

**The Korean Emissions Trading Scheme:  
Focusing on Accounting Issues**

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## **Abstract**

The purpose of this study is to examine the accounting standard-setting process in relation to emissions rights and related liabilities in the Korean context in order to provide a better understanding of accounting issues under an emissions trading scheme (ETS).

Using an interpretive inductive approach, this study comprises semi-structured, face-to-face interviews and analysis of relevant documents. Interviews were carried out with a wide range of key players, including accounting standard setters (Korean Accounting Standards Board, International Accounting Standards Board, and Autorité des Normes Comptables), accounting experts, industry and government.

This study identifies how problematic accounting issues on emissions rights and related liabilities have been addressed by accounting standard setters. The key accounting issues under ETS are linked mainly with free allowances. It is found that accounting standard setters attempt to establish the most appropriate accounting standard under the given circumstances reflecting a variety of considerations, and that the most common elements affecting the development of accounting standards for ETS are the legal and economic context, the existing accounting framework, and preceding models and practices. Nevertheless, these factors affect the development of accounting standards for ETS in different ways. Accordingly, the primary accounting issues on which each standard setter concentrates vary depending on different circumstances and considerations.

This study investigates the accounting standard-setting process for emissions rights by Korean accounting standard setters, from the agenda-setting stage to the final publication of the standard. The findings reinforce the importance of political factors in the standard-setting process, including stakeholders' participation in the process, prominent stakeholders, and the motivation, methods and timing of lobbying activities. In particular, the findings have important implications for the effectiveness of lobbying. Overall, the findings confirm that accounting standards are likely to be the political outcome of interactions between the accounting standard setter and stakeholders.

The findings highlight desirable factors for accounting models of emissions rights. Desirability or appropriateness of standard is judged by the extent to which stakeholders in institutional environments consider the promulgation to be legitimate or authoritative. Therefore, accounting standard setters must make greater efforts to encourage stakeholders to participate in the standard-setting process in order to ensure institutional legitimacy.

The originality of this study lies in its empirical research on accounting issues for ETS from a practical point of view. In particular, in its timely and detailed investigation of Korean accounting standard setters, this study provides a broader understanding of the accounting standard-setting process in the Korean context. The study also advances legitimacy theory by offering a framework particularly applicable to accounting standard setting process, which also incorporates stakeholder theory research. The study finds support from the framework and further contributes to the related literature by reviewing legitimacy conflicts. From an accounting policy point of view, the findings have implications for both national and international standard setters and provide guidance on how to achieve high-quality accounting standards with a high degree of compliance.

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## **Abbreviations**

ANC	Autorité des Normes Comptables
ASB	Accounting Standards Board
BAU	Business as Usual
CDM	Clean Development Mechanisms
CERs	Certified Emission Reductions
EFRAG	European Financial Reporting Advisory Group
ETS	Emissions Trading Scheme(s)
EURs	European Union Allowances
FASB	Financial Accounting Standards Board
FKI	Federation of Korean Industries
FV	Fair Value
GAAP	Generally Accepted Accounting Principles
GHG	Greenhouse Gas
IAS	International Accounting Standard
IASB	International Accounting Standards Board
IFRS	International Financial Reporting Standards
KASB	Korean Accounting Standards Board
KAI	Korean Accounting Institute
K-IFRS	Korean version of IFRS
KOSDAQ	Korea Securities Dealers Automated Quotations
KRW	Korean Won

NAPs	National Allocation Plans
NGOs	Non-Governmental Organisations
PCGG	Presidential Committee on Green Growth
P/L	Profit and Loss Statement
RGGI	Regional Greenhouse Gas Initiative
TCR	The Corporate Report
TMS	Target Management System
UNFCCC	UN Framework Convention on Climate Change

# **1. Introduction**

This chapter is structured as follows. Section 1.1 describes the background and motivation of this study; Section 1.2 presents the objective of the study, followed by the research questions; Section 1.3 provides an overview of the research design; Section 1.4 sets out the contribution of this research; and finally, Section 1.5 presents the structure of the thesis.

## **1.1. Background and motivation**

Since the mid-1980s, as a result of a wide range of evidence of accelerating global warming from emissions of greenhouse gases (GHG) by human economic activities (Stern and Treasury, 2006), climate change has emerged as one of the most serious challenges facing mankind (Hepburn and Stern, 2008). Many studies have warned that climate change may have a serious and irreversible impact on the sustainability of life on earth. There have been many calls for urgent global action in response to the potentially massive risk of climate change. A series of international efforts to tackle climate change has been made since 1992, when the UN Framework Convention on Climate Change (UNFCCC) triggered more integrated global understanding and collaboration (Ratnatunga and Jones, 2012). In accordance with the ambition of the UNFCCC, in 1997 a binding international commitment was made to facilitate the effective reduction of GHG through the Kyoto Protocol (Barrett, 2010). Along with a legally binding target on reducing GHG emissions, the Kyoto Protocol introduced policy instruments to achieve GHG emissions targets, which comprise three innovative, market-based, flexible mechanisms: emissions trading schemes (ETS), clean development mechanisms (CDM), and joint implementation (JI) projects (Cracea, 2012; Richelle, 2008).

Amongst market-based measures for tackling GHG emissions, ETS have been expanding worldwide owing to a degree of certainty regarding government administration of emissions levels (Hepburn and Stern, 2008). For example, the EU (2005), New Zealand (2008) and South Korea (2015) have implemented schemes at national levels. Several forms of schemes are currently running at



regional levels, such as the Regional Greenhouse Gas Initiative (RGGI,<sup>1</sup> 2009), and in California (2013) and Québec (2013).

From an accounting perspective, ETS has been an important emerging issue which has engendered a new 'financial carbon accounting' sphere regarding how to account for carbon emissions in terms of *pro forma* reporting. Financial carbon accounting is regarded as a new inter-disciplinary area involving a high level of expertise in the disciplines of both accounting and carbon trading. In view of the relatively short history of ETS, it is still regarded as a novel issue from an accounting perspective.

ETS are operated on the basis of a market mechanism by which the authority creates an administrative tool to deal with a certain level of emissions, known as 'emissions rights' or 'emissions allowances'.<sup>2</sup> Emissions rights represent permission to emit; once allocated, they are tradable with a specific monetary value (Wemaere et al., 2009). Most schemes involve 'free allocation', whereby the government distributes emissions rights to participants for free. The granted allowances constitute economic benefits for participants, similar to government grants. Accordingly, emissions rights create a new type of asset from an accounting perspective. In addition, the obligation to surrender emissions rights as emissions are produced creates a liability from an accounting point of view. In essence, in creating a new type of asset and liability, ETS raises basic accounting issues regarding the recognition and measurement of assets and liabilities.

Moreover, the nature of emissions rights means that, from a financial accounting point of view, they do not fit comfortably into any existing asset category. For example, emissions rights may be treated as intangible assets<sup>3</sup> because they represent rights to emit carbon, with no physical substance; yet they are considered to be consumed during the production process as a commodity. In addition, they are tradable on the market at a company's discretion, similarly to

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<sup>1</sup> RGGI established in 2009 in northern USA, currently involving nine states: Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont (<http://www.rggi.org/>).

<sup>2</sup> Emissions rights are referred to as 'permits', 'rights' or 'allowances' in different papers, depending on which aspects of emissions rights are focused on. This study mainly uses 'rights' or 'allowances'.

<sup>3</sup> According to IAS 38, 'intangible assets' are non-monetary assets which are without physical substance and identifiable (either being separable or arising from contractual or other legal rights).

financial instruments. Multi-faceted attributes of emissions rights accompany a variety of potential uses (Lovell et al., 2010). Business entities are able to use emissions rights variously for different purposes. Accordingly, from an accounting point of view, ETS are potentially problematic because emissions rights give rise to a variety of tensions in the existing accounting framework.

When implemented, ETS cover a large proportion of industry in terms of the broad scope and large number of participants affected. For example, the EU ETS, the largest in the world, covers more than 11,000 installations (EC, 2013). This implies that the impact of ETS on companies may be large and material. In particular, large emitters are expected to recognise assets and liabilities arising from many emissions rights and high volumes of emissions. The impact of ETS on financial statements may be sufficiently material that a business entity must provide stakeholders with relevant accounting information from the decision-usefulness perspective (Lovell et al., 2010). In addition, the accounting treatment of emissions rights and obligations may affect financial statements in various ways (Starbatty, 2010). From an accounting point of view, ETS brings about 'materiality' in terms of financial consequences, not only from a company's viewpoint but also from users' perspective.

Since the EU ETS began in 2005, experts and practitioners have persistently called for authoritative accounting guidance on ETS in order to generate decision-useful accounting information. In response, in 2004 the International Accounting Standards Board (IASB) published accounting guidance for emissions rights as an interpretation, referred to as 'IFRIC 3'; however, IFRIC 3 was revoked in 2005. In the absence of an international accounting standard for emissions rights, a diversity of practices has emerged as an important problematic issue. In turn, the accounting standard-setting bodies have continued to make efforts to set up appropriate accounting guidance to deal with emissions rights and related liabilities under ETS.

In essence, the difficulty in dealing with the complexity of emissions rights within the existing framework is attributable to the prolonged absence of accounting standards for emissions rights (Lovell and MacKenzie, 2011; Lovell, 2014). Lovell et al. (2010) acknowledge the necessity for empirical research in this area in order

to resolve ‘tensions’ between newly-emerging accounting issues under ETS and the existing accounting framework. This study is motivated by these circumstances in relation to the complicated and unsettled issues relating to emissions rights.

In summary, a number of policy measures have been taken to tackle carbon emissions. Amongst these, ETS may be considered to be ‘problematic’ from an accounting point of view because, in contrast to many other accounting issues, the recognition of carbon emissions in financial statements brings about a number of new and complex issues (Lovell, 2014). In this regard, this study is concerned with how the complexity of emerging accounting issues under ETS may be resolved in the field. It explores how accounting standard setters address these complicated accounting issues in practice, and how they may ultimately resolve them.

This research began as ETS in South Korea was being introduced, since the Korean ETS bill was established in 2012.<sup>4</sup> In the absence of an international accounting standard for ETS, the Korean accounting standard setter, referred to as the ‘Korean Accounting Standards Board’ (KASB), set out to establish an accounting standard for emissions rights in the run-up to the commencement of the Korean ETS on 1 January 2015. Against this background, this study is concerned with practical accounting issues with regard to ETS. Specifically, by investigating the accounting standard-setting process in the Korean context, this research examines how KASB dealt with the multi-faceted issues on emissions rights.

## **1.2. Research objective and research questions**

The aim of this study is to achieve a better understanding of practical accounting issues under an emissions trading scheme through the accounting standard-setting process.

Accounting plays a ‘constitutive role’ in social processes (Hopwood and Miller, 1994, cited in Lovell et al., 2013). It is both constructed by the social, cultural and

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<sup>4</sup> The author worked on the Presidential Committee on Green Growth (PCGG) in Korea, and was involved in establishing the Korean ETS bill in 2012.

political environment, and also influences society (Burchell et al., 1980). As ETS have affected the social and economic circumstances of organisations, accounting issues under ETS, referred to as 'carbon accounting', have subsequently emerged in diverse disciplines and have been addressed from a variety of perspectives. However, only a few papers have dealt with these issues from a financial carbon accounting point of view (Lovell and MacKenzie, 2011). Although there has been a surge of calls from accounting experts and practitioners for authoritative accounting guidance on ETS, specific accounting guidance for ETS has not yet been provided by IASB.

In response to a scarcity of research on accounting issues under ETS, as well as the absence of an international accounting standard for ETS, this research investigates an accounting standard-setting process for emissions rights and related liabilities in order to identify how complicated and unresolved accounting issues under ETS may be managed and resolved in the field. To this extent, this study provides important insights into and knowledge on how accounting issues in relation to the unique attributes of ETS are addressed in the standard-setting process and how an accounting standard setter accomplishes an appropriate (or desirable) accounting standard for ETS. It contributes to determining the main attributes of 'desirability' and 'appropriateness' of an accounting standard with the introduction of a new policy, ETS.

In addition, this study aims to shed light on the political nature of the accounting standard-setting process with the introduction of a new policy, ETS. Sutton (1984) posits that an accounting standard-setting process entails not only professional technical knowledge but also a political process. In particular, underpinning the latter aspect, numerous studies of standard-setting processes have been undertaken with regard to a wide range of cases and issues. However, few have been conducted empirically in the case of ETS. Therefore, this study contributes an empirical body of research on accounting standard setting for ETS.

This research focuses on accounting issues for ETS since IFRIC 3 was withdrawn. Empirically, this study mainly investigates the standard-setting process by KASB. Since Korea adopted IFRS on 1<sup>st</sup> of January in 2011, the accounting treatment regarding emissions rights and related liabilities under ETS should correspond to

IFRS. However, without an international accounting standard for emissions rights, KASB had no choice but to attempt to develop its own accounting standards for emissions rights. Due to limited accessibility to materials published in English, KASB mainly referred to IFRIC 3 and the accounting models developed by IASB in 2008-2010 and by the French accounting standard setter (Autorité des Normes Comptables, referred to as 'ANC') in 2012. IFRIC 3 and the accounting models developed by IASB in 2008-2010 and ANC have substantially influenced the development of Korean GAAP on emissions rights. Accordingly, this study extends to research IASB's tentative decisions made in 2008-2010 and ANC's proposal in 2012.

As the primary concern about accounting issues under ETS arises in the context of standard setting, this study posits the following research questions.

*Research Question 1: How does an accounting standard setter tackle accounting issues under ETS in the standard-setting process in order to achieve the most appropriate accounting standard?*

This question is concerned with accounting issues on emissions rights and related liabilities, which are addressed mainly in standard setting since IFRIC 3 was withdrawn. Given a variety of nature of emissions rights, it is essential to investigate how accounting standard setters recognise emissions rights and related liabilities under the conceptual framework: to be specific, the elements of financial statements in the 'Conceptual Framework for Financial Reporting' in 2010 provided by IASB and the 'Conceptual Framework of Financial Accounting' under Korean GAAP in 2003 provided by KASB. It aims to identify factors that affect accounting standard setters in developing an accounting standard for ETS. In addition, this question investigates the accounting models or standards for ETS that accounting standard setters develop taking several factors into account. Thereby, the main attributes of each accounting model or standard are derived. This question aims to enhance understanding of the complex and diverse aspects of accounting issues under the scheme; to this extent, the purpose of this research is to appreciate how the accounting standard setter settles new and complicated issues associated with emissions rights in order to achieve the most desirable solution under various circumstances.

*Research Question 2: How does the accounting standard-setting process proceed in the case of ETS?*

This question is concerned with the accounting standard-setting process in the case of ETS. By investigating the procedures through which due process proceeds, this question examines the players, motivations, methods and arguments in association with the accounting issues for ETS, and specifically: who constitute the main stakeholders; what stakeholders are interested in; how stakeholders participate in the process; how stakeholders attempt to reflect their own interests; how the accounting standard setter addresses a variety of interests raised by stakeholders while setting up the standard for ETS; and how the accounting standard setter makes a choice on specific accounting treatments considering various factors and reflecting stakeholders' interests. The main stakeholders in line with this research question were identified on the basis of a theory of stakeholder identification of Mitchell et al. (1997).

The objective of this question is to explore the political features of the accounting standard-setting process in dealing with new accounting issues. It intends to elicit insights into the assessment of desirable features of accounting standards on emissions rights, as a consequence of the political process in standard setting.

These questions are elaborated in Section 4.2, unfolding them into a number of objectives in association with each research question.

### **1.3. Overview of research design**

This study is concerned with accounting issues for ETS in practice, where an accounting standard setter sets up accounting standards for emissions rights and related liabilities. With regard to the main subject of this study, two research questions have been described in Section 1.2, which are subdivided into relevant objectives in Section 4.2. These research questions and associated objectives are guided by a wide range of perspectives from the literature on financial accounting issues under ETS (Section 3.2) and the accounting standard-setting process (Section 3.3), as well as the findings from fieldwork conducted in 2014.

In view of the aim, research questions and objectives, an interpretive inductive methodological approach is adopted which is most suited to providing insights into

and understanding of the accounting issues under ETS. In accordance with this methodology, this study relies mainly on semi-structured and in-depth interviews, primarily undertaken face-to-face. Relying on Mitchell et al. (1997)'s coverage of stakeholder salience, interviewees were deliberately selected amongst stakeholders who are heavily involved in the development of accounting standard for emissions rights from the KASB's perspective. In addition to the interviews, a number of documents have been analysed which are available in the public domain or were collected in the field. All interview transcriptions and documents have been coded and analysed using QSR NVivo 10 in order to organise the data effectively. Using an interpretive approach, the findings have been triangulated and interpreted.

#### **1.4. Contributions**

First, the originality of this study lies in investigating how a new accounting issue arising from ETS is transformed into an accounting standard in practice. Compared with more conventional accounting issues, accounting issues under ETS have been comparatively little explored because of the novelty and short history of the issue from the point of view of the traditional accounting regime. In view of the paucity of empirical research in this area, this study contributes to the empirical body of literature on accounting issues for ETS.

Second, this study enhances understanding of accounting issues under ETS from a practical point of view. By investigating the main accounting issues dealt with by accounting standard setters in the standard-setting process, this study identifies how problematic issues associated with emissions rights can be resolved in the field. Accordingly, this study is academically and practically valuable because it investigates tangible solutions to resolving the complexity of accounting issues under the scheme within the existing accounting framework. The accounting models explored in this study provide plausible solutions for other jurisdictions in need of an accounting standard for emissions rights.

Third, this study extends understanding of the accounting standard-setting process from legitimacy perspective. It sheds light on the political attributes not only of the standard-setting process but also of the resulting accounting standards. In particular, this study probes how accounting standard setters make decisions in

the standard-setting process in pursuit of accounting standard setters' legitimacy. This study is important in demonstrating empirically how legitimacy functions in the standard-setting process. In addition, this study makes a contribution to a strand of literature on stakeholder's participation and lobbying activities in the standard-setting process, including motivation, methods, timing and effectiveness of lobbying.

Fourth, this study draws on features of 'desirability' and 'appropriateness' of accounting standards. It investigates how the accounting standard setter addresses accounting issues for ETS in order to establish the most appropriate accounting standard under a variety of conditions. The solutions sought by the accounting standard setter enable the deduction of core elements that determine the desirability and appropriateness of the accounting standard for emission rights.

Fifth, this study makes an important contribution in drawing the attention of the case of KASB to other academics worldwide. Owing to the linguistic limitations of accessing KASB and its relatively short history, unsurprisingly, there have been few studies on KASB's standard-setting process. In particular, this study investigates very closely the entire process of accounting standard setting for ETS in Korea by speaking to KASB staff and stakeholders in person. This was timely because it corresponded with the launch of an ETS project set out by KASB in order to develop an accounting standard for emissions rights. This well-timed research generated the noteworthy findings of this study. To this extent, this study paves the way toward broadening international understanding of the accounting standard-setting process in the Korean context.

Sixth, this study is important from a policy-making point of view. Empirical research on the accounting standard-setting process enables the accounting standard setter to understand the political nature of the standard-setting process and the importance of stakeholders' participation in the process. The findings and empirical evidence of this study highlight critical implications for the accounting standard setter to achieve a high-quality accounting standard with a high level of compliance.



### **1.5. Structure of the thesis**

The remainder of this thesis comprises seven chapters. Chapter 2 describes the background of this study, the emerging accounting issues arising from ETS, the main features of ETS and examples of ETS. Chapter 3 reviews extant research from two strands of literature: financial accounting issues under ETS and the accounting standard-setting process. A theoretical framework is derived from the literature review in order to interpret the findings. Chapter 4 describes the research questions and associated objectives, followed by the methodological choices, including the philosophical assumptions, methodological approach, research methods and data analysis. Chapters 5 to 6 correspond with the first research question and Chapter 7 goes in line with the second research question posed in Chapter 4. These chapters present the findings from the data collected in the fieldwork. Finally, Chapter 8 provides a summary of the main findings and recurring themes, with discussion and interpretation of the findings, and a summary of the contributions and limitations of this study and ideas for further research.

## **2. Background**

### **2.1. Introduction**

This chapter provides a general overview of the context of this study, including carbon accounting and carbon trading. The next section presents carbon pricing instruments as a theoretical background to ETS. In Section 2.3, emerging accounting issues under carbon trading are discussed, and sub-section 2.3.2 specifically discusses accounting for carbon, on which this study focuses. A general understanding of ETS is provided in Section 2.4, which covers general design features of ETS, as well as the EU and Korean ETS. Since this research explores accounting issues under ETS in the Korean context, Section 2.5 provides a general overview of KASB. This chapter provides an overall background from which to identify the research gaps presented in Chapter 3.

### **2.2. Carbon pricing instruments**

A number of policy instruments have been introduced to tackle climate change, including carbon pricing measures, support for low-carbon R&D, and financial support for adaptation. Carbon pricing is based on the idea of putting a price on GHG emissions (Hepburn and Stern, 2008). Theoretically, the carbon pricing mechanism originates from an economic instrument used to price emissions known as the 'Pigouvian tax scheme', in which a tax is levied on activity generating negative externalities (Pasfield and Paeffgen, 2013). In practice, there are two forms of carbon pricing mechanisms where the externality associated with carbon emissions is converted into a price: carbon trading, in which the quantity of emissions is fixed but the price is determined by the market; and carbon tax, where the price is fixed but the level of emissions reduction is uncertain (Hood, 2010).

Several studies dealing with a variety of issues under ETS (e.g. Baldwin, 2008; Egenhofer, 2007; Ellerman et al., 2010; Hood, 2010; MacKenzie, 2009; OECD, 2001; Pope and Owen, 2009) present the carbon trading operating mechanism. In essence, a government sets an overall cap on emissions, which is converted to an equivalent quantity of emissions rights representing an authoritative entitlement to emit (Wemaere et al., 2009). The overall cap is divided into sub-caps in sectors covered by the scheme. In line with the sub-caps, emissions rights are assigned to

each sector and to participants in the scheme (Ellerman et al., 2010). In order to comply with the obligation to meet the reduction target, participants are able to sell or purchase permits in the market by comparing their marginal cost of reducing carbon emissions with the market price of permits. ETS is based on a market-based mechanism; accordingly, this is considered to be the most cost-effective policy instrument to tackle GHG emissions by inducing business entities strategically to adopt means of carbon reduction such as research and development in abatement technology (Egenhofer, 2007; Kruger et al., 2007; Schmalensee and Stavins, 2013).<sup>5</sup>

In theory, both carbon tax and ETS are equivalent instruments to internalise the externality cost using a market-based approach in a 'perfect market' subject to 'complete information' (Braun, 2009; Pope and Owen, 2009). There has been a long-running academic debate over which market mechanism is more desirable in terms of transparency, effectiveness, market efficiency, certainty and acceptability. On the whole, carbon tax may be more efficient and less distortive from various perspectives, such as transparency, simplicity and administrative cost (Andrew et al., 2010; Mann, 2009, cited in Pasfield and Paeffgen, 2013, p.390). For instance, by using an existing tax system, a carbon tax may be less costly to implement than ETS, which requires setting up an entirely new market system (Andrew et al., 2010). In addition, carbon tax provides business entities with greater certainty given a specific carbon tax rate, thereby enabling them to operate more predictably (Andrew et al., 2010). Moreover, since in reality it is almost impossible to run a 'well-designed and credible' trading scheme (Garnaut, 2007, cited in Andrew et al., 2010), it is arguable that carbon tax is not only theoretically but also practically superior to ETS in terms of economic efficiency and environmental effectiveness.

In spite of the theoretical superiorities of carbon tax, ETS is a much more attractive policy tool in reality. It has been predominantly preferred to carbon tax in practice because of a high degree of 'acceptability', in the sense that, due to

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<sup>5</sup> Several studies (e.g. Carlson et al., 2000; Ellerman et al., 2010; Schmalensee and Stavins, 2012) assert that an emissions trading scheme based on a cap-and-trade mechanism is a more cost-effective way than a command-and-control approach to achieve environmental objectives.

generous free allowances, it can be politically reconciled without causing severe conflict between stakeholders' interests (Baldwin, 2008; Hepburn and Stern, 2008). In effect, governments tend to implement ETS rather than carbon tax schemes because ETS is a strong and attractive environmental policy tool, not only for tackling carbon emissions but also to harmonise with other energy or industrial policies. 'Predictability' regarding a targeted reduction provides greater certainty about levels of emissions by setting a mitigation target (Baldwin, 2008), enabling the emissions reduction target to be achieved over time irrespective of energy price levels (Hood 2010).<sup>6</sup> Accordingly, ETS is preferable to carbon tax in practice as a measure to tackle carbon emissions and to achieve a certain level of emissions (Andrew et al., 2010). Moreover, as long as a robust level of carbon prices is sustained, business entities are induced to invest in energy-efficient facilities and green technologies (Baldwin, 2008), thereby leading to a shift towards a low carbon economy in the longer term (Convery, 2009).

From a business perspective, a carbon tax may be more desirable because of the regulatory certainty of a certain rate of tax. On the other hand, ETS may be a practically better means from a policy perspective. The benefits of the two measures cannot be compared directly. However, in virtue of various advantages in terms of applicability in reality, ETS has been preferred in practice as it is considered the most cost-effective mechanism for reducing carbon emissions. It appears that a preference for the better applicability of ETS rather than the carbon tax preference of business entities may result in a prevalence of ETS rather than carbon tax in practice.

In summary, as an instrument for carbon pricing, ETS has been adopted over carbon tax worldwide on the grounds that ETS is politically more acceptable and provides greater certainty of achieving carbon reduction targets. Although ETS has been preferred to carbon tax as a measure for tackling carbon emissions, greater discretion is required when implementing such a scheme. Under ETS, a totally new market is artificially created, in which government manipulates the

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<sup>6</sup> In contrast to ETS, under a carbon tax regime, there is no certainty of a national economy achieving an 'optimal level of pollution', which is an essential factor for estimating the extent of carbon tax (Hood, 2010; Pope and Owen, 2009).

supply of and demand for emissions rights. This may cause dysfunction in the carbon market if a robust carbon price cannot be sustained. For example, a collapse in the carbon price on the EU ETS market was observed at the end of 2007, and the EU ETS has continued to struggle with low carbon prices.<sup>7</sup> This implies a vulnerability of the market mechanism of ETS. Furthermore, ETS may be driven by political intervention in relation to cap setting, allocation, etc. ETS entails interference from lobbying and political decisions that may impair cost-effectiveness, which is its most important benefit. Therefore, in admitting that ETS cannot be a perfect measure under perfect conditions, governments must operate schemes rigorously following implementation.

### **2.3. Emerging accounting issues under carbon trading**

#### *2.3.1. Accounting for carbon*

As ETS has been expanding worldwide since the Kyoto Protocol was approved in 1997, an essential technical issue that has emerged is how to measure carbon emissions accurately. The accurate measurement of carbon emissions is a critical element in implementing schemes at different levels, including the product unit level, organisational level, industrial level, national level and even planet level. As a platform to measure GHG emissions for implementing ETS, a new interdisciplinary field of accounting has appeared, referred to as 'carbon accounting'. Since carbon accounting is widely and differently used in various contexts, it is necessary to differentiate various carbon accounting systems and identify a specific sub-area of carbon accounting in accordance with this research.

Prior to this study, preliminary work was necessary to articulate the scope of the research in light of financial reporting under ETS, in order to identify relevant elements in designing a new market. Financial carbon accounting is presented as the scope researched for this study. This section helps to identify the principal actors and interest groups relevant to this research by highlighting a particular dichotomy of carbon accounting.

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<sup>7</sup> Since prices went below €10/t CO<sub>2</sub> in 2011, the price of EUA (EU allowance: 1 allowance (EUA) equals 1 tonne of CO<sub>2</sub> or its equivalent) has been around €6–€7/t CO<sub>2</sub> (Source: EUA future prices 2005–2011 and 2008–2012, <http://glossary.eea.europa.eu/terminology/sitesearch?term=EUA+price>).

One distinct strand of previous research on accounting issues under ETS deals with various uses of carbon accounting. Various attempts have been made to build a 'market-enabling accounting platform' in the process of measuring, verifying and reporting carbon stocks or carbon footprint at national, organisational, project and personal levels (e.g. Ascui and Lovell, 2011, 2012; Bowen and Wittneben, 2011).

Many definitions of 'carbon accounting' have been given in the literature (e.g. Ascui and Lovell, 2011, 2012; Bowen and Wittneben, 2011; Stechemesser and Guenther, 2012; Schaltegger and Csutor, 2012). Previous studies highlight that carbon accounting has been employed with a wide variety of meanings in various fields, reflecting a wide spectrum of carbon activities (Ascui and Lovell, 2011).

Bowen and Wittneben (2011, p.1025) define carbon accounting as 'the measurement of carbon emissions, the collation of this data and the communication thereof, both within and between firms'. From the perspective of the relationship between accounting and society, Lovell et al. (2012) describe carbon accounting as 'the accounting treatment chosen by companies [that] constructs the significance of carbon markets, and provides insights into the relative importance of carbon in communications to stakeholders via an organisation's financial accounts'. On the whole, carbon accounting is widely used in the context of the measurement of carbon at an organisational level.

The term 'carbon accounting' may be used and interpreted differently depending on the objectives of organisations using it (Ascui and Lovell, 2011, 2012; Bowen and Wittneben, 2011; Schaltegger and Csutora, 2012; Stechemesser and Guenther, 2012). Several studies illustrate different uses of carbon accounting from different organisational perspectives. For example, on the basis of a systematic literature review, Stechemesser and Guenther (2012) suggest four different scales – national, project, organisational and product – and subdivide the organisational scale into carbon management accounting and carbon financial accounting. Ascui and Lovell (2011) distinguish carbon accounting in terms of five frameworks: physical, political, market-enabling, financial, and social or environmental. Schaltegger and Csutora (2012) also provide a framework for carbon accounting at different organisational and geographical levels, addressing

scientific, political-economic and corporate levels as well as global, multinational, national and local levels. Bowen and Wittneben (2011) show how carbon accounting has evolved in three distinct organisational fields (counting carbon, carbon accounting, and accountability for carbon) in light of accuracy, consistency and certainty. Notably, Ascui and Lovell (2011) suggest a framework (see Figure 1) to define carbon accounting by selecting and combining different scopes for either mandatory or voluntary purposes. This framework indicates the extent to which carbon accounting may be applied to a wide variety of dimensions.

**Figure 1: Various types of carbon accounting**

(adapted from Ascui and Lovell, 2011, p.980)

Estimation Calculation Measurement Monitoring Reporting Validation Verification Auditing	of	Carbon Carbon dioxide Green- house gas	Emissions to the atmosphere Removal from the atmosphere Emissions rights Emissions obligations Emissions reductions  Legal or financial instruments linked to trade/transactions of any of the above  Impacts on climate change Impacts from climate change	at	Global National Sub- national Regional Civic Organisati onal Corporate Project Installation Event Product Supply chain	level, for	Manda- tory Volun- tary	Research Compliance Reporting Disclosure Benchmarking Auditing Information Marketing Other	Pur- pose
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Carbon accounting is categorised variously according to scale, and individual frameworks of carbon accounting identify the key issues, institutions and players which make up each one (Ascui and Lovell, 2011). For example, scientists tend to emphasise carbon accounting in terms of ‘the practice of making scientifically robust and verifiable measurement of greenhouse gas emissions’ (Watson, 2009, p.6, cited in Ascui and Lovell, 2011). Meanwhile, as ETS is globally pervasive, accounting experts have asserted that assets, liabilities and profits/losses associated with emissions rights and obligations should be reported in monetary terms in financial statements (Ratnatunga and Jones, 2012).

In short, carbon accounting is considered to be an ‘enabler’ for tackling climate change issues in terms of the measurement of GHG emissions on various

dimensions (Ascui and Lovell, 2011). Considering all aspects of carbon accounting, it cannot be defined as a single term but should be understood as activities related to measuring, calculating, monitoring, reporting and verifying carbon emissions at different organisational levels in the form of either monetary or physical information.

Carbon accounting development has influenced and in turn has been influenced by recent developments in integrated reporting and earlier developments in particularly environmental but also social reporting (it should be stressed that it is particularly difficult to disentangle developments in the environmental reporting arena from those in the social). Discussions on forms of accounting that incorporate economic, social and environmental corporate impacts predate that of carbon accounting and can be traced in the 1960s. Gray et al. (1996) highlight that at the time “the most important (for the planet and society if not for business and accounting)” related development was “the emerging environmental movement which laid the groundwork for the environmental revival of the late 1980s” (Gray *et al.*, 1996, p. 92). The early 1970s are generally regarded as the period when environmental reporting “research first became established as a substantial discipline in its own right” (Owen, 2008, p. 243). Environmental (and social) reporting appears to have first come,

As a natural consequence of the debate then raging concerning the role of the corporation in society at a time of rising societal expectations and emerging environmental awareness. More perceptive managements, particularly those of prominent corporations in environmentally or socially sensitive sectors, speedily grasped the public relations benefits in producing, at least rudimentary, social reports which attempted to convey a picture of corporate responsiveness to key societal concerns (Owen, 2004, p. 24).

Indeed following this increased public awareness that augmented environmental responsibility, the whole area of accounting standards and regulation also became a matter of debate, and for the first time accounting was seen both as part of, and a potential source for solving, the associated with the environmental damage problems (Gray *et al.*, 1996). This was reflected in the publication of The Corporate Report (TCR) in 1975 by the Accounting Standards Steering Committee. TCR identified various user groups in society, ranging from the equity investment



group through to government and the public, and suggested that organisations publish statements such as value added statement, employment report and energy usage statement. TCR thus played an important part in expanding the involvement of the accounting function in the accountability of organisations to different groups in society (Quirke, 1996). As Perks (1993, p. 36) points out, it was the first time that public accountability was seen “as being in addition to legal obligations and [the Report] argued that it arises from the custodial role played in the community by economic entities”. Although this was still far from considering related reporting developments as being, “at the heart of an examination of the role of information in organization–society dialogue” (Gray *et al.*, 1995, p. 48, see also Parker, 2005), as many researching the field would hope, TCR remains “the most radical re-statement, from the accounting profession, of how organisational disclosure needed to be enhanced by social and environmental accounting” (Gray, 2002, p.690).

Environmental reporting nevertheless became widespread during the 1980s and 1990s, with an increasing number of (predominantly large) organisations publishing related information in their annual reports. Important early drivers seem to include action by European legislators in the early 1990s (such as the European Union’s Fifth Action Programme and the Environmental Management and the Audit Scheme, EMAS). It seems however to have been first the Brundtland Report (UNWCED, 1987) and then the run up to the Rio de Janeiro Earth Summit in 1992, which transformed the global awareness and prominence of environmental issues, and it is within that changed atmosphere that the ‘standalone’ environmental reports started to emerge (Gray *et al.*, 2014). Environmental reporting appears to have been subsequently driven by the development of a range of voluntary reporting guidelines and the increasing attention given by professional accounting bodies to environmental reporting issues (Gray *et al.*, 2014). Indeed, in more recent years, initiatives from diverse entities including SustainAbility, AccountAbility, The Global Reporting Initiative, The United Nations Global Compact and the Prince of Wales Accounting for Sustainability Project have all appeared to be increasingly influential.

Research on environmental reporting has also followed suit with a number of dedicated papers being published in the last 40 years (Vourvachis and Woodward, 2015) and with journals such as *Accounting, Organizations and Society*; *Accounting, Auditing and Accountability Journal*, and *Accounting Forum* publishing dedicated issues to the phenomenon (see e.g. Callon, 2009; Engels, 2009; Lohman, 2009; and Milne and Grubnic, 2011; for some notable contributions). Research highlights the complexity of environmental reporting and key issues of concern, such as the surprising organisational lack of environmental information systems to support reporting despite the, now, decades of guidance and experimentation (Gray et al., 2014). Nevertheless and whether it is examined in a standalone form or in conjunction with developments in social reporting, research suggests that it is largely the voluntary nature of the offered initiatives that prohibits the more systematic development of the field. Indeed research highlights that related organisational practice is primarily influenced by organisational attempts to achieve legitimacy (Deegan, 2002) and/or to manage stakeholders (Mitchel et al., 1997) (see next chapter for a detailed discussion of these frameworks). It thus seems that “[w]ithout mandatory reporting guidelines... companies will continue to produce reports which leave out impacts... material to key stakeholder groups” (Adams and Narayanan, 2007, p. 83). And it is the potential of the more recent initiatives such as integrated reporting (as well as carbon accounting) to be mandated that highlight their contribution to enhancing the legitimacy and further development of the field (in both professional and research terms).

Integrated reporting in its most recent form has only been developed in the last decade, as the outcome of the collaboration of the Prince of Wales’ Accounting for Sustainability Project, with the International Federation of Accountants and the Global Reporting Initiative. It nevertheless seems to be prominent in the current development of social and environmental reporting (de Villiers et al., 2014). As both carbon accounting and integrated reporting are relatively young projects, they can contribute towards each other’s legitimacy. As global climate change entails a variety of social, environmental, and economic impacts, carbon accounting has a need to integrate more relevant information to support stakeholders to evaluate an organisation’s strategy, governance, performance, and prospects under the

impacts of global climate change (Bebbington and Larrinaga-Gonzalez, 2008; de Villiers et al., 2014). On the other hand, integrated reporting needs to also incorporate the corporate impacts with respect to climate change, in particular carbon, in order to offer more inclusive reporting frameworks to the stakeholders concerned. As a consequence, carbon accounting has appeared in a wide range of accounting and reporting for the issues arising from global climate change. Bebbington and Larrinaga-Gonzalez (2008, p.703) put an emphasis on providing relevant non-financial reporting in addition to financial reporting to the extent to which stakeholders enable to assess the impact of global climate change and to evaluate how the company deals with the 'risks and uncertainty associated with global climate change'. Considering the important role of integrated reporting in terms of the extent of information provided, integrated reporting can be regarded as a more appropriate vehicle to provide more 'forward-looking' information to enable stakeholders to effectively assess an organisation's strategy and performance in the context of environmental, social and economic challenges (Solomon and Maroun, 2012, p.8) than current accounting templates. Nevertheless, de Villiers et al. (2014) highlight that despite its ambitious aim and high potential, integrated reporting over the years seems to be developing into a rather complementary as opposed to a revolutionary new framework that could replace existing templates and serve the stakeholders information needs. In that regard, carbon accounting which has been debated by international accounting bodies for a number of years with a number of related standards being issued is at a more mature stage and could contribute towards the greater acceptance of integrated reporting by accounting standard setters and preparers.

In the previous literature on carbon accounting, an explicit distinction has been made between financial carbon accounting, focusing mainly on carbon assets and liabilities under ETS, and other organisational frameworks of carbon accounting (Ascui and Lovell, 2011). Adopting Ascui and Lovell's (2011) categorisation of carbon accounting, financial carbon accounting can be envisaged in terms of scope, main attributes, organisations involved and key issues. Ascui and Lovell (2011) classify the types of carbon accounting at organisational level as shown in Table 1.

