evaluation of the framework within which the EU must act if it is to successfully advance its stated objective of linkage. Fourth, through application of the preceding three points, particularly the core convergence criteria, this

[92] Hoffmann (n 10) 7.

research has advanced the first analysis of the prospects and implications of direct linkage between the EU ETS and the KETS in a post-Paris Agreement landscape and since the KETS launched in January 2015.

The contribution of linkage to climate governance, particularly with the prospect of Brexit on the horizon, is likely to increase. To date, the implementation of linkage between schemes has been described as "understudied",[93] whilst "practice on linking remains in its early stages".[94] As more countries consider the adoption of emissions trading schemes, the concept of linkage is likely to increase in prominence. Yet significant concerns have already been raised regarding the design of nascent trading schemes beyond the EU. Türk and colleagues, for example, have observed that "the emergence, to date, of national and regional carbon markets has been characterised by a *virtual absence* of institutional structures for the governance of trading markets across borders".[95] The California emissions trading scheme, for example, recognises reduction credits generated via afforestation initiatives, but does not acknowledge offsets generated via the CDM, whilst contrastingly the EU allows CDM credits, but does not recognise afforestation credits.[96]

The potential for the emergence of diverging emissions trading design features is especially concerning and reinforces the importance of this research. Incremental evolution of a globally connected trading architecture is heavily dependent on ensuring that certain fundamental design features are shared by

[93] Jørgen Wettestad and Torbjørg Jevnaker, 'The EU's Quest for Linked Carbon Markets: Achievements and Challenges' (International Studies Association Annual Convention, San Francisco, 3-6 April 2013), 2 <https://www.yumpu.com/en/document/view/24270183/the-eus-quest-for-linked-carbon-markets-fridtjof-nansens-institutt> accessed 14 April 2017.
[94] Sampo Seppänen and colleagues, *Demand in a Fragmented Global Carbon Market: Outlook and Policy Options* (Norden 2013) 56.
[95] Andreas Türk, Michael Mehling, Christian Flachsland and Wolfgang Sterk, 'Linking Carbon Markets: Concepts, Case Studies and Pathways' (2009) 9 Climate Policy 341, 342 (emphasis added).
[96] Lars Zetterberg, *Linking the Emissions Trading Systems in EU and California* (FORES: Swedish Environmental Research Institute 2012) 41.

all linked schemes. As Chapter 5 emphasises, this does not require that all emissions trading schemes are identical. It would, in any event, be practically impossible for two separate trading schemes to develop independently which treat their participants exactly equally.[97] However, the integrity of any emerging global framework will only be as secure as its weakest link.[98]

Fostering complementarity between trading schemes and pre-emptively preventing the emergence of conflictive critical design features remains a continuing challenge in developing durable climate governance arrangements and requires further research beyond the scope of this thesis. A much better understanding is needed, for example, of how synergies between emissions trading schemes can be created and exploited from the earliest stages of an emissions trading scheme's development. Linkage by degrees provides an analytic framework within which to further pursue this research, but as a concept it leaves many unanswered questions including a lack of definition concerning the (potentially unlimited) pathways to achieve de minimis compatibility and which pathways better enhance the prospects of earlier convergence between schemes.

The period 2017 – 2020 will be of great significance to the evolution of an international climate governance framework. During this period the Chinese Government envisages the launch of its national emissions trading scheme,[99] the successful implementation of which could promote wider adoption of emissions trading globally.[100] The process of elaborating the Paris Agreement could also generate a degree of momentum – if political developments are conducive to

[97] William Blyth and Martina Bosi, *Linking Non-EU Domestic Emissions Trading Schemes with the EU Emissions Trading Scheme* (Organisation for Economic Cooperation and Development 2004) 31.
[98] Betsill and Hoffmann (n 12) 101.
[99] Reklev (n 13).
[100] Andresen, Skjærseth, Jevnaker and Wettestad (n 29) 192.