**Table 1: Types of carbon accounting at the organisational level**

(adapted from Ascui and Lovell, 2012, p.57)

	<b>Internal (Management accounting)</b>	<b>External (Accounting and reporting)</b>
Physical	Carbon flow accounting	Carbon footprinting and labelling(products)
	Strategic carbon management accounting	Carbon footprinting and reporting(organisations)
		Climate risk, opportunity and governance disclosure
Monetary	Carbon cost accounting	Financial carbon accounting and reporting*

\* This study focuses on the area of financial carbon accounting and reporting

The main concerns of carbon accounting at the organisational level are the development of carbon accounting systems as a way of recording and reporting carbon-related data according to quantitative and qualitative standards, and assessing companies' efforts to reduce GHG emissions activities (Bowen and Wittneben, 2011). Specifically, financial carbon accounting focuses on accounting for emissions allowances and corresponding liabilities (Stechemesser and Guenther, 2011). In light of financial carbon accounting, the development of new accounting rules for emissions allowances is essential in order to provide useful information to users.

In summary, carbon accounting is used for various measurement, performance monitoring and verification purposes at different levels. On the basis of categorisations of carbon accounting in previous studies, a tentative conclusion can be drawn that accounting for emissions allowances under ETS is conceptually linked with financial carbon accounting. Financial accounting affects the allocation of economic resources, and accounting rules substantially influence stakeholders (Jorissen et al., 2012). This study focuses on financial carbon accounting, which helps to delineate the accounting issues that may arise, the main stakeholders, and the interests of those stakeholders.

### 2.3.2. *Accounting for ETS*

Since the EU ETS was launched in 2005, financial reporting under ETS has been an emerging issue considerably different from other accounting issues that have been discussed within the traditional accounting regime. As accounting for carbon credits is still at a 'formative' stage (Lovell and MacKenzie, 2011, p.709), rules and practices are still 'hot' and 'unsettled' (Lohmann, 2009, cited in Lovell et al., 2013). Financial accounting for emissions rights has received relatively little attention from either academics or practitioners compared with other accounting issues (Lovell et al., 2013; Lovell, 2014). Accordingly, there is a paucity of academic literature in the area of financial accounting reporting under ETS.

Nevertheless, a handful of notable papers highlights the necessity for financial reporting under ETS (e.g. Ascui and Lovell, 2011, 2012; Bebbington and Larrinaga-Gonzalez, 2008; Mackenzie, 2009). This strand of early academic work contributes to building a backdrop and raising issues regarding how to incorporate emissions rights into the traditional accounting framework. As a background to this study, this is a preliminary overview to understand the necessity of financial reporting for relevant activities under ETS.

Firstly, accounting reporting of activities under ETS has been conducted on a voluntary basis in response to a demand for social accountability. Bebbington and Larrinaga-Gonzalez (2008) highlight corporate accountability to stakeholders for a variety of economic and social consequences of climate change. As a result of the 'polluter-pay principle' and the 'market-based mechanism', ETS has been spreading worldwide because of the extent to which climate change has become a social and economic circumstance by which organisations are significantly affected. In turn, stakeholders have called for accounting information regarding entities' carbon-related activities under ETS (Solomon et al., 2011). In response to a social demand for accounting information, companies have voluntarily reported their carbon activities under ETS as a form of corporate social responsibility (CSR) or as a part of existing financial reporting in line with accounting standards (Lovell et al., 2010). As also discussed earlier, emerging as a new area of social and environmental reporting in line with the formation of the International Integrated Reporting Committee in 2010, integrated reporting has been widely utilised for

social and environmental disclosure in a voluntary manner (de Villiers et al., 2014), and could further incorporate and push towards more systematic reporting of carbon impacts. In this context, Ascui and Lovell (2012) address that, to date, 'external demand' from stakeholders has been the main factor provoking disclosure of carbon activities.

Secondly, the market mechanism of ETS enables emissions permits and obligations to be assessed at monetary value, which has led to the incorporation of tradable emissions rights into *pro forma* reporting. By placing a price on a unit of carbon emissions, carbon-emitting activities and corresponding performance under ETS can be described in monetary terms. MacKenzie (2009) regards emissions rights as a tool for 'making things the same' in terms of financial reporting. Put differently, emissions allowances can be captured in financial statements by putting monetary values on emissions for the purpose of financial reporting (MacKenzie, 2009; Ratnatunga and Jones, 2012). In essence, the inherent calculability of emissions allowances is a critical determinant corresponding with the role of accounting as 'economising' (Miller and Power, 2013), whereby accounting conceptualises and transforms the carbon-related activities of organisations into money values.

Thirdly, due to a distinctive attribute of allowances of the entitlement to emit greenhouse gases, ETS creates a new type of asset and liability in financial statements from an accounting point of view, which needs to be displayed in financial statements in monetary terms (Ratnatunga and Jones, 2012). Having implemented a scheme, government allocates the intended amount of emissions rights either for free or by auctioning. In turn, the distributed emissions rights are characterised as an asset for an entity. Meanwhile, irrespective of the number of emissions rights held, participants in the scheme must comply with their obligation to surrender them to the government as they carry out business activities generating GHG emissions (Bebbington and Larrinaga-Gonzalez, 2008). This comprises a liability in accounting terms.

In essence, ETS creates a new type of asset, liability, revenue and expense so that relevant information under the scheme necessitates the disclosure in financial statements of a form of asset and liability (Bowen and Wittneben, 2011; Cook,

2009; Lovell et al., 2010; Ratnatunga and Jones, 2012). This necessity for disclosure gives rise to a critical issue from a practitioner point of view, whereby financial reporting of emissions allowances has become an issue urgently in need of accounting standards. From both academic and practical points of view, the increasing need for financial reports under ETS has intensified calls for standardisation. As greater emphasis has been placed on comparability and consistency, it has become more desirable for financial reporting of performance under ETS to be provided as a conventional accounting standard (Bebbington and Larrinaga-Gonzalez, 2008).

Lastly, the introduction of ETS may have significant and substantial economic consequences (Bebbington and Larrinaga-Gonzalez, 2008; Haupt and Ismer, 2013; Lovell et al., 2010). Several papers stress the importance of accounting for and reporting of business performance under ETS. Since regulatory and competitive risks of uncertainty may be associated with ETS, relevant information needs to be disclosed in order to enable stakeholders appropriately to assess the potential economic impact of ETS on a company.

To be specific, ETS may fundamentally affect companies' strategic development in taking account of, for example, estimated total emissions, the technology available for abatement, the marginal costs of reduction and the costs of purchasing emissions rights (Bebbington and Larrinaga-Gonzalez, 2008). In pursuit of the most cost-effective way of reducing carbon, companies may invest in abatement technology or facilities, or change their pricing strategy or product mix (Jaehn and Letmathe, 2010). The introduction of ETS drives business entities to make efforts to reduce carbon emissions, which are inevitably accompanied by changes in cash flow.

In addition, energy-intensive and carbon-intensive industries encounter substantial increases in production costs. Since most schemes include free allocations as measures to lessen the burden on carbon-intensive industries, participants in the schemes are expected to receive a large volume of free allowances, and this initial free allocation results in a 'transfer of wealth' (Kruger et al., 2007, p.114) because emissions rights are used to offset obligations under ETS. The total amount of free allowances may constitute so-called 'materiality' in financial statements, so

emissions rights and related liabilities should be reported. Ratnatunga and Jones (2012) assert that entities' activities and obligations under ETS must be reported to their stakeholders and must contain all material information which is relevant and reliable. Haupt and Ismer (2013) reiterate the necessity for financial reporting of relevant information under the scheme. All relevant accounting information should be disclosed and reported to enable existing and potential stakeholders to make informed decisions (Lovell et al., 2010). In essence, from a 'decision-usefulness' perspective, all activities under ETS with economic consequences must be reported to stakeholders.

## 2.4. Understanding of ETS

A full understanding of ETS is essential for well-developed accounting standards for such schemes. Prior to reviewing the accounting issues under ETS, it is important to understand how each scheme is designed and actually operates. Corresponding to the aims of this research, the EU and Korean ETS are introduced as particular cases. A comprehensive appreciation of general features of ETS and the specific attributes of each scheme will help to identify the accounting issues under ETS.

### 2.4.1. *General features of ETS*

Most emissions trading schemes focus mainly on a cap-and-trade approach (Uddin and Høltedahl, 2013). Based on Hood's (2010) study, general design features of ETS have been derived from analysis of existing and proposed ETS as of 2010.

**Cap-and-trade versus baseline-and-credit schemes:** In terms of implementation, there are two types of emissions trading schemes: cap-and-trade and baseline-and-credit. A cap-and-trade scheme is subject to an 'absolute' level of cap, whereas a baseline-and-credit scheme is subject to a 'relative' level of cap (Wemaere et al., 2009). Under a cap-and-trade scheme (e.g. EU ETS), the cap is implemented by issuing allowances to emit up to the cap. The overall cap on emissions is established, whereby 'allowances' or 'permits' are issued corresponding to the cap as an authorisation and entitlement to emit (Wemaere et al., 2009). The aggregate number of allowances or permits is determined within



the overall cap. 'Allowances or permits are used to offset participants' emissions. Once allowances have been allocated to participants, they are tradable on the market.

In contrast, under a baseline-and-credit scheme (e.g. clean development mechanism), the cap is implemented by assigning an individual baseline of regulated emissions to the cap (Cook, 2009). Credits are issued to participants only when emissions are produced below the baseline. The baseline is not tradable; only credits being issued are tradable. Hence, the trading mechanism operates after issuing credits and credits are tradable only after a compliance period (Starbatty, 2010). Trading under a baseline-and-credit scheme may cause 'insufficiency to sustain the market' (Cook, 2009). Starbatty (2009, p.17) posits that 'the trading window in a baseline and credits is shorter than in a cap and trade scheme'. Presumably, owing to the great extent of tradability of allowances, cap-and-trade schemes are adopted predominantly to ensure better implementation of the cap.

***Statutory versus voluntary schemes:*** ETS is operated either mandatorily or voluntarily. Under a statutory scheme, participants mandatorily comply with their obligations under the scheme, while under a voluntary scheme, entities are free to decide whether to take part in the scheme.

***Cap setting and allocation of allowances:*** At the initial stage of a cap-and-trade scheme, it is necessary to establish the level of cap, or the reduction target to be achieved by the scheme. The cap may be converted into an absolute quantity of emissions quotas representing 'allowances' or 'permits', or it may be determined on the basis of relative criteria such as a business as usual (BAU) basis. In general, a unit of allowance represents the right to emit one tonne of carbon dioxide equivalent (tCO<sub>2</sub>-eq). The authority then sets out the initial allocation process by determining how many allowances are to be allocated to participants. Allowances may be distributed by auctioning, allocating for free, or combining these two methods. The quantity of allowances distributed to each company may be determined on the basis of the company's historical emissions (referred to as 'grandfathering') or on the basis of a desired level of emissions performance being

attained (referred to as ‘benchmarking’). The scheme sets aside a proportion (or amount) of total allowances for new entrants.

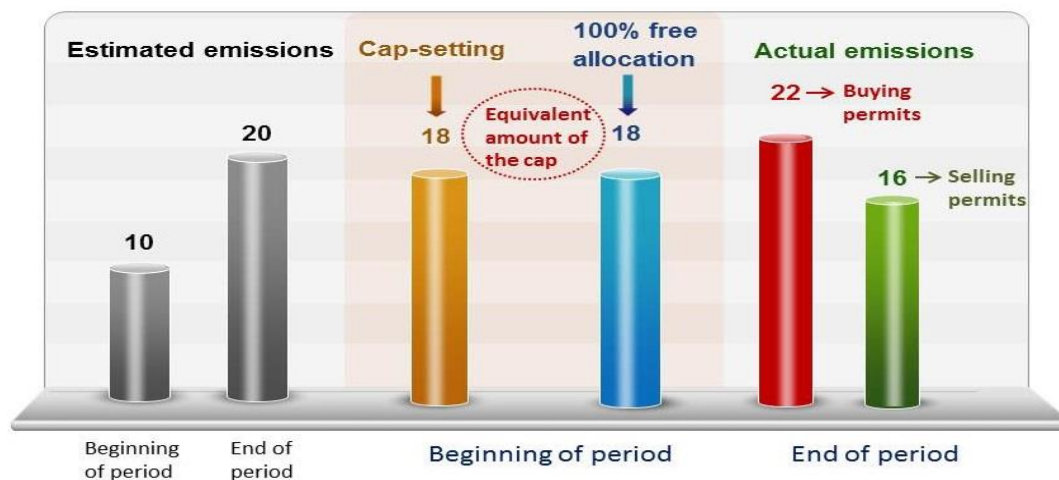
**Offsets:** ‘Offsetting’ is a type of flexibility measure intended to reduce the cost of compliance with obligations under ETS. When emissions reductions are achieved in a project not covered by the scheme, following a process to verify the extent to which an entity has achieved a reduction in emissions from the project, the authority provides the entity with credits equivalent to the verified reduction in emissions. The credits generated by offsetting projects can either be sold on the market or offset for compliance purposes. Most schemes allow the use of carbon credits issued under CDMs (known as certified emission reductions or CERs), and some schemes provide a domestic offset crediting system to generate offsetting credits.

**Flexible measures:** In addition to the offsetting mechanism, a variety of flexible measures for compliance are included in the design of ETS. For example, when participants have a shortage of allowances to surrender at the end of a compliance year, they may use allowances allocated for the next compliance year (referred to as ‘borrowing’), while ‘banking’ allows unused allowances to be carried forward to a future trading period. If emissions are reduced below the allocated allowances, business entities may sell their extra allowances on the market or carry them forward (bank them) for future use (Schmalensee and Stavins, 2013). Thus, these flexible measures – offsetting, banking and borrowing – help greatly in smoothing short-term volatility in carbon prices.

**Measures to protect competitiveness of industries:** In considering the introduction of an ETS, a government must coordinate tensions arising between environmental conservation and economic impact. Taking competitiveness issues into consideration, schemes are deliberately designed in order to minimise their adverse effects, for example by setting moderate reduction targets at an initial stage, providing generous free allocations, or allowing a generous use of offsetting. Specifically, most schemes include provisions to ease competitive disadvantage for emissions-intensive industries by providing a high level of free allowances, sometimes even amounting to 100 per cent of companies’ emissions reduction targets, referred to as ‘100 per cent free allocation’ (see Figure 2).

**Figure 2: Market mechanism under ETS**

‘100 per cent free allocation’ means that emissions allowances equivalent to the cap set are freely allocated to participants. The figure below assumes that the estimated emissions of an entity are 10 units at the beginning and 20 units at the end of a period, and the government allows the entity to emit 18 units, which is the reduction target. Assuming that 1 unit of allowance represents a right to emit 1 unit of emissions, the government distributes 18 units of allowances for free, referred to as ‘100 per cent free allocation’. If the entity has emitted 22 units of emissions at the end of the period, four units more than the 18 allowances allocated, then it must purchase more permits on the market in order to fulfil its obligation to surrender permits to the government. By contrast, if it has emitted only 16 units by making efforts to reduce emissions, it may sell its remaining allowances on the market. This is how a market mechanism in ETS works.



There is an argument that measures to protect ‘at-risk’ industries are unnecessary. For instance, the overall impact of ETS on the economic cost and international competitiveness of industries is relatively small, so the impact on output growth will be limited (OECD, 2012b). In this context, Hood (2010) argues that measures and policies to support existing production patterns may undermine and prevent the transition to a sustainable and low-carbon economy in the long term. In contrast, some sectors of industry have persistently contended that measures to

protect competitiveness should be included in ETS. From a practical point of view, ETS may be implemented successfully with a high degree of acceptability, and in order to achieve such acceptability it must inevitably take account of the adverse effects of ETS on the economy. In reality, industry competitiveness is generally taken into consideration when designing ETS.

***Reporting, surrendering, penalising:*** Emissions that participants produce during a compliance year should be measured and reported to government. This is associated with the area of carbon accounting at the physical and external level (see Table 1). For external reporting, emissions must be verified through either self-auditing or independent auditing. Participants must surrender emissions allowances to the amount emitted during the trading year (Jaehn and Letmathe, 2010). They may purchase or sell allowances on the market in line with their needs. In the case of a shortage of allowances to surrender, participants may use offsetting credits or borrow allowances from the next compliance year. In order to ensure compliance with obligations to report and surrender allowances, most schemes impose severe penalties for non-compliance.

***Intervention in the market:*** ETS is generally designed deliberately to incorporate administrative measures for intervening in the market under exceptional circumstances. The government draws a general picture of the market, for example the overall amount of permits, who will play a role in the supply of and demand for permits, and the anticipated price of permits. Since the market is being artificially created by the government, market imperfection inherently and potentially exists. Therefore, measures for the authority to address market imperfection should be included in order to intervene in the market if necessary. In order to tackle instability of the market, measures include setting a price ceiling or floor, or reserving part of the allowances.

Nevertheless, in reality, all general features of ETS are operated variously to reflect the different circumstances under which scheme are established. In terms of general design features, each scheme differs slightly from the other (Starbatty, 2010). As background to this study, it is necessary to establish the main features of the EU and Korean ETS in order to identify similarities and distinctive variations between the schemes.

#### *2.4.2. EU emissions trading scheme*

The EU ETS is regarded as critical, not only in the EU but also globally, in terms of tackling climate issues. When the EU ETS was established in 2005, it was the world's first international ETS and the largest market in the world. The EU ETS has been regarded as a cornerstone to making an impact on the development and implementation of other schemes worldwide, and was a key reference when the Korean ETS was being developed. Meanwhile, from an accounting standards perspective, in several studies in academic and practical papers the accounting issues under ETS have been addressed in terms of the EU ETS model. Accordingly, it is necessary fully to understand the main features of the EU ETS as a precedent for later studies.

#### *Background of introduction of the EU ETS*

The Kyoto Protocol was a driving force in triggering the development of the EU ETS (Convery, 2009; Ellerman and Buchner, 2007; Bailey and Maresh, 2009). During the Kyoto negotiations, the EU insisted on inserting a binding numerical reduction target into the Protocol. Meanwhile, the US insisted on inserting market-based flexible mechanisms, including international emissions trading, the clean development mechanism and joint implementation into the text of the Kyoto Protocol (Convery, 2009). In addition, the US opposed the inclusion of a legally binding quantitative target in the Kyoto Protocol without the flexible mechanisms it was suggesting (Skjærseth and Wetttestad, 2009). In order to achieve the Protocol with a binding reduction target, the EU yielded to include market-based flexible mechanisms (Bailey and Maresh, 2009; Convery, 2009; Pohlmann, 2009; Skjærseth and Wetttestad, 2009). The Kyoto Protocol was signed in 1997 with a commitment to a legally binding target on emissions for developed countries within an agreed commitment period (2008-2012), with flexible mechanisms to enable the achievement of emissions targets (Egenhofer, 2007). Specifically, in terms of the reduction target, the 15 countries of the EU committed to reducing GHG emissions to eight per cent below the 1990 emissions level by 2012 (Freestone,

2009). The provision of international emissions trading contains very general and optional terms in Article 17 (Skjærseth and Wettestad 2009).<sup>8</sup>

The EU intended to demonstrate efforts to comply with the mandatory Kyoto Protocol commitment (Skjærseth and Wettestad, 2009) in order to grasp global leadership of climate change issues. Correspondingly, the European Commission and most member states deployed emissions trading as a new cost-effective policy measure in order to achieve the EU's emissions target (Braun, 2009; Convery, 2009; Skjærseth and Wettestad, 2009). The EU ETS was developed in such a way as to make the vague expressions in the Protocol more concrete and technical (Skjærseth and Wettestad, 2009).

On the whole, evaluations show that the EU ETS was successfully implemented, and it has been described as the 'cornerstone' of the EU's climate policy (Braun, 2009, EC, 2013, Skjærseth and Wettestad, 2009). In addition, it has been regarded as a core instrument not only for reducing GHG emissions at the EU level but also for complying with the Kyoto Protocol commitments (Pohlmann, 2009; Skjærseth and Wettestad, 2009; Wettestad, 2009). In essence, the development of the EU ETS led the EU to take the initiative and leadership in the international climate change regime (Convery, 2009; Skjærseth and Wettestad, 2009).

#### *Main features of the EU ETS*

Phase III (2013-2020) of the EU ETS is currently running. Phase I (2005-2007) is considered to have been a so-called 'pilot phase', while Phase II (2008-2012) is referred to as the 'Kyoto phase' (Convery, 2009) because it entailed more fine-tuned conditions corresponding with the first commitment period of the Kyoto Protocol (Skjærseth and Wettestad, 2008).

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<sup>8</sup> Kyoto Protocol (1998) Article 17: The Conference of the Parties shall define the relevant principles, modalities, rules and guidelines, in particular for verification, reporting and accountability for emissions trading. The Parties included in Annex B may participate in emissions trading for the purposes of fulfilling their commitments under Article 3. Any such trading shall be supplemental to domestic actions for the purpose of meeting quantified emission limitation and reduction commitments under that Article (UN, 1998).

The EU ETS was based on a 'cap-and-trade' model in order to encourage reduced GHG emissions in a 'cost-effective and economically efficient manner' (Directive 2003/87/EC Article 1; Clò, 2009; Egenhofer, 2007). In terms of cap setting, in Phase I the cap was set on the basis of BAU expectations. However, in order to be more ambitious, in Phase II the cap was determined on an absolute-cap basis, set at 6.5 per cent below verified 2005 levels. Now that Phase III is running, the current cap is set to reduce emissions by 1.74 per cent per year, linearly declining to approximately 21 per cent below verified 2005 levels by 2020.

The EU ETS partially covers sectors which entail mainly heavy energy-using installations in power generation and manufacturing industries. The aviation sector has also been included since 2012. It covers installations undertaking the combustion of fuels with a total capacity 20MWth, and more than 11,000 installations in 31 countries owned by 5,000 companies are currently participating in the EU ETS (EC, 2013).<sup>9</sup>

The EU ETS allows full banking and borrowing within each phase (Convery and Redmond, 2007). The EU ETS directive explicitly allows unlimited banking, enabling participants to carry forward unused allowances to the next compliance year or the next trading phase. The EU ETS does not provide clear guidelines on borrowing. However, the deadline for submission (by 30 April in the following year) comes after the issue of the following year's units (before 28 February in each year); therefore, borrowing is *de facto* used unlimitedly within trading periods in participants' holdings (Convery and Redmond, 2007; Ellerman et al., 2010).

A company owning an installation covered by ETS must annually verify and report its emissions arising during a compliance year by 31 March of the following year. By 30 April of each year, the company must surrender allowances (EUAs) corresponding to the total amount of verified emissions incurred during the preceding compliance year (EC 2013).<sup>10</sup> To date, the EU ETS has been the world's largest carbon market, with over 70 million allowances being traded per

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<sup>9</sup> The 28 EU countries and the three EEA-EFTA states (Iceland, Liechtenstein and Norway)

<sup>10</sup> EUA is an abbreviation for 'European Union Allowance', a tradable unit under the EU ETS. One EUA represents the right to emit one tonne of CO<sub>2</sub>-equivalent.

day (EC, 2013; Pohlmann, 2009; Vespermann and Wald, 2011). In terms of total trading value, the EU ETS market accounted for around 148 billion US dollars in 2011, about 84 per cent of the traded value of the international carbon market (Kossoy and Guigon, 2012).

### *Governance and Allocation*

Phases I and II have been characterised as a ‘largely decentralized system’ (Convery and Redmond, 2007; Convery et al., 2008; Ellerman and Buchner, 2007; Ellerman et al., 2010). Each member state must develop a national allocation plan (NAP) consistent with the ETS directive,<sup>11</sup> whereby each is substantially responsible for the most essential ETS policies, including cap setting, allocation, operation of registries, measuring, reporting, verifying annual emissions and enforcement (Pohlmann, 2009). A decentralised system allowed each member state full discretion in operating the scheme; this led to generous allocations and unambitious target reductions during Phases I and II (Kruger et al., 2007, Skjærseth and Wetttestad, 2008).

Most allowances were allocated for free on the basis of grandfathering in both Phases I and II (Ellerman and Buchner, 2007, Ellerman et al., 2010). Although the guidance was for auctioning as an option up to 5 per cent (Phase I) or 10 per cent (Phase II) of total allowances,<sup>12</sup> almost all allowances were allocated for free.<sup>13</sup> In particular, along with cap setting based on BAU estimates and a grandfathering approach to allocation, generous allocations at the member state level caused ‘over-allocation’ during the first period (Ellerman et al., 2010). Jaehn and Letmathe (2009) suggest that Phase I (2005-2007) was characterised by the ‘generous allocation of emission allowances’ to participants in emissions-intensive industries according to the grandfathering principle. Consequently, the total allowances allocated in Phase I exceeded what should have been allocated in line with the real demand for allowances (Hood, 2010; Skjærseth and Wetttestad, 2009). As a

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<sup>11</sup> Directive 2003/87/EC. EC 2003.

<sup>12</sup> Guidance to Directive 2003/87/EC (COM/2003/0830 final); Guidance for the 2008 to 2012 trading period (COM/2005/0703 final).

<sup>13</sup> 0.2 per cent of total European allowances were sold during Phase I (Schleich et al., 2009, cited in Venmans, 2012), while 3 per cent of total allowances were set aside for auctioning in Phase II (Hood, 2010).



result of the over-supply of allowances caused by over-allocation and restriction of banking to Phase II, Phase I experienced a zero price of allowances in 2007 (EC 2013).<sup>14</sup> Moreover, Phase II experienced an over-supply of allowances due to decreased demand for allowances caused by the economic downturn in late 2008 (Hood, 2010; Venmans, 2012). As a consequence, the price of allowances dropped to €7/tCO<sub>2</sub> at the end of 2012 (Venmans, 2012). Overall, over-supply of allowances occurred in both Phases I and II. Nevertheless, the main causes of over-supply of allowances differed: over-allocation driven by generous free allocations during Phase I; over-supply resulting from unexpected economic downturn in the EU during Phase II.

The EU ETS has been transformed from a decentralised to a centralised system from Phase III (Skjærseth and Wettestad, 2009). The European Commission adopted an amended Directive whereby all processes of ETS are to become centralised (Bailey and Maresh 2009; Pohlmann 2009).<sup>15</sup> Under the centralised system for Phase III, large structural reforms have been made in terms of cap setting and allocation methods (Skjærseth and Wettestad, 2010).

A single EU-wide cap is now applied to enhance consistency between EU member states. Auctioning has become the default method for allocation, and more than 40 per cent of allowances were auctioned in 2013. Specifically, full auctioning is undertaken in the power-producing sector in order to address concerns about windfall profits in this sector (Bailey and Maresh, 2009; Hood, 2010).<sup>16</sup> In 2013, industry sectors had to purchase at least 20 per cent of the allowances they needed, and the minimum auctioning rate will increase to 70 per cent by 2020 (EC, 2013; Hood, 2010; Skjærseth and Wettestad, 2010).

Meanwhile, 100 per cent free allocation is provided during the 2013-2020 period for energy-intensive and trade-intensive industries, so called 'carbon leakage'

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<sup>14</sup> The price of allowances fell to €0.08/tCO<sub>2</sub> at the end of 2007 (Venmans, 2012).

<sup>15</sup> Initial proposed amendment Directive 2008/101/EC, followed by final version adopted on 6 April 2009 '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'.

<sup>16</sup> In the power sector in Phase I, windfall profits were created by passing through the costs of emissions to consumers. The windfall profits can be addressed by means of auctioning (Venmans, 2012).

sectors which are deemed to be exposed to a significant risk of carbon leakage.<sup>17</sup> With regard to concerns about protecting vulnerable industries in the competitive global market, the provision of 100 per cent free allocation was deliberately included in the amended Directive<sup>18</sup> to prevent ‘carbon leakage’ (Skjærseth and Wettestad, 2010).

On the whole, the EU ETS has played a core role in accelerating the implementation of emissions trading worldwide (Ellerman et al., 2010). It is commonly accepted that the EU ETS is a role model for well-operated ETS (Convery et al., 2008; Ellerman and Buchner, 2007; Egenhofer, 2007) and has inspired the development of schemes in other parts of the world, such as New Zealand, South Korea and the USA (EC, 2013; Pohlmann, 2009).

#### *2.4.3. Korean emissions trading scheme*

##### *Economic circumstances in Korea*

Korea had achieved a rapid industrialisation in the past five decades under the proactive state-intervention in the development of economy (Westphal, 1990). In pursuit of industrialisation, the Korean government was committed to encourage exports and nurture infant industries under the ‘Five Year Plan of Economy Development’ (Westphal, 1990; OECD, 2012a; KOFIA, 2013). Adopting a strategy of export-led industrialisation since early 1960s, the Korean government implemented a number of measures to incentivise exports in a form of indirect or direct tax reductions, preferential interest rates,<sup>19</sup> and import licenses (Westphal et al., 1981; Westphal, 1990).

In addition to export-led industrialization, the Korean government fostered targeted industries resulting in development of heavy industry in the mid-to-late 1970s: steel and petrochemicals in the late 1960s and early 1970s; shipbuilding and electronic products in the mid-to-late 1970s; automobiles and computers in the

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<sup>17</sup> Carbon leakage is referred to as ‘the situation that may occur if, for reasons of costs related to climate policies, businesses transferred production to other countries which have laxer constraints on greenhouse gas emissions’ (EC, 2013, p.4).

<sup>18</sup> Directive 2009/29/EC.

<sup>19</sup> In the late of 1960s, the non-preferential interest rate on loans was between 25 and 30 per cent per year while the preferential interest rate on working capital loans to exporters was 6 per cent (Westphal, 1990).

1980s (Westphal, 1990; OECD, 2012a). Under the protection granted by government, they were able to expand their businesses given a number of direct and indirect supports including privileged access to import licenses, preferential interest rates, tax benefits, etc. (Westphal, 1990). Major industries, which were mostly heavy manufacturing industries, led a significant increase of exports during 1970 and 1980 (Westphal, 1990; Chang et al., 1998).

In short, owing to an effective 'government-driven and export-oriented industrialisation' strategy, the Korean economy had successfully caught up during the past 50 years and heavy industries in particular made an important contribution to expanding exports and economic growth (Westphal et al., 1981; Westphal, 1990; OECE, 2009a, p.125, OECD, 2012a; OECD, 2014).

Since the 1990s, Korean industrial policy put more emphasis on the deregulation of service sectors including finance and telecommunication and technology-led development (OECD, 2009a; OECD, 2014). An array of financial liberalisation processes were carried out corresponding to the 'Five-year Financial Liberalisation Plan' announced in 1993 under the Kim Young Sam government (from 1993 to 1998) (Chang et al., 1998). In addition, in line with the technology-focused industrial policy, the Korean government promoted high-technology industry sectors by means of a number of government R&D programmes (OECD, 2014).

Prior to global economic crisis in 2008, the economy growth rate had remained at around 5-8% (OECD, 2014). When the financial crisis arose in 2008, Korea had experienced economic regression with an economic growth rate at 2.8 per cent in 2008 and 0.7 per cent in 2009 respectively.<sup>20</sup> The global economic crisis in 2008 required a new role for government sustaining 'medium-and long-term' economic growth (OECD, 2009b, p.41). Following the financial crisis, the Korean government needed a new industrial policy to lead sustainable economic growth in the next 50 years (OECD, 2012a). Furthermore, along with the rapid economic development of developing countries including China India, Korea was expected to participate in global attempt to tackle environmental issue in order to address a

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<sup>20</sup> Economic Statics of System, Bank of Korea (<http://ecos.bok.or.kr>)

rising carbon levels (Jones and Yoo, 2012; Kang, 2012). Under these circumstances, the Korean government sought a new balanced-paradigm not only for the sustainable development of economy but also in response to an increasing global demand for addressing carbon emissions.

#### *Background to introduction of ETS in Korea*

In 2008, Korean President, Myung-bak Lee proclaimed 'Low Carbon, Green Growth' as a national vision to lead development over the next 50 years (PCGG, 2010a). The Green Growth Policy stemmed from an economic situation in 1990s where the Korean economy had experienced rapid population aging and falling potential growth (Jones and Yoo, 2012; OECD, 2012b; PCGG, 2010a). Korea's potential growth had been fallen from 7 per cent in 1995 to around 4 per cent in 2010 (OECD, 2012b). In the pursuit of sustainable growth of the Korean economy, the Korean government intended to move toward a low-carbon economy by renovating energy-intensive manufacturing industries in order to strengthen their competence.

Global climate change had an impact on the business sector to the extent to which a number of energy-intensive manufacturing companies were aware of the need to address the risk and uncertainty in association with climate change. In addition, the rise of China and India created rigorous competition in the area of heavy industries including steel, cement, refined oil, petrochemical which had led the significant growth of Korean economy in 1970s-1990s. Under the circumstances which the manufacturing sectors faced, a shift to energy-efficient business was a critical factor for energy-intensive manufacturing industry to survive.

Consistent with the Low Carbon, Green Growth policy, in 2009 the Korean government pledged to a voluntary mid-term target of a 30 per cent GHG reduction below the BAU level of 2020 by 2020 (PCGG, 2010a; PCGG, 2010b) in accordance with the maximum level of reduction target recommended by the Intergovernmental Panel on Climate Change for Non-Annex I countries (Jones and

Yoo 2012; PCGG 2010a).<sup>21</sup> The BAU emissions were calculated on the basis of the national statistics data: 776.1 MtCO<sub>2</sub>-eq in 2020 (Park and Hong, 2014).<sup>22</sup> Three different scenarios on reduction target were developed on the basis of the BAU emissions: 21 per cent reduction, 27 per cent reduction, and 30 per cent reduction from the BAU level of 2020 (Park et al., 2012). The 30 per cent reduction target was set at 543.1 MtCO<sub>2</sub>-eq by 2020 (Park and Hong, 2014) impliciting the government's strong will of transposition toward low carbon and energy-efficient system nationwide (Park et al., 2012). Adopting a reduction target is a strategy aimed not only at offering a strong signal to domestic industries and consumers, but also taking the initiative in global GHG mitigation opportunities (Kang, 2012). The reduction target has become an administrative means to encourage all sectors in Korea to develop renewable energy and new technologies to reduce carbon emissions (Park et al., 2012).

In order to achieve the target, the Korean government decided to adopt both regulatory and market-based policy measures (PCGG, 2010a). As a market-based measure, the Korean government proposed the introduction of ETS rather than carbon tax in the industry and energy sectors because it was seeking to achieve a reliable reduction (Park et al., 2012). The Korean government believed that ETS would be the most effective way of transforming energy/carbon-intensive industries into energy-efficient and low-carbon industries by leading them to invest in more energy-efficient technologies (PCGG, 2012b).

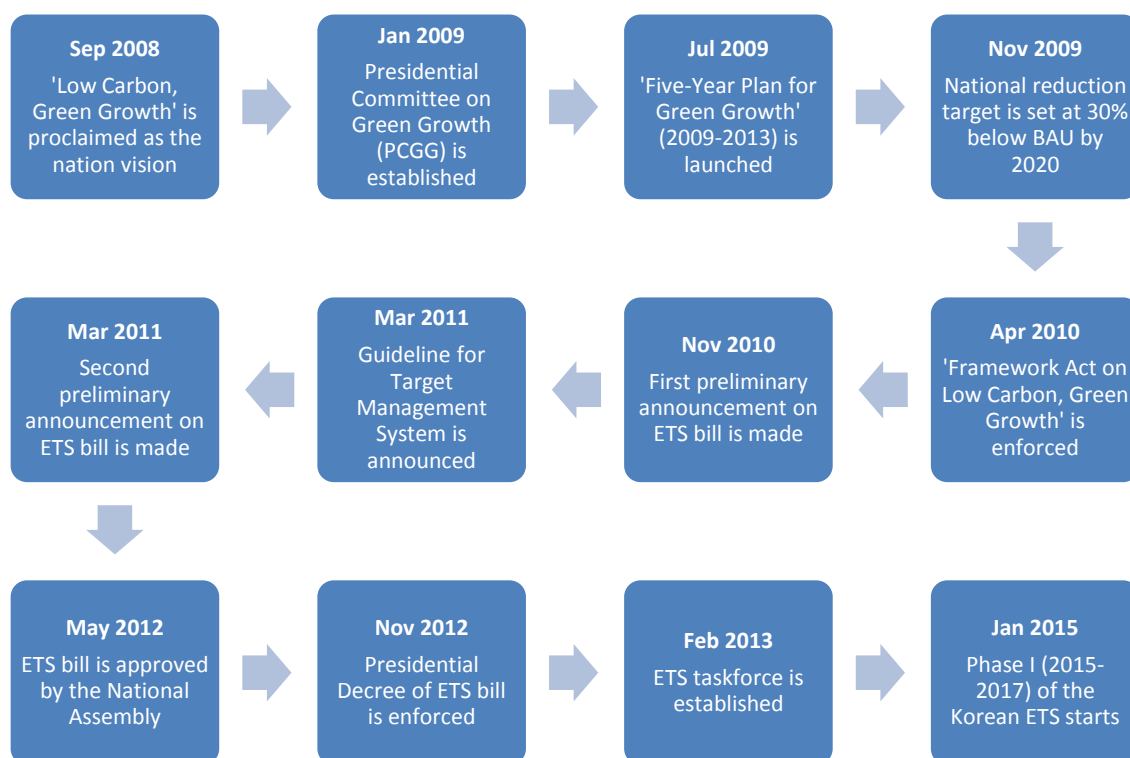
Figure 3 demonstrates the chronological order of development of the Korean green growth policy and the Korean ETS.

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<sup>21</sup> Non-Annex I countries involved in mostly developing countries had no obligation to set a legally binding numerical reduction target during 2008-2012 under the Kyoto Protocol on the UN Framework Convention on Climate Change (Jones and Yoo 2012; Kang 2012).

<sup>22</sup> The BAU of 2020 was initially estimated at 813 MtCO<sub>2</sub>-eq in the reduction scenario announced in 2009. In 2014, the Ministry of Environment amended the estimation of the BAU level of 2020 set at 776.1 MtCO<sub>2</sub>-eq before setting reduction target of each entity. Nevertheless, Korean government has not changed the target of a 30 per cent GHG reduction below the BAU level of 2020 by 2020 since it is the National commitment toward international society in accordance with global efforts to tackle GHG emissions.

**Figure 3: Development of Korean green growth policy and ETS**



(Source: PCGG, 2010a, 2012a; Bloomberg New Energy Finance, 2013)

Prior to setting out the ETS, the Korean government introduced a command-and-control measure, referred to as the 'Target Management System' (TMS), which has been implemented since 2012. Under the TMS, more than 470 companies producing over 25,000 tons of GHG emissions per year set a target for emissions, and companies were required to meet their reduction targets (Chatterton, 2013). In essence, TMS was regarded as a transitional measure for moving to ETS. The Korean government intended to transform the policy measure on GHG emissions from a command-and-control system (TMS) to a market-based system (ETS) because it considered ETS superior to TMS in terms of cost-effectiveness (PCGG, 2010a, 2010b). A recent study shows that achievement of the reduction target through ETS would reduce costs by 40 per cent compared with direct regulation (Lee, 2009, cited in OECD, 2012b). In addition, data from the SO<sub>2</sub> trading programme operated in the US in the 1990s suggest that a cap-and trade approach is less costly than a command-and-control regulatory approach (Schmalensee and Stavins, 2013). In effect, the Korean government put forward a

transformation from TMS to ETS as a core measure to achieve the national reduction target.

Unlike other schemes, such as the EU ETS, the TMS played a significant role as a transitional instrument in leading the successful initiation of ETS. The TMS initiated the collection of data on verified GHG emissions which business entities generated before the Korean ETS started. It was important to establish a reliable data register in order to justify the allocation of allowances based on verified rather than estimated data when ETS was implemented. Unlike the EU ETS Phase I, as a result of the TMS, the Korean ETS commenced with more reliable data based on verified historical emissions.

#### *Establishment of ETS in Korea*

Initially, ETS was not welcomed by industry. Industry sectors presented their concerns about increased cost burdens if ETS were introduced. Since most large companies were expected to be affected by the ETS, companies in heavy-industry sectors such as power, steel, cement, petrochemicals and electronics (which as discussed earlier were key contributors to the country's most recent economic development) confronted an additional burden incurring a significant increase of costs due to the introduction of ETS. This would be of key importance to them as they would not only be expected to face higher economic burdens compared to other industries, but also this would also disadvantage them compared to their rising competitors from China and India (countries which have yet to apply a related standard) With a strong sense of objection to the introduction of ETS, industry sectors argued that ETS would weaken the international competitiveness of domestic industries, given that competitors in neighbouring countries such as China did not face similar burdens (Park et al., 2012). Moreover, they contended that the manufacturing sector in Korea was already sufficiently energy-efficient so it was not necessary to reduce carbon emissions by adopting ETS (Kang, 2012). The Korean government held several meetings and feedback sessions with various stakeholders in order to take into consideration a wide range of interests. Meanwhile, in the National Assembly, a special committee on climate change and green growth was set up to review the bill. As a consequence of several consultations at the levels of both the Korean government and the National

Assembly, the Korean ETS bill was finally approved by the National Assembly with unanimous bipartisan support on 11 May 2012. Since the Korean ETS bill contained only the basic structure and general rules for ETS, several controversial issues, including allocation criteria, the proportion of auctioning, early-action criteria, offsetting criteria and governance, remained to be determined and elaborated in a subordinate Presidential Decree. After a series of consultations with a wide range of stakeholders (PCGG, 2012a), the subordinate Presidential Decree of the Korean ETS bill was finalised in November 2012, and the Korean ETS commenced on 1 January 2015.

### *Main features of the Korean ETS*

According to the Bill and the subordinate Presidential Decree,<sup>23</sup> the Korean ETS covers companies emitting over 125,000 tonnes and facilities emitting over 25,000 tonnes of carbon equivalents per year. More than 500 companies are required to comply with the scheme, including most heavy-industry sectors such as power, steel, cement, petrochemicals and electronics. The sectors covered by the Korean ETS are estimated to represent about 60 per cent of the country's total emissions.

The Korean ETS has been designed in conformance with features of schemes operated in other countries; in particular, the EU model has been a key reference point for the Korean ETS (PCGG, 2012b). Based on the Bill and the subordinate Presidential Decree, the main features of the Korean ETS are shown as follows.

**Scope and Coverage:** In principle, the trading phase lasts for five years. As a pilot phase, Phases I (2015-2017) and II (2018-2020) each last for three years. ETS participants are divided into two categories: voluntary and mandatory. Entities or installations emitting over a certain threshold (see above) are categorised as 'mandatory participants'. The Korean ETS covers all six Kyoto Protocol GHG emissions.<sup>24</sup>

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<sup>23</sup> Act on Allocation and Trading of Greenhouse Gas Emission Permits (Bill no. 11690) and subordinate Presidential Decree (Presidential Decree no. 24429).

<sup>24</sup> Carbon dioxide (CO<sub>2</sub>), Methane (CH<sub>4</sub>), Nitrous oxide (N<sub>2</sub>O), Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), Sulphur hexafluoride (SF<sub>6</sub>) (UN, 1998).



**Allocation:** Allocations can be on the basis of either grandfathering or benchmarking. The initial phase inevitably depends on grandfathering due to a lack of data to apply benchmarking. A 100 per cent free allocation in Phase I (2015-2017), 97 per cent in Phase II (2018-2020) and, after Phase III (2021-2025), less than 90 per cent is to be assigned, where the exact amount of allowances in each compliance year, sector and industry are specified in the national allocation plan. In order to ease the cost burden on companies in the early stage of implementation and to prevent carbon leakage, 100 per cent free allocation is available to energy-intensive and trade-exposed industries on the basis of: (1) production cost increases over 5 per cent and trade intensity increases over 10 per cent; (2) production cost increases over 30 per cent; or (3) trade intensity increases over 30 per cent. The criteria for carbon leakage lists have been formulated with reference to the criteria of the EU ETS. The Korean government undertook a wide range of simulations and analyses, in which the criteria of the EU ETS were applied to the Korean ETS at sector, industry and entity levels. Correspondingly, a decision was made that the EU ETS criteria would be applicable on the whole to the Korean ETS without serious loss of competitiveness to Korean industries.<sup>25</sup>

**Adjustment of permits:** If the national allocation plan is altered during a trading phase, the authority may take measures to adjust emissions permits by additional allocations or adjustment of permits for each compliance period. In the case of new implementations of facilities, mergers and acquisitions, changes in product mix, or unexpected changes to business plans, at the request of the compliance entity, the authority may allocate additional allowances to it. In addition, if facilities are entirely shut down, the authority may take measures to cancel permits allocated to those facilities.

**Flexibility measures:** Offsetting is allowed for at most 10 per cent of total allowances that participants are required to surrender to the competent authority. Only domestic offsetting credits can be used in Phases I and II. From Phase III

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<sup>25</sup> The rationale regarding the Korean government's judgement is described on the basis of the author's work experience in the Presidential Committee on Green Growth (PCGG) in 2012.

onward, international credits can be used for up to 50 per cent of the total offset limit. With this provision, the Korean government intends to lead reduction targets effectively by encouraging entities to invest in green technologies, rather than purchasing credits from outside companies for compliance. In terms of details of offsetting projects, a subordinate directive details specific types of offsetting projects, as well as criteria and procedures for approving and certifying external projects for offsetting.<sup>26</sup> Unlimited banking is allowed *de facto* because allowances can be banked to the next compliance year within the same phase or the first compliance year of the next phase. On the other hand, because of concern about the over-supply of allowances, limited borrowing is allowed, up to 10 per cent of total allowances to be surrendered to the authority.

**International links:** Under the general terms of the ETS bill and the Presidential Decree, the Korean ETS may link to other carbon markets, such as the EU ETS. However, more details will need to be provided in the form of a subordinate directive for future links with other systems. The enactment of links with other carbon markets is at the government's discretion.

**Market stabilisation measures:** The authority may take measures to stabilise the carbon market in case of a severely fluctuating market in terms of soaring prices, mounting demand or collapsing prices. These measures include: 1) additional allocations up to 25 per cent of reserved permits; 2) imposing minimum or maximum limits on allowance holdings; 3) restrictions on banking, borrowing and offsetting; and 4) setting ceiling or floor prices for allowances. These criteria have been formulated on the basis of analysis of the trend in carbon prices in the EU ETS. In case of an abnormal dysfunction of the market, the Korean government may set up tangible measures to intervene in the market with very specific criteria. .

**Third-party market participation:** During Phases I and II, trading market participants are limited to compliance entities and accredited public financial

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<sup>26</sup> The Ministry of Environment enacted the subordinate directive of offsetting as of 4 September 2014.

institutions<sup>27</sup> in order to ensure market stability during the pilot periods. Foreign investors will be allowed to participate in trading permits in the Korean ETS market from Phase III (2021-2015) onward.

### *Competitiveness issues*

International competitiveness issues stem from concerns about the extent to which ETS causes loss of competitiveness, leading to a 'carbon leakage' issue. In general, in order to ensure a high level of legitimacy and acceptance when establishing ETS, governments take measures to support current production processes (Hood, 2010; Skjærseth and Wettstad, 2009). Similarly, the Korean ETS entails a number of measures to address competitiveness issues.

Korean industry sectors have consistently insisted that ETS will bring about significant and substantial economic burdens, resulting in a severe loss of competitiveness of domestic industry.<sup>28</sup> In addition, Lee (2010, cited in Jones and Yoo, 2012) argues that the adverse effects of ETS on Korean industry will include a significant decline in the turnover of the iron and steel industries. The Korean government could not disregard the voice of industry because industry sectors were regarded as core players in the move to a more green economy. They were regarded as the major stakeholders of the green growth policy: in particular, the success of ETS rested on the degree of compliance of corporate stakeholders. Furthermore, the manufacturing industry sectors have been an important part of economic growth to date where heavy manufacturing products such as automobile and steel are accounted as Korea's top export products.<sup>29</sup> Due to the great importance of the manufacturing industry in the Korean economy, the Korean government was obliged to take into consideration the interests of the manufacturing industry in the introduction of ETS in Korea, and particularly their concerns over international competitiveness. In response, the Korean ETS has

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<sup>27</sup> Korea Development Bank, Industrial Bank of Korea, Export-Import Bank of Korea, Korea Finance Corporation.

<sup>28</sup> Institutions representing Korean industry include the Federation of Korean Industries (FKI), Korea Chamber of Commerce and Industry Associations (KCCI), Korea International Trade Association (KITA). A variety of industry associations have released statements opposing the introduction of ETS several times.

<sup>29</sup> Korea's top ten export products are semi-conductor, products from petroleum, automobile, ship, displays, mobile utilities, parts of automobile thereof, synthetic resin, steel, and plastic products in 2014 (<http://stat.kita.net>).

been designed to reflect the concerns and interests of domestic industries facing a potential loss of competitiveness due to the introduction of ETS. Measures need to be taken to alleviate the impact on some seriously-affected industries in order to curb the complaints of industry sectors (Jones and Yoo, 2012). Several provisions were included in the Korean ETS bill and the Presidential Decree; for example, 100 per cent free allowances have been provided for energy-intensive and trade-intensive industries (the so-called 'carbon-leakage lists'), and financial support, including loans, subsidies and tax benefits, is available for the installation of GHG reduction facilities and investment in green R&D. The Korean government intended to use free allowances as an administrative means for the purpose of offsetting a burden on the industry; the amount of free allowances could become an element to determine a company's costs arising from emissions. It indicates that a critical concern for manufacturing companies or large carbon emitters may lie in how extent a company's reduction target would be determined and how many allowances would be allocated thereby.

In summary, the Korean ETS was launched on 1 January 2015 in order to achieve the national target reduction in GHG emissions in the most cost-effective way. For Korea, the adoption of ETS is regarded as a noteworthy breakthrough in terms not only of being the first country in Asia to pass a nationwide bill on ETS, but also of initiating a new policy tool for proactive participation in global climate change issues (PCGG, 2012b).

Distinctive features of ETS have been derived from a review of general features of ETS and the main attributes of the EU and Korean ETS, as shown in Table 2. All features of ETS are associated with accounting issues. In other words, not only the general characteristics of ETS but also variations in each scheme may variously influence the development of accounting standards for ETS. Furthermore, the accounting issues arising from ETS have important implications from the perspective of conceptual framework since assets and liabilities in relation to emissions rights and obligations under ETS have only recently emerged. Due to inconsistency with the existing rules under the conceptual framework of financial reporting, recognition and valuation of the assets and liabilities under ETS may give rise to significant conflicts in the development of accounting guidance. In

addition, from a business entity's perspective, the accounting issues linked to the features of ETS may entail significant implications for how the financial statements are influenced depending on accounting treatment for emissions rights and related liabilities.

**Table 2: Summary of features of ETS**

<b>General design features of ETS</b>	<b>EU ETS</b>	<b>Korean ETS</b>	<b>Accounting implications</b>
General framework <ul style="list-style-type: none"> <li>- Mandatory or voluntary</li> <li>- Cap-and-trade versus baseline-and-credit</li> </ul>	Mandatory cap-and-trade	Mandatory cap-and-trade	Under cap-and-trade, ensuring optimum tradability of emissions rights
Time frame <ul style="list-style-type: none"> <li>- Commitment period</li> <li>- Compliance year</li> </ul>	<ul style="list-style-type: none"> <li>▫ Phase III: 2013-2020</li> <li>▫ 12-month compliance year (1/1-31/12)</li> </ul>	<ul style="list-style-type: none"> <li>▫ Phase I: 2015-2017</li> <li>▫ 12-month compliance year(1/1-31/12)</li> </ul>	Inconsistency between business year and compliance year
Cap/Reduction target <ul style="list-style-type: none"> <li>- Absolute cap</li> <li>- Relative cap</li> </ul>	21% below 2005 verified levels by 2020	30% reduction below BAU level of 2020 by 2020	Estimation of quantity of emissions rights that should be held in the end
Allocation of allowances <ul style="list-style-type: none"> <li>- Auctioning or free allocation</li> <li>- Grandfathering or benchmarking</li> </ul>	<ul style="list-style-type: none"> <li>▫ Greater use of auctioning in Phase III leading to 100% auctioning in 2027</li> <li>▫ Benchmarking is the default method</li> </ul>	<ul style="list-style-type: none"> <li>▫ 100% free allocation in Phase I</li> <li>▫ Grandfathering in most sectors (benchmarking in some sectors)</li> </ul>	Recognition of emissions rights and related liabilities in financial statements
Flexibility for compliance <ul style="list-style-type: none"> <li>- Offsetting, banking and borrowing</li> </ul>	<ul style="list-style-type: none"> <li>▫ Restrictions on use of credits of Kyoto mechanisms</li> <li>▫ Unlimited banking/borrowing</li> </ul>	<ul style="list-style-type: none"> <li>▫ Limited use of offsetting credits</li> <li>▫ Unlimited banking</li> <li>▫ Limited borrowing</li> </ul>	Recognition of emissions rights in the case of offsetting, banking or borrowing
Competitiveness of 'at-risk' industries <ul style="list-style-type: none"> <li>- Carbon leakage lists</li> <li>- Free allocation</li> </ul>	<ul style="list-style-type: none"> <li>▫ Criteria of carbon leakage lists</li> <li>▫ 100% free allocation to industries included in carbon leakage lists</li> </ul>	<ul style="list-style-type: none"> <li>▫ Criteria of carbon leakage lists same as for EU ETS</li> <li>▫ 100% free allocation to sectors included in carbon leakage lists</li> </ul>	Same accounting issues as allocation of allowances
Market oversight and rules <ul style="list-style-type: none"> <li>- Reporting and verification</li> <li>- Penalties</li> </ul>	<ul style="list-style-type: none"> <li>▫ Annual reporting by 31 March of following compliance year</li> <li>▫ €100/tCO<sub>2</sub>eq for non-compliance</li> </ul>	<ul style="list-style-type: none"> <li>▫ Annual reporting by 31 March of following compliance year</li> <li>▫ Maximum of KRW 100,000/tCO<sub>2</sub>eq for non-compliance</li> </ul>	<ul style="list-style-type: none"> <li>▫ Recognition and de-recognition of asset and liability</li> <li>▫ Accounting treatment of penalties</li> </ul>

Of all the features shown in Table 2, the allocation of allowances gives rise to the most essential but critical accounting issues, relating to recognition and measurement. Owing to the unique and complex attributes of emissions rights, accounting experts have struggled to accommodate them within the existing accounting framework. Accordingly, this study sets out to explore how accounting standard setters cope with the problematic issues of recognition and measurement associated with the allocation of allowances.

## **2.5. Introduction of the Korea Accounting Standards Board<sup>30</sup>**

This research is concerned with accounting issues addressed in the standard-setting process of the Korea Accounting Standards Board (KASB). Accordingly, it is necessary to understand the standard-setting process in Korea and the organisation of the Korean accounting standard setter as an overall background to this study.

In Korea, the Financial Services Commission has a duty to set and amend accounting standards on the basis of the Act on External Audit of Stock Companies, the fundamental law governing accounting for companies. Since 2000, under Article 13 of the Act on External Audit of Stock Companies, the Financial Services Commission has delegated this duty to KASB. In this respect, the Korea Accounting Institute (KAI) was established as an independent private organisation on 1 September 1999, with the mission to set accounting standards that ensure consistency and objectivity for external audits of corporations.

Since July 2000, KAI has had the duty of setting and interpreting accounting standards, as well as providing a technical inquiry service in accordance with the Act on External Audit of Stock Companies. KAI is engaged in accounting standard-setting activities and conducts research on accounting and audit issues. It carries out all relevant work in setting up accounting standards.

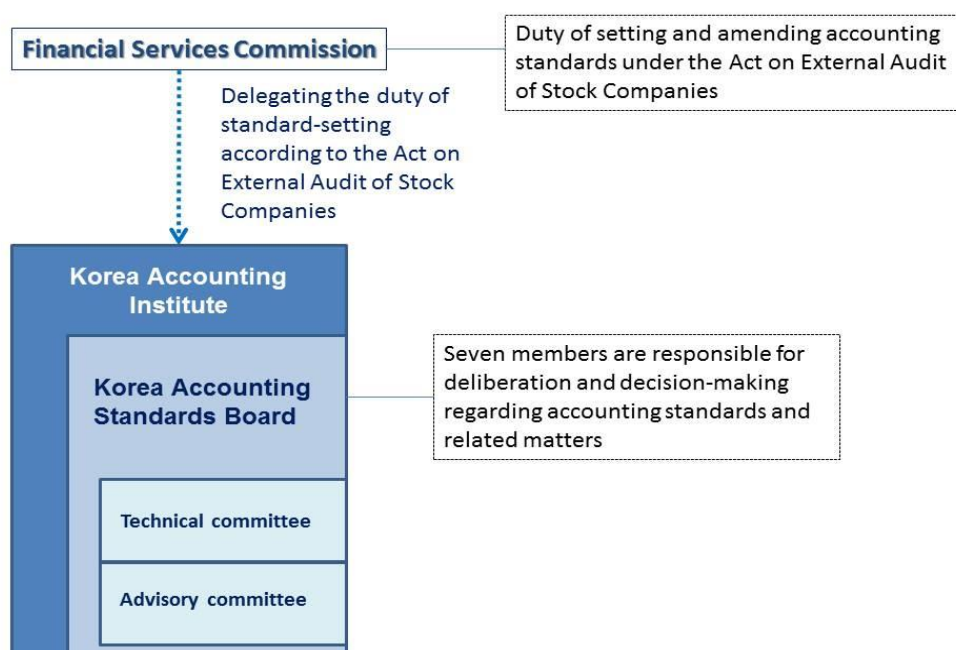
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<sup>30</sup> This section refers mainly to KAI and KASB (2008), preface to *Statements of Korea Accounting Standards* (2011).

In addition, KASB was established under KAI for the purpose of deliberation and decision making regarding accounting standards and related matters. From an organisational perspective, as shown in Figure 4, KASB is embedded in KAI.

**Figure 4: Organisational Structure of KASB**

(KAI and KASB, 2008)



According to the 'Conceptual Framework of Financial Accounting' under Korean GAAP, the objective of financial reporting is described as providing useful information to enable investors and lenders to make economic decisions as follows:

Usefulness for potential investors and lenders lies in assessment of future cash flows such as amount, inflow timing, or uncertainty. The information should be provided in order to assess the valuation of an entity based on the assessment of the expected dividends or risks of investments (para.20). [...] Financial reporting should provide the information to assess credit risks or the capability of repayment of debts in a timely manner (para.24). [...] The business performance measured by accounting earnings may be useful to assess the stewardship or accountability of management (para.30).

The information users are defined in general (KASB, 2003, para.12-para.16): they are comprised of investors, lenders, and other information users. Investors are defined as those who invest in equity securities or debt securities of a company. Lenders are defined as who lend money or provide credit to a company; in some cases, suppliers, customers, or employees may constitute lenders. Investors and debtors have a direct interest in the substance of a company. Other information users including managers, financial analysts, information intermediaries, the tax authority, supervisory regulatory organisations, or the general public may not have a direct interest in substance of a company, except for managers.

In short, KASB articulates the objective of financial reporting in a very similar way to that of the conceptual framework issued by IASB (including the most recent reiteration currently in an exposure draft form), as providing information users (mainly investors and lenders) with useful information in order to make appropriate decisions on investment. The usefulness of information is determined by a variety of financial information to assess future net-cash flows of an entity. In this respect, financial reporting should deliver information on the entity's financial status, business performance, information regarding cash flows and equity status.

The mission of KASB is independently to set, revise and interpret accounting standards to enhance the quality of Korean accounting standards and to suit Korean economic circumstances. Technically, KASB is a type of committee that deliberates and makes decisions in relation to accounting standards and related issues, while KAI is responsible for setting accounting standards conducting a variety of technical and practical works including documentation, consultation, and research. Since ultimate responsibility for setting and amending accounting standards lies with the Financial Services Commission, accounting standards set or amended by KASB are finalised by endorsement of the Financial Services Commission. KASB comprises member organisations as a form of board that makes decisions on accounting issues.<sup>31</sup> KASB members include representative

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<sup>31</sup> Member organisations consist of the Korean Institute of Certified Public Accountants, Korea Chamber of Commerce & Industry, Federation of Korean Industry, Korea Federation of Small and Medium Business, Korea Listed Company Association, Korea Federation of Banks, Korea Securities Dealers Association, Asset Management Association of Korea, Korea Life Insurance Association, Korea Non-Life Insurance Association,



organisations in the area of accounting and finance in Korea, such as the association bodies of certified public accountants, industry, banks, insurance companies, supervisory organizations and Korean-stock exchange. These member organisations constitute the main stakeholders for KASB. Practically, member organisations are regarded as stakeholders participating in the accounting standard-setting process mainly by providing comment letters.

In 2007 Korean government announced it was adopting IFRS and this meant that all listed companies in Korea should mandatorily apply IFRS in their preparation of their financial statements from 1<sup>st</sup> of January 2011 onwards (KASB, 2013). This was in pursuit of high-quality accounting standards on a par with internationally accepted levels and improvement of accounting transparency of Korean entities (KASB, 2013; Yang et al., 2010). The adoption of IFRS brought a big change in all accounting systems in Korea, including accounting laws and regulations and practices because the preceding Korean accounting GAAP had been 'rule-based standards' (KASB, 2013).

In accordance with the 'Roadmap toward IFRS adoption in Korea' which is a basic work-plan for adoption of IFRS, the 'IFRS Adoption Task Force' undertook a series of activities to prepare adoption of IFRS (KASB, 2013). In terms of the way of adoption of IFRS, instead of 'adaptation' which modifies IFRS to some extent by reflecting particular circumstances in a certain country, KASB undertook 'adoption' which fully adopts IFRS as a whole without any adaption or modification (Yang et al., 2010). Under the copyright agreement between the KASB and the IFRS Foundation, the full adoption of IFRS was carried out by directly translating the entire set of IFRSs consisting of 38 IFRSs and 27 IFRICs into Korean (Yang et al., 2010; KASB, 2013). The translated version of IFRS was referred to as 'K-IFRS' meaning the Korean version of IFRS.

The related laws and regulations were amended in accordance with adoption of IFRS in order to implement K-IFRS (KASB, 2013). The Act on External Audit of Stock Companies was amended to govern all listed-companies subject to

mandatory application of IFRS. Some range of amendments was committed to the Act on Financial Investment Services and Capital Markets and Corporation Tax Law.

Before the adoption of IFRS, all Korean companies, regardless of whether they were listed or not, ought to apply the Korean GAAP which was developed by KASB. K-IFRS was mandatorily applied to all listed companies and financial institutions whereas the adoption of IFRS was not compulsory for non-listed companies (KASB 2013). Accordingly, the accounting standards for non-listed companies were needed and KASB decided to set up accounting standards applying to non-listed companies. Based on the preceding Korean GAAP, a set of accounting standards were developed for to non-listed companies, referred to as 'Accounting Standards for Non-Public Entities' replacing the preceding Korea GAAP.<sup>32</sup> The objective of 'Accounting Standards for Non-Public Entities' describes their application to 'amongst companies governed by the Act on External Audit of Stock Companies, the companies which do not apply K-IFRSs.' (para.30, KASB, 2011a). As a consequence of the adoption of IFRS, the Korean accounting systems include Korean IFRS issued by IASB (K-IFRS) for listed-companies, accounting standards for non-public entities (Korean GAAP) and accounting standards for special purpose entities such as Corporate Restructuring Vehicle. Accordingly, the KASB's commitment for setting up or interpreting accounting standards lies in Korean GAAP for non-public entities or special purpose entities.

With regard to the conceptual framework, KASB is in charge of the development of the conceptual framework for financial accounting in Korea (KASB, 2011a). Since K-IFRS and Korean GAAP for non-listed companies are the effective Korean accounting standards, KASB provides two types of the conceptual framework for financial reporting. The conceptual framework under Korean GAAP, referred to as the 'Conceptual Framework of Financial Accounting' was developed by the Accounting Standards Deliberation Committee, a former body of KASB, in 2003. When the 'Accounting Standards for Non-Public Entities' was issued in 2009, the

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<sup>32</sup> In this study, 'Korean GAAP' means "Accounting Standards for Non-Public Entities.'

‘Conceptual Framework of Financial Accounting’ was handed over as it is as basic guidance for financial reporting under Korean GAAP for non-listed companies (KASB, 2011a). It delivers a wide range of guidance for preparation and presentation of financial statements including definition of information users, the general objective of financial reporting, qualitative characteristics of accounting information, assumptions of financial reporting, elements of financial statements, and criteria of recognising basic elements of financial statements such as assets, liabilities, incomes and expenses, etc.

On the other hand, corresponding to the adoption of IFRS, KASB released the ‘Conceptual Framework for Financial Reporting under K-IFRSs’ in 2011 (KASB, 2011a). This conceptual framework was developed in accordance with the ‘Conceptual Framework for Financial Reporting’ in 2010 provided by IASB (KASB, 2011b). This framework clearly states the correspondence between the ‘Conceptual Framework for Financial Reporting under K-IFRSs’ and the ‘Conceptual Framework for Financial Reporting’ provided by IASB. The Conceptual Framework for Financial Reporting under K-IFRSs is not a component of K-IFRSs. The preface of Conceptual Framework for Financial Reporting under K-IFRSs articulates ‘this framework shall not be construed to apply any provision under K-IFRSs’. In other words, in the event of inconsistency between K-IFRS and the Conceptual Framework for Financial Reporting under K-IFRSs, K-IFRS takes priority over the conceptual framework. Accordingly, under the two-tier accounting standards system – K-IFRS and Korean GAAP for non-listed companies – there is no relationship between the Conceptual Framework for Financial Reporting under K-IFRSs (or the ‘Conceptual Framework for Financial Reporting’ provided by IASB) and the ‘Conceptual Framework of Financial Accounting’ under Korean GAAP.

In general, there are similar features in standard setting between one accounting standard setting body and another. The standard-setting process comprises multiple stages: agenda decision; development of discussion paper at project level; development of exposure draft; issue of final outcome (standard); and implementation of standard. For example, according to IASB (2013), the IFRS process of standard setting consists of four stages: agenda consultation, research programme, standards programme and implementation. At the research

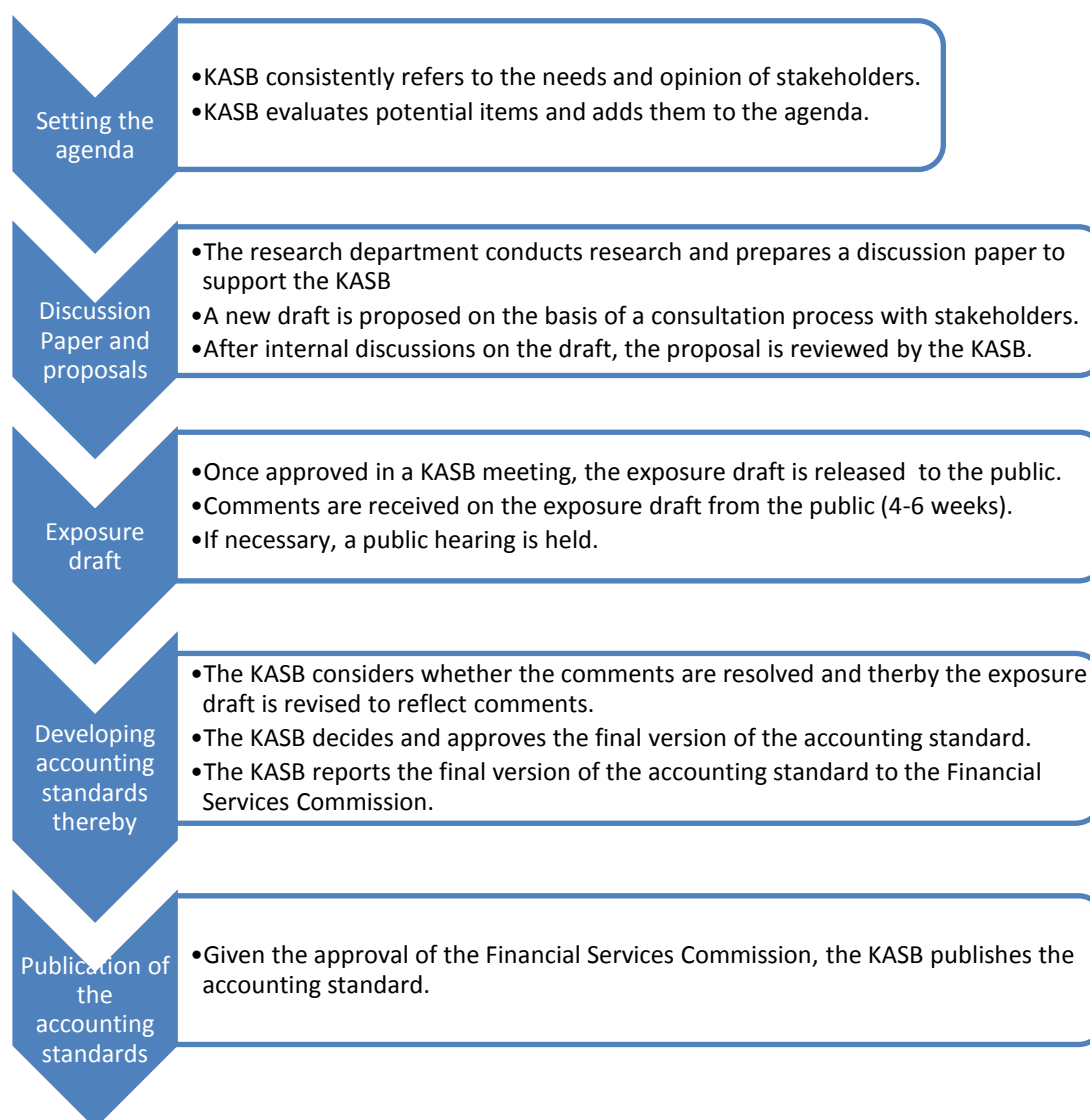
programme stage, a 'discussion paper' is developed and published as a result of conducting a project. Following consultation on the discussion paper, a proposal is issued. Moving to the 'standards programme' stage, an 'exposure draft' is developed and published, followed by consultation on the exposure draft. Having addressed various issues arising from the exposure draft, a standard is developed, and IASB then finalises the standard. Finally, the IFRS is issued.

KASB carries out a similar process in developing or amending accounting standards. In terms of K-IFRS, KASB closely monitors IFRS due process because K-IFRS entirely corresponds to IFRS. At the stage of a discussion paper and exposure draft, KASB conducts consultation on the paper or draft with Korean stakeholders. Once a new IFRS or IFRIC is released, KASB carries out consultations, deliberates and makes decision on adoption of IFRS or IFRIC as K-IFRS (Yang et al., 2010). The K-IFRS is consequently endorsed by the Financial Services Commission.

On the other hand, in the amendment or development of Korean GAAP, KASB conducts several steps as shown in Figure 5: agenda setting; development of a proposal; development of exposure draft; development of standard; and implementation of standard.

**Figure 5: Development procedure for Korean accounting standards for non-listed entities**

(KASB, 2011a)



During the standard-setting procedure, KASB must undertake a consultation process, as shown in Figure 5. The consultation process is compulsory in accordance with the Directive for Generally Accepted Korean Accounting Standards. Accordingly, KASB must carry out due process by communicating in various ways with its stakeholders. Distinct opportunities are offered to stakeholders to convey their interests and views on particular issues.

For example, the KAI Forum is held as a public workshop that meets as and when a consultation process in the form of a workshop is necessary to discuss a certain accounting issue with the public and stakeholders. In addition, when an exposure draft is released, the KAI Forum meets in lieu of public hearings on the exposure draft. While the KAI Forum is open to the public, the technical committee is more likely to be a consultative group, including accounting expertise, specialists in certain issues and major preparers. The technical committee provides more professional and technical advice on certain accounting issues to KAI and KASB. In addition, when an exposure draft is published, a consultation process is followed, targeting its stakeholders through public hearings and comment letters on the exposure draft.

## **2.6. Summary**

This chapter has described the overall background to this study. First, ETS is one type of carbon pricing instrument for achieving a reduction target for emissions on the basis of a market mechanism. The introduction of ETS has significant economic consequences affecting business entities. In addition, ETS is based on a market mechanism by which a price is put on carbon emissions and participants are able to trade emissions rights freely in the market. This has engendered a new discipline referred to as 'carbon accounting', which has been used extensively in various spheres and from a variety of perspectives in relation to quantifying carbon emissions. Amongst various areas of carbon accounting, financial carbon accounting is concerned mainly with the development of specific accounting rules on emissions rights and related liabilities under ETS. Accordingly, this study is underpinned by financial carbon accounting.

ETS is considered to be one of the most cost-effective measures and has been widely implemented in practice. For example, the EU ETS, launched in 2005, is now in Phase III. With extensive reference to the EU ETS, the Korean ETS started in 2015. It is important to understand the main features of these schemes in order to identify relevant accounting issues under ETS. Based on the background of ETS and the scope derived for this research, the next chapter will review previous research on accounting issues and accounting standard setting in relation to ETS in order to identify research gaps.

### **3. Literature Review**

#### **3.1. Introduction**

This chapter consists of a review of two stands of literature: accounting issues for ETS and the accounting standard-setting process. The main purpose of this chapter is to identify research gaps in order to formulate research questions (see Chapter 4). In addition, this chapter aims to build a framework to support analysis and interpretation of the findings of this study (see Chapters 5, 6 and 7) as well as to develop the discussion (see Chapter 8). Section 3.2 reviews accounting issues in the ETS literature. Section 3.3 reviews the literature on the accounting standard-setting process and is extended to thematic features of the accounting standard-setting process. Finally, based on the literature review, key research gaps are identified in relation to this study, leading to the formulation of themes connected with the research questions.

#### **3.2. Understanding of financial accounting issues for ETS**

This section presents a review of previous studies with regard to accounting issues for ETS, specifically accounting issues for emissions allowances and related liabilities. Amongst various areas of carbon accounting, the literature focusing on financial carbon accounting is reviewed, consistent with the research topic. This section presents a number of previous studies that demonstrate the main accounting issues under ETS, leading to identification of the main research gaps in relation to this study.

##### *3.2.1. Accounting issues for ETS*

##### *Accounting for emissions rights and related obligations under ETS*

From the perspective of financial carbon accounting, the main concern lies in accounting for emissions rights and related liabilities under ETS within the existing accounting framework. Bebbington and Larrinaga-Gonzalez (2008) explain the accounting issues arising from ETS in light of financial accounting: recognition and evaluation of assets in relation to emissions rights and recognition of liabilities incurred by obligation surrendering allowances. For example, the companies participating in the EU-ETS need to recognise EUAs allocated for free and to evaluate them in the financial statement (Bebbington and Larrinaga-Gonzalez,

2008). In this respect, it is necessary to explore whether emissions rights meet the definition of an asset.

IASB (2015) explains the consensus on recognition of emissions rights and as an asset and a liability under IFRIC 3 in accordance with the conceptual framework.

According to the Conceptual Framework for Financial Reporting in 2010 provided by the IASB, an asset is defined as: 'a resource controlled by the entity as a result of past events and from which future economic benefits are expected to flow to the entity' (para. 4.4(a)). Emissions rights are devised as an administrative grant to operate ETSs in the form of a market-based mechanism, to the extent to which emissions rights are freely tradable in the market like other commodities (Mace, 2005). Once emissions rights are allocated by an authority (mainly government), entities are allowed to control emissions rights where they are transferred or held like other assets. Transferability and disposability at an entity's discretion endow emissions with rights in the nature of property rights. Accordingly, emissions rights can be viewed as an economic resource which an entity can control as a result of past events, which is the allocation of emissions rights committed by government, consequently fitting in the definition of asset (IFRIC 3, cited in IASB, 2015).

Furthermore, emissions rights are mainly used to settle the entity's obligation to surrender a certain number of allowances to the authority at the end of the compliance period. When an entity receives or purchases emissions rights, emissions rights are perceived as economic benefits which can be used to offset the obligation arising from emitting activities in the future (IFRIC 3, cited in IASB, 2015). Emissions rights are attributable to future economic benefits in terms of discharging obligations under ETS. In short, thanks to the nature of either controllability or offsetting obligation, emissions rights either granted by the government or purchased are able to meet the requirement of recognition as an asset.

Meanwhile, a liability accrues in accordance with the definition in the Conceptual Framework for Financial Reporting in 2010 provided by IASB: 'a present obligation of the entity arising from past events, the settlement of which is expected to result



in an outflow from the entity of resources embodying economic benefits' (para. 4.4(b)).

Once emissions occur, the obligation arises to deliver a determinable number of allowances to the government. Otherwise, the entity is expected to incur a significant penalty due to negligence under the scheme. As an entity produces carbon emissions, the obligation to surrender allowances occurs, which constitutes a liability in term of financial accounting (IFRIC 3, cited in IASB, 2015).

In summary, for the purpose of financial reporting, emissions rights are eligible to be recognised as an asset while the obligation of submissions of allowances and should be reconised as a liability and a cost of carbon emissions recognised as an expense in the financial statement.

With regard to accounting for ETS, various efforts have been made by the accountancy profession to account for emissions rights (Larrinaga, 2014). A particularly prominent feature of the literature on accounting issues under ETS is efforts to incorporate emissions rights into the existing accounting framework in light of financial reporting (e.g. Bebbington and Larrinaga-Gonzalez, 2008; Cook, 2009; MacKenzie, 2009). Most previous studies have attempted to identify feasible solutions for the recognition, categorisation and measurement of emissions rights within the conventional paradigm. Unsurprisingly, these studies have dealt mainly with free allowances, since most schemes generally entail free allocation at the initial stage. MacKenzie (2009) analyses how the accounting profession has had difficulty in making emissions rights commensurable with financial reporting, specifically with regard to the classification and measurement of emissions rights within the existing accounting framework. Highlighting the urgency of accounting issues associated with carbon trading, Bebbington and Larrinaga-Gonzalez (2008) discuss different ways of accounting for and reporting on carbon emissions, including financial accounting for emissions rights, and accounting for and reporting on the risks and uncertainty arising from the global climate change regime. Cook (2009) analyses ways of accounting for emissions allowances and liabilities corresponding with IFRIC 3 and its effects on financial statements.