progress – and succeed in delivering a more developed framework for coherent climate action. The architecture of the Paris Agreement is significantly more decentralised than the Kyoto Protocol and its effectiveness is likely to depend on its future strengthening.[101] As this thesis consistently emphasises, the multilateral regime is just one element within a wider governance architecture and it would be misguided to repose undue confidence in this regime, particularly at a time when the commitment of a leading global actor, the United States, is rapidly diminishing.[102] More generally, the glacial pace with which the multilateral process has progressed over the past two decades raises very real concerns as to whether this process is capable of confronting the urgency of the climate change challenge.

In closing, the remarkable trajectory of emissions trading as a policy instrument to the extent that it has now emerged as the central pillar of climate policy in many countries strongly suggests that the potential for linkage is likely to increase in the coming years.[103] Multi-level and multi-scale approaches (of which linkage represents one example), within the flexibility offered by the Paris Agreement architecture, could make a substantial and enduring difference in governing the climate commons.[104] Climate governance generally – and emissions trading in particular – is developing in a variety of forms often defined by an intricate public-private nexus blurring the boundaries of the more orthodox territorially-based states-system.[105] The contribution of linkage and other bottom-up institutional arrangements in the evolution of a global carbon market is even

[101] Jorge E Viñuales, Joanna Depledge, David M Reiner and Emma Lees, 'Climate Policy After the 2015 Paris Climate Conference' (2017) 17(1) Climate Policy 1, 1.
[102] Matthew Nisbet, 'Climate Denial's Trump Card' (2016) 230 (3077) New Scientist 18.
[103] Michael A Mehling, 'Legal Frameworks for Linking National Emissions Trading Systems' in Kevin R Gray, Cinnamon Piñon Carlarne and Richard Tarasofsky (eds), *Toward a New Climate Agreement: Conflict, Resolution and Governance* (Oxford University Press 2016) 257, 277.
[104] Qiang Wang and Xi Chen, 'Rethinking and Reshaping the Climate Policy: Literature Review and Proposed Guidelines' (2013) 21 Renewable and Sustainable Energy Reviews 469, 475.
[105] Hoffmann (n 10) 11-14.

more apparent when understood as building blocks which contribute to the incremental construction of a more rigorous, cost-effective and expandable carbon market.[106] As such, linkage has the potential to facilitate multi-speed climate action through linkage by degrees, whilst accommodating incrementalist progress, through (in)direct linkage, towards an integrated climate governance architecture.

This research advances the contribution of linkage as a critical component in an evolving climate governance framework where the promotion and maintenance of complementarity is emerging as a crucial quality. It has been suggested that "[t]he EU ETS is becoming a model to which other [schemes] converge",[107] but EU policymakers must remain open-minded if the prospect of forging direct linkage beyond the immediate geographic orbit of the EU is to be achieved. This challenge will require EU policymakers to respond flexibly to variations in non-critical design features in potential partner schemes, but it will also require scholars to better elaborate the range of institutional arrangements involved in governing emissions trading in the months and years ahead. This thesis, by evaluating the contribution and modalities of linkage, has endeavoured to engage with this challenge.

[106] Christian Flachsland, Robert Marschinski and Ottmar Edenhofer, 'Global Trading Versus Linking: Architectures for International Emissions Trading' (2009) 37 Energy Policy 1637, 1638.
[107] Sonja Hawkins and Ingrid Jegou, 'Linking Emissions Trading Schemes: Considerations and Recommendations for a Joint EU-Korean Carbon Market' (2014) International Centre for Trade and Sustainable Development Global Platform on Climate Change, Trade and Sustainable Energy – Climate Change Architecture Series Issue No 3 March 2014, 38 <https://www.ceps.eu/publications/carbon-market-provisions-paris-agreement -article-6> accessed 14 April 2017.

Appendix 1: Table of Treaties and Legislation

I. European Union

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