Meanwhile, Ratnatungan and Jones (2012) stress the inevitability of the development of a new accounting framework. Under the premise that the current financial reporting framework does not provide an appropriate solution, they suggest a new approach to calculate the value of CO<sub>2</sub> sources, and cite capability, referred to as 'environmental capability', as displaying the value of assets and capability in a 'capability balance sheet'. This approach, based on the idea of the valuation of capability, can be regarded as a radical attempt at carbon accounting. Nevertheless, owing to the novelty of the idea, it is taking a long time for the valuation of environmental capability to be applied in practice.

On the whole, previous studies highlight the necessity and importance of accounting and reporting on business activities and the financial consequences arising from ETS. While one strand of literature adopts an incremental approach, seeking a solution within the conventional financial accounting framework, another strand proposes a radical approach, arguing the inability of the existing framework to accommodate accounting issues under ETS.

From the previous literature, the key questions with regard to the accounting treatment of emissions rights and obligations within the conventional accounting paradigm are summarised in terms of how to recognise and measure allowances and related liabilities using existing accounting techniques and practices. The recognition, measurement and presentation of emissions rights and relevant liabilities have been widely addressed by accounting experts, including accounting standard setters (e.g. IASB), academics (e.g. Cook, 2009; Black, 2013) and practitioners (e.g. KPMG, 2008).

The main accounting issues derived from previous studies are as follows (adapted from Cook, 2009, p.460; Haupt and Ismer, 2013, p.76).

- Emissions allowances:
  - Are emissions allowances assets, whether purchased or freely allocated by government?
  - If so, what type of assets are they – financial instruments or intangible assets?

- How should the value of allowances be initially and subsequently measured?  
In particular, in terms of free allocation, should income or a liability be recognised on the day allowances are received?
- Liabilities arising from emissions:
  - When should a liability be recognised?
  - How should the liability be initially and subsequently measured?

In essence, the starting point for accounting issues under ETS lies in the determination of the main characteristics of emissions rights. In terms of classification, accounting standard setters tend to make an assessment of the similarity of a particular accounting event or item by referring to existing accounting standards (Young and Williams, 2010). However, the assessment of emissions rights is necessarily ambiguous because of various aspects of emissions rights. Accounting treatments of emissions rights and related liabilities may differ depending on underlying assumptions in terms of the characteristics of emissions rights. If emissions rights are seen as intangible assets, they are treated under either a cost model or a fair value model.<sup>33</sup> If they are assumed to be financial instruments, they are measured at fair value. Furthermore, since emissions rights and liabilities are reversed at the point of surrender, depending on accounting treatment, recognition and de-recognition of asset and liability may increase the volatility of accounting numbers.

The diverse nature of emissions rights and the unique administrative process under ETS indicate that financial statements are materially affected by the way in which emissions rights are treated. Some studies (e.g. Cook, 2009; Ratnatunga and Jones, 2012; Haupt and Ismer, 2013) suggest the recognition and measurement of emissions rights and related liabilities by applying different accounting models, such as a cost model or a fair value model. Depending on the

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<sup>33</sup> The fair value model cost models are types of measurement model, each based on one measurement such as fair value or historical costs. Fair value is referred to as '*a current value* of the asset, liability, or equity instrument at the measurement date; and '*the market value* for assets, liabilities and equity instruments traded in an active market ... Under the fair value model, assets and liabilities are measured at fair value at each reporting date and changes in fair value are reported in each period as income or expense ... [while] under the cost model, assets and liabilities are measured at each reporting date by reference to their historical costs. Historical cost is the entry price for the asset or liability ... In contrast to the fair value model, under the cost model, changes in the fair values of the assets and liabilities are not adjusted (Cairns, 2013, pp.131-3).

different accounting models, the potential impact on financial statements is analysed (e.g. Gledhill et al., 2007b; Cook, 2009; Fornaro et al., 2009; Haupt and Ismer, 2013).

Overall, previous research highlights the problematic accounting issues that emerge under ETS and the main causes of these problems. These studies acknowledge the most problematic issues originating from the multi-faceted nature of emissions rights, in that they may be viewed as an intangible asset, financial instrument or inventory (commodity). Some studies point out the inappropriateness of existing accounting models to address the technical complexities of emissions rights. In addition, the previous literature suggests that the most significant accounting issues are associated with the recognition of free allowances. These studies have contributed to the initiation of standard setting for emissions rights, consistently raising issues about the necessity for a standard. In response to a surge of calls for an accounting standard for emissions rights, IASB took action in publishing an interpretation, IFRIC 3. This is described below.

#### *Ongoing debates on accounting issues with regard to ETS post-IFRIC 3*

Prior to the commencement of the EU ETS in 2005, in December 2004 the IASB issued an interpretation to account for emissions allowances, IFRIC Interpretation 3, *Emission Rights* (IFRIC 3).

According to IFRIC 3, emissions rights should be recognised as an intangible asset. In line with IAS 38 *Intangible Assets*, emissions rights either purchased or granted are measured initially at fair value (Starbatty, 2010). Allowances that are allocated at less than fair value, e.g. free allowances, are measured at fair value (Starbatty, 2010). Since such allowances are viewed as 'government grants' (Black, 2013), IAS 38 *Intangible assets* and IAS 20 *Accounting for Government Grants and Disclosure of Government Assistance* are applied in relation to free allowances. Accordingly, on the day of receiving free allowances (referred to as 'Day 1'), a company must recognise allowances as intangible assets at fair value; at the same time, a government grant is recognised as deferred income in a corresponding entry.

Meanwhile, as an entity produces emissions, an obligation occurs whereby the entity must surrender emissions rights to the government as a corresponding quantity of emissions is produced. This liability is recognised as a provision under IAS 37 *Provisions, Contingent Liabilities and Contingent Assets*. Accordingly, the liability is measured as a best estimate of expenditure to resolve the obligation by referring to the present market value of emissions rights (Starbatty, 2010). For the subsequent measurement of emissions rights, either a cost model or a revaluation model may be selectively applied.<sup>34</sup> (See Appendix 1 for more detail on accounting treatment under IFRIC 3)

IFRIC 3 gave rise to many criticisms from EU ETS participants (especially large emitters) and the accountancy profession. These criticisms stemmed mainly from accounting mismatches (Bebbington and Larrinaga-Gonzalez, 2008; Cook, 2009; MacKenzie, 2009; Warwick and Ng, 2012; Black, 2013). For example, if emissions rights are initially measured at fair value with no subsequent revaluation, and recorded at historical cost, a mismatch arises because the liability is revalued at fair value as emissions are generated (a so-called 'measurement mismatch'). Meanwhile, if emissions rights are subsequently revalued at fair value, another type of mismatch occurs in presentation. A change in the fair value of an intangible asset is recognised in other comprehensive income (OCI) under equity (on the balance sheet), while a change in the value of a liability is reflected in the income statement (Black, 2013; EFRAG, 2012; Lovell et al., 2010; Lovell et al., 2013). Moreover, a mismatch in relation to 'timing of recognition' may occur (Warwick and Ng, 2012, p.57), where an asset is recognised on Day 1 when allowances are received, while a liability is recognised as emissions are produced throughout the year (Ernst and Young, 2009, cited in Warwick and Ng, 2012).

The European Financial Reporting Advisory Group (EFRAG), the most prominent stakeholder of IASB, articulated concerns in relation to mismatches in IFRIC 3,

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<sup>34</sup> According to IAS 38, an intangible asset should be subsequently measured either (Starbatty, 2010):

- (a) At its cost less any accumulated amortization and any accumulated impairment losses; or
- (b) At a revalued amount, being its fair value at the date of the revaluation less any subsequent accumulated amortization and any subsequent accumulated impairment losses.

\*\* Impairment: an asset is impaired when its carrying amount exceeds its recoverable amount (McKeith and Collins, 2013, p.189).

contending that these mismatches might cause artificial volatility in financial statements by not reflecting the 'economic reality' of organisations from the perspective of 'true and fair value' (Bebbington and Larrinaga-Gonzalez, 2008; Black, 2013; Königsgruber, 2009). Since IFRIC 3 set up accounting treatment on a fair value basis, Ratnatunga and Jones (2012) argue that the fair value model may intensify volatility in the income statement, which may bring about major internal concern. Meanwhile, some stakeholders were opposed to a gross approach in IFRIC 3, insisting on applying net presentation. They argued that no substantial effect on profit or loss should arise because all emissions rights held are obviously expected to be used for settlement of obligations at the end of the compliance year (IASB, 2010a).

In response to several criticisms from stakeholders, IASB withdrew IFRIC 3 in June 2005 (Bebbington and Larrinaga-Gonzalez, 2008; Lovell et al., 2010; Warwick and Ng, 2012). As Bradbury (2007) documents, this was the only IFRIC that was withdrawn and not developed in to a standard during the period 2002-2007 (i.e. his examined period), showcasing the exceptional character of this topic. Nevertheless, it is meaningful to analyse accounting treatment under IFRIC 3 as a starting point for identifying accounting issues under ETS and establishing subsequent solutions (Lovell and MacKenzie, 2011). Furthermore, the revocation of IFRIC 3 resulted in 'openly re-assessing' (PwC 2007, p.46) various accounting models, involving all stakeholders and experts in this issue.

After IFRIC 3 became invalid, some academic writers explained the main reasons for the failure to promulgate an accounting standard for emissions rights. Lovell et al. (2010, 2013), Lovell and MacKenzie (2011) and Lovell (2014) consistently point out that the main reason for failure of standardisation in carbon accounting was friction or conflict between the complex nature of emissions allowances and a type of 'inertia' whereby the solution was sought from within the existing accounting framework. Lovell et al. (2010) posit that emissions allowances are difficult to incorporate into existing accounting standards due to their various potential uses, as a commodity or a financial instrument. In line with assertions of previous studies, Lovell et al. (2013) restate that the core problematic accounting issues under ETS arise from the complexities associated with emissions rights. Lovell

(2014) refers to the 'incommensurability' of emissions rights as an enigma in the standardisation of carbon accounting.

In contrast to various uses of emissions rights with various practical purposes, IASB did not explicitly admit the treatment of emissions rights in different ways. As a rule, 'emission rights should be treated in a single and uniform way' from a conventional accounting perspective (Lovell, 2014, p.272). In short, a degree of discrepancy between reality and institutionalisation resulted in delays in standardisation.

In addition to the complex attributes of emissions rights and their multiple uses, Ascui and Lovell (2011) ascribe the failure of standardisation to 'a lack of full understanding of ETS', resulting in difficulty in establishing appropriate accounting treatment of emissions rights within the traditional accounting framework.

Carbon has been difficult to classify, in part because accountants and accounting standard setters lack a full appreciation of the 'production process' of carbon credits: the science, politics and market-enabling rules involved in turning GHG emissions and emissions reductions, into tradable commodities (Lovell et al., 2010). 'Accountants typically seek to understand carbon by comparison with existing, more familiar, accounting entities such as taxes, leases, subsidies and commodities, without appreciating the complexities caused by changes in climate policy or regulation' (Ascui and Lovell, 2011, pp.988-9).

In effect, the existing accounting framework has not accommodated accounting issues under ETS due to the unique and innovative attributes of emissions rights. These 'unresolved tensions' (Lovell et al., 2013, p.745) have led practitioners to seek their own 'legitimate' solutions in response to the absence of an international accounting standard on emissions rights (Lovell, 2014). Lovell (2014) probes empirically how practitioners cope with the ambiguity of accounting issues on emissions rights. By employing several methods, including in-depth interviews with staff from accounting standard setters (such as IASB and FASB), a survey of European companies and an analysis of documents, Lovell (2014) demonstrates how accountants seek 'authority' of accounting treatment for emissions rights and related liabilities in the absence of an international accounting standard. Notably,

she stresses the emergence of local accounting standards: some national accounting standard setters in the EU have independently developed regional accounting standards for ETS. For example, the French accounting standard setter proposed accounting standards for emissions rights in 2012, and this proposal has been mandatorily applied to most listed companies in France. Overall, Lovell's (2014) findings are a significant contribution to an empirical body of research on carbon accounting issues, confirming ongoing friction and difficulties in developing accounting standards for emissions rights and related liabilities. In particular, Lovell (2014) views the 'emergence of diverse local accounting standards for emission rights' as a 'strength' not a 'problem' because the standard is developed according to various needs. Overall, Lovell's (2014) findings have important implications for this study regarding the necessity of further empirical research on how other local standards for emissions rights are developed to accommodate a variety of stakeholders' interests.

Considering the diverse nature of emissions rights, some studies (e.g. Lovell et al., 2011; Ratnatunga and Jones, 2012) call for a 'radical approach' in seeking an appropriate solution to emissions rights. A totally new approach is necessary from outside the existing accounting framework when developing accounting standards for emissions rights due to the inappropriateness of the existing framework. Nevertheless, Ratnatunga and Jones (2012) cite Quinn's (1978) assessment of 'the real world of accounting practice', in which accounting standard setters have a tendency to take an incremental approach so that accounting standards evolve as marginal changes from existing practices. Lovell and MacKenzie (2011) support this propensity of standard setters, arguing that the accountancy profession has responded to climate change issues through the 'application of existing accounting approaches and frameworks' rather than the development of new ones to address this issue. Under the premise of the 'constitutive role' of accounting referred to by Hopwood and Miller (1994), Lovell and MacKenzie's findings (2011) confirm that accounting decisions are made largely on the basis of 'path dependency' or 'inertia' in the case of carbon accountancy. Admittedly, this implies the existence of inevitable limitations to taking a radical approach.



Despite several attempts to develop accounting standards for ETS, the process of setting up an international accounting standard for emissions allowances is still ongoing and looks unlikely to move forward (Lovell, 2014).

### *3.2.2. Practice in the absence of accounting standard for emissions rights*

Since the withdrawal of IFRIC 3, no international accounting standard for emissions rights has yet been offered. This absence has resulted in a high degree of liberty in accounting for emissions allowances in practice (Cook, 2009; Fornaro et al., 2009; MacKenzie, 2009; Lovell et al., 2010). In particular, companies under the mandatory adoption of IFRS have treated emissions rights and liabilities corresponding to their own accounting policy, which has been developed according to IAS 8 (Lovell et al., 2010, 2013).<sup>35</sup> In turn, there has been concern that a variety of accounting treatments of emissions rights may reduce the comparability of accounting information and, as a result, decrease its quality (Lovell et al., 2010).

Several noteworthy studies have examined how companies account for emissions allowances and liabilities under the EU ETS (e.g. Gledhill et al., 2007a, 2007b; Lovell et al., 2010; Warwick and Ng, 2012; Black, 2013). The earliest was undertaken by PwC and IETA (Gledhill et al., 2007a, 2007b) which jointly surveyed accounting approaches to EURs and CERs. Table 3 demonstrates the approaches applied in practice, drawing on the survey conducted by PwC and IETA in 2007.

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<sup>35</sup> IAS 8, **Para 10**. In the absence of an IFRS that specifically applies to a transaction, other event or condition, management shall use its judgment in developing and applying an accounting policy that results in information that is: (a) Relevant to the economic decision-making needs of users; and (b) relevant, in that the financial statements: a. Represent faithfully the financial position, financial performance and cash flows of the entity; b. reflect the economic substance of transactions, other events and conditions, and not merely the legal form; c. are neutral, ie free from bias; d. are prudent; and e. are complete in all material respects. **Para 11**. In making the judgment described in paragraph 10, management shall refer to, and consider the applicability of, the following sources in descending order: (a) The requirements in IFRSs dealing with similar and related issues; and (b) The definitions, recognition criteria and measurement concepts for assets, liabilities, income and expense in the Framework. **Para 12**. In making the judgment described in paragraph 10, management may also consider the most recent pronouncements of other standard-setting bodies that use a similar conceptual framework to develop accounting standards, other accounting literature and accepted industry practices, to the extent that these do not conflict with the sources in paragraph 11.

**Table 3: Approaches applied in practice**

	Approach 1	Approach 2	Approach 3
Initial recognition – Allocated allowances	At market value on date of issue; corresponding entry to government grant (deferred income)		At cost; allowances for grants are at nil value
Initial recognition – Purchased allowances	At cost		
Subsequent measurement of allowances	Subsequently measured at cost or market value, subject to review for impairment <sup>36</sup>		Subsequently measured at cost, subject to review for impairment
Subsequent measurement of government grant	Government grant is amortised on a systematic and rational basis over compliance period		Not applicable
Recognition of liability	Recognise liability as emissions are produced		Recognise liability as emissions are produced. The liability is not presented until emissions produced exceed allowances held by participant
Measurement of liability	At market value of allowances which would be required corresponding to actual emissions	At carrying value of allowances on hand to cover actual emissions; plus market value of allowances to cover excessive emissions	At carrying value of allowances on hand to cover actual emissions (nil or cost); plus market value of allowances to cover excessive emissions

(Source: Gledhill et al., 2007a, 2007b; Starbatty, 2010)

Approach 1 is the approach taken by IFRIC 3, in which fair value measurement and gross presentation are applied. Approach 2 is akin to Approach 1 except for the measurement of a liability using the carrying amount of emissions rights held. Approach 3 is the simplest accounting model, in which free allowances are recognised at nil value and the asset/liability is displayed net.

The survey presents a wide variety of accounting treatments for emissions rights in practice, given the lack of authoritative accounting guidance. Some entities

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<sup>36</sup> According to IAS 36 *Impairment of Assets*, an entity must carry out the procedures of impairment when its assets are impaired; namely, assets are carried at no more than their recoverable amount. IFRIC 3 states that the existence or requirement of the scheme may cause a reduction in cash flows expected to be generated by certain assets. This reduction is an indication that those assets may be impaired and requires those assets to be tested for impairment in accordance with IAS 36 (Starbatty, 2010, p.42).

have continued to adopt IFRIC 3, while others have chosen an alternative approach due to the mismatch problems under IFRIC 3. Notably, the survey provides evidence that most companies rely on the accounting treatment of Approach 3. This indicates that a simpler and easier accounting treatment may be preferred in practice.

Lovell et al. (2010) subsequently conducted a survey of accounting treatments used by companies participating in the EU ETS. In investigating accounting treatments of emissions allowances and related liabilities, the survey results largely corresponded with those found by PwC and IETA in 2007. Lovell et al. (2010) illustrate extensive diversity of accounting treatment of emissions allowances in the EU ETS because companies have a wide degree of liberty to choose a preferred accounting approach. In particular, a high level of non-disclosure was observed due to the lack of a mandatory disclosure requirement. From this survey, Lovell et al. (2013) specify the materiality of accounting information associated with emissions allowances from a 'usefulness' perspective in financial reporting.

Meanwhile, Warwick and Ng (2012) selected 47 companies representing large emitters in the EU ETS and conducted content analysis using 2007 financial year annual reports of these companies in order to explore their accounting treatment of emissions allowances. They found no uniform pattern. In addition, their findings confirm the results of previous surveys on accounting treatments of emissions rights, demonstrating that large emitters in the EU ETS have adopted a variety of accounting approaches to dealing with emissions allowances.

Similarly, Black (2013) undertook content analysis, examining the 2011 financial statements of 62 companies selected from large emitters in Phase II of the EU ETS. Black's (2013) study is different from previous surveys because it uses 2011 annual reports, which belong to Phase II when auctioning had been undertaken only at a low level of total allowances under NAP II. Black's findings also largely correspond with the previous survey. Notably, Black (2013) illustrates a pattern of accounting treatment that combines a specific measurement base with a particular presentation approach: (a) a nil value approach to free allowances with a net liability approach; and (b) a market value approach to free allowances with a gross

liability approach. The analysis highlights important implications on how to create alternative accounting models for emissions rights by combining a measurement base with a presentation approach.

The earlier surveys identify various aspects of accounting treatments of emissions rights and related liabilities. Starbatty (2010) asserts that there are various effects on financial statements depending on the accounting model used. In particular, depending on the measurement base, a big difference may arise in terms of the net effect on profit/loss and the net position of the asset/liability (see Appendix 2). Interestingly, this implies that a degree of volatility in the accounting numbers may be reinforced under a particular accounting model.

In summary, in practice emissions rights have been treated as an asset. In terms of classification in the asset category, the majority of companies that disclose emissions allowances on their balance sheet have classified them as intangible assets. Nevertheless, the surveys present various categorisations into intangible assets, inventory or financial assets. This implies various uses of emissions rights in practice due to their diverse attributes. In terms of the initial valuation of free allowances, a significant proportion of companies initially measures free allowances at nil value on the balance sheet, which is inconsistent with IFRIC 3.

With regard to recognition of a liability, the accounting profession largely agrees that a liability should be recognised as emissions are produced (Black, 2013). However, there has been no consensus on how to value this liability. In terms of measuring the liability, while IFRIC 3 recommends measuring at fair value, most companies measure it at the carrying value of allowances. Since most companies have taken a net approach in practice, if free allowances are initially recognised at nil value, only a net amount of liability is shown on the balance sheet (Black, 2013). By and large, 'companies tend to deal with emission allowances departing from IFRIC 3' (Warwick and Ng, 2012, p.64).

In addition, there has been a noticeably high degree of non-disclosure regarding emissions allowances and related liabilities in every survey. In other words, the absence of accounting standards for ETS inevitably results not only in various accounting treatments of allowances but also in discretionary reporting (Lovell et

al., 2013). In pursuit of usefulness of accounting information, accounting professionals have urged that accounting standard setters quickly develop authoritative guidance.

Interestingly, Lovell et al. (2013) point out the potential 'knock-on' effects on accounting treatment by auctioning. From Phase III of the EU ETS, the default allocation method has shifted from free allocation to auctioning. Most companies have initially measured free allowances at nil value during Phases I and II, but Lovell et al. (2010, 2013) raise the issue of how to account for emissions rights and related liabilities to reflect the substantial costs which arise in association with auctioning.

More importantly, previous studies indicate the significance of practice in the development of accounting standards for emissions rights. Practice reflects how corporates deal with emissions rights in doing their business. Accounting standard setters are able to assess the various uses of emissions rights in practice, providing them with insights into elaborating accounting models for emissions rights. Furthermore, with mandatory adoption of IFRS, a variety of accounting treatments have been used by companies on the basis of IAS 8. If national accounting standard setters seek consistency with IFRS, practice should be taken into account in seeking an appropriate solution. In this context, Teixeira (2013) supports the importance of practice for evidence-informed standard setting that enables decision making on the basis of supported evidence or proof.

In essence, previous studies demonstrate that the easier and simpler accounting treatment, referred to as the 'net approach', has predominantly been used in practice. A particular accounting treatment that has been widely adopted over a long time may be likely to be 'routinised' or 'institutionalised' in the field (Georgiou and Jack, 2011, p.312), and companies may advocate an approach to which they are already accustomed. In this regard, it is necessary to explore how practice may affect the development of accounting standards for emissions rights. In particular, it is important to investigate which aspects of practice lead the accounting standard setter to make decisions on specific accounting models and rules for emissions rights in the accounting standard-setting process.

### 3.2.3. *Suggestions from accounting experts*

Since IFRIC 3 was withdrawn, several proposals regarding alternative approaches have been made by accounting practitioners (e.g. IASB/FASB joint project, 2008-2010; KPMG, 2008; ANC, 2012; EFRAG, 2012) and academics (e.g. Cook, 2009; Black, 2013; Giner, 2014).

There has been concern that liberty to account for emissions allowances in practice might eventually decrease the usefulness of accounting information. Several studies (e.g. Bebbington and Jones, 2011; Fornaro et al., 2009; Lovell et al., 2010, 2013; Lovell and MacKenzie, 2011) have stressed the importance of setting accounting standards for emissions rights in light of the quality of accounting information. For example, Lovell et al. (2010) points out the lack of consistency and comparability in accounting information that business entities have produced with the lack of an accounting standard for emissions rights. Research conducted by Solomon et al. (2011) illustrates that institutional investors are particularly interested in comparing their investee companies' emissions with those of their competitors. This indicates that institutional investors expect climate change reporting to provide more consistent and reliable information for incorporation into their decision making (Solomon et al., 2011).

In response, accounting standard-setting bodies have attempted to develop accounting standards for emissions rights. For instance, in 2008 IASB re-launched its Emission Trading Scheme Project as a joint project with the Financial Accounting Standards Board (FASB) in order to address unresolved accounting issues on emissions trading schemes (Black, 2013; Lovell et al., 2010; Lovell and MacKenzie, 2011). The project proceeded by discussing rigorously a number of critical accounting issues for ETS; nevertheless, little progress was made on the issue. After several meetings, the project was deferred. In 2012, IASB determined to resume accounting issues on ETS as a research project.

As a national accounting standard setter, the French accounting standards setter (ANC) proposes how to account for emissions allowances and corresponding liabilities. ANC acknowledges emissions rights as an asset. However, in terms of the type of asset, emissions rights do not belong to any existing asset category, as they are neither financial instruments nor intangible assets (ANC, 2012).

Alternatively, ANC proposes that emissions rights should be sub-classified in inventory, since they are consumed in the production process. This view is different from the perspective of IASB, academics and most surveys on practice, which have reached a general consensus that emissions rights should be classified as intangible assets. Noticeably, ANC adopts a new economic approach in which different accounting models are applied depending on the type of business activity. To some extent, ANC's proposal is essentially consistent with KPMG's (2008) suggestion of an 'activity-based model', in which the accounting treatment is differently applied to emissions rights depending on business activities (Lovell, 2014). ANC provides a different accounting treatment in accordance with different business models, depending whether a company purchases emissions rights under an obligation (GHG emitter) or trades the rights (trading company) in its ordinary business. ANC's proposal is evaluated as an 'innovative model' (ANC, 2012, p.48) because an accounting treatment linking emissions rights with an obligation as one account is incompatible with the IFRS framework (Giner, 2014).

In response to ANC's proposal, EFRAG released a comment paper in 2012. Overall, EFRAG agrees with the business model approach. However, supporting a fair value approach, EFRAG articulates opposition to netting off emissions rights and obligations, which is manifestly different from ANC's accounting treatment. It is notable that EFRAG's suggestions present an accounting treatment in accordance with each process under ETS, such as receiving free allowances, purchasing, emitting and surrendering permits during the period. EFRAG stresses the need for the development of a new accounting standard for ETS, since emissions rights and relevant liabilities have specific features that existing standards cannot accommodate. This assertion corresponds with the views of previous academic papers, such as Bebbington and Larrinaga-Gonzalez (2008) and Ascui and Lovell (2011), that more radical and fundamental changes should be pursued in developing an accounting standard for ETS. Considering that EFRAG is one of the most significant stakeholders of IASB, its suggestions may be extended to the development of an accounting standard for ETS from an IASB point of view.

In spite of all efforts by accounting standard setters to develop accounting standards for emissions rights, little progress has been made. Meanwhile, various suggestions have been offered by academic and practitioner organisations (e.g. KPMG, 2008; Ratnatunga and Jones, 2012; Haupt and Ismer, 2013).

For example, KPMG (2008) suggests a type of activity-based model, which follows different accounting principles depending on the type of organisational activities undertaken, such as by emitters, creators of green energy, traders (or aggregators), and investors or consultants. According to KPMG's suggestions, the accounting treatment for emissions rights should be 'commensurable' in terms of incorporating all types of business activities which might occur, with multiple intentions regarding uses of emissions rights. Thanks to its activity-based approach, KPMG's suggestions may be widely acceptable from a practical point of view.

From the academic domain, Haupt and Ismer (2013) propose an accounting approach for emissions allowances in light of a 'true and fair' view. They posit that previous suggestions, including IFRIC 3, have been inappropriate to accommodate all processes of ETS because the suggested accounting treatment for emissions is a kind of extended interpretation of the existing IFRS. From a 'true and fair' point of view based on a fair value model, emissions allowances should be measured at fair value, regardless of whether they are allocated for free or purchased on the market. Haupt and Ismer (2013) oppose a net approach in which free allowances are initially measured at nil value because this approach undermines the transparency and comprehensiveness of financial statements. With regard to the subsequent measurement of allowances, they suggest a distinct approach depending on the objective of holding the allowances, either for compliance or for trading. This approach is consistent with previous suggestions by EFRAG and ANC, which have put forward different accounting treatments subject to different business models or different objectives for holding allowances. In terms of the measurement of a liability, a 'cost of settlement approach' is suggested, whereby a liability is measured on the basis of 'the carrying value of the allowances' held for compliance. They argue that the carrying value of the allowances held by an entity should be the best estimate for the cost incurred by



business activity. By and large, Haupt and Ismer's (2013) suggestions may provide a solution as an applicable and acceptable accounting model, both from a practical and from a theoretical point of view. A 'true and fair value' perspective leads to an accounting treatment that is consistent overall with the existing accounting framework, e.g. IFRS. In addition, the business model approach may lead the accounting treatment to be extensively adopted in practice.

In order to address diversity in practice, accounting professionals have suggested various accounting models. The most contentious accounting issues under ETS can be derived from these suggestions: 1) how to incorporate the various attributes of emissions rights into the existing accounting framework; 2) how to account for emissions rights and related liabilities considering the unique link between emissions rights and liabilities under the scheme.

First of all, in order to address the diverse attributes of emissions rights, two strands of approach are suggested. On the one hand, some academic writers support a radical approach, stressing the inappropriateness of the existing accounting framework for incorporating multi-faceted emissions rights. On the other hand, as a more applicable approach constructed within existing accounting standards, some suggestions propose a so-called 'economic approach' or 'activity-based approach'. This means different accounting treatments depending on different activities involving emissions rights, such as trading on the market or consuming in the production process. These suggestions provide accounting standard setters with a critical insight into ways of coping with the complex accounting issues in relation to emissions rights.

Secondly, there are divided perspectives on the preferable accounting treatment for emissions rights and related liabilities: a net approach or a gross approach. A net approach is a model in which an asset is recognised at cost (in the case of a granted allocation, allowances are recognised at nil); a liability is recognised only when the level of emissions exceeds the number of emissions allowances held. Subsequently, a net amount of liability is shown on the balance sheet. On the other hand, a gross approach is a way of recognising an asset and a liability separately, where the asset is measured at fair value and the liability should be recognised as emissions are produced. Studies present various ways of

measuring the liability. Notably, applying the carrying value of allowances, referred to by Haupt and Ismer (2013) as the 'cost of settlement approach', may be a conceivable approach in terms of addressing the mismatch problems under IFRIC 3 and presenting a unique link between emissions rights and related liabilities. According to several surveys on accounting treatment in practice, a net approach is preferable from a practitioner point of view. By contrast, accounting experts, including academics (e.g. Haupt and Ismer, 2013), largely favour a gross approach in terms of providing more useful accounting information. From the previous literature, it is impossible to judge which approach may be more appropriate or desirable in dealing with the unresolved accounting issues in relation to emissions rights.

In the ongoing discussions of accounting models for emissions rights, accountancy researchers suggest directions in which research on accounting models should go. For example, although not exactly mentioning the 'radical approach', Ascui (2014) insists that any proposal on the accounting treatment of emissions rights and related liabilities should be formulated by retaining the original 'nuances' (p.21) of carbon markets rather than relying only on the 'pre-existing categorisation' in the existing accounting framework. Giner (2014) indicates that, regardless of the accounting model, a 'common approach' that allows a business entity 'more discretion' would be preferable in practice. This provides a useful hint toward a solution to the unresolved difficulties associated with the unique attributes of emissions rights.

Following this review of previous studies, further investigation is necessary to probe which aspects of emissions rights critically affect the development of an accounting standard for emissions rights, and how accounting standard setters address the complexity in relation to emissions rights, taking into consideration the various interests of stakeholders (*Research Question 1*).

#### *3.2.4. Summary and implications for research questions*

In reviewing the previous literature, this section has examined theoretical and practical perspectives that provide a deeper understanding of the accounting issues regarding emissions allowances. The core aspects of the strand of

literature in each section provide a framework to envisage research gaps in relation to this study.

Similarly to previous studies, this study is motivated by the absence of international accounting standards for emissions allowances. By reviewing previous studies on accounting issues relating to emissions allowances, a major research theme has been identified: in order to design an appropriate accounting model for emissions rights, how have accounting standard setters dealt with the complex accounting issues on emissions rights since IFRIC 3 was revoked? (*Research Question 1*) Specifically, what are the most heavily discussed, contentious or controversial accounting issues? What are the main factors taken into consideration by each accounting standard setter in developing accounting standards for ETS? And what will be the final outcome as a consequence of accommodating a variety of factors?

Despite all the suggestions from accounting experts, including academics and accounting standard setters, it is difficult to identify an appropriate solution to address all accounting issues in relation to emissions rights and related liabilities. Any suggestion cannot become absolute guidance on the determinants of the 'desirability' of an appropriate solution to emissions rights. A desirable accounting model should ensure the best decision usefulness from the user's point of view, as well as the greatest applicability from the preparer's point of view, concurrently producing the highest quality of accounting information in light of the accounting conceptual framework. All these determinants of a desirable accounting model could be achieved directly in the field. Therefore, the actual accounting standard-setting process for emissions rights needs to be explored in order to identify critical features that determine the desirability and appropriateness of accounting models for emissions rights.

From a practical point of view, this study focuses on accounting issues under ETS arising from the standard-setting process. In accordance with the aim of this study, several previous studies with regard to this process are reviewed in the next section.

### 3.3. Understanding the accounting standard-setting process

This section reviews the literature with regard to the political nature of the accounting standard-setting process. The literature review in this section provides a general background to the process. By reviewing the literature on accounting standard setting, distinctive themes may emerge from both an accounting standard setter's point of view and a stakeholder's point of view.

#### 3.3.1. *Political aspects of accounting standard setting*

Accounting standard setting is regarded not only as a highly technical process but also as a political process of choice (Sutton, 1984). On the one hand, the accounting standard-setting process embraces a high degree of professional knowledge and skills (Sutton, 1984). On the other hand, it is viewed as more as a political process in which various stakeholders are involved and provide inputs (Hodges and Mellett, 2002; Giner and Arce, 2012; Sutton, 1984). In the search for a desirable set of accounting rules corresponding with the introduction of a new policy (e.g. ETS), Demski's (1973) impossibility theorem implies the imperative necessity of an approach focusing on the political facets of the standard-setting process.<sup>37</sup> Booth and Cocks (1990, p.512) highlight the political aspects of standard setting in an 'institutional and social context', so issues of power and conflict surrounding an organisation (i.e. accounting standard setter) must be appreciated by means of research on accounting standard setting. In the context of the political process, the accounting standard setter is expected to play a role in resolving conflict between interest groups in order to reach a consensus.

Numerous studies have addressed the subject of the accounting standard-setting process. One considerable strand of literature concentrates on the political aspects of standard setting (e.g. Georgiou, 2002, 2004, 2005, 2010; Sutton, 1984; Fogarty et al., 1994; Watts and Zimmerman, 1978; Hodges and Mellett, 2002; Giner and Arce, 2012). This view originates from the premise that the accounting

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<sup>37</sup> On the basis of 'rational choice theory', Demski (1973) asserts that optimal accounting principles do not exist, stating: '[G]enerally speaking, we cannot rely on standards to provide a normative theory of accounting. No set of standards exists that always will rank alternatives in accordance with preferences and beliefs – no matter what these preferences and beliefs are' (p.721). This sheds light on the political aspects of accounting standard setting to achieve the second-best, whilst not guaranteeing the optimal solution.

standard setter essentially engages in political activities and is devoted to harmonising and adjusting various interests and stakeholder views in the standard-setting process.

For example, Fogarty et al. (1994), Sutton (1984) and Watts and Zimmermann (1978) focus on the 'political' aspects of standard setting where choices are made between the interests and views of different parties. Sutton (1984) views accounting as a type of regulation in which various interest parties, including managers, investors and auditors, seek to persuade a rule maker to set the rules to their advantage.

A number of previous studies have dealt with the political nature of accounting standard setting rather than technical or professional aspects of the process. The standard-setting process may be characterised as being largely political, wherein a wide range of stakeholder interests are inherently coordinated through to making a choice (Becker, 1983, cited in Giner and Arce, 2012). Consequently, accounting standards are regarded as an outcome of political compromise (Rahman et al., 1994, cited in Giner and Arce, 2012).

When developing accounting standards, the accounting standard setter undertakes 'due process', in which interest parties present their views and interests regarding a draft of the proposed accounting standards (Königsgruber, 2009; Parker, 2012). Deegan (2000) defines 'due process' as follows:

Due process can be defined as a process wherein the regulator involves those parties likely to be affected by the proposed regulation in the discussions leading to the regulation – it provides an opportunity to 'be heard' (Deegan, 2000, p.70).

Due process is a consultation process in association with the development of accounting standards. It usually proceeds homogeneously from one accounting standard setter to another (Georgiou, 2004). Due process arises at various stages of standard setting, for example the agenda stage, the draft stage of a discussion paper, the issuing of a discussion paper for comment, the drafting stage of an exposure paper, publication of an exposure draft for comment, and a draft of the accounting standard (Georgiou, 2004).

Due process is an essential element through which to determine the political nature of the accounting standard-setting process. Practically, due process proceeds in such a way that various stakeholders participate in the standard-setting process and convey their interests to an accounting standard setter.

During due process, from agenda setting to enactment review, various interests may appear at each stage. At each stage of due process, stakeholders are able to express their specific interests and opinions to the accounting standard setter using formal and informal methods. Receiving input from stakeholders is particularly important in enabling the accounting standard setter to assess stakeholders' potential responses to enactment of a proposal (Tandy and Wilburn, 1992). More importantly, the accounting standard setter is able preliminarily to coordinate or adjust interests or conflicts prior to issuing the final version of the accounting standard (Kwok and Sharp, 2005).

For example, IASB provides several ways for stakeholders to participate in the standard-setting process, including formal public consultations, such as public hearings, and inviting comments on discussion papers or exposure drafts, as well as other informal methods, such as informal meetings with board members and staff (Jorissen et al., 2012). Stakeholders are able to participate directly in the process, for example by communicating directly with project staff, becoming members of a working group; or writing formal comment letters in response to a discussion paper or exposure draft released by IASB (Jorissen et al., 2012).

In essence, due process is substantially and technically associated with the political characteristics of the accounting standard-setting process. It plays a role in conveying the interests of stakeholders to the accounting standard setter. By participating in the process, stakeholders may affect the formulation of accounting standards to their own benefit. The accounting standard setter has to take stakeholders' interests into account when developing accounting standards in order to ensure a high degree of acceptability of the outcome. In turn, accounting standards are promulgated as a result of compromise of various social and economic considerations (Parker, 2012).

### *3.3.2. Identification of stakeholders in the development of accounting standard for emissions rights*

Research concentrating on the political aspects of the standard-setting process needs to identify stakeholders who may have particular interests in the course of due process. A 'stakeholder' can be "any identifiable group or individual who can affect the achievement of an organisation's objectives, or is affected by the achievement of an organisation's objectives" (Freeman and Reed, 1983, p. 91, see also Freeman, 1984). This implies that all entities are likely to have many stakeholders, which will include, among others, employees, communities, society, the state, customers, competitors, suppliers, local governments, stock markets, industry bodies, the media or even non-human life and future generations (Gray et al., 1996). There seem to be two variants of stakeholder theory, a moral (normative) and a managerial version (Deegan and Unerman, 2006). The moral perspective of stakeholder theory argues that all stakeholders have the right to be treated fairly by an organisation, and that issues of stakeholder power are not directly relevant. That is, regardless of whether stakeholder management leads to improved financial performance, managers should manage the organisation for the benefit of all stakeholders. As Hasnas (1998) states, this variant:

Views the firm not as a mechanism for increasing the stockholders' financial returns, but as a vehicle for coordinating stakeholder interests, and sees management as having a fiduciary relationship not only to the stockholders, but to all stakeholders... This of course implies that there will be times when management is obliged to at least partially sacrifice the interests of stockholders to those of the other stakeholders (p. 23).

In contrast, the managerial variant of stakeholder theory is more 'organisation-centred'. As Gray et al. (1996) note, under this premise:

The stakeholders are identified by the organisation of concern, by reference to the extent to which the organisation believes the interplay with each group needs to be managed in order to further the interests of the organisation. (The interests of the organisation need not be restricted to conventional profit-seeking assumptions). The more important the stakeholder to the organisation, the more effort will be

exerted in managing the relationship. Information is a major element that can be employed by the organisation to manage (or manipulate) the stakeholder in order to gain their support and approval, or to distract their opposition and disapproval (p. 45, comments in brackets in original).

Indeed, empirical evidence (Neu et al., 1998) finds stakeholder theory to be employed in a strictly organisation-centred way. In this case, stakeholder analysis assists in primarily identifying, “which groups are stakeholders deserving or requiring management attention, and which are not” (Mitchell et al., 1997, p.855; see also Clarkson, 1995 and Nasi et al., 1997, for similar arguments), and in ranking or prioritising their interests (Gray, 2001)<sup>38</sup> in order to maximize the profit of an entity (Mitchell et al., 1997).

Preceding literature has employed a wide range of definitions of stakeholders, and have more often vaguely employed the above stakeholder dichotomy, without offering more specific typologies which could refine the approach and add to our understanding of its applicability. A notable exception appears to be Mitchell et al. (1997)’s study on stakeholder identification and salience, which could be particularly applicable in the context of accounting standard setters and their stakeholders.

Instead of simply describing who stakeholders are, Mitchell et al. (1997) define the core but comprehensive attributes of stakeholder identification. In order to identify who constitute stakeholders, they suggest three variables as attributes which stakeholders may possess: (1) the stakeholder’s power to influence the firm; (2) the legitimacy of the stakeholders’ relationship with the firm; (3) the urgency of the stakeholder’s claims on the firm. On the basis of Etzioni (1964)’s categorization of power, Mitchell et al. (1997) understand the power depending on the resources where it originates: coercive, utilitarian, or normative means in order to affect the relationship between the parties. With regard to legitimacy, by using Suchman’s

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<sup>38</sup> A number of studies (Freeman, 1994; Clarkson, 1995; Mahoney, 1997) suggest that some stakeholders are more powerful than others and, still, “shareholders have the dominant role in external information provision (Gray et al, 1996, p. 47)”



definition of legitimacy, they utilise legitimacy as an attribute of stakeholders possessing a desirable social good. Urgency is an attribute to understand why a stakeholder's claim is prioritised as the most critical and important issue. Mitchell et al. (1997) argue 'time sensitivity and criticality' (p.867) are the elements to determine the extent to which managers put immediate attention to stakeholder's claims.

Identification of stakeholders is essential to make a judgment on the degree of priority of claims from stakeholders, which is "salience" in Mitchell et al. (1997)'s terms. Mitchell et al. (1997) put an emphasis on the role of managers in stakeholder theory on the grounds that managers ultimately determine stakeholder salience on the basis of manager's perception of a stakeholder's attributes: power, legitimacy, and urgency.

Mitchell et al. (1997) posit that it is critically essential to understand that stakeholders' attributes are 'variables' which are socially constructed; stakeholders may or may not be perceived by managers depending on managers' perception of stakeholder salience. Managers' perception of stakeholder's attributes is indeed a critical determinant to identify "Who or What Really Counts" (Mitchell et al., 1997, p.864). Managers may then employ multiple typologies and identify stakeholders as dormant, discretionary, demanding, dominant, dangerous, dependent, definitive, and non-stakeholder. Stakeholder salience implies that the individuals or entities with no power, legitimacy, or urgency in relation to the firm may not appear as stakeholders as they would be perceived as having no salience.

Meanwhile, Mitchell et al. (1997) highlight the changeability of stakeholders in terms of salience, and thus the subsequent degree of attention paid, subject to the attributes which they may possess. The levels of salience vary from issue to issue and from time to time and thus prominent stakeholders are in relation to a particular issue.

Since this research deals with accounting standards setting process, accounting standard setters play a role as 'managers' and their perception of stakeholders is a critical determinant of stakeholder salience. From the accounting standard setters' perspective, stakeholders can be delineated in relation to the objective of

financial reporting in the conceptual framework. The Conceptual Framework for Financial Reporting in 2010 issued by IASB describes 'the objective of financial reporting...[as being] providing financial information about the reporting entity that is useful to existing and potential investors, lenders and other creditors in making decisions about providing resources to the entity' (OB 2). In that context,, it describes as limitation of general purpose financial reports the existence of individual primary users who may have different information needs (OB 6, OB 8). Interestingly, the Conceptual Framework previously published (1989) had identified wider user groups and *inter alia* made explicit reference to employees, governments and general public. By limiting therefore the number of stakeholders in the latest reiteration (which is maintained in the latest exposure draft published in 2015), IASB seems to apply in practice the concept of stakeholder salience – and in relation to a particular issue of a Conceptual Framework. Although the Conceptual Framework for Financial Reporting does not deliver specific terms for defining stakeholders of individual accounting standard setters – or in relation to specific standards being developed, the surrounding context of the objectives of financial reporting enables us to estimate the existence of a particular group of information users who may need additional information in relation to a certain accounting issue in which they may be of interest. In practice, certain stakeholders may emerge with a strong voice when they may have a big concern on a certain issue; some may not.

Stakeholders can then be specified depending on the degree of of power, legitimacy, or urgency they possess and always on the basis of the accounting standards setter's perception of these attributes.

For example, in relation to accounting standard setting for ETS, IASB perceived other national accounting standard setters and accounting firms (e.g. big four accounting firms) as main stakeholders. In the advent of the Phase I in the EU ETS in 2005, other national accounting standard setters and accounting firms were persistently invited to express their views on the development of the accounting standard for ETS in accordance with the commencement of EU ETS: as a consequence, IASB released IFRIC 3 in 2004. They were regarded as main stakeholders on the basis of IASB's perception on urgency.

On the basis of managers' perception on power, specific entities can be regarded as the main critical stakeholders because they may make distinctive voices on a particular issue. The conceptual framework provides general guidance to judge stakeholders, such as investors and financial information users which may be generally applicable. Nevertheless, not all of the stakeholders may make distinctive voices, and with particular reference to the development of the accounting standard for ETS. In this case,, large emitters participating in the ETS such as steel-makers, energy-generating companies, and oil-refining companies may arguably appear as the main critical stakeholders because they are directly affected by the accounting treatment under ETS. On the basis of stakeholder theory, stakeholders which KASB may perceive as salient for the development of the accounting standard for ETS are specified in the selection of interviewees in Chapter 4.

### *3.3.3. Legitimacy in the accounting standard-setting context*

As the foregoing discussion has illustrated, stakeholder theory arguments are intertwined with legitimacy conceptualizations. Indeed it seems impossible to discuss stakeholder theory without some reference to legitimacy – and vice versa. In this section, the concept of legitimacy in the accounting standard setting is discussed. Discussion is aided by reference to previous studies in relation to the organisational mechanisms of accounting standard setters, as well as to studies on stakeholders' lobbying activities in Section 3.3.3. Both sections help build up a theoretical framework for this study, with reference to both stakeholder and legitimacy theories, in the context of accounting standard setting.

On the premise of the political nature of accounting standard setting, it is necessary to review mechanisms by which accounting standard setters accomplish their institutional roles. Booth and Cocks (1990, p.517) refer to accounting standard setting as a legitimating process stating: 'an analysis of standard setting should start from the proposition that, in the main, accounting standards will be produced that support and reflect the prevailing hegemony'. Standard setting is a major social process for legitimating and propagating accounting with a particular nature and effect.

In viewing accounting standard setting as a process of 'legitimizing' accounting rules, which stakeholders generally accept as 'desirable, proper, or appropriate', legitimacy theory is an appropriate theoretical framework to provide a better understanding of the mechanisms involved in accounting standard setting.

Drawing from the foundational work of Parsons and Jones (1960) and Weber (1978), Legitimacy Theory has been made by researchers, "into an anchor-point of vastly expanded theoretical apparatus addressing the normative and cognitive forces that constrain, construct, and empower organizational actors" (Suchman, 1995, p. 571). The theory is centred on the notion of a social contract, whereby "business agrees to perform various socially desired actions in return for approval of its objectives, other rewards and ultimate survival" (Guthrie and Parker, 1989, p. 344). Consistent with this view, Richardson (1987, p. 352) asserts accounting is a legitimating institution, and provides a "means by which social values are linked to economic actions".

Failure to comply with societal expectations (in essence, to comply with the terms of the social contract) may lead to sanctions being imposed by society (Deegan and Unerman, 2006). As Lindblom (1993, p.3) notes:

To the extent corporate performance does not reflect the expectations of the relevant publics a legitimacy gap exists... [This] will fluctuate without any changes in action on the part of the corporation... the corporation must make changes or the legitimacy gap will grow as the level of conflict increases and the levels of positive and passive support decrease... the resulting penalty for any perceived legitimacy gap will come in the form available and deemed appropriate by the particular person or persons.

These sanctions may take an economic form (such as limited provision of financial capital, reduced demand of products, boycotts of output, strikes), a legal form (e.g. lawsuits, other legislative action) or social action (limited labour capital, publicity campaigns, information picketing [Lindblom, 1993; Deegan, 2000, 2002; Aguilera et al., 2004]). However, despite the theory's wide application, few researchers define the notion when they employ it and "Legitimacy and related concepts

unfortunately have been... both abstract and indefinite” (Hybels, 1995, p. 241). Further, “most treatments cover only a limited aspect of the phenomenon as a whole and devote little attention to systematizing alternative perspectives or to developing a vocabulary for describing divergent approaches... [Hence] research on organizational legitimacy threatens to degenerate into a chorus of dissonant voices” (Suchman, 1995, p. 572). By developing a legitimacy theory framework with specific reference to the accounting standard setting process and by incorporating stakeholder theory arguments as particularly expressed by Mitchell et al. (1997), I believe this study contributes towards greater theoretical refinement of the legitimacy notion.

A theoretical perspective based on legitimacy theory which has been predominantly used in previous studies as a theoretical lens for understanding the accounting standard-setting process, is institutional legitimacy. According to Suchman (1995), institutionalists:

Downplay both managerial agency and manager-stakeholder conflict. In a strong and constraining symbolic environment, a manager’s decisions often are constructed by the same belief systems that determine audience reactions. Consequently, rather than examining the strategic legitimization efforts of specific focal organizations, institutionalists tend to emphasize the collective structuration (DiMaggio and Powell, 1983) of entire fields or sectors of organizational life ( p. 576).

From the perspective of institutional legitimacy, firstly it is necessary to identify what legitimacy means in an institutional setting. In order to identify legitimacy in the context of the accounting standard-setting process, previous studies justify legitimacy by relying on Suchman’s (1995) typology. Suchman (1995) defines legitimacy comprehensively from an organisational point of view as:

A generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions (Suchman, 1995, p.574)

In an institutional setting, legitimacy depends on the perception of audiences. Legitimacy is the result of a positive judgment by an audience with regard to the appropriateness of an organisation and its actions (Richardson and Eberlein, 2011). In this context, Deegan (2000) highlights that consideration of constituency is crucially linked to the existence of an organisation. Clearly in this context, the overlaps between stakeholder theory (particularly the managerial variant) and legitimacy theory are becoming almost impossible to disentangle.

Larson and Herz (2013, p.103) stress the importance of constituency in attaining legitimacy, stating: 'for an organisation to obtain legitimacy, survive and thrive, the organisation must be justified by its institutional stakeholders'. Accordingly, the organisation strives to achieve and maintain legitimacy by gaining acceptability from its environment (Larson and Herz, 2013). In terms also of the accounting standard setter, legitimacy is a core element for the survival and prospect of the organisation. Several studies on accounting standard setting also view legitimacy as a critical factor for accounting standard setters, not only to ensure the acceptability of the outcome of its activities, but also to maintain the sustainability of the organisation (e.g. Durocher and Fortin, 2010; Fogarty et al., 1992; Larson, 2002; Larson and Herz, 2013).

In order not only to ensure the continued existence of the organisation but also a high degree of acceptability of the outcomes from its stakeholders, the accounting standard setter strenuously pursues legitimacy as an organisational objective. Achievement of legitimacy is one of the main objectives of a standard-setting organisation (Fogarty et al., 1994) and a fundamental factor in determining the legitimacy of accounting standards (Burlaud and Colasse, 2011). Burlaud and Colasse (2011) stress the role of legitimacy in the accounting standard-setting process, as it ensures that the accounting standard is implemented properly when issued. Proper implementation will allow the accounting standard to be 'institutionalised, i.e. taken for granted and 'routinised' in practice (Georgiou and Jack, 2011, p.312). In effect, legitimacy builds the confidence of users in financial statements which are produced by relying on accounting standards. In summary, accounting standard setters must achieve legitimacy in order to survive and thrive.

Accordingly, institutional legitimacy provides guidance on how the accounting standard-setting process should proceed in the pursuit of organisational survival and sustainability.

The legitimacy of an organisation is not inherently given but is formulated or constructed (Burlaud and Colasse, 2011). Accordingly, it is necessary to identify types of legitimacy and the factors and determinants attributable to legitimacy. Suchman (1995) presents three types of legitimacy for organisations: pragmatic, moral and cognitive. Pragmatic legitimacy depends on the 'self-interested calculation of the organization's most immediate audiences' (Suchman, 1995, p.578). More intuitively, pragmatic legitimacy concerns support from stakeholders in exchange for the expected benefits of a policy based on cost-benefit calculations. Meanwhile, moral legitimacy is a type of 'positive normative evaluation of the organization and its activities, involving judgment of the organisation's activity as 'the right thing to do' (Suchman, 1995, p.579). In other words, moral legitimacy is 'sociotropic', as audiences perceive the 'rightness' of an organisation's activities from a social welfare perspective. A judgment is made by evaluating whether the outputs or consequences (referred to as 'consequential legitimacy'), the techniques or procedures (referred to as 'procedural legitimacy'), or the structures (called 'structural legitimacy') are of 'social value' or 'positive moral value'. Cognitive legitimacy is based on 'comprehensibility' and 'taken-for-grantedness' (Suchman, 1995, p.582). In contrast with evaluation or calculation (e.g. good or bad; positive or negative), cognitive legitimacy is a kind of unconditional acceptance or cognition, where the existence and functions of an organisation are conceived to be 'taken-for-granted', so that 'for things to be otherwise is literally unthinkable' (Zucker, 1983, p.25, cited in Suchman, 1995, p.583).

In addition, along with the typology of pragmatic, moral and cognitive legitimacy which demonstrates the multiplicity of legitimacy dynamics, Suchman (1995) presents several strategies for gaining, maintaining and repairing each type of legitimacy. While legitimacy is a status or condition, 'legitimation' is the process of achieving legitimacy (Lindblom, 1993). Suchman's legitimacy management strategies are associated with legitimation rather than legitimacy. By virtue of the

comprehensiveness of the typology of legitimacy and the extensive applicability of legitimacy management strategies, Suchman's ideas have been widely adopted in studies of accounting standard setting.

Applying Suchman's (1995) typology of legitimacy to accounting standard setting, pragmatic legitimacy relates to how the standard setter will act in response to the input of stakeholders and to what extent the interests of stakeholders will be reflected in the final outcome. In addition, underlying notions of the conceptual framework, such as 'decision-usefulness', 'primacy of users' and 'transparency' provide criteria against which to judge the 'rightness' of moral legitimacy (Georgiou and Jack, 2011). As one component of moral legitimacy, procedural legitimacy is associated with 'procedural features' of the standard-setting process (Durocher and Fortin, 2010). In other words, a well-developed due process in which the accounting standard setter ensures stakeholders' participation and carries out proper consultation is ascribed to the achievement of 'procedural legitimacy' (Durocher and Fortin, 2010; Bamber and McMeeking, 2016).

In addition to Suchman's (1995) typology of legitimacy, his legitimacy management strategies (Suchman, 1995) have been widely adopted as a theoretical framework for managing accounting standard setting with a strategic approach. For example, Durocher and Fortin (2010) explore the institutional legitimacy of the Canadian accounting standard setter, which originates from users, and how legitimacy management strategies are used by financial statement users. The findings demonstrate that the Canadian standard setter tends to focus on 'symbolic features' rather than 'pragmatic concerns' in its pursuit of legitimacy. These findings provide meaningful empirical evidence, confirming Young's (2003, p.497) assertion that 'users remain a symbolic rhetorical category'. In order to ensure legitimacy, the importance of a legitimacy management strategy is highlighted, suggesting that accounting standard setters should be more aware of users' views in the standard-setting process. In addition, Sinclair and Bolt (2013) explore the New Zealand accounting standard setter, focusing on how third-party voices are involved in the standard-setting process. Their findings suggest that the New Zealand standard setter achieves legitimacy by 'conforming to the environment'. In particular, the standard setter is inferred to achieve 'pragmatic



legitimacy' with its strategy of incorporating third-party interests in its decisions. The findings indicate that stakeholders justify the standard setter's decisions as 'right things to do' to the extent to which the accounting standard setter achieves 'cognitive legitimacy', in Suchman's terms.

Meanwhile, the notion of legitimacy is further elaborated as scoping the context of accounting standard setting. Burlaud and Colasse (2011) suggest three notions of legitimacy as being particularly applicable: political, procedural and substantial. Notably, in presenting the sources of legitimacy, Burlaud and Colasse (2011) contend no legitimacy in the case of IASB from these three perspectives. In response to Burlaud and Colasse's (2011) critique of IASB's legitimacy, Danjou and Walton (2012) make a counter-argument, pointing out a lack of detail in the three notions of legitimacy. Despite arguments over the appropriateness of the notion of legitimacy, the three categorisations of legitimacy elaborated by Burlaud and Colasse (2011) are meaningful in conceptualising legitimacy and envisaging the sources of legitimacy in the context of the accounting standard-setting process. Moreover, as components of a standard setter's legitimacy, Sinclair and Bolt (2013, p.776) refer to 'substantive legitimacy', which relates to the content of the accounting standard and 'procedural legitimacy', which is in essence fulfilled as a form of due process.

In summary, previous studies on the legitimacy of accounting standard setters (e.g. Fogarty et al., 1992; Larson, 2002; Durocher and Fortin, 2010), find legitimacy to be a critical determinant allowing accounting standard setters to retain the right to set accounting standards and thereby secure appropriate implementation of accounting standards. Accordingly, previous studies indicate the necessity for the management of legitimacy so as to gain and maintain institutional legitimacy and ultimate survival.

Richardson and Eberlein (2011) emphasise the significance of managing legitimacy on the grounds that the acceptance of accounting standards is essentially associated with how to manage the legitimacy of the standard-setting process. Richardson and Eberlein (2011) state the management of legitimacy in the context of accounting standard-setting:

It has long been recognised that continuing acceptance of accounting standard setting is a matter of managing the legitimacy of the standard-setting process in addition to, or perhaps even independently of, the technical characteristics of those standards (Richardson and Eberlein, 2011, p.217, cited in Larson and Herz, 2013).

Suchman (1985) posits that various facets of legitimacy may emerge heterogeneously due to the diverse sources and effects of legitimacy. This implies that legitimacy management strategies have various effects on legitimacy. Accordingly, in the pursuit of institutional legitimacy, it is necessary to identify which type of legitimacy and managerial approach may be more appropriate for a particular issue under distinct circumstances.

#### *Importance of identifying stakeholders in the accounting standard-setting process*

Audiences or stakeholders, play a central role in the ultimate determination of legitimacy (Durocher and Fortin, 2010). Accordingly, in order to manage legitimacy in due process, the accounting standard-setting body must identify the stakeholders who will be affected by a new accounting standard. Stakeholders with a particular interest are more likely to participate in the standard-setting process and to exert more influence on the standard setter by defending their own interests. Identification of key stakeholders is therefore a starting point for the management of legitimacy. In identifying stakeholders, the accounting standard setter is able make a preliminary assessment of stakeholders' interests (McCarthy, 2007, cited in Sinclair and Bolt, 2013, p.766). Various studies have been carried out to identify the main stakeholders, why they participate in the standard-setting process, when they exert influence on particular accounting rules during the process, etc.

With regard to the major stakeholders of accounting standard setters, public accounting firms, professional accountancy bodies, preparers (corporations and other businesses) and users (such as financial analysts) are traditionally involved in the accounting standard-setting process (Larson and Herz, 2013). Stakeholders who may be significantly affected by an expected accounting standard will constitute the predominant interest group that will constantly offer its input to the

accounting standard setter. The various stakeholders are unlikely to be equally influential, insofar as they do not all participate in the standard-setting process at an equivalent level (Walker and Robinson, 1993, cited in Georgiou, 2010). Viewing accounting standard setting as a political process involving diverse interactions between an accounting standard setter and its stakeholders, the accounting standard setter must identify who may be primarily affected by a specific accounting standard, and who may not (Larson and Herz, 2013).

Moreover, previous research (e.g. Georgiou, 2002; Johnson and Solomons, 1984; Jorissen et al., 2012; Larson, 2002, 2007; Larson and Herz, 2013) suggests that the participation of stakeholders is regarded as a key means for an organisation to obtain legitimacy and success. Accordingly, in order to achieve legitimacy, the standard setter should ensure stakeholders' participation in the standard-setting process (Larson, 2007).

In summary, the most important and substantial way of obtaining legitimacy is to achieve a high degree of acceptability from stakeholders. Due process is considered to be a critical pathway to manage the legitimacy of the accounting standard setter. Strategically, in the pursuit of legitimacy it is essential for the accounting standard setter to identify prominent stakeholders, and facilitate their greatest possible participation in the standard-setting process. This will facilitate the achievement of legitimacy (Larson and Herz, 2013).

#### *Pursuit of institutional legitimacy in the accounting standard-setting process*

In the context of accounting standard setting, legitimacy management strategies involve two dimensions: 1) the procedural dimension of standard setting; 2) the decisional (Sinclair and Bolt's [2013] substantive legitimacy) dimension of the standard setter's choices in forming a set of accounting rules.

First of all, with regard to the procedural dichotomy of standard setting, sources of legitimacy need to be explored. For example, Johnson and Solomons (1984, pp.172-3) develop prerequisite conditions to ensure legitimacy in due process: 1) 'sufficient authority' to issue accounting standards; 2) 'procedural due process', in which reasonable opportunity for participation in standard setting is ensured for

stakeholders to provide their input; and 3) 'substantive due process' in order to deliver 'adequate justification' and an 'adequate rationale' for decisions.

Johnson and Solomons' (1984) general conditions of legitimacy are further elaborated by later studies which identify core elements in gaining legitimacy. As a source of sufficient authority, an organisation needs a 'regulatory component' such as a statutory mandate (Durocher and Fortin, 2010). Meyer and Rowan (1977, cited in Durocher and Fortin, 2010) view legal mandates as an official component of legitimacy. If the accounting standard setter is endowed with 'a clear mandate' from government, this implies legitimacy (Durocher et al., 2007; Johnson and Solomons, 1984).

Procedural due process is associated with justification of the standard-setting procedure. Ensuring adequate opportunities for participation in the standard-setting process may encourage stakeholders to regard the process as 'legitimate' (Burlaud and Colasse, 2011; Luthardt and Zimmermann, 2009; Richardson and Eberlein, 2011). Procedural legitimacy is delivered by procedural due process. Ensuing stakeholders' participation in the accounting standard-setting process is the most significant prerequisite to legitimacy (Larson and Herz, 2013). In addition, active involvement in the process may reinforce acceptance of and compliance with accounting standards, which may be one aspect of the desirability of accounting standards (Larson and Herz, 2013).

Substantive due process relies on a conceptual framework that provides a theoretical foundation for a rationale of institutional roles, goals and objectives. Napier (2013) refers to the role of a conceptual framework consisting of a range of theoretical notions, through which standard setters are able to build a rationale to legitimate accounting rules by relying on the conceptual framework. Burlaud and Colasse (2011) highlight the role of a conceptual framework in ensuring the legitimacy of the standard-setting process. A standard setter's use of a conceptual framework contributes to building a reputation for competence and provides substantial legitimacy (Burlaud and Colasse, 2011, p.28). In the standard setting process, the conceptual framework enables the standard setter to develop accounting rules with a more robust, consistent and logical rationale. It influences stakeholders to consider an accounting standard to be persuasive and acceptable.

In summary, on the basis of a managerial approach to legitimacy, an accounting standard setter is able to intensify institutional legitimacy in due process by strategically addressing the elements of procedural and substantive due process. To be specific, in the pursuit of institutional legitimacy, the standard setter must properly undertake due process, ensuring stakeholders' participation in the process. In addition, by aligning with the conceptual framework, the standard-setter must develop a robust and sound rationale for specific accounting rules so that most stakeholders will perceive the accounting standard to be legitimate.

Along with the procedural dimension corresponding with due process, legitimacy management strategy is also applied to the decisional dimension of the standard-setting process. In other words, the decision-making mechanism can be understood as the legitimising dynamics of organisational activities from an institutional legitimacy perspective. In order to produce legitimate outcomes, it is necessary to identify how the standard setter makes decisions on specific accounting rules which constitute a set of accounting treatments, as an accounting standard.

Under legitimacy theory, it is assumed that organisational activities and their consequences are 'desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions' (Suchman, 1995, p.577). When setting up specific accounting rules, the accounting standard setter will make choices in such a way as to legitimate the accounting rules so that its institutional activities are perceived to be desirable, proper, and appropriate within given specific circumstances. Specifically, accounting standard setters attempt to make choices in formulating a set of accounting rules in response to the specific interests of stakeholders, in order to ensure that most stakeholders will be largely in favour of the outcome (Baylin et al., 1996, cited in Richardson and Eberlein, 2011).

Suchman (1995) asserts that different types of legitimacy interact: one type of legitimacy may intensify another and vice versa, or they may conflict with each other. In other words, each type of legitimacy may function differently depending on different behavioural dynamics. In particular, a certain type of legitimacy or legitimisation strategy may be distinctly more suitable for a particular environmental

condition (Suchman, 1995, p.604). In this regard, within Suchman's, distinct legitimacy and legitimation strategies may be identified in the context of accounting standard setting. Specifically, accounting standards are promulgated as legitimate by achieving pragmatic and procedural legitimacy, or by conforming to their environment.

For instance, in a political context, accounting standard setting is a process involving a variety of interests of several stakeholders. Stakeholders who are concerned with a specific accounting issue may actively participate in the standard-setting process and voice their specific interests on the basis of 'self-interested calculations' (Suchman, 1995, p.578). Accordingly, given abundant opportunities for lobbying activities by stakeholders in the process, the outcome is more likely to be a compromise in terms of reflecting a specific input from a stakeholder. Accounting standards are therefore significantly associated with 'pragmatic legitimacy', or 'exchange legitimacy', using Suchman's (1995) typology of legitimacy. Because the accounting standard is in need of legitimacy, the standard setter tends to set accounting rules aligning with the interests of stakeholders in order to ensure a high degree of acceptability. In essence, pragmatic procedural legitimacy provides a theoretical window to understand the dynamics of how accounting standards are set; specifically, the accounting standard setter is prone to set accounting standards through political compromise and reconciliation of a variety of interests (Monciardini, 2016).

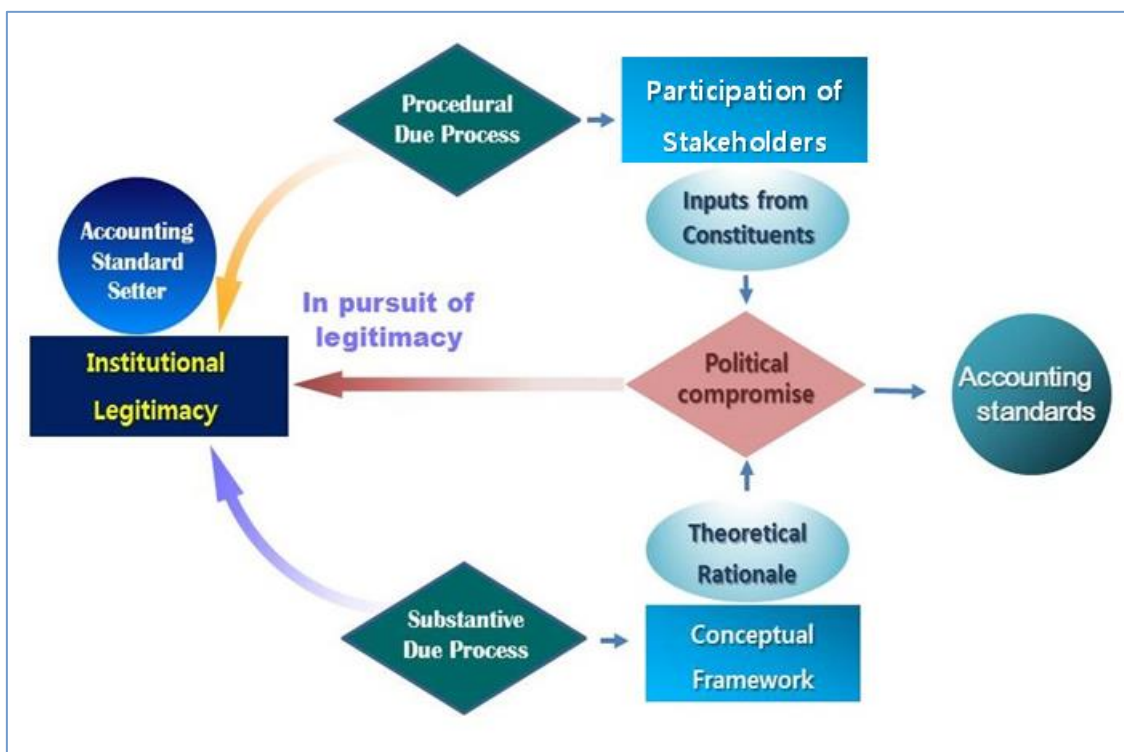
In addition, 'conforming to environments' is a type of legitimacy management strategy in which an organisation is simply placed 'within a pre-existing institutional regime' (Suchman, 1995, p.587). In particular, an organisation may achieve 'cognitive legitimacy' by conforming to established models or standards. From an institutional theory perspective, this mechanism is referred to as 'isomorphism'. DiMaggio and Powell (1983, cited in Suchman, 1995, p.589) conceptualise 'isomorphism' as a tendency for organisations to adopt similar rules and routines. Carpenter and Feroz (2001, p.570) define 'institutional isomorphism' as 'the process by which organizations tend to adopt the same practices and/or structures over time in response to common institutional pressures' which may exist at the individual or organizational field level. In other words, simply mimicking or

following existing norms, structures and practices is a strategy for achieving legitimacy. DiMaggio and Powell (1983, p.152, cited in Carpenter and Feroz, 2001, p.571) suggest that 'organisations tend to model themselves after similar organizations in their field that they perceive to be more legitimate or successful'. To a large extent, the pursuit of institutional legitimacy is attributable to institutional isomorphism, which is an institutional tendency to conform to environments. Institutional isomorphism provides a significant insight into the dynamics of institutional decision making in the accounting standard-setting process. Under the premise that organisations pursue institutional legitimacy, it is expected that accounting standard setters may make decisions 'at the margin', for instance by following preceding accounting models or standards or adopting commonly used practice. This implies a pattern of inertia in decision making. To this extent, in the institutional isomorphic process, several accounting standard setters may affect each other, or they may learn by adopting or following pre-existing accounting models developed by other accounting standard setters.

In summary, on the basis of legitimacy theory, and considering also the foregoing discussion on stakeholder theory, the process of legitimating accounting standards can be characterised as a process of political compromise among the stakeholders concerned. Legitimacy theory indicates that in order to achieve a desirable, proper, or appropriate outcome given specific circumstances, the accounting standard setter tends to build a set of accounting rules by means of compromise, reflecting prominent stakeholders' interests and/or conforming to pre-existing standards or pervasive practices. In essence, political compromise is necessary to achieve desirable, proper, and appropriate accounting standards.

In adapting strategic determinants to achieve institutional legitimacy in the context of accounting standard setting, as suggested by previous studies, Figure 6 is based on the strategic management of legitimacy, showing how institutional legitimacy is pursued during due process, and how legitimacy functions in decision making in the standard-setting process.

**Figure 6: Legitimacy in the context of the accounting standard-setting process**



In summary, accounting standard setters pursue legitimacy as an institutional objective for organisational survival and sustainability. In pursuit of legitimacy, the accounting standard setter attempts to manage legitimacy strategically in the standard-setting process. In the procedural context, the accounting standard setter ensures rightness in due process by facilitating stakeholders' participation. Several previous studies shed light on the active participation of stakeholders as a key element in institutional legitimacy. In addition, the accounting standard setter tends to produce an outcome in such a way that accounting standards are perceived as being legitimate by its environmental constituency. In the search for legitimacy, accounting standards tend to be set as a result of political compromise, reflecting the various interests of stakeholders, and particularly their power and urgency of their claim. Moreover, the accounting standard setter has a tendency to conform to pre-existing standards or practices because this is a simple way to ensure cognitive legitimacy.

Despite extensive theoretical and empirical studies based on legitimacy theory, the discipline of carbon financial accounting remains unexamined in terms of



institutional legitimacy. Since accounting issues relating to ETS are relatively new and innately complex, it may be meaningful to investigate how the accounting standard setter sets accounting standards for ETS in light of institutional legitimacy. Accordingly, this study aims to understand the institutional dynamics of how the accounting standard setter makes choices in the matter of ETS from an institutional legitimacy perspective.

#### *3.3.4. Review of studies on participation/lobbying*

Viewing accounting standard setting as a political process, this section reviews previous research on the standard-setting process from a constituency perspective.

Stakeholders' participation has been a critical issue in the standard-setting process, not only from the perspective of the accounting standard-setting organisation but also for academics. Numerous studies have explored stakeholders' participation behaviour and lobbying activities. In particular, many studies of stakeholders' participation have taken an empirical approach to examine stakeholders' participation in the context of various standard setters, including the FASB, IASB and several national accounting standard setters. Owing to the availability of data, most research (e.g. Watts and Zimmerman, 1978; Larson, 2007; Georgiou, 2002; Königsgruber, 2009) has traditionally been conducted on the basis of analysis of comment letters sent to the standard setter. Georgiou (2004) asserts that writing comment letters is significantly associated with other methods of lobbying, and has therefore been widely used as a valid proxy for lobbying.

Accounting standard setters generally ensure opportunities for stakeholders' participation throughout the various stages of due process. This implies that interested stakeholders are deliberately given opportunities to lobby a rule maker in order to influence the outcome. Schalow (1995, cited in Jorissen et al., 2012, p.697) refers to 'participation' as 'actions which interested parties take to influence a rule-making body'. Sutton (1984, p.92-3) describes lobbying as 'the efforts of individuals and organisations to promote or obstruct new regulations whatever the source'. Zeff (2012) defines 'political lobbying' as action against a proposal where an economic entity intervenes for the purpose of pressuring for a change in the

proposal or affecting the views or attitudes of the authorities responsible for the proposal. By and large, stakeholders' attempts to influence the standard setter's decision-making to reflect their interests are referred to as either 'participation' (Schalow, 1995) or 'lobbying' (Königsgruber, 2009; Sutton, 1984; Watts and Zimmerman, 1978; Zeff, 2002; Zeff, 2012).

Many studies have been carried out on the subject of lobbying activity in the accounting standard-setting process (e.g. Larson, 2007; Georgiou, 2002, 2004, 2010; Giner and Arce, 2012; Watts and Zimmerman, 1978; Zeff, 2002). Interrelated issues have been explored, including whether or not to lobby, which method(s) of lobbying to use and what arguments to use, in the context of IASB, the Accounting Standards Board (ASB) and other accounting standard setters (Georgiou, 2004).

Most studies of lobbying activity in the accounting standard-setting process imply the extent to which self-interested political lobbying activities have accomplished certain accounting issues. Most notably, Sutton (1984) builds a theoretical framework for lobbying activities with the assumption that the accounting standard-setting process is a 'fundamentally political process'. Using Downs' cost-benefit framework (voting model), Sutton devises a model to examine how lobbyists make choices on lobbying activity on the basis of cost-effective decision making (in Sutton's terms, decision making means to 'express his or her voice'). By means of a 'rational-choice model' of lobbying, Sutton (1984) analyses who lobbies, when and why they lobby, and what methods they use in accordance with cost-effectiveness criteria. Sutton analyses the major features of lobbying activity, using examples from the accounting standard-setting process in the UK and the US.

Sutton's (1984) model is regarded as the most notable study founded on economic theory. Consequently, it has been adopted by a wide range of later studies on lobbying activities in the standard-setting process (e.g. Georgiou, 2002, 2004, 2010; Giner and Arce, 2012; Jorissen et al., 2006; Orens et al., 2011; Tutticci et al., 1994; Weetman and Collins, 1996). Several studies have extended Sutton's model to a wide range of subjects relating to lobbying, such as motivation, timing, players, methods and effectiveness.

All examinations of lobbying activities have contributed to enhancing understanding of the political nature of the accounting standard-setting process (Georgiou, 2002) and to providing insights into stakeholders' participation in the process (Jorissen et al., 2012).

### *Motivation*

Sutton's rational choice model of lobbying articulates the motivation for lobbying. According to Sutton's model, an individual will vote if the perceived utility of voting exceeds the cost, taking into account the probability of influencing the result. In other words, a stakeholder engages in lobbying activity only when the benefits of lobbying exceed the costs. The benefits are adjusted by the probability that the lobbying actions will change the outcome of the standard-setting process (Jorissen et al., 2013). The cost of voting includes the cost of engaging with the proposal and acquiring the expertise needed to respond to it. The cost-effectiveness criterion serves as a theoretical lens for a number of studies examining motivations for lobbying activities in the standard-setting process, and Sutton's (1984) model of motivation for lobbying has been re-examined by a number of studies.

Meanwhile, Watts and Zimmerman (1986) apply positive theory to explain the drivers of stakeholders' participation. According to positive theory, the benefits of participation depend on the potential impact of a new accounting proposal on the cash flows of a company. Specifically, the new accounting proposal may 1) alter the political costs, 2) affect the accounting numbers as a result of internal or external contracts bringing additional burdens, or 3) affect information gathering and bookkeeping costs (Georgiou, 2002; Jorissen et al., 2012). In particular, the benefits of lobbying are more clearly articulated in terms of positive theory, for example the material impact on a company's financial statements, borrowing agreements, and compensation contracts for internal management (Georgiou, 2002). Based on positive theory, Watts and Zimmerman (1986, cited in Orens et al., 2011) generally assume that corporate lobbying is associated with the overall economic impact of the proposal on the financial statements of preparers.

Positive theory (Watts and Zimmerman, 1978) has been used by later studies to explore motivations for lobbying (e.g. Francis, 1987; MacArthur and Groves 1993; Schallow, 1995; Dechow et al., 1996; Seamann, 1999; Ang et al., 2000; Hill et al., 2002; Georgiou and Roberts, 2004, all cited in Jorissen et al., 2012, p.699). With regard to the impact on companies' financial statements, Morris (1986) and Deakin (1989, cited in Georgiou, 2002) suggest that companies are more likely to take lobbying action when they expect higher debt costs from the potential implementation of the proposal. Jorissen et al. (2012) illustrate that a negative impact on a firm's cash flow or accounting numbers is a significant motivation for preparers to participate more in the standard-setting process. Similarly, focusing on financial firms anticipated to be affected by accounting changes in IFRS 4, Kosi and Reither (2014) reiterate the economic consequences resulting from an anticipated accounting change as the main driver of lobbying activity. Overall, in line with Watts and Zimmerman's (1978) positive theory, numerous studies have found that an adverse effect on cash flow is a critical element associated with preparers' participation in the standard-setting process (Jorissen et al., 2012).

In summary, motivation for lobbying is associated mainly with economic consequences. Several studies find that preparers' lobbying is due largely to the significant effect of expected accounting standards on the accounting numbers.

#### *Attributes of lobbying or not lobbying*

In addition to studies on the economic motives leading to lobbying activities, many studies have explored the determinants of lobbying or not lobbying from various perspectives. For example, Tandy and Wilburn (1992) explore various determinants of participation or lack of participation, such as low expectations of influencing the standard setter, few or no rewards for writing in, the cost of participation, limited time, a belief that other respondents (such as trade associations) will adequately represent their views, and a lack of knowledge or expertise regarding a particular issue.

Tandy and Wilburn's (1992) findings have been further elaborated by later academic research. Georgiou has carried out a number of empirical studies (e.g. Georgiou, 2002, 2004, 2010) on several cases, exploring various reasons for

engaging or not engaging in lobbying activities, using Sutton's (1984) model and Watts and Zimmerman's (1978) positive theory.

Georgiou (2002) finds that the unlikelihood of influencing the outcome is an important factor resulting in non-submission. In addition, when external auditors represent a company's position, companies may not make an individual submission because they tend to rely on the auditors (Georgiou, 2002). This largely confirms the claims of previous studies (Gavens et al., 1989, Walker and Robinson, 1993) that companies do not make individual submissions; instead, they convey their interests to 'special-interest groups' representing their interests.

Moreover, whether companies agree or disagree with a proposal may drive their decisions on whether or not to respond (Georgiou, 2002). Companies that agree with the proposals tend not to respond, while companies that disagree are more likely to respond promptly (Georgiou, 2002). In line with Schalow's (1995) claim, overall agreement with the proposal may be an important factor leading to non-participation in the process (Georgiou, 2002). Georgiou (2010) also reveals that the costs associated with acquiring the necessary expertise and time to participate in the process are a critical determinant of participation. This finding largely supports Sutton's (1984) assertion.

The background of stakeholders may also affect the extent of their participation. Orens et al. (2011, cited in Larson and Herz, 2013) suggest that a country's accounting regulatory background may affect decisions to participate in the accounting standard-setting process. Larson and Herz (2013) point out that institutional and cultural differences between countries may result in variations in the relative level of comment letter participation by various stakeholder interest groups.

In summary, lobbying activities are triggered by economic motivation; however, whether or not to lobby has a variety of determinants. Therefore, it is necessary to explore which prominent stakeholders emerge in the matter of accounting issues for ETS, whether they engage in lobbying activities, and why they participate in the process. In addition, based on the findings of previous studies, this study sets

out to examine various attributes of lobbying and not lobbying amongst the stakeholders of KASB.

### *Timing*

Since due process is undertaken throughout the standard-setting process, stakeholders may have several opportunities to take lobbying action. In view of a sequential process of standard-setting, Georgiou (2004) highlights that the timing of lobbying is an important factor in its effectiveness.

A number of studies have asserted that lobbying at an earlier stage is considered more effective than at the post-exposure draft stage (e.g. Sutton, 1984; Jordan, 1991). Specifically, Sutton (1984) mentions that lobbying at an early stage in the process is more likely to influence the outcome. He argues that such lobbying influences the decision maker more effectively, highlighting that lobbying on a pre-exposure draft is more productive because the probability of influencing a rule maker tends to be higher when the rule-maker's preferences are still undecided. Sutton's assertion has been restated in a number of later studies. Jordan (1991, p.180, cited in Georgiou 2004) reiterates that the timing of lobbying is associated with its effectiveness, suggesting that 'in the arena of politics there is an iron law from lobbyists that the time to influence legislation is the drafting or even the pre-drafting stage'.

By contrast, with the case of ASB, Georgiou (2004, 2010) argues that companies are more likely to lobby during the public consultation process, such as at the exposure draft stage, than at an earlier stage of the process, such as agenda formation (Georgiou, 2004). Contrary to Sutton's (1984) assertion, Georgiou (2004, 2010) finds that companies do not concentrate their lobbying activities on the early stages.

On the basis of a multi-issue/multi-period approach, Jorissen et al. (2012) provide empirical evidence that the timing of participation in the process varies depending on the characteristics of stakeholders. Specifically, the accounting profession (including academics), standard setters and users are likely to participate in the process at an earlier stage, whereas preparers tend to participate in the process at a later stage.

In terms of the most effective timing for lobbying activities, previous studies provide various and inconsistent conclusions. Some studies (e.g. Sutton, 1984; Jordan, 1991) argue that lobbying at an earlier stage is more influential on standard setters, while others (e.g. Georgiou, 2004, 2010; Jorissen et al., 2012) argue that the most effective timing is variously perceived depending on the characteristics of stakeholders and the intention of lobbying at different time horizons.

Given the inconsistent results of previous studies with regard to the most effective timing of lobbying activities, further investigation is required, from the early to later stages of the accounting standard-setting process, to identify the most effective timing of lobbying activities in the case of accounting issues for emissions rights.

### *Players*

Most studies have concentrated largely on corporate lobbying activities, in particular as 'preparers of the financial statements' (e.g. Francis, 1987; Georgiou, 2004; Larson, 1997; MacArthur, 1988; Schalow, 1995, all cited in Georgiou, 2010), regarding the main characteristics of preparers who lobby and those who do not.

Many studies suggest that preparers tend to participate more actively in the standard-setting process, whereas users are unlikely to be actively involved in the process (e.g. Durocher and Fortin, 2010; Georgiou, 2004, 2010, 2012; Giner and Arce, 2012; Jorissen et al., 2012; Larson, 2007; Sutton, 1984; Tandy and Willburn, 1992; Tutticci et al., 1994). Sutton (1984) asserts that preparers are more likely to be involved in lobbying activities than users because their potential benefits are greater. In line with Sutton's assertion, Georgiou (2010) demonstrates that the level of lobbying activities undertaken by investment management firms (users of financial statements) is lower than other groups, including preparers. In addition, Giner and Arce (2012) reiterate Sutton's (1984) rational choice model, showing that preparers are the most active group of stakeholders. Jorissen et al. (2013) also reveal that users are less engaged in formal participation than preparers. These findings confirm the assertions of previous studies (e.g. Sutton, 1984; Larson, 2007).

Accounting standard setters tend to put users' interests first when setting accounting standards (Georgiou, 2010; Durocher and Fortin, 2010). Nevertheless, several studies (e.g. Sutton, 1984; Georgiou, 2010) find that users are significantly less likely to engage in the process. Accounting standard setters encounter a low level of input from users compared with preparers, which implies that the users' perspective may be relatively neglected in the standard-setting process (Georgiou, 2010). The findings of previous studies reveal a lack of user participation in the process, reiterating Young's (2003, 2006) scepticism about users' primary value. Similarly, Durocher and Fortin (2010, p.497) also find the value of user-oriented conceptual frameworks to be questionable in a practical context, to the extent that users' value is in 'a symbolic rhetorical category' rather than 'a true pragmatic concern'.

Previous studies generally show a scarcity of inputs from users in the standard-setting process, which may adversely affect the legitimacy ultimately pursued by the standard setter. In order to maintain legitimacy, standard setters must proactively seek users' inputs by facilitating their participation in the standard-setting process (Durocher and Fortin, 2010).

Meanwhile, it is widely revealed that the participation of preparers tends to be uneven and partial, and that only a few preparers are proactively involved in the standard-setting process. Tandy and Wilburn (1992) identify the existence of dominant stakeholder interest groups in most countries, such as domestic accounting standard setters, professional accountancy bodies and public accounting firms. In addition, Jorissen et al. (2012) reveal that comparatively small numbers of responses are usually involved in public consultation processes, the majority being from entities potentially affected by a new accounting standard. Burlaud and Colasse (2011) observe that few stakeholders have sufficient financial and intellectual resources to participate in the standard-setting process. Since most accounting issues are complex, respondents need a high level of accounting knowledge in order to respond appropriately in the process. Most preparers must take into account the cost of participation, which may be an obstacle to participation in the process. On the whole, the findings indicate that



accounting standards may be formulated reflecting only the interests of certain interest groups proactively involved in the process (Jorissen et al., 2012).

Moreover, a number of previous studies find that larger firms are more likely to engage in lobbying than small firms (Ang et al., 2000; Georgiou, 2002; Georgiou, 2005; Giner and Arce, 2012; Jorissen et al., 2006; Larson, 2007; Sutton, 1984, Watts and Zimmerman, 1978). Larger companies are more likely than non-lobbying companies (smaller counterparts) to experience greater impacts on their financial statements from the implementation of potential proposals (Georgiou, 2002). Of the companies that engage in lobbying activities, larger companies are more likely to be influential in the process than smaller ones (Georgiou, 2002).

In summary, extant studies explore various aspects of stakeholders who lobby or not. Stakeholders are not equally involved in the standard-setting process, insofar as a few stakeholders have a loud voice, significantly influencing the standard setter. This implies a degree of variation in terms of stakeholders' lobbying or not lobbying, depending on the issues. With a paucity of previous studies of lobbying activities regarding ETS, it is meaningful to explore further who are the stakeholders in accounting issues on ETS, what are their interests, and how they respond in the accounting standard-setting process.

### *Methods*

In terms of methods of lobbying, Georgiou (2004) illustrates that while direct lobbying methods include 'submitting comment letters' and 'meeting with officials from the standard setting body or holding speeches at public hearings', indirect methods include using an 'intermediary', such as the media, auditors or accountancy bodies. Direct informal lobbying involves 'private conversations' or 'meeting with members of the standard setter'. Larson and Herz (2013) show that a range of formal and informal methods are used to participate in the process and to influence IASB and other accounting standard-setting organisations.

Sutton (1984) mentions that actors (stakeholders) may take advantage of various lobbying methods simultaneously in order to maximise the effectiveness of influencing a standard setter. Amongst various lobbying methods, he argues that lobbying in informal ways is more effective than through formal methods. In line

with Sutton's (1994) assertion, Tandy and Wilburn (1992) show that companies are more likely to use indirect methods. Stakeholders may channel their views through representative organisations such as industry associations or large public accounting firms (Tandy and Wilburn, 1992). Similarly to Tandy and Wilburn's (1992) evidence, Georgiou (2010) reveals that a substantial number of companies indirectly input their interests into 'user representative organisations'. Presumably, companies consider that industry organisations will represent their views more effectively (Georgiou, 2010; Orens et al., 2011; Tandy and Wilburn, 1992).

Overall, the findings indicate that companies are likely to rely on 'representative organisations' rather than direct participation, which may be one of the most important factors hindering companies' participation in the IASB process (Georgiou, 2010, cited in Orens et al., 2011, p.217). This implies that accounting standard setters should pay more attention to the views of 'representative organisations' because a substantial number of firms rely on them.

In summary, previous studies provide empirical findings that various lobbying methods are used in both formal and informal ways. This has important implications from a policy perspective, because the accounting standard setter is able to facilitate stakeholders' participation by identifying the main methods on which a number of stakeholders depend. In this regard, this study needs to conduct further exploration of the means of lobbying on which stakeholders rely to convey their interests to accounting standard setters.

### *3.3.5. Summary and implications for research questions*

Overall, previous studies exploring the accounting standard-setting process have provided a better understanding of the political aspects of standard setting. From a standard setter's perspective, legitimacy theory provides a theoretical framework to visualise the dynamics of standard setting. In addition, numerous studies on lobbying activities in the standard-setting process capture various attributes from a stakeholder's point of view.

Despite the range of contributions by previous studies regarding the accounting standard-setting process, there are some limitations. Extant studies have mainly explored a single issue under a single jurisdiction. In addition, most studies of the

accounting standard-setting process have focused on a particular stage of due process (e.g. the discussion paper stage), relying on an analysis of documents, mainly comments letters because of the accessibility of data. In order to overcome the weaknesses associated with the limited scope and research method of the studies, some research has attempted to extend the scope to multi-issue/multi-period (e.g. Georgiou, 2005; Larson and Herz, 2013). Nevertheless, there is still a lack of empirical research demonstrating the effectiveness of lobbying activities. In this regard, Sutton (1984) highlights the need for further research through questionnaires and interviews in order to explore how inputs from lobbyists are accommodated into final outputs. This implies that further empirical research is necessary in order to assess the effectiveness of lobbying.

Since the accounting issues arising from the introduction of ETS are relatively new from the financial accounting point of view, research on the standard-setting for ETS has not been previously undertaken. Considering that accounting standards are the refined outcomes of standard-setting process, it is necessary to investigate the standard-setting process in order to identify how accounting standard setters address any emerging issues and how they would find an appropriate solution.

Unlike previous studies, this research probes the entire standard-setting process from agenda setting to the completion of an accounting standard and from a combined legitimacy and stakeholder point of view. In accordance with Sutton's (1984) suggestions for further study, this study explores the final outcome as a consequence of the consultation process, enabling an assessment of the effectiveness of lobbying activities. Moreover, this study relies not only on analysis of documents but also on face-to-face interviews. In contrast to other studies, accounting standard setters and stakeholders are interviewed in the field in order to obtain deeper and richer content.

The main research gaps derived from the literature review are as follows. From an institutional legitimacy perspective, how does accounting standard setting proceed? How do accounting standard setters make decisions to maximise legitimacy when setting accounting standards for emissions rights? How do stakeholders become engaged in the standard-setting process? How do lobbying activities emerge in

the standard-setting process? And how effective is stakeholders' participation?  
(*Research Question 2*)

In summary, by reviewing the previous studies on accounting issues in relation to emissions rights and related liability arising from ETS in Section 3.2, the first research gap is identified: how accounting standard setters tackle accounting issues under ETS in pursuit of desirable accounting standards for emission rights. Focusing on the political aspects of accounting standards, the second research gap emerge: how the accounting standard-setting process proceeds in the case of ETS.

Having identified the research gaps by reviewing the literature, the next chapter addresses the methodological approach used to accomplish this research.

## **4. Methodology**

### **4.1. Introduction**

The aim of this research is to provide a better understanding of how accounting issues under ETS are addressed by accounting standard setters in the standard-setting process. The purpose of this chapter is to present the research questions and associated objectives and the general methodological approach and methods used in this study. Section 4.2 presents the research questions and related objectives. Section 4.3 discusses the research approach, including the philosophical assumptions, methodology and research methods on which this study is based. Section 4.4 describes how data were collected in the field, followed by the data analysis process in Section 4.5. Section 4.6 identifies some limitations which may arise in association with the research design on which this study relies.

### **4.2. Research questions and objectives**

Following the withdrawal of IFRIC 3, various efforts and suggestions have been made by professional accounting experts, including academics and practitioners, in search of authoritative accounting guidance for ETS. Nonetheless, due to the unique attributes embedded in emissions rights and the novelty of this issue compared with other common accounting issues, standard setting for emissions rights and related liabilities remains an ongoing task. Accordingly, this study sets out to examine how accounting standard setters have tackled problematic accounting issues under ETS in developing accounting standards for emissions rights since IFRIC 3 was revoked. Specifically, the study examines: (a) the accounting models with which IASB and FASB worked between 2008 and 2010; (b) a proposal made by ANC in 2012; and (c) Korean GAAP for emissions rights set up by KASB in 2014. Underpinned by the political nature of accounting standards, this study is concerned with how accounting standard setters introduce accounting standards for emissions rights under particular institutional conditions and with various stakeholder interests. Specifically, the standard-setting process is explored in the cases of IASB, ANC and KASB. In particular, the case of KASB is examined most closely throughout the standard-setting process from the agenda-setting stage to the promulgation of the accounting standard. Since accounting

standards are regarded as the consequence of political compromise, this investigation into the standard-setting process is essential to understand how accounting standards are produced through interactions between the accounting standard setter and its stakeholders in the process of accounting standard setting for emissions rights. To this extent, the elements that determine the desirability or appropriateness of accounting standards will be identified from this investigation.

Two research questions and associated objectives have been formulated from the research gaps identified from the review of related literature discussed in Chapter 3 and the implications of a preliminary interview.<sup>39</sup> These are as follows:

*Research Question 1: How does the accounting standard setter tackle accounting issues under ETS in the standard-setting process in order to achieve the most appropriate accounting standard?*

Objectives:

- To examine the main accounting issues for emissions rights and related liabilities that have been addressed by accounting standard setters since IFRIC 3 was withdrawn, in the cases of IASB, ANC and KASB.
- To examine how accounting standards for emissions rights are developed under different circumstances.
- To probe how accounting standard setters cope with problematic accounting issues for ETS in particular contexts by coordinating the various interests of stakeholders.
- To examine the factors which accounting standard setters take into consideration in the standard-setting process and how these factors affect the development of accounting standards for emissions rights.
- To identify the main features of the most appropriate solution for the incorporation of accounting issues for emissions rights into the existing accounting framework.

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<sup>39</sup> A preliminary interview with KASB was undertaken in April 2013. KASB had been aware of the necessity for an accounting standard for emissions rights with the commencement of the Korean ETS, and it subsequently established an ETS project to develop this accounting standard.

- To gain insights into how the accounting regime accommodates new policy issues arising from ETS into the existing accounting framework.
- To gain insights into the role of practice and preceding accounting models in developing accounting standards for emissions rights.
- To gain insights into the determinants of the desirability and appropriateness of accounting standards for emissions rights subject to various factors and circumstances.

*Research Question 2: How does the accounting standard-setting process proceed in the case of ETS?*

Objectives:

- To examine the accounting standard-setting process for emissions rights in the cases of IASB, ANC and KASB.
- To identify the main stakeholders and the specific interests of stakeholders in relation to accounting issues for emissions rights.
- To examine how stakeholders attempt to reflect their interests in the standard-setting process, thereby identifying various features of stakeholders' participation in the process.
- To explore how the accounting standard setter makes decisions in setting accounting rules for emissions rights from the perspective of legitimacy.
- To examine the extent to which the interests of stakeholders are accommodated, and thereby assess the effectiveness of stakeholders' lobbying activities.
- To gain insights into political features of the accounting standard-setting process.
- To gain insights into how institutional legitimacy is pursued in the standard-setting process and how legitimacy functions in decision making in setting accounting standards for emissions rights.
- To gain insights into interactions and cooperation between standard setters that enhance the quality of accounting standards and ensure institutional legitimacy.

### 4.3. Research approach

#### 4.3.1. *Philosophical assumptions*

The first step in research design is to articulate the research framework adopted. McKerchar (2010, p.63) refers to a research framework as 'the theoretical underpinning or inquiry paradigm' adopted when designing research. Grix (2004, p.171, cited in McKerchar, 2010, p.63) posits that 'the research framework is the philosophical underlying that provides some indication for where research is originated, what research is doing, and how research is being done'. This implies that, in designing research, it is essential to articulate the type of research framework chosen, as the choice of research framework will affect all elements of the research design, including methodology, methods and analysis (McKerchar, 2010). In addition, as readers interpret the research outcomes or examine the contribution of the research, the research framework provides them with 'expectations' regarding elements of the research (McKerchar, 2010, p.65). This indicates that the research framework is connected with all research processes, not only to the design, but also to the analysis and interpretation of the findings.

The research framework reflects underlying philosophical assumptions about how a researcher views the world, referred to as 'ontology', and how a researcher believes that knowledge is created, referred to as 'epistemology' (McKerchar, 2010). The philosophical assumptions and theoretical framework link to create the overall research process (Creswell, 2003). In other words, a philosophic orientation to inquiry will affect the formulation of the framework, the understanding of the nature of the qualitative approach and the conduct of the research in the field (Creswell, 2003).

In this regard, for the purpose of understanding the orientation and objective of this research, firstly the research framework is identified, reflecting the philosophical assumptions of ontology and epistemology. Bryman and Bell (2011) presents two types of ontological positions: objectivism and constructivism. Oats (2012b) distinguishes two ontological assumptions: 'realism' and 'nominalism'. Both 'objectivism' and 'realism' take the ontological position that social phenomena (or social worlds) exist independently of and separately from the individual's perception of them (Bryman and Bell, 2011; Oats, 2012b). By contrast,



‘constructivism’ and ‘nominalism’ take the opposite stance in terms of ontological position, viewing society as relative (Oats, 2012b). Specifically, nominalism is based on the assumption that the social world consists of names or concepts to which social actors refer (Oats, 2012b). Constructivism assumes that social phenomena are continuously accomplished by social actors, implying that society is built up of social interactions and is being changed over time (Bryman and Bell, 2011).

From an ontological perspective, the philosophical position of this research is constructivist in nature because it examines meanings or knowledge accomplished by social entities engaged in the Korean ETS. In particular, it explores the process of how the accounting standard for ETS in Korea was formulated as a consequence of interactions between social actors, i.e. KASB and Korean companies. In light of this ontological position, the researcher adopts a subjective position toward society. In other words, society is explored as a subjective reality resulting from interactions between social actors. Specifically, meanings and knowledge are explored on the basis of the perception that an accounting standard for ETS (a social phenomenon) is being built by interactions between the accounting standard setter and stakeholders (social actors).

In relation to epistemology, Bryman and Bell (2011) and Oats (2012b) categorise two epistemological positions: positivism and interpretivism. Interpretivism is a predominantly non-positivist assumption. Bryman and Bell (2011) refers to interpretivism as a term to contrast with positivism, while McKerchar (2010, p.74) suggests that interpretivism is a core, ‘non-positivist’ theoretical paradigm.

Oats (2012b, p.11) defines positivism as an epistemological assumption that ‘seeks to explain and predict by searching for causes, patterns and relationships that hold across space and time. Hypotheses are developed from theories and then tested’. Guba and Lincoln (2005, pp.195-203, cited in McKerchar, 2010, p.72) state that ‘positivism does assume that the researcher is completely objective and relies on empirical means to create scientific truth and knowledge about reality’. Accordingly, in the context of positivism a researcher takes an objective position in explaining social reality. Correspondingly, positivist researchers take an objective stand and create knowledge through ‘deductive reasoning’ on the basis of

empirical evidence or tested theories (McKerchar, 2010). Thus, researchers with positivist assumptions tend to adopt a quantitative methodology in designing their research.

On the other hand, interpretivism is based on a philosophical view that 'social science cannot create true objective knowledge of any kind' (Oats, 2012b, p.11). This is a view that social phenomena are outcomes of interactions of social entities, and therefore it is necessary to go inside the worlds in order to establish the meaning of the social construction (Bryman and Bell, 2011; Oats, 2012b). Interpretivism assumes that 'the knowledge created is subjective and that the findings are probably true for their given context' (McKerchar, 2010, p.75). In this regard, interpretivism provides interpretations regarding social reality from a researcher's own subjective perspective (McKerchar, 2010). Interpretation accordingly entails an understanding of social reality reflecting the researcher's own perspective, philosophy, personal experiences and existing knowledge. In this context, Chua (1988, p.60) refers to interpretation of interpretivism describing: 'this philosophical tradition focuses on the constructive and interpretive action of people, whether it be their ability to organise sense data through forms of a *priori* knowledge, or as reflected in the essentials of their experiences'. In essence, interpretivist researchers commonly create knowledge through inductive reasoning. McKerchar (2010) claims that a qualitative methodology is generally adopted with an interpretivist approach. Nevertheless, she argues that the typical linkage between methodology and philosophical foundation is not rigid.

As an epistemological position, the underlying philosophy of this study is consistent with interpretivism. On the basis of an interpretive stance, this research elicits findings from inside a particular society involved in the Korean ETS and in the governance surrounding accounting standard setting in Korea. Knowledge claims for this research are created by interpreting the meanings constructed by stakeholders engaged in setting up an accounting standard in the run-up to the commencement of the Korean ETS. This research investigates the interests of the main stakeholders with regard to ETS accounting issues, and how these interests are reflected in the new accounting standard for ETS.

The researcher's own background plays a key role in interpreting the findings of the study. For instance, the author has experience of establishing the Korean ETS bill and the subordinate Presidential Decree of the Bill in 2012, and was engaged in a variety of technical work, including documenting a draft of the subordinate Presidential Decree of the Korean ETS bill and a number of internal reports, and conducting consultations with various stakeholders. This background provides a better understanding of stakeholders' interactions, and insights into the Korean ETS and emerging accounting issues corresponding with the commencement of the Korean ETS. The researcher's background supports the appreciation of phenomena in relation to the Korean ETS and related accounting issues, resulting in profound interpretations of the findings through her own lens.

On the basis of interpretation of the findings, discussion is developed to support knowledge claims for plausible solutions to resolve problematic accounting issues under ETS, the political nature of the accounting standard-setting process, and elements determining the desirability and appropriateness of the accounting standard in the case of ETS. This process is undertaken in accordance with an interpretive understanding of both social phenomena and the views of social entities.

#### *4.3.2. Methodology*

McKerchar (2010, p.90) refers to methodology as an overall guideline to how the research will proceed and a platform for choosing methods for research. Thus, aligned with the philosophical assumptions of the researcher, the methodological approach influences the nature of data collection (McKerchar, 2010).

Using a quantitative methodology, researchers seek 'objective and absolute truth' on the basis of a view that the world can be described objectively (McKerchar, 2012). Accordingly, this approach requires a researcher to adopt an objective or neutral position. Furthermore, in terms of epistemology, a quantitative methodology reflects a view that knowledge is created by facts and observations verified by an empirical approach. The quantitative approach is driven by deductive reasoning, hypothesis testing, the study of variables, or making statistical generalisations (McKerchar, 2010, 2012).

On the other hand, qualitative research involves interpretive inquiry, in which researchers go into society to collect data, and interpret data from their viewpoint on the world on the basis of inductive reasoning. Denzin and Lincoln (2005) point to interpretivism as an essential attribute of qualitative research as follows:

Qualitative research is a situated activity that locates the observer in the world. Qualitative research consists of a set of interpretive, material practices that make the world visible. These practices transform the world. They turn the world into a series of representations, including field notes, interviews, conversations, photographs, recordings, and memos to the self. At this level, qualitative research involves an interpretive, naturalistic approach to the world. This means that qualitative researchers study things in their natural setting, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them (Denzin and Lincoln, 2005, p.3).

Since the research framework of this study is philosophically based on interpretivism, as mentioned above, the research uses a qualitative methodology. Qualitative research is more suitable for this research on the grounds that the research topic is a novel issue, so neither sufficient data have been accumulated to undertake quantitative research nor has a relevant applicable theory been developed. Creswell (2013, p.40) states that qualitative research can be used when 'quantitative measures and the statistical analysis simply do not fit the problem'. In financial accounting, emissions trading schemes are regarded as a novel issue because little research on accounting issues under ETS has been carried out to date. Accordingly, it is difficult for accounting researchers to identify the critical 'variables' that need to be examined: 'Qualitative research is exploratory and is useful when the researcher does not know the important variable to examine' (Morse, 1991, cited in Creswell, 2003, p.22).

Qualitative research is appropriate when a research topic is being explored without being backed up by theory (Creswell, 2003). Morse (1991, p.12, cited in Creswell, 2003, pp.74-5) specifies the conditions under which qualitative research may be more suitable:

(a) the concept is 'immature' due to a conspicuous lack of theory and previous research; (b) a notion that the available theory may be inaccurate, inappropriate, incorrect, or biased; (c) a need exists to explore and describe the phenomena and to develop theory; or (d) the nature of the phenomenon may not be suited to quantitative measures.

In particular, the accounting issues regarding ETS have not previously been explored in Korea. Therefore, a qualitative approach is very appropriate to this research inquiry and the scope of investigation, in which the phenomenon (accounting issues under ETS) in the Korean context needs to be understood, rather than empirically testing a particular theory.

In qualitative research, the researcher interprets the data, which involves developing a description of an individual or setting, analysing data for themes or categories, and finally interpreting or drawing personal and theoretical conclusions about its meaning, stating the lessons learned and suggesting further questions to be asked (Wolcott, 1994, cited in Creswell, 2003, p.182). This also means that the researcher filters the data through a personal lens situated in a specific socio-political and historical moment.

Prior to the launch of the Korean ETS in 2015, setting up the accounting standard for ETS had been under discussion in Korea. Whilst conducting a pilot interview with KASB in 2013, it was noticed that KASB had outlined an ETS project to set the accounting standard for emissions rights just as this research was commencing. This research aims to explore how accounting issues under ETS are addressed in the standard-setting process and how various factors are accommodated into the standard in the Korean context. In addition, this research investigates stakeholders' views and actions toward the accounting standard for ETS. Based on the meanings and useful findings from this research, policy issues on ETS will be raised from the perspective of accounting. It should be noted that such knowledge claims cannot be gained from experimental data. Since this research inquiry is connected with exploring interactions between social actors toward a certain object, knowledge claims are created by interpreting empirical data in the field.

In essence, taking account of all attributes of this research, including the novelty of the topic, the aims of the study and the implications of the findings, this research proceeds by taking a qualitative approach on the basis of interpretivism.

#### *4.3.3. Research methods*

Research methods are a specific technique for collecting data. Oats (2012a, p.9) states that 'methods refer to the specific techniques employed in the pursuit of research, including data collection and data analysis'. Methods are means by which data are collected, such as experiments, interviews and surveys (McKerchar, 2010).

Oats (2012a) highlights the necessity for alignment throughout the elements of research, including research framework (philosophical assumption), methodology and methods. In this regard, the method needs to be consistent with the qualitative and interpretive methodology adopted for this research (McKerchar, 2010).

Creswell (2003, p.198) claims that qualitative research occurs 'in natural settings where human behaviours arise and social events take place'. This implies that qualitative research entails fieldwork for data collection. In line with the interpretive approach, qualitative methods, including field notes, interviews, conversations, recordings and memos, are techniques for transforming the world into a series of data sets.

#### *Interviews*

Among the various qualitative methods available, interviews are critically important for an interpretive approach (Oats, 2012a). Interviews are usually employed when a researcher seeks to obtain more 'in-depth insight' into a particular topic of interest (Denscombe, 1998). Bryman and Bell (2011) refers to interviews employed in connection with qualitative research as 'qualitative interviews'.

Kvale and Brinkmann (2009, p.29) refer to the advantages of qualitative interviews as a research method as 'a unique potential for obtaining access to and describing the lived everyday world' and 'privileged access to people's basic experience of the lived world'. They describe qualitative interviews as a 'knowledge-producing

activity' (cited in Oats, 2012a, p.20). Qualitative interviews allow a researcher to be objective in terms of obtaining data which is non-biased, 'real data' or an interviewee's 'authentic meaning' (Kvale and Brinkmann, 2009, p.29). Following the data collection, the researcher moves into a subjective position from which the findings are interpreted by the researcher, creating a narrative (Oats, 2012a).

There are two main types of qualitative interview: unstructured and semi-structured.

Starting with a single question introducing a theme or topic, unstructured interviews are similar to informal conversation (Bryman and Bell, 2011; Denscombe, 1998). On the other hand, semi-structured interviews address a list of questions or issues, although the interviewer has flexibility in terms of the order of questions, in order to encourage interviewees to develop or elaborate their own views or explanations of processes, beliefs or experiences (Bryman and Bell, 2011). Bryman and Bell (2011, p.467) describes how to conduct semi-structured interviews as follows:

The researcher has a list of questions on fairly specific topics to be covered, often referred to as an interview guide, but the interviewee has a great deal of leeway in how to reply. Questions may not follow on exactly in the way outlined on the schedule. Questions that are not included in the guide may be asked as the interviewer picks up on things said by interviewees. But, by and large, all the questions will be asked.

Semi-structured interviews are an appropriate approach particularly if interviewees' views are vital for understanding social circumstances (Bryman and Bell, 2011).

On the whole, as a research method, interviews have the advantage of generating in-depth information. They are a useful research method when a research topic is associated with exploring a phenomenon in depth and in detail (Denscombe, 1998). This is because interviews enable a researcher to obtain valuable and profound data from 'key informants' who are deliberately chosen to give their own unique perspectives and concerns on a specific issue (Denscombe, 1998). Furthermore, the process of interviewing is flexible, and an interviewer can adjust

a line of inquiry depending on an interviewee's response during the interview (Bryman and Bell, 2011; Denscombe, 1998).

In this regard, semi-structured, in-depth interviews are the main research method used in this research, and the interviews were conducted face-to-face. A semi-structured interview aims to understand themes of everyday lives in relation to the subject of research. The purpose of the interview is to obtain interviewees' descriptions of phenomena, while the researcher interprets the meaning of the descriptions. Conducting semi-structured interviews as a method of collecting data in this research enabled the collection of profound information with 'real' and 'authentic' meanings in relation to accounting issues for ETS.

The main objective of this study is to explore how accounting issues under ETS were tackled by KASB in the standard-setting process. In particular, this study is concerned with the institutional dynamics between the accounting standard setter and stakeholders. Accordingly, key players were identified who were engaged in setting up the accounting standard for emissions rights in Korea. These key players provided 'privileged views and opinions' on the accounting issues in the field. In-depth interviews were conducted with key practitioners in KASB and the main interested stakeholders who participated in the standard-setting process.

Another distinctive objective of this research is to explore the position of IASB toward ETS accounting issues. Although public documents released by IASB are accessible, they do not provide sufficiently rich data regarding, for example, why IASB has delayed releasing an IFRS for ETS, and what position it has taken with regard to establishing an accounting standard for ETS. In order to accomplish this research, it is necessary to understand the real and authentic concerns underpinning this issue from IASB's point of view. Given the limited access to data, semi-structured interviews with IASB were carried out in order to acquire rich and in-depth views on accounting issues for ETS.

An interview with ANC was also undertaken. ANC released a proposal for the accounting treatment of emissions rights and related liabilities in the form of French GAAP in 2012. ANC's proposal emerged following the withdrawal of IFRIC 3, and this proposal influenced later attempts by other accounting standard setters



in need of an accounting standard for emissions rights, including KASB. The case of ANC was regarded as significant progress in the evolution of accounting models under ETS once IFRIC 3 had been revoked. Thus, a semi-structured interview was conducted with ANC in order to obtain in-depth data, including the background, the underlying logic of the accounting model and the real sources of a potential solution.

Overall, in-depth interviews supported the gathering of rich and tangible data to assess a variety of factors functioning in standard setting, such as the extent to which the stance of the standard setter was transformed and why standard setters' views changed.

### *Document analysis*

In addition to interviews, document analysis is used in qualitative research. Documents are critical sources for research in enhancing understanding of 'events, processes and transformations in the context of social relations' (May, 2001).

Bowen (2009) defines document analysis as 'a systematic procedure for reviewing or evaluating documents'. Document analysis has several advantages from various perspectives. Bowen (2009) suggests that documents may be exploited as 'supplementary research data', and enable a researcher to gain not only information but also insights into the extent to which research contributes to a particular body of knowledge. Furthermore, documents provide an important source to track a change or development and verify the findings obtained from other sources (Bowen, 2009). Flick (2006) posits the necessity for analysis of documents in qualitative research as a 'complementary strategy' to other methods such as interviews.

Document analysis can be used throughout a research study, for example for building background information, generating research questions to be explored, and verifying evidence from other sources (Bowen, 2009). In addition, document analysis is applicable to qualitative research, in combination with other qualitative research methods such as interviews or observation (Bowen, 2009). Atkinson and Coffey (2004, p.58) state that documentary data are an essential part of qualitative analyses, as 'there are many research questions and research settings that

cannot be investigated adequately without reference to the production and use of documentary materials’.

Furthermore, document analysis is an important research method in conducting ‘thematic analysis’. Fereday and Muir-Cochrane (2006, p.32, cited in Bowen, 2009) refer to thematic analysis as ‘a form of pattern recognition within the data, with emerging themes becoming the categories for analysis’. Document analysis allows for ‘rich textual thematic analysis’ (Altheide, 2000). This implies the importance of document analysis as a means of data triangulation, where a researcher pursues ‘multiple sources of evidence’, seeking ‘convergence and corroboration through the use of different data sources and methods’ (Bowen, 2009, p.28).

Considering the range of research settings and the posited research questions in this study (Section 4.2), document analysis provided useful supplementary research data in the form of relevant information and insights to describe the findings with reliable and detailed content. Analysis of relevant documents enabled the findings from interviews to be corroborated and verified, such as the background and underlying logics of the accounting models that each accounting standard setter dealt with, the arguments on accounting issues under ETS, and changes in stance by accounting standard setters. In effect, document analysis was of great methodological value for this research.

In summary, semi-structured interviews were used as the primary research method, and document analysis was undertaken as a complementary method. Since relevant documents were obtained not only by accessing publicly available online sites but also directly from interviewees in the field, document analysis was carried out intentionally to contextualise interviewees’ general statements and illuminate underlying meanings in their statements. In addition, documents enabled subsequent events in the accounting standard-setting process to be followed up after completion of the interviews in the field.

#### **4.4. Fieldwork activities**

Miles and Huberman (1994, cited in Creswell, 2003, p.185) state that four aspects must be considered in relation to the selection of participants or sites: the setting (where the research will take place), the actors (who will be observed or

interviewed), the events (what the actors will be observed or interviewed doing), and the process (the evolving nature of events undertaken by the actors within the setting). In terms of these four factors, the data collection for this study was purposely bounded as follows.

*Setting:* The fieldwork was conducted mainly in Korea. In addition, in order to address research questions in relation to accounting issues for ETS, fieldwork was also conducted in London and Paris where IASB and ANC are located.

*Actors:* The prominent actors in relation to the research questions are accounting standard setters. KASB is the most critical actor in this setting, as well as IASB and ANC. In addition, stakeholders of KASB were intentionally contacted in order to obtain their views and perspectives on the issues.

*Events:* The core event in this study is the accounting standard-setting process for ETS following the withdrawal of IFRIC 3. This study focuses mainly on the standard setting of Korean GAAP for emissions rights. It also explores previous discussions in which IASB and ANC had been involved in setting up accounting standards for emissions rights.

*Processes:* With regard to Research Question 2, this research follows the entire process of accounting standard setting for emissions rights in the context of KASB. This process consisted of several stages, including KAI Forum meetings, technical committee meetings, KASB meetings and public hearings.

#### **4.5. Interviews**

Samples were chosen on the basis of non-probability sampling; in other words, interviewees were purposefully selected. Purposive sample selection is beneficial when specific people may make a special contribution to the research because they have unique insights or are in a specific position in an organisation (Denscombe, 1998). Creswell (2003, p.185) also considers intentional sampling in fieldwork to be a common attribute of qualitative research.

The idea behind qualitative research is to purposefully select participants or sites (or documents or visual material) that will best help the researcher understand the problem and the research question. This

does not necessarily suggest random sampling or selection of a large number of participants and sites, as typically found in quantitative research.

Identification of stakeholders is an essential stage for determining whom I would interview. Since Mitchell et al. (1997) emphasised as a role of managers to determine stakeholder salience on the basis of manager's perception of stakeholder's attributes (see Section 3.3.2). For this research, I viewed KASB as a 'manager' in Mitchell et al. (1997)'s terms; accordingly, the interview samples were mainly chosen on the basis of observation on how KASB perceived its stakeholders in the development of accounting standards for ETS. Sampling was deliberately conducted among stakeholders which KASB had explicitly identified as important and were consulted and got involved in consultation process of the development of the Korean ETS.

Moreover, given the limited time and resources available for the research, it was important to interview the 'right' person who could answer the research questions. The selection of interviewees was attributed to my judgment on the basis of work experience in the Presidential Committee on Green Growth (PCGG) during 2011-2012. When I was involved in establishing the Presidential Decree of the Korean ETS bill in 2012, I carried out several consultations with various stakeholders with regard to the Korean ETS. This work experience supported the identification of appropriate individuals who had taken part in accounting standard setting for ETS. Since the introduction of ETS in Korea was keenly controversial among stakeholders, a variety of groups such as government, NGOs, companies, and experts in climate change was regarded as stakeholders with great interests in the issues of ETS. Amongst them, it is critically essential to identify who constitutes the appropriate stakeholder group for the accounting issues for ETS. Thanks to my work experience, I was able to judge who would be more relevant to researching the accounting issues for ETS.

A deliberately selected sample was expected to provide more relevant answers to the research questions than a randomly selected sample. Since the research topic is associated mainly with accounting issues in the Korean ETS, purposive

sampling led to concentration on a specific population to conduct in-depth face-to-face interviews.

The primary data collection method in this study was face-to-face semi-structured interviews. Interviews were conducted with two phases. As the first phase, a preliminary interview was carried out with the KASB in March 2013 because I intended to identify which were the key interest parties for KASB. At the start of the ETS project in March 2013, KASB held the KAI forum as a form of public hearing (The 120<sup>th</sup> KAI forum). It invited POSCO (the largest emitter among Korean companies), Ministry of Environment (the competent authority), Samjeong KPMG and Samil PwC (big four accounting firms) to present in the forum. In addition to these entities, when launching the technical committee for ETS in 2014, KASB called Financial Services Commission (the supervisory authority of financial market in Korea), South-East power Co. (one of electricity generation companies) as a member of the committee. The attendants in the KAI forum and the member of the technical committee assisted me to identify whom KASB perceived to be the most relevant stakeholders for this issue. The participants in the KAI forum were Korean companies-especially large emitters, accounting experts in accounting firms, and the government.

Moreover, this preliminary interview also suggested the necessity for interviews with IASB and ANC. During the preliminary interviews, I found KASB to have relied significantly on the cases of IASB and ANC. KASB referred to all preceding models available in English version including IFRIC 3, the accounting models developed by IASB in 2008-2010 and by ANC in 2012. KASB staff posited that the accounting model of IASB was different from that of ANC due to the different perspective toward emissions rights and related liabilities. Both models were analysed by KASB in the pursuit of the most appropriate model in Korea. It provided good grounds for justifying key players who were able to provide privileged information regarding the research inquiry. I made judgment on necessity of interview with IASB and ANC in order to see how the preceding models may affect the development of accounting model for emissions rights and related liabilities in Korea. Given KASB's reliance on IASB and ANC, it was decided from the perspective of stakeholders' salience, that other accounting

standard setters may not be of great relevance in terms of accounting issues under ETS. Accordingly, interviews with standard setters (in addition to KASB) only involved members of IASB and ANC and other accounting standard setters were not included.

On the basis of the preliminary interview with KASB and the researcher's private network, I was able to judge who may be a right person as stakeholders for this issue. The stakeholder group consists of accounting standard setters, companies who may be categorised as large emitters, industry associations, government, public organisations, and accounting experts.

Amongst various stakeholders in relation to ETS issues, I deliberately excluded NGOs because NGOs did not constitute major stakeholders according to stakeholders' salience insofar as the accounting issues for ETS. NGOs had not delivered any interest or expressed any concern in relation to accounting issues for ETS to KASB beforehand. As a consequence, they were not invited in the KAI forum for the development of accounting standard for ETS. Although they were regarded as one of the most important stakeholders with regard to ETS, they seemed to be perceived by KASB as an irrelevant entity with regard to the accounting issues for ETS. On the grounds of stakeholder's salience and considering KASB's decision, I decided not to interview members of NGOs.

Based upon my judgment, interviewees were nominated and contacted by email in order to make arrangements for interviews. I selected Korean companies mainly considered to be 'large emitters' in Korea. Based on the historical record of emissions per year, I contacted companies ranked within top-ten emitters since they are mainly responsible for producing carbon emissions in Korea. The companies ranked within top-ten emitters mainly belonged to steel, petroleum, power generation, cement, semi-conductor industries. In addition to companies, I deliberately included a certain industry association in the list of interviewees. Among a wide range of industry associations in Korea, I selected the Federation of Korean Industries, referred to as FKI, a multifunctional association for domestic industries, which exists in the form of an incorporated body. FKI is composed of representatives from the major corporations in Korea. In addition, FKI has association members, which represent major corporations whose annual sales

should be fifty billion KRW.<sup>40</sup> In other words, FKI is regarded as a representative association on behalf of large companies in all industrial sectors such as manufacturing, finance, construction, wholesales and trade, transportation and storage, electricity and gas, and telecommunications. Since most large emitters in Korea are member of FKI, I believed that an interview with FKI would be appropriate in order to identify its role regarding the issue for this research.

In relation to the accounting experts, I intentionally contacted a few accountants who were working in the big-four accounting firms in Korea. For the 'accounting experts', most accountants in Korea are members of the professional accounting body in Korea, called 'Korean Institute of Certified Public Accountants (KICPA)'. Accountants working in the accounting firms such as the big-four accounting firms are technically in charge of financial reporting. Accordingly, I made the judgment that accountants working in the big-four accounting firms were much more appropriate experts to answer the technical accounting issues in relation to ETS.

Korean government also needed to be interviewed: the Ministry of Environment and the Ministry of Strategy and Finance were deliberately selected because they are mainly in charge of the ETS policy in Korea. In particular, I chose to interview the Task Force Team of ETS in the Ministry of Environment, which is the competent authority of ETS in Korea. In addition, I deliberately included public organisations in relation to ETS or energy since I was aware that some public organisations were conducting research on accounting and taxations issues for Korean ETS. Besides, I intentionally contacted persons or organisations which were able to provide appropriate views on the Korean ETS development. Some experts in climate change and a director in charge of operation of the carbon exchange market in the Korean Exchange were therefore also included.

While carrying out the fieldwork, more interviewees emerged through so-called 'snowballing'. Snowball sampling is a type of interview process in which the number of interviewees is extended in the process of interviewing (Denscombe, 1998). Snowballing is a complementary method in the sense of not only extending

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<sup>40</sup> It is equivalent to at around USD 4,200,000.

the size of sample but also enhancing the credibility of interviews, and in this regard it is technically compatible with purposive sampling (Denscombe, 1998). Once an interviewer has embarked on research with a few interviewees, each interviewee may nominate relevant people who may need to be included in the sample (Denscombe, 1998). As a consequence of snowballing, a director working in the accounting and finance division in GS Caltex Co., an accounting standard setter working in IASB and an accounting expert having worked in IASB were additionally interviewed.

Interviewees were asked to nominate other individuals who might be relevant to this topic. In Korea, 17 interviews were undertaken, including one focus group interview. In London, two interviews were carried out with experts from IASB. One interview was undertaken in Paris and another in Munich. Overall 21 interviews with 32 participants were conducted. The final list of participants is presented in Table 4.

**Table 4: List of interviewees**

Interview	Participant	Code	Role	Name of institution	Date
1	1	ASS 1	Accounting standard-setter	KASB	05/03/2014
	2	ASS 2	Accounting standard-setter	KASB	05/03/2014
2	3	ASS 3	Accounting standard-setter	KASB	04/04/2014
3	4	ASS 4	Accounting standard-setter	IASB	05/06/2014
4	5	ASS 5	Accounting standard-setter	IASB	06/06/2014
	6	ASS 6	Accounting standard-setter	IASB	06/06/2014
5	7	ASS 7	Accounting standard-setter	ANC	01/07/2014
	8	ASS 8	Accounting standard-setter	ANC	01/07/2014
6	9	EXP_ACC 1	Accounting Expert	Siemens	03/07/2014
7	10	EXP_ACC 2	Accounting Expert	KPMG Korea	07/03/2014
	11	EXP_ACC 3	Accounting Expert	KPMG Korea	07/03/2014



8	12	EXP_ACC 4	Accounting Expert	PwC Korea	03/03/2014
9	13	COM 1	Industry	POSCO	05/03/2014
10	14	COM 2	Industry	GS Caltex	11/03/2014
	15	COM 3	Industry	GS Caltex	11/03/2014
11	16	COM 4	Industry	GS Caltex	07/05/2014
12	17	COM 5	Industry	Samsung Elec.	12/03/2014
	18	COM 6	Industry	Samsung Elec.	12/03/2014
	19	COM 7	Industry	Samsung Elec.	12/03/2014
	20	COM 8	Industry		12/03/2014
13	21	COM 9	Industry	South-East Power Co.	07/03/2014
	22	COM 10	Industry	South-East Power Co.	07/03/2014
	23	COM 11	Industry		07/03/2014
14	24	COM 12	Industries association	Federation of Korean Industries	10/03/2014
15	25	GOV 1	Government	Ministry of Environment	14/03/2014
	26	GOV 2	Government	Ministry of Environment	14/03/2014
16	27	GOV 3	Government	Ministry of Strategy and Finance	18/03/2014
17	28	PO 1	Public organisation	Korean Exchange	14/03/2014
18	29	PO 2	Public organisation	Greenhouse Gas Inventory and Research Center of Korea	21/03/2014
19	30	PO 3	Public organisation	Korean Energy Management Corp.	21/03/2014
20	31	EXP_CC 1	Expert in climate change	Korean Energy Management Corp.	21/03/2014
21	32	EXP_CC 2	Expert in climate change	Korea Institute of Industrial Technology	20/03/2014

The fieldwork for interviews took place in Korea, London, Paris and Munich. Interviews in Korea were conducted in Korean, while other interviews in London, Paris and Munich were undertaken in English.

Interview questions were drafted in accordance with the research questions. However, in line with the semi-structured interview approach, all interviews proceeded in the form of open questions in order to obtain interviewees' 'pure experience unspoiled by any leading questions' (Kvale and Brinkmann, 2009, p.48).

In addition, all interviews were electronically recorded using a recording device. During the fieldwork in Korea, two KASB meetings were attended as an observer on 28 March and 11 April 2014. Recording of these meetings was not permitted, but extensive notes were taken of discussions in these meetings relating to the research questions.

#### *4.5.1. Document analysis*

In order to conduct data analysis, relevant documents were selected as a supplementary source to verify and specify the data obtained from interviews. Along with interviews in the field, it was necessary to analyse relevant documents because the accounting issues explored in this study were described in highly technical terms. Scott (1990, cited in Flick, 2006, p.248) suggests the use of four criteria for documents to be employed: authenticity, credibility, representativeness and meaning. These criteria were used to assess documents provided by IASB, ANC, KASB and other interviewees. Accordingly, a set of documents relevant to the research questions was selectively adopted as shown in Table 5.

**Table 5: List of documents**

Document title	Type of document	Reference number	Source	Date
Emission Trading Schemes	Research paper	Agenda paper 10A	IASB	May 2010
Recognition of assets in a cap and trade scheme	Staff paper	IASB Agenda paper 10A/FASB Agenda 6A	IASB	Sep 2010
Existence and recognition of liabilities for the allocation in	Staff paper	IASB Agenda paper	IASB	Sep 2010

a cap and trade scheme		10B/FASB Agenda 6B		
Issues to be discussed at future board meetings	Staff paper	IASB Agenda 10C/FASB Agenda 6C	IASB	Sep 2010
Recognition of a liability for emissions in excess of initial allocation, and measurement of liabilities in an emission trading scheme	Staff paper	IASB Agenda 7A/FASB Agenda 8A	IASB	Nov 2010
Initial and subsequent measurement of purchased allowances (assets) (cap and trade scheme)	Staff paper	IASB Agenda 7B/FASB Agenda 8B	IASB	Nov 2010
Balance sheet presentation of the assets and liabilities in an emission trading scheme	Staff paper	IASB Agenda 7C/FASB Agenda 8C	IASB	Nov 2010
The Research Programme	Agenda paper	Agenda paper 13A	IASB	Apr 2014
Background scheme information	Staff paper	IASB Agenda 6A/ASAF Agenda 4B	IASB	Nov 2014
Summary of accounting issues	Staff paper	IASB Agenda 6B/ASAF Agenda 4C	IASB	Nov 2014
Pollutant Pricing Mechanisms (formerly Emissions Trading Schemes)	Agenda paper	IASB Agenda 6A	IASB	Jun 2015
Proposals for accounting of GHG emission rights	Agenda paper	Agenda 12	IASB/ANC	Oct 2012
Review of the law relating to the ETS	Agenda paper	Agenda 1	KASB	Mar 2014
Exposure draft, Accounting standards for Non-public entities 'Emission rights and Liability to deliver allowances'	Agenda paper	Agenda 2	KASB	Jun 2014
SKAS No. 33 'Greenhouse gas emission permits and emission liability'	Agenda paper	Agenda 2	KASB	Sep 2014
SKAS No. 33 'Greenhouse gas emission permits and emission liability'	Agenda paper	Agenda 1	KASB	Oct 2014
Minutes of the technical committee for the ETS	Meeting minutes		KASB	Mar 2014
KAI Forum: Exposure draft 'Emission rights and Liability to deliver allowances'	Presentation and minutes		KASB	Jul 2014

Documents were purposively adopted in relation to key topics: accounting issues discussed by the accounting standard setter; accounting models sought in the standard-setting process; and accounting standards for emissions rights set up by each accounting standard setter. The purpose of including these documents in the fieldwork activities was to contextualise and verify interviewees' general statements, to clarify the underlying content which interviewees might not have articulated in their statements, and to follow up subsequent events after the interviews.

#### **4.6. Data analysis**

##### *Transcription of interviews*

Transcription is a process of converting interviews 'from an oral conversation to a written mode' to provide a form amenable to substantial data analysis (Kvale, 2009, p.183). Once data have been recorded, transcription should be the next step toward data interpretation (Flick, 2006). In other words, transcription is a starting point in the analytic process (Kvale, 2009).

After conducting the interviews, all interviews were subsequently transcribed. A personal code was assigned to each interviewee in order to safeguard anonymity in accordance with the ethical considerations of this research.

##### *Coding*

Coding is considered to be a key step in the context of qualitative analysis (Bryman and Bell, 2011), and data coding is regarded as a preliminary stage toward data analysis (McKerchar, 2010). Practically, as the analytical process proceeds, the researcher tends to build up connections by elaborating data, specifically breaking data apart, drawing concepts from the data, and combining data in line with related concepts (Corbin, 2008).

McKerchar (2010, p.227) defines coding as 'a generic process by which data is organised into categories on the basis of themes, concepts, or similar features that will allow for analytical generalisations to be made'. Coding is the process of organising data into more manageable forms in order to interpret it more systematically (Neuman, 1994).

When conducting coding, computer-assisted qualitative analysis (CAQDAS) is widely adopted for qualitative research. CAQDAS is defined as the use of a dedicated computer software package (such as NVivo) which assists the researcher in managing and retrieving data more efficiently compared with manual systems (Liamputtong, 2009, p.293, cited in McKerchar, 2010, p.247). Bryman and Bell (2011) states that CAQDAS supports the delineation of codes by building up 'trees of interrelated ideas'.

Thematic analysis is commonly used for qualitative analysis (Bryman and Bell, 2011), and is adopted to identify themes emerging from the data on the basis of inductive reasoning (Ezzy, 2002, p.88, cited in McKerchar, 2010, p.232). Although it is one of the most common approaches in qualitative analysis, there are no specified procedures for conducting thematic analysis (Bryman and Bell, 2011). Generally, thematic analysis is conducted by 'visualising' themes or sub-themes and, since there is no systematic way to identify themes, the researcher's intuition or perspective plays a critical role in theme identification (McKerchar, 2010).

Based on data collected from fieldwork activities, data analysis and interpretation were undertaken to elicit a detailed description of the setting and the individuals, followed by analysis of the data for themes and issues (Creswell, 2003). QSR NVivo 10 was used to organise the data effectively and systematically, and to better facilitate the elicitation of themes. Using NVivo, initial codes were assigned to chunks of data. The coded data from interview transcriptions and notes taken in KASB meetings were then subjected to thematic analysis. Distinctive themes were identified, such as 'main accounting issues for emissions rights', 'factors to be considered', 'attributes of stakeholders' participation in the standard- setting process' and 'ways of reflecting stakeholders' interests'.

### *Triangulation*

In obtaining data sets from multiple resources, the data must be triangulated. Triangulation is an analytical skill combining several qualitative methods, and is widely used in various settings with different study groups and theoretical frameworks (Flick, 2006). In order to validate data obtained from one method,

triangulation is strategically adopted to further enrich the data analysis (Flick, 2006).

In this study, triangulation was undertaken for data analysis where data obtained from individuals was interlinked. The interview transcripts, email correspondence received from interviewees, and relevant documents analysed constituted a large volume of qualitative data. Creswell (2003) posits that triangulation can be undertaken to check the accuracy of findings. In order to ensure the credibility and authenticity (internal validity) of data obtained from the interviews, document analysis was carried out on the documents listed in Table 5. This process can be regarded as a process of triangulation, as referred to by Creswell (2003, p.196).

In order to identify significant themes and concepts, connections between themes were visualised and, more importantly, existing theory, such as legitimacy, was applied to recurring themes.

#### *Writing-up*

Following coding and data analysis, descriptive versions of Chapters 5, 6 and 7 were drafted. As a consequence of iterative reading of the first draft, the most appropriate quotations were extracted and distinctive themes derived from the findings were presented. In effect, these themes comprise the structure of this thesis. Discussion and conclusions evolved subsequently (see Chapter 8).

#### **4.7. Limitations**

There are inevitable limitations to a qualitative approach. Lillis (1999, p.84) points out that the semi-structured interview method may be subject to interviewer bias whilst conducting the interviews or during data analysis, which may diminish the 'credibility of theory building from qualitative data'. In order to minimise 'the intrusive effects of the interviewer' (Lillis, 1999, p.84), the questions were cast in a neutral way, without a specific list of interview questions. Endeavours were made not to bias interviewees with leading questions.

Denscombe (1998) states that an appropriate sample size may be a crucial factor to ensure accuracy of results, as small-scale research may lead the findings to be invalidated. The sample size in this study (21 interviews) might be regarded as

relatively small; however, a greater number of participants (32 persons) were interviewed. Qualitative approach entails an assumption that research is a process of 'discovery' rather than the testing of hypotheses (Denscombe, 1998).

The main data were obtained through interviews with a few interviewees in a single country (South Korea) on a single issue (ETS). Accordingly, the findings cannot be generalised in statistical terms. Nevertheless, the qualitative research contributes to providing valuable real-world observations which have not previously been investigated.

Data analysis inevitably involves subjective interpretations as the findings are analysed and interpreted on the basis of the researcher's individual perspective, values and thoughts. In order to tackle the potential weakness of subjective analysis in the qualitative approach, the theoretical framework of legitimacy theory was used to interpret the findings and create a narrative in order to ensure objectivity of analysis. All relevant literature referred to in Chapter 3 contributed to building a theoretical lens for interpretation of the data. Analytical interpretation was conducted on the basis of various extant studies, and these new findings contribute to relevant existing literature.

#### **4.8. Summary**

This chapter has presented the two main research questions and their associated objectives for this study. The overall research approach taken in this study has been described and explained. As the main research framework, philosophical assumptions have been discussed in detail. A constructivist position has been taken in terms of the ontology and an interpretivist position in terms of the epistemological approach to this study. In accordance with the philosophical assumptions made, qualitative research was chosen as an appropriate methodological approach for this study. In particular, a qualitative approach was considered more suitable for exploring the research objectives and questions of this study, where there was a need to examine and interpret empirical data in the field. In essence, an interpretive inductive methodological approach has been taken, which is well suited to providing insights and understanding of the accounting issues for ETS, which is the main subject of this study.

The fieldwork included semi-structured and in-depth interviews, mainly conducted face-to-face, and a number of relevant documents were analysed. Details of the interviews have been described, including the selection of interviewees, schedule and processes. Notes taken during KASB meetings were coded along with transcription of the interviews. Relevant documents were utilised mainly to analyse data collected in the field. On the basis of an interpretive approach, the process of data analysis has been described in detail. Finally, some limitations of this study have been addressed.

The next three chapters present and describe the findings of this study, in line with the research questions and objectives.



## **5. Accounting Issues for ETS in the cases of IASB and ANC**

### **5.1. Introduction**

This chapter presents and analyses the findings in relation to Research Question 1: *How does the accounting standard setter tackle accounting issues under ETS in the standard-setting process in order to achieve the most appropriate accounting standard?* It presents the findings on various aspects of accounting issues arising when an accounting standard-setting body sets up accounting standards for ETS.

In particular, this chapter describes the main accounting issues for emissions rights and related liabilities which have been addressed by IASB and ANC following the withdrawal of IFRIC 3. The accounting models of these two organisations have substantially influenced KASB in its development of accounting models for emissions rights (see Chapter 6).

General observations are presented in Section 5.2, followed by specific accounting issues addressed by each accounting standard setter. Section 5.3 describes a number of observations in relation to how accounting issues for ETS evolved in the IASB-FASB joint project conducted from 2008 to 2010. This is followed in Section 5.4 by findings revolving around accounting issues addressed by the ANC. The findings presented in this chapter emerged as themes throughout the interviews.

### **5.2. General Observations**

In line with previous studies, key accounting issues under ETS include the recognition, measurement and presentation of emissions rights and related liabilities corresponding with each process of the ETS. In particular, the interviewees were generally in agreement that the main accounting issue relates to free allowances. One interviewee described this well:

I guess the main question, if and when you address the accounting for emission trading schemes, is whether you also deal with a situation of free allowances. So I think that was the biggest hurdle at my time from a conceptual point of view (EXP\_ACC 1).

Similarly, another interviewee emphasised that the core accounting issue is intrinsically driven by free allowances:

When it comes to accounting for emissions rights, the main issue is how to account for free allowances. If or when emissions rights are allocated for free at the initial stage, the accounting issue arises because companies can sell or purchase emissions rights at their discretion (EXP\_ACC 2).

Meanwhile, when breaking down the accounting issues into detail, each accounting standard setting body tended to concentrate on different aspects under the different circumstances which each organisation faced. The accounting standard setter had to take specific attributes of each scheme into consideration when developing an accounting standard for ETS. For example, IASB concentrated mainly on the accounting treatment of free allowances and related liabilities in its joint project with FASB from 2008 to 2010. When IASB restarted the ETS project in 2008, it attempted to develop an accounting standard to be applied to all kinds of emissions trading schemes worldwide (Lovell and MacKenzie, 2011; Lovell, 2014). In general, most schemes entail free allocations in order to ease the burden on industry arising from the introduction of ETS (see Section 2.4.1). For example, most allowances were distributed for free during Phase II of the EU ETS, while the joint ETS project was proceeding. This is presumably why IASB concentrated on accounting issues relating to free allowances during the period of the joint project.

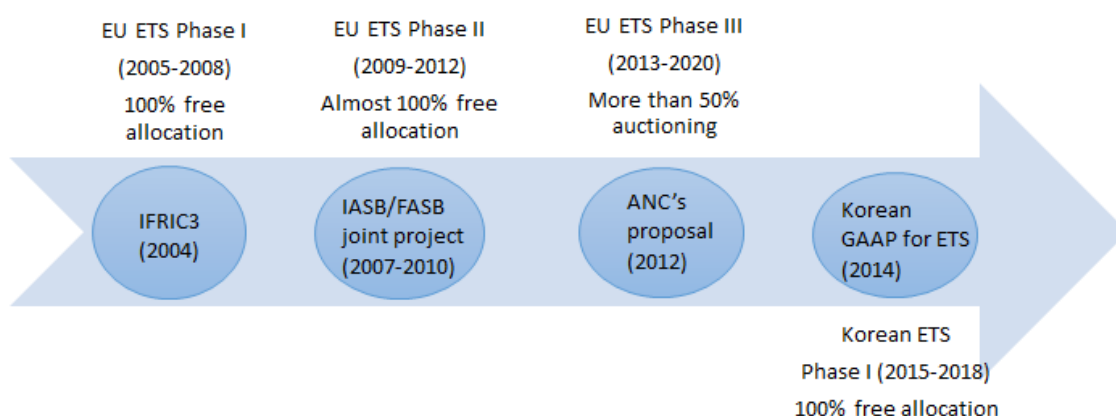
On the other hand, ANC initiated the establishment of a French accounting standard for emissions rights prior to commencement of Phase III (2013-2020) of the EU ETS. From Phase III onward, auctioning has become the default method of allocation, so companies may incur substantial increases in production costs by purchasing emissions rights. ANC intended to accommodate features arising from this large structural change in the EU ETS into a new accounting standard.

Meanwhile, KASB focused mainly on accounting issues relating to free allowances and related liabilities because 100 per cent free allocation was expected in Phase I (2015-2017) of the Korean ETS.

In essence, under the different circumstances in which accounting issues on emission rights were being addressed, each accounting standard-setting body emphasised different accounting issues.

Figure 7 demonstrates in chronological order how discussions on accounting standards for emissions rights evolved, corresponding to the commitment periods of the EU ETS and the Korean ETS. It illustrates the different attributes of each specific phase in the scheme that explain the main accounting issues on which each accounting standard setter concentrated at that time. In addition, Figure 7 implies the idea of ‘path dependency’ in the development of accounting models for emissions rights. When developing its accounting model, it is presumed that KASB was significantly influenced by preceding models because it referred mainly to IFRIC 3, IASB’s tentative decisions, and ANC’s proposal.

**Figure 7: Development of accounting standards for ETS**



The main accounting issues identified through interviews are discussed in the next section.

### 5.3. IASB’s tentative decisions, 2008-2010

From 2008 to 2010, IASB discussed the accounting issues relating to ETS with FASB as a form of joint project. Despite vigorous discussions during the joint project, IASB made only a few tentative decisions on how to account for emissions allowances and related liabilities. To this extent, the ETS project ended up being deferred in 2010 ‘without making that much progress’ (ASS 5).

Emissions right meet the Conceptual Framework's (as published by IASB, 2010, but also in the latest reiteration) definition of an asset as 'a resource controlled by the entity as a result of past events and from which future economic benefits are expected to flow to the entity.'

When the ETS project was resumed in 2007, one IASB member (ASS 5) had reached a 'solid' conclusion on the recognition of free allowances as an asset without a conflict. A free allowance was regarded as a sort of economic resource that 'an entity can control' (EXP\_ACC1). According to IASB staff paper 7B,<sup>41</sup> the board members and staff largely agreed that emissions rights should be categorised as assets, regardless of whether they were obtained for free or purchased.

With a clear conclusion on viewing emissions rights as an asset, the next accounting issues to be addressed were set out as follows:

- 1) Asset side: If allowances (either free or purchased) are recognised as an asset, how should allowances be measured?
- 2) Liability side: What kinds of obligations/liabilities arise in each scheme, and how should relevant liabilities be measured?

#### *5.3.1. Day 1 issue*

One interviewee (ASS 5) viewed the accounting treatment of free allowances as a more 'fundamental' issue from a conceptual framework point of view. With regard to the measurement base for allowances, IASB took a fair value approach in which either purchased or granted allowances are measured at fair value. IASB staff paper 7B suggests that IASB had reached a tentative conclusion that free allowances should be measured at fair value in accordance with the approach to purchased rights.

Measuring free allowances at fair value brought about a number of significant 'knock-on issues' from an accounting conceptual point of view (ASS 5).

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<sup>41</sup> IASB Agenda 7B/FASB Agenda 8B, Staff paper (Nov 2010): Initial and subsequent measurement of purchased allowances (assets).

Specifically, a fair value approach raised vigorous debates on the corresponding entry of free allowances. One interviewee described how subsequent accounting issues arose in relation to the corresponding entry:

So it is clearly an asset. The problem is how you look at the situation that you have a debit entry, that you have only received those allowances because someone expects you to emit in the future, and how you would enter that. So that was one of the questions related to how you account for the assets (EXP\_ACC1).

When companies receive allowances for free and recognise them at fair value, an accounting issue subsequently arises: Should the gain be recognised or should a liability for the allocation be recognised at the time of allocation? This is the so-called 'Day 1 issue'.

It appears that IASB attempted to deal with the Day 1 issue by generating neither mismatch problems under IFRIC 3 nor any conflict with the existing accounting framework. IASB members refrained from putting strain on the conceptual framework because they did not 'want to see any flaws that might be in the conceptual framework' (EXP\_ACC 1).

According to IASB staff paper 7A,<sup>42</sup> there were three alternatives to address the Day 1 issue (as shown in Figure 8); 1) recognise a liability on Day 1; 2) recognise a Day 1 gain; or 3) recognise deferred income.

**Figure 8: Alternative accounting entries for free allowances on Day 1**

Dr) Emissions rights      XX (FV)	Cr) View 1. Liability      XX
	View 2. Gain      XX
	View 3. Deferred Income    XX (under IFRIC 3)

The issue with regard to the corresponding entry of recognition of emissions rights given for free by the government intrinsically relates to the nature of emissions

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<sup>42</sup> IASB Agenda 7A/FASB Agenda 8A, Staff paper (Nov 2010): Recognition of a liability for emissions in excess of initial allocation, and measurement of liabilities in an emission trading scheme.

rights which can be either delivered for offsetting obligations arising from emissions or sold at a designated price in the market.

With regard to recognition and measurement of an asset, the board tentatively decided that an entity should recognise emissions allowances as assets, initially and subsequently measured at fair value, whether received free of charge from the government or purchased.

The corresponding entry of emissions rights to be allocated for free can be considered to be a liability or a credit income. Some viewed that the allowances are given to the entity in contemplation of the entity's expected future emissions.

According to the Conceptual Framework for Financial Reporting in 2010 of IASB, a liability is defined as 'a present obligation...arising from past events, the settlement of which is expected to result in an outflow from the entity of resources embodying economic benefits.' As expected future emissions occur, the entity will incur an expense in profit or loss that effectively reverses the gain initially recognised. Emissions rights embody a present obligation akin of a contingent liability. They are deemed to be not a 'transferable certificate' to be sold in the market but an instrument which must be delivered to settle the obligation arising from emissions. Accordingly, as allowances are recognised, a liability would accrue to be recognised as a corresponding entry (View 1).

On the other hand, the latter view is based on the idea that the entity has no obligation to do anything at the start of the compliance period when allowances are issued. As a result of receiving the allowances from government for less than fair value, income would be recognised as a gain (View 2). Meanwhile, the allowances are given as 'assistance by government in the form of transfers of resources to an entity in return for past or future compliance with certain conditions relating to the operating activities of the entity' (IASB, 2015), which would mean a government grant (View 3).

Apparently, none of these alternatives provided a satisfactory answer in line with IASB's intention. One interviewee referred to all the potential solutions as being 'uncomfortable' from an accounting framework perspective:

I think the reason the boards have struggled with the Day 1 issue is that the most obvious interpretation of the framework says you've got an asset on day one but you don't have to give over any allowances until you emit. But it produces an answer that most people don't really feel that comfortable with (ASS 5).

The third view in Figure 8 adopts the same approach as under IFRIC 3. When an entity receives free allowances, no liability arises on Day 1; instead, an entity recognises deferred income as a form of government grant. One interviewee (ACC 5) ascribed the withdrawal of IFRIC 3 to recognition of a 'Day 1 gain' as deferred income rather than recognition of a liability in the corresponding entry of free allowances. Under IFRIC 3, recognition of deferred income caused the main mismatch problems, which gave rise to severe criticisms from major stakeholders at that time. The interviewee said:

The reason IFRIC 3 wasn't accepted, really, was that IFRIC 3 concluded there is no liability, and therefore there's a gain on Day 1 and then there are some consequences from that as well. But that's really it's a mismatch of products (ACC 5).

IASB was unlikely to adopt the third alternative because it wished to avoid the mismatch problems of IFRIC 3.

Instead, according to IASB staff paper 7A, the members were divided between two main views; some members were opposed to recognition of a Day 1 gain, while others were against recognition of a liability on Day 1 on the grounds that free allowances have eventually to be returned to the authority. One interviewee said that there was keen debate between IASB members in relation to the Day 1 issue:

The biggest hurdle from a conceptual point of view, because the IASB board was clearly split into two groups. There was one group basically saying if and when you receive free allowances, you don't have any obligation to return those allowances so there is no obligation at the point in time when you receive the allowances. [...] There was another group within the board, [...] in favour of having a situation where the free allowances would not result in a gain at day one (EXP\_ACC 1).

Recognition of a Day 1 gain brings about a number of problems, making it unacceptable from an accounting standard setter's point of view as well as from companies' and investors' points of view. With reference to IAS 20 *Accounting for Government Grants and Disclosure of Government Assistance*, recognition of a Day 1 gain in exchange of free allowances may cause conflict with IAS 20 because government grants do not constitute gains on the day of receipt. In other words, a Day 1 gain may be in conflict with the conceptual framework, explained by one interviewee:

There was another group within the board, and they were basically saying, "well, if and when you analyse emission trading schemes and the accounting for them, and if and when you come to the conclusion that there *is* a day one gain, then please come back to us and report to us, because we want to see any flaw that might be in the conceptual framework", because from their point of view it did not make any sense (EXP\_ACC 1).

Furthermore, industry may argue that recognition of a Day 1 gain might place an additional burden on companies in addition to mandatory participation in a statutory ETS. Free allowances are provided by government for the purpose of easing burdens at the initial stage of the scheme. No industrial company would agree that free allowances make companies better off in the future, because they are only given for compensation (COM 1, EXP\_CC 2). In this context, the same interviewee commented:

In a situation when most companies would say they receive additional burdens but some of the burdens are eased by free allowances, by saying in that event that a company is better off because of receiving allowances is just not telling the entire picture, and therefore they did not concur with the other group but basically were in favour of having a situation where the free allowances would not result in a gain at Day 1 (EXP\_ACC 1).



Notably, this interviewee's comment indicates that, from a user's point of view, a Day 1 gain does not provide any 'decision-useful' information to users because it is predictable that a Day 1 gain will be reversed on surrender:

They [investors] would say, 'If you come to the Day 1 gain, if you tell us the numbers we will just reverse the numbers. We can fix the model by just reversing the numbers.' But the question would be is it a wise conclusion or is it helpful accounting if the accounting itself results in information that first must be translated into different numbers before providing decision-useful information? I would take the view and say if analysts have to reverse the numbers and other users of financial statements have to reverse the numbers in order to get to a meaningful picture for the company, why wouldn't the accounting answer in itself come to a conclusion that results in that picture that is the correct picture from the perspective of the users? (EXP\_ACC 1)

Indicatively, from a user's perspective, investors would consider accounting information much more decision-useful if the information enabled them to assess appropriately the performance of an entity as a result of emissions under ETS. In this context, one interviewee said:

What they [investors] want to do is predict what the company's going to pay for the emissions it does; and they're more interested in forecasting what's going to happen over the whole year, and what's going to happen in future years as well. Those fluctuations you get from the Day 1 gains and from subsequent re-measurements don't really give them information that helps them very much with those assessments (ASS 5).

In addition, from the perspective of future cash flow, the rationale of a Day 1 gain may not be persuasive because it does not generate a substantial or actual gain. Assuming that all property, plant and equipment (PPE) are measured at fair value, participation in the scheme gives rise to additional costs of PPE, the carrying amount of which decreases as a consequence of bearing emissions costs. As an entity receives free allowances, the increase in production costs under the scheme can be offset by free allowances. In other words, free allowances do not generate

actual gains, although they are recognised as an asset. One interviewee provided an explanation of this view:

If you look at the discounted cash flows for the company, potentially you might not say that the present value of the company increases as a result of entering into the scheme. If you would account for all those premises at fair value, perhaps you would see the decrease in fair value and perhaps you would receive the allowances on top and you might end up at kind of the same level. But as a result that you don't decrease the premises or the property, plant and equipment unless you have impairment, you don't see that change, that switch in value from the factory to the allowances and that interaction between those two items (EXP\_ACC 1).

In essence, recognition of a Day 1 gain raised a number of subsequent arguments. It appeared to be difficult to persuade stakeholders of the validity of the second alternative, not only from an accounting conceptual point of view but also from the perspective of the entire picture of ETS.

Taking into consideration all arguments opposing a Day 1 gain, IASB appears to have reached a tentative decision on recognition of a liability on Day 1 in line with the first alternative in Figure 8. If neither a Day 1 gain nor deferred income was an acceptable way of recording a corresponding entry for free allowances, the other alternative was to recognise a liability on Day 1.

A liability should be recognised when 'it is probable that an outflow of resources embodying economic benefits will result from the settlement of a present obligation and the amount at which the settlement will take place can be measured reliably' (para. 4.46, IASB, 2010e). However, recognition of a liability became more problematic from an accounting conceptual framework perspective because there is no present obligation to deliver allowances when allowances are issued. Recognition of a liability on Day 1 brought great tension within the existing accounting framework because no emission and no obligation arises on Day 1. One interview (ASS 5) referred to the liability issue as 'the biggest single issue' saying 'is there a liability at all [on Day 1]?' Both this and another interviewee

(EXP\_ACC 1) acknowledged that recognition of a liability on Day 1 gave rise to a 'fundamental decision' from an accounting framework perspective.

In addition, recognition of a liability on Day 1 was accompanied by 'knock-on issues' (ACC 5). Having decided to recognise a liability on Day 1, IASB members had to judge whether a liability actually exists in exchange for receiving free allowances, even though emissions do not arise on Day 1. As a consequence, it seems that IASB members struggled to justify the substance of the liability on Day 1 from a conceptual point of view. One interviewee (ASS 5) went on to describe why the existence of a liability on Day 1 had materialised:

The boards struggled really to identify really what the liability was. And I think most board members actually felt there was some kind of liability but found it very difficult to really pin down what it was. And that's really the fundamental decision, because there are some sorts of knock-on issues as well if you do conclude there isn't a liability (ASS 5).

From previous literature in relation to recognition of liabilities (e.g. Haupt and Ismer, 2013), it is generally acknowledged that an obligation under the scheme is generated when an entity actually produces emissions. There is a consensus on the timing of recognition of a liability: a liability is recognised as emissions are generated. Consequently, the board members had to identify the 'essential fundamental issue' of whether there is a liability on Day 1 even if no real emissions are produced on Day 1.

One interviewee (ASS 5) explained further how to resolve the 'tension' between the concept and the reality. The board members tried to understand what drove the tension. Specifically, the board attempted to identify what the obligation event under ETS really was. In terms of the characteristics of obligation under ETS, the board members expressed different views. Some viewed emitting activity as an obligation event; thus, no obligation accrues until emissions occur. Proponents of this view took their logic from voluntary schemes in which entities do not incur any present obligation when allocating allowances. Others viewed the allocation of free allowances as an obligation event; thus, as soon as allowances are allocated,

an obligation to comply with the requirements under the scheme occurs. One interviewee provided an explanation of different views on this issue:

In essence, some would take the view it is not free, because it is dependent on the fact that you emit in the future. If you don't emit, you're not allowed to keep the allowances. And therefore some of the board members did take a different view, a different perspective on schemes where there's a claw-back. [...] So they said 'if that happens, you return the allowances that you did not use in your production to pay for your emissions' (EXP\_ACC 1).

The board decided tentatively that an obligation arises when an entity receives free allowances. In order to resolve the tension with reality, the board supported their decision by analogy with a claw-back clause in the UK.<sup>43</sup> The same interviewee described the sources of the tentative decision:

I think that was in the UK at that time at least the case, that they did hand out also free allowances but if, during a compliance period, you went out of business or you stopped your emissions – let's assume that on day one you receive 100 allowances for the year, on day two you stop your premises, you stop emitting – in that event the UK scheme had a so-called claw-back, so they said "if that happens, you return the allowances that you did not use in your production to pay for your emissions". And if you have that kind of scheme, the question turns slightly different, whether you have a present obligation when you receive the allowances. Because in essence some would take the view it is not free, because it is dependent on the fact that you emit in the future. If you don't emit, you're not allowed to keep the allowances (EXP\_ACC 1).

Meanwhile, as an alternative solution, one interviewee (EXP\_ACC 1) suggested an analogy with voluntary schemes. He stated that, since neither a gain nor a

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<sup>43</sup> A claw-back is a mechanism requiring participants in a scheme to return excess allowances in case of closure of installations (Starbatty, 2010).

liability arises on Day 1 when allocating free allowances in voluntary schemes, the same logic could be applied to a statutory scheme. In voluntary schemes, when a commitment is entered into, an entity does not recognise either a liability or a Day 1 gain. Agreement to participate in a voluntary scheme is in the nature of a private contract that generates a 'performance obligation' (EXP\_ACC 1). This obligation does not bring about recognition of a liability corresponding with free allowances. In addition, the agreement could be considered as a type of 'executory contract' (EXP\_ACC 1) in which recognition of a Day 1 gain is unnecessary when an entity receives free allowances. One interviewee indicated that the board could have avoided struggling with the Day 1 issue at that time if the accounting treatment under a voluntary system had been considered:

If you enter into a voluntary scheme and you receive free allowances, it's like a performance obligation – you have to perform at a certain level, otherwise you have to pay additional (extra), you have a net loss. But if you come to that conclusion in a voluntary scheme, why would you not apply that thinking to a statutory scheme? Why are statutory schemes that different? (EXP\_ACC 1)

It is noteworthy that if a 'holistic view' had been taken, combining a voluntary scheme with a statutory scheme, this interviewee believed that it would have been unnecessary to come up with a solution to the debate on recognition of a gain or a liability on Day 1. In other words, if the analogy of voluntary schemes had been extended to the statutory scheme, it would have been a mere 'measurement' issue of the corresponding entry of free allowances, not a 'fundamental' or 'conceptual' issue of recognition of a liability. In this context, this interviewee explained:

Perhaps you could take it from the voluntary schemes and take it from there and then come to the statutory schemes and say that's the mechanism that should apply to voluntary schemes. And let's have a look. Is it different for statutory schemes? And let's take a holistic view of both situations. So that is, I guess, the rationale for why the focus of the board was really only on statutory schemes (EXP\_ACC 1).

### 5.3.2. Presentation issue

Meanwhile, the board did not reach a tentative decision on the presentation issue. IASB staff paper 7C<sup>44</sup> provides details on how the discussion developed with regard to the presentation of assets and liabilities. Three different approaches were discussed: a gross approach, a net approach, and linked presentation. The board members had different views on each approach. Some members preferred gross presentation while others supported net presentation and others were in favour of linked presentation. The members advocating a gross presentation asserted that presenting the allowances with related liabilities on a net basis should be prohibited because the allowances and related liabilities do not meet the offsetting criteria under IAS 1 *Presentation of Financial Statements*: ‘An entity shall not offset assets and liabilities [...] unless required or permitted by an IFRS’ (para. 2). On the other hand, a net approach views the allowances and related liabilities to meet the criteria for offsetting because the allowances are the only methods to settle the liabilities in the scheme. Since an entity intends to use allowances for offsetting the liabilities, ‘the intention’ leads to meet the offsetting criteria.

The third approach is the same as a net approach in principle utilising a form of linked presentation. IASB staff paper 7C explains a linked presentation: ‘the allowances and related liabilities should be presented gross on the face of the balance sheet, but should total a net emissions asset or net emission liability, a linked presentation (para. 20)’. In principle, assets and liabilities should not be offset. If linked presentation is exceptionally applied to emissions rights and related liabilities, the linked presentation would be shown in the balance sheet as follows:

Emissions rights and related liabilities	
Emissions rights	XXX
Less: emissions liabilities	<u>(XX)</u>
	X

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<sup>44</sup> IASB Agenda 7C/FASB Agenda 8C, Staff paper (Nov 2010): Balance sheet presentation of the assets and liabilities in an emission trading scheme.

In terms of a net amount of emissions rights in the balance sheet calculating difference of the amount of emissions rights held and the amount of liabilities arising from the obligation surrendering allowances, there is no difference between a net presentation and a linked presentation. The only difference lies in a way of presentation of liabilities. While the amount of liabilities is not shown in the balance sheet under a net presentation, the amount of liabilities is displayed as a form of subtracting from the emissions rights under a linked presentation. This approach is based on a unique linkage between the allowances and related liabilities because the liabilities should be settled with only allowances. Advocates for a linked presentation insisted that this approach should be applied only when an entity intends to use allowances to settle the liabilities at the end of the period.

While IASB did not manifestly object to linked presentation, FASB was apparently a proponent of this approach. One interviewee (ASS 5) presumed that some FASB members supported linked presentation on the basis of 'unit of account'. This interviewee mentioned various views on the presentation issue:

There were some FASB members particularly who said that they thought there was a kind of unit of account question, and that if you saw the objective as accounting for the scheme as a whole, then somehow you wouldn't have this day one gain problem' [...] If you said it was the scheme as a whole, I guess that might push you towards some sort of net presentation, or maybe even a linked presentation (ASS 5).

The idea of 'unit of account' for emissions rights and related liabilities is associated with a unique administrative process whereby the obligation under the scheme is discharged only by surrendering emissions rights. In other words, there is a linkage between an asset and a liability where an entity producing emissions does not recognise both an asset for emissions rights issued for free and a liability for emissions at the same time. The entity should recognise a liability only when it has produced emissions and holds insufficient emissions rights to cover them; otherwise, recognising an asset when it holds emissions rights in excess of its requirement. Corresponding with an exclusive offsetting mechanism under the scheme, this might be a more appropriate way to account for the scheme as a whole from an accounting perspective. Based on the exclusive link between

emissions rights and obligation under the scheme, emissions rights and related liabilities could be accounted for as 'one unit of account' in financial statements. This is the rationale for linked presentation and unit of account.

It is commonly admitted that a gross approach might be more 'transparent' (EXP\_ACC 1) and 'decision-useful' (ASS 1) because investors want to take advantage of full information. The IFRS conceptual framework uses gross presentation as the default rule for presentation. One interviewee admitted this:

From investors' point of view, generally investors want to be provided full information. [...] In this regard, investors might firstly prefer a gross presentation which displays a total number of assets on the one side and a total number of liabilities on the other side (ASS 4).

One interviewee (EXP\_ACC 1) pointed out that from a company perspective, the presentation issue was regarded as a significant issue because of the impact on financial numbers. Some companies were opposed to gross presentation, arguing that it would negatively affect their debt (or equity) ratio. Amongst the three alternatives presented in IASB staff paper 7C, companies were likely to favour either net presentation or linked presentation for the presentation of emissions rights and related liabilities:

Some would object and say that it also has some impacts on your ratios – on your equity ratio. And some companies have very clear views on why they would recognise something gross or net, and I think I can clearly see the view that many would favour a linked presentation (EXP\_ACC 1).

However, linked presentation might cause conflict with the IFRS framework because gross presentation is a primary principle in terms of presenting assets and liabilities. One interviewee (ASS 4) referred to a possible incompatibility between linked presentation and the IFRS conceptual framework. In this regard, instead of linked presentation, the same interviewee addressed that a net approach might become a plausible approach to presentation under the premise of 'unit of account'. In addition, a net approach has been commonly used in practice because it is simpler and more applicable. Nevertheless, this interviewee



added that it was impossible to judge which approach would be more appropriate from an accounting conceptual point of view.

In summary, the findings suggest that the most contentious accounting issue under ETS turned out to be the Day 1 issue. Specifically, when emissions allowances are measured at fair value, the most problematic issues are associated with the corresponding entry of free allowances on Day 1. As the joint project proceeded between 2008 and 2010, it appears that IASB concentrated on accounting issues which were more fundamental and significant from an accounting conceptual point of view.

As an international accounting standard setter, IASB focused on a more fundamental issue that might ultimately have significant consequences if the standard were introduced. Despite the arguments over the presentation issue, this issue was not as critical to IASB as the Day 1 issue. It appears that the presentation issue may have been regarded as a type of subsequent and more technical matter, while the Day 1 issue was considered to be the most fundamental problem when discussing the accounting treatment of emissions rights at that time. Presumably, that is why the board members did not reach a tentative decision on the presentation issue at that time. On the other hand, for companies and preparers the presentation issue was one of the most important issues because they were concerned about the impact on financial numbers (e.g. debt ratio). These findings provide a better understanding of the gap between the accounting standard setter's perspective and the preparers' perspective in terms of the core accounting issues of each perspective.

#### **5.4. Autorité des Normes Comptables' proposal in 2012**

This section presents the accounting issues for emissions rights that the French accounting standard setter, ANC, dealt with in developing a proposal for emissions rights in 2012.

##### **5.4.1. Background**

In 2012, ANC proposed an accounting standard for ETS (entitled 'Proposals for Accounting of GHG Emission Rights') in the form of French GAAP to be applied to French listed companies in their separate and consolidated financial statements.

Importantly, the transformation from Phase II (2008-2012) to Phase III (2013-2020) of the EU ETS was the main driver leading ANC to develop its own accounting standard for ETS. From Phase III onward, auctioning has become the default method of distributing allowances. Industries must purchase at least 20 per cent of their allowances for compliance with Phase III, and consequently they face substantial increases in production costs. Correspondingly, ANC acknowledged that it was time to provide accounting guidance in order to incorporate into financial accounts the increasing costs caused by purchasing emission rights. In this context, one interviewee described the background well:

At the beginning (Phase I and Phase II) there was nearly no cost or at the margin. [...] The system is progressively moving to a paying system because less and less emitters are allocated free emission rights. [...] Now there are new emission costs. So we had to think about the impact of this movement. We considered that it was not the same thing to manage a bonus-malus system as to manage new emission costs (ASS 8).

As addressed in Section 5.2, ANC faced different circumstances from those faced by IASB. When IASB was working on the ETS project during that time, the EU ETS was running in Phase II, in which most allowances were allocated for free. In effect, free allowances constituted the most critical accounting issue, so IASB focused primarily on issues regarding free allowances. On the other hand, ANC was aware of a shift in the allocation method from free allocation to auctioning, and that the existing accounting treatment 'was not able to deal with these new issues' (ASS 8). Admitting the necessity for new accounting guidance corresponding with Phase III from 2013, ANC decided to set up a new accounting standard for ETS.

ANC stated that its aim in setting up the new accounting standard for ETS was to provide authoritative accounting guidance dealing with various types of business activities emerging when the scheme entered Phase III. For example, some companies in the carbon linkage sector would be given free allowances. On the other hand, electricity-generating companies would be expected to purchase as many emissions rights as they needed in order to meet their reduction obligations.

Furthermore, as the carbon market was becoming more advanced, intermediaries might participate more actively in the market in the pursuit of arbitrary gains. In summary, as the scheme was changing, ANC acknowledged the need for new accounting guidance which could be applied to various types of business. This was clearly articulated by one interviewee:

From an accounting point of view we had to deal with an accounting system able to comply with free emission rights – allocated for free – or auctioned, and to deal with emitters which don't play in the market, and banks which propose to trade emission rights because they have no emissions and they want to make a profit with the difference in value. The aim of this proposal is to be able to deal with several situations – whether or not you have limits, whether you are allocated for free or not (ASS 8).

#### *5.4.2. Scope*

French companies must apply IFRS to their financial statements, yet at the same time most large French companies mandatorily participate in the EU ETS. ANC explicitly admitted that French companies which have to use IFRS do not wish their financial statements to be regulated by two different accounting rules: consolidated financial statements under IFRS and accounting for emissions rights under a new accounting rule yet to be formulated:

All companies have to apply French GAAP for their individual accounts. But then obviously the largest companies are the largest emitters, and they use IFRS for their consolidated accounts, and so we needed to have a system that was compatible between French GAAP and IFRS. [...] Obviously, the largest companies didn't want to have to have two different accounting systems, one for the French GAAP and one for IFRS (ASS 7).

For this reason, ANC intended not to pursue two different accounting systems when developing accounting guidance for emissions rights. In other words, it aimed to set an accounting standard for ETS based on existing standards. The scope was clearly addressed by ASS 8:

The scope was to issue an interpretation compliant with French accounting standards which could be a basis for reflection within the IASB community, and which didn't imply issuing new standards to deal with (ASS 8).

Consequently, accounting treatment of emissions rights was deliberately devised within IFRS and French GAAP. This limited scope was very important for ANC because it was a critical constraint in the development of the accounting standard for emissions rights. In effect, ANC had to seek a solution by marginally changing existing accounting standards rather than creating totally new accounting rules only for ETS:

We didn't want to issue a system which would have needed a new specific French standard for emission rights. We based our reflections on the existing French standards. We just changed it at the margin. And we didn't want to push the IASB to issue a specific standard for emission rights (ASS 8).

In this regard, ANC called it a 'proposal' (ASS 7), which was more in the form of an interpretation, with French companies being regulated by French GAAP as well as IFRS. One interviewee referred to how the accounting guidance was developed and why it was called a 'proposal':

You don't need a specific IFRS standard to apply what we propose. It works within the existing standards. [...] This is why they're called 'proposals', because under IFRS there's no given set of standards that specifically deals with this; whereas under French GAAP this is a regulation. So this is already applied under French GAAP and it's applied by the French large companies that use IFRS in their consolidated accounts (ASS 7).

#### *5.4.3. Accounting issues*

##### *The nature and classification of emissions rights*

Given a general consensus on the asset requirements of emissions rights, the next accounting issue was the classification of emissions rights into existing asset

categories. Unsurprisingly, ANC faced difficulty in categorisation of emissions rights because they cannot be embraced within 'the literal accounting definitions' (ASS 7) of any asset class. Due to the specific and innovative nature of emissions rights, emissions assets cannot appropriately be defined as financial instruments, intangible assets or inventory, nor could ANC determine an exactly suitable category from amongst existing asset categories. In addition, emissions rights have a regulated and administrative nature because they are created and allocated by government. Once allocated, entities own and are able to sell and purchase emissions rights at their discretion.

Unlike suggestions from most previous studies and prevalent practice in the EU, where emissions rights are categorised as intangible assets, ANC asserted that emissions rights could not be considered as intangible assets because companies can operate facilities without holding emissions rights while they are producing emissions. In other words, emissions rights held by a company do not provide companies with the legal entitlement to carry out their ordinary business activities which produce emissions. The ANC's viewpoint differed substantially from the view of IASB, which regarded emissions allowances as intangible assets both under IFRIC 3 and in its tentative decision of 2008-2010. In addition, ANC mentioned that the inventory category is not strictly suitable for emissions rights because they have no physical substance. One interviewee described the multifaceted nature of emissions rights which resulted in having to find a solution 'outside the box':

We began with assets, it was not a financial instrument we are sure of that. Despite the fact that the IASB considered it was an intangible asset, we didn't consider it was really an intangible asset because, even if you don't have emission rights, when you are emitting you are compliant with regulation within the definition of inventories, you think to match everything. When you refer to raw materials, it is materials and not physical. [...] We thought it didn't have all the characteristics. In neither of these classifications of assets did it tick all the boxes of the definition. So we tried to think outside the box (ASS 7).

Notably, ANC sought a practical solution by looking outside existing asset definitions. It took a so-called 'economic approach' to analyse when and why companies purchase emission rights, how they manage them, and how they account for emissions rights in their business. One interviewee explained how the economic approach was taken:

We tried to think what are companies, what are investors purchasing emission rights intending to do? What are they intending to do? And what is their business model when they purchase emission rights or when they own them? (ASS 8)

ANC was manifestly aware of how emissions rights had been dealt with by companies. Specifically, most French companies had accounted for emissions rights as being consumed in the production process like commodities (that is, raw materials), as supported by one interviewee's comments:

Despite the fact that it is not a raw material, it is not a physical material. Companies manage this exactly as a raw material, as a physical material. [...] The system of emission rights results in an additional cost of physical raw materials – fossil fuel materials – which are used in production. And these materials, when they are held before production, are inventories. They are not intangible assets, of course. So the subcategory is inventory and it's a net additional cost for inventories held by the companies. Or if they don't have inventories they consume it as soon as they purchase it, but it's included in their production costs. So there is a logical way to consider this as inventory and to reflect this in production cost, because there was another argument that – have you ever seen the cost of an intangible asset reflected in production costs? And companies said "never". [...] As emission rights were managed as a specific new commodity, they had the nature of a new administrative raw material (ASS 8).

Importantly, this practice provided ANC with a critical insight with regard to how to account for emissions rights. From the treatment in practice, in which companies dealt with emissions rights in the same way as raw materials consumed in the

production process, ANC built a logic stating that emissions rights are considered to be a new type of commodity. Accordingly, ANC created the concept of emissions rights as a so-called 'new administrative raw material', referred to by one interviewee as 'administrative raw materials, which are managed in exactly the same way as physical materials' (ASS 8).

### *Business models*

ANC articulated new accounting guidance to be applied to various types of business under the EU ETS, including mandatory participants and financial intermediaries. With this objective, it shed light on intentions for holding or purchasing emissions rights: why would a business entity purchase emissions rights? ANC derived an answer from real usage patterns in business: 'emission rights are consumed in the production process; or they are held for sale in the ordinary course of business' (ASS 8). Having identified the intentions for holding or purchasing emissions rights, the same interviewee defined two business models: a 'production business model' and a 'trading business model'.

The production model is appropriate for 'companies which are obliged to purchase emission rights owing to their manufacturing activity', while the trading model is applied to 'companies which voluntarily purchase emission rights for purposes other than compliance'. This interviewee differentiated the objectives or intentions of using emissions rights under each business model as follows:

Purchase: why do you purchase? It's compulsory within the production model; it's absolutely voluntary in the trading model, because your ambition is to make profit. The purpose of the purchase in the production model is compliance; in the trading model the purpose is to realise a capital gain (ASS 8).

Under the premise that emissions rights are considered to be a new type of administrative raw material, ANC developed an accounting treatment for emissions rights based on the business model, as shown in Table 6.

### **Table 6: Summary of accounting treatment under business models**

(adapted from ANC's proposal, 2012)

Business model	Purpose of purchase	Effect of purchase	Treatment in business	Accounting treatment (in line with IAS 2)	
				Classification	Measurement
Production business model	Compliance with obligation under the scheme	Freeze or secure production costs	Consumed in production process	Raw material inventory	At cost
Trading business model	Appreciation in value or capital gains	Generate gains	Held for sale as for ordinary business	Trading Inventory	At fair value

ANC was able to elaborate a set of accounting rules for emissions rights in accordance with IAS 2 *Inventories* and French GAAP in terms of recognition and measurement. One interviewee highlighted the consistency of accounting treatment under the business models within the existing accounting framework:

We had two business models: pollution business models where emission rights are consumed in the production process; or they are held for sale in the ordinary course of business. It's a definition of inventory in IFRS 2 and in our French standards too. And the measurement of inventories in IFRS is at cost when it's used in the production process, and fair value is allowed when they are held for trading purposes (ASS 8).

ANC reckoned that the measurement requirement under IAS 2 could be appropriately applied to emissions rights under each business model. With reference to IAS 2, emissions rights under the production model are measured at cost, while under the trading model they are measured at fair value. One interviewee (ASS 8) stressed that the proposal based on business models harmonised entirely with existing accounting standards, in particular IFRS and French GAAP, in terms of classification and measurement. ANC achieved its goal within the constraints by means of an economic approach properly reflecting actual practice.

Meanwhile, in terms of the effect of purchase of emissions rights, under the production model, companies are able to freeze their production costs by



incorporating the purchase costs into production costs. In effect, freezing the production cost is beneficial for companies as emissions rights are treated like any 'raw material' (ASS 7). From the perspective of managerial accounting, freezing production costs is a decisive factor in securing marginal costs and setting out a product price in the internal budgeting process. In this context, one interviewee referred to the significance of 'the notion of freezing and stabilising' production costs in relation to pricing strategy:

If you want a certain margin, you know at what price you need to sell it.  
And that's why the notion of freezing or stabilising, if you want, your production cost is important (ASS 7),

On the other hand, under the trading model, companies may pursue capital gains by purchasing emissions rights because reducing production costs may not be meaningful for their business model. One interviewee stressed the distinction between the business models in terms of the effect of purchase:

The effect of the purchase is obviously not the same. In the production model the purchase freezes your production cost; under the trading model you don't freeze anything because you have no production cost (ASS 8).

In summary, based on how companies deal with emissions rights in practice during their production process, the business models were devised by aligning with reality. The business models should be perceived as a practical solution derived from practice. In effect, the business models were highly applicable to any type of business under ETS. In addition, the business models were beneficial for managerial control thanks to the effect of freezing production costs.

With regard to a mechanism for de-recognition of an asset and recognition of a liability as emissions arise, the underlying analogy of the ANC's proposal evolved with a firm rationale and logical reasoning within the existing accounting conceptual framework. Notably, ANC had a different view from previous discussions with regard to a mechanism for de-recognition of an asset and recognition of a liability.

For example, in previous papers (e.g. IFRIC 3), assets were de-recognised in accordance with either surrendering or selling them. On the other hand, ANC posited that emissions rights should be de-recognised as emissions are generated, assuming that emissions rights are no longer an asset as soon as a company produces GHG emissions, in the sense that emissions rights are expected to be used to settle the obligation arising from emissions. The underlying logic of de-recognition of asset was explained by ASS 8:

We had to answer very important questions. Are emission rights still an asset after the production and after emissions? We can consider that emission rights are no longer an asset after production because they only generate what an asset is able to generate if they are held before producing, because they can be sold or can be used for future compliance. As soon as you have emitted, they cannot be sold; they cannot be held for future compliance because they must be kept for past emissions. Of course, as there is a free market they can be sold, but at the same time, if the company decides to sell them, the company immediately generates a liability for the same amount. So we consider that as soon as you have emitted, even though you have an administrative certificate – of course you still have it – you no longer have an asset in hand (ASS 8).

In terms of the liability, ANC presumed that the liability stems from the event that an entity has to purchase emission rights from the accounting point of view. ANC justified the liability as an accounting event of purchasing emissions rights, not surrendering them on the grounds that the outflow of resources is essentially in line with purchasing emissions rights. ANC viewed the surrender of emissions rights as an administrative process to prove compliance, as stated by the following interviewee:

We had to think about the end of the obligation – the end of the liability, the obligating event. Is the obligating event of force, the obligation to surrender emission rights to the state when you emit. [...] We really think that the obligation is a purchase of emission rights and not the surrendering to the state, because only the purchase gives a way for

the outflow of resources. Surrendering the emission rights is not really the end of the liability; it's an administrative way for the system to work and it's a proof that you are compliant, but it's not a sign of the outflow of resources (ASS 8).

In addition, it is notable that 'unit of account' was manifestly adopted in ANC's proposal for recognition of assets and liabilities. Under the production model, emissions rights and related liabilities are accounted for under the 'same unit of account' (ASS 7). This means that emissions rights and related liabilities cannot be presented simultaneously on a balance sheet (ASS 8). Consequently, a company has 'either an asset or a liability', 'but not the same time' (ASS 8) on a balance sheet. On the other hand, under the trading model, only an asset is presented on the balance sheet, to the value of emissions rights held by the company.

Remarkably, owing to 'the same unit of account' for emissions rights and the corresponding liability under the business models, the so-called mismatch problems under IFRIC3 could be resolved. ANC emphasised that presentation under the business models should be distinguished from net presentation. The presentation under the production model is apparently similar to net presentation from an asset/liability point of view. However, ANC took the approach of netting asset and liability in order to deal with emissions rights and related liabilities under the same unit of account. In this context, ASS 7 said:

It's not a net of an asset and a liability. It's inventory: you've either used it or you don't have enough. A lot of people say to us 'well, it's a net presentation'. If you think business model, if you think of how this works, it's not a net presentation. It can't be, because you either have too many that you're going to use or you don't have enough; it looks like a net presentation for people who think you have to have an asset and you have to have a liability. This is not what we think. We think if you have an asset, you don't have a liability (ASS 7).

In addition, ANC posited the usefulness of business models from a user's point of view. The business models provide more useful accounting information under ETS

because 'this system gives [you] the exact position of the balance sheet or an asset or a liability' (ASS 8).

For example, under the production model showing either an asset or a liability is displayed on the balance sheet, if information users identify the existence of a liability on the balance sheet, they are able to judge immediately whether a company is at risk and assess how many emissions rights need to be purchased. One interviewee (ASS 7) addressed that information users are able directly to figure out the position of a company and the extent to which it may face risk. In this regard, the same interviewee stressed how the business models can be perceived to be more decision-useful.

Moreover, ANC also emphasised that the production model provides the exact performance in the profit and loss statement as a result of managing 'the appropriate level of performance' associated with emission activities (ASS 8).

Notably, ANC indicates the influence of the business models on other jurisdictions which are in need of accounting standards for emissions rights. One interviewee posited that the business model approach may be a plausible way for other accounting standard setters which attempt to develop accounting standards within the existing accounting framework:

This was the first time that we'd actually pushed the business model approach, and I know the Koreans [KASB] are very keen on performance, operating measures and everything as we are – and within the discussions that exist currently on the conceptual framework, we think the business model needs to be taken into account. So this is one way of applying it and demonstrating that we think there is no need to change IFRS to apply this. And it's for the individual countries to look at how people apply their own. How do they use, manage their own emission rights within the constraints of their own systems? How do they do that? And you'll probably find it's the same thing. So there might be minor changes to these, but this is probably something that can be applied. If you consider it's part of your production cost, well, you know, the consequences flow and are relatively easy to apply (ASS 7).

In summary, the business models delivered an applicable solution to the accounting treatment of emissions rights in light of both financial accounting, with a firm rationale within the existing accounting framework, and managerial accounting, with the effect of freezing production costs.

### *Justifying the business models*

ANC acknowledged that justifying the business models might be problematic in the sense that an entity may change its strategic intention for purchasing emissions rights in order to 'optimise' production costs. Some asserted that specific guidance should be provided in order to identify and justify which model should be applied, as there was concern that a company might manipulate its accounting numbers by changing from one business model to another.

In order to take this concern into consideration, according to ANC's proposal an entity is required to document its 'strategy, targets and contracts to purchase emission rights' in order to validate its business model. Along with documentation, an entity must report some off-sheet numbers in association with its activities in order to validate the particular business model on which it relies.<sup>45</sup>

Despite concerns in relation to justifying the business models, ANC highlighted that no problem has emerged to date in the process of implementing the proposal. The main reason for successful implementation may be ascribed to the fact that both production and trading models had already been pervasively applied in most large companies for managing raw materials, such as oil. A large industrial group has separate legal entities or divisions in charge of producing and trading commodities for carrying out their core business. In other words, the production model and the trading model can be applied simultaneously to a single entity with both production and trading divisions. In this sense, ANC asserted that there is no difference between raw materials and emissions rights when applying the business models, as explained by ASS 7:

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<sup>45</sup> According to the ANC's proposal (para 5.2.), an entity must report on the number of emissions rights held at the period's cut-off date and their association with past and future emissions; the total aggregate number of emissions rights purchased and sold since the beginning of the multi-year plan and for each business model.

Those large companies, they also have a production business model and a trading business model for raw material; it already exists. The same company can have petrol for its own activities and it can have petrol for trading purposes, so it already has the two business models. So within a big group, and oftentimes what you'll have is that – obviously the big group is a consolidation of a number of companies – I think within a group. Usually there's a central trading desk which is a separate company. So you can find it, but oftentimes you will have strictly the production units, that it will be clear what they do; you'll have the trading. And if you do have a legal entity that has both, they obviously have systems in place for all the other things where they do one and the other, and we considered that it was no different for this specific inventory (ASS 7).

Moreover, ANC emphasised that emissions rights can be controlled in terms of valuation by taking advantage of the 'own-use model' within an internal audit system. For example, an auditor may allow measurement at cost for purchase of emissions rights for own use, while measuring at fair value emissions rights outside the own-use model. In this context, one interviewee stated:

For raw materials auditors ask the companies to document their own use purchases. In the own-use model, the auditors allow the company to value the commodity at cost. If you are outside the own-use model, if you don't have the real intention for the commodity to be delivered – for instance if you have no production forecast – you are outside the own-use model and this commodity is valued at fair value (ASS 7).

In addition, ANC asserted that each company must keep sufficient budgeting data to enable it to make judgments on which model is more appropriate for their business. For example, in light of the internal control and budget process, it is critical for an entity to 'secure' margin and production cost in order to set up price control and strategy under a managerial control system. In order to secure production costs, an entity may decide to apply the production model. In this setting, one interviewee referred to internal controllability in the operation of the business model:

You have to think in a company's process obviously there's budgeting – budgeting based on production plans which are established years in advance – and so you have an idea of what the volume is that you're looking at that's going to normally come within the production business model. After a while, obviously history says what you've been doing, so you can see if the company's been playing around or not. So I think there's enough information beforehand and afterhand to check and say what is reasonable within the one business model to have (ASS 7).

Thanks to several 'internal safeguards' (ASS 7), application of the business models is unlikely to undermine the implementation process. In other words, contrary to a number of concerns raised in relation to validation of a particular business model, companies are unlikely to switch from one business model to another simply in order to manipulate their earnings or improve their margins.

To date, ANC has not reported any complaints from or conflicts with French companies when applying its proposal to account for emissions rights. In essence, ANC's proposal may be regarded as an accounting model for emissions rights with a high degree of acceptability and applicability. It is expected to become a reference with regard to post-enactment for other accounting standard setters over time.

### **5.5. Summary**

This chapter has presented and discussed the findings in relation to *Research Question 1* and its related objectives in the cases of IASB's tentative decisions 2008-2010 and ANC's 2012 proposal. Several key findings have been identified with regard to accounting issues on emissions rights and related liabilities since IFRIC 3 was withdrawn.

In line with previous studies, there is general consensus on the core accounting issue of how to account for free allowances. Although the key accounting issues stem from free allowances, the most material accounting issues with which each standard-setter primarily dealt turned out to differ under various circumstances.

While IASB's tentative decisions were being made, Phase II of the EU ETS was running, under which most allowances were allocated for free. Therefore, the

accounting issue in relation to free allowances was primarily addressed in IASB's tentative decisions. For IASB, the most arguable issue related to recognition of the corresponding entry of free allowances on Day 1 (the so-called the 'Day 1 issue'). In particular, recognition of a liability on Day 1 was regarded as 'the biggest single issue' (ASS 5) which caused the most heated arguments. It appears that recognition of a liability on Day 1 was tackled as a priority because it gave rise to more fundamental knock-on issues in light of the accounting conceptual framework. On the other hand, the presentation issue was not argued as intensely as the Day 1 issue; in effect, IASB did not reach any conclusion in relation to the presentation issue at that time.

Meanwhile, ANC intended to develop new accounting guidance for emissions rights in accordance with Phase III of the EU ETS, in which auctioning is the default allocation method. Accordingly, the costs under ETS were expected to rise, and companies needed to incorporate actual costs associated with the purchase of emissions rights into their accounts. Against this background, ANC pursued the development of a type of umbrella accounting guidance to be applied comprehensively to various types of business under ETS. Furthermore, the accounting guidance was to be subject to the existing accounting framework, specifically IFRS and French GAAP. Notably, ANC sought a solution with reference to how companies actually dealt with emissions rights in practice. In effect, actual business practice inspired ANC to devise business models under the premise of different uses of emissions rights for different purposes. The accounting rules were elaborated logically on the basis of each business model, in line with the existing accounting framework. By virtue of several strengths of the business models, ANC's proposal has been successfully implemented with a high degree of compliance to date.

The accounting models which were addressed by IASB's tentative decisions and ANC's proposal were referred to by KASB. Consequently, all aspects of the accounting models investigated in this chapter have effectively influenced KASB in its quest for an appropriate model for emissions rights in Korea. Details of accounting issues in the case of KASB are described in the next chapter.



## **6. Accounting issues for ETS in the case of KASB**

### **6.1. Introduction**

This chapter presents and analyses the findings in relation to *Research Question 1* in the context of KASB. KASB initiated the establishment of an accounting standard for emissions rights and related liabilities in the run-up to the commencement of the Korean ETS on 1 January 2015. The author was able to explore the Korean case as KASB was in the process of setting up Korean GAAP on emissions rights. This chapter describes the accounting issues for ETS in the Korean context on the basis of interviews in the field and documentary analysis.

As noted in Section 1.1, this study is concerned primarily with accounting issues on ETS in the Korean context. Accordingly, in this chapter more specific details are given on the case of KASB in light of accounting issues on emissions rights and related liabilities. Section 6.2 addresses the background to the development of Korean GAAP for ETS. Section 6.3 analyses factors to be considered when developing an accounting standard for emissions rights. Section 6.4 describes features of Korean GAAP relating to emissions rights and liabilities, including accounting models and specific accounting treatment.

### **6.2. Background to initiation of Korean GAAP for ETS**

According to the Act on External Audit of Stock Companies (Article 13), the Korea Accounting Institute (KAI) and KASB are entitled to set accounting standards (see Section 2.5). Introduction of the Korean ETS gave rise to need of standardisation of ETS. In this context, one interviewee highlighted the need for accounting guidance when a new policy is introduced and applied to business entities. In line with Hopwood and Miller's view (1994), referring to the 'constitutive role' of accounting in social processes, the interviewee stated:

When a new policy is introduced such as an emissions trading scheme, accounting guidance should be set up. Given accounting information reflecting business activities under a new policy (e.g. ETS), stakeholders are able to analyse how the new policy influences the business, in particular to what extent assets, liabilities, or profit and losses would be affected (ASS 3).

Moreover, the Korean government officially requested KASB to establish an accounting standard for ETS by the end of 2014 as a part of follow-up measures for a three-year plan for economic innovation which was implemented in March 2014 (MOSF, 2014). In response to the government's call to set an accounting standard for ETS, the ETS project was effectively accelerated.

Corresponding to the call from government and statutory responsibility for accounting standards, KASB acknowledged its mission to set an accounting standard for emissions rights (ASS 3).

In the absence of IFRS for emissions rights hitherto, KASB felt that it was desirable to develop its own accounting standard for emissions rights in accordance with the commencement of the Korean ETS. KASB expected that Korean GAAP for emissions rights would contribute to ensuring overall comparability of accounting information between Korean companies.

In addition, Korean companies might not be comfortable with the diversity of accounting treatment under IAS 8. Rather, they might prefer to be provided with specific guidance by an authoritative organisation. Two interviewees (ASS 3 and ASS 4) acknowledged a preference for uniformity in Korean companies.

Considering the usefulness of accounting information and the companies' preference for a unified rule, it was judged that KASB had made the right decision in setting up Korean GAAP for emissions rights. One interviewee (ASS 4) referred to the importance of the development of Korean GAAP for emissions rights, given the absence of IFRS. In particular, he stressed the necessity of Korean GAAP to ensure comparability at least between Korean companies. He commented:

I think that Korea is better to set up national accounting standards for ETS because it enables it to ensure comparability among regional companies. If the KASB does not set up the Korean GAAP, this would result in decreased comparability between Korean companies. On top of that, considering the specific Korean propensity not to accept variety but to pursue uniformity, using IAS 8 paras. 10 to 12 would not be appropriate for Korean companies. In this regard, the second best

would be to provide Korean GAAP for emissions rights that would be unvaryingly applied to Korean companies (ASS 4).

Accordingly, KASB admitted the inevitability of developing a new accounting standard for ETS and thereby determined to develop an accounting standard for ETS in accordance with the start of the Korean ETS.

### **6.3. Factors for consideration**

It was observed that, from the beginning of the ETS project, KASB took several factors into consideration in setting up an accounting standard for ETS.

KASB explained the factors generally to be considered when establishing accounting standards.<sup>46</sup> Firstly, the accounting standard setter must pursue the most desirable accounting model, to be built with proper analogy and a firm rationale. Secondly, as a primary principle, the accounting standard setter must be aware of information users' needs and decision-usefulness from a user's point of view. One interviewee stated that 'decision-usefulness' was the primary objective in setting an accounting standard for emissions rights:

The main principle of accounting is providing timely accounting information in order to optimise the flow of capital. That is, accounting information should be timely provided to stakeholders. For doing this, the accounting standards are necessary to produce decision-useful accounting information. [...] From the information users' point of view, the accounting standards for ETS would be important in light of the usefulness of accounting information (ASS 3).

Despite the importance of users' needs, one interviewee (ASS 1) admitted the difficulty of identifying users' needs precisely due to a lack of previous surveys on this issue. As an alternative, KASB referred to practice commonly adopted by companies participating in the EU ETS in order to acquire insights into users' needs. Thirdly, the accounting standard setter must consider the extent to which

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<sup>46</sup> This view was identified in a pilot interview in April 2013. Since the pilot interview was carried out at the beginning of the standard-setting process, the factors were described in more general terms. These factors were further elaborated as the standard setting progressed (see Figure 9).

preparers will be burdened when producing accounting information. In other words, accounting rules should be applicable and acceptable from a preparer's point of view, and accounting rules should be formulated in such a way as to produce accounting information without generating unnecessary extra costs for companies.

The factors to be considered were elaborated more tangibly by accommodating stakeholders' concerns and interests. An agenda paper for the KASB meeting held on 28 March 2014 ('Review of the law relating to the ETS') explicitly states that KASB took two factors into consideration when setting up an accounting standard for ETS.

Firstly, it was necessary to minimise the impact of the new accounting standard for ETS on the objectives of ETS. In particular, the accounting standard should not cause dysfunction of the scheme's market mechanism. In addition, the accounting standard for emissions rights should not undermine the ability of ETS to achieve GHG emissions reduction targets in the most effective manner on the basis of a market mechanism.

When the Korean government requested the establishment of a new accounting standard, it provided guidelines for KASB to follow. One interviewee (GOV 2) stated that the government called for an accounting standard for ETS that would not 1) place additional burdens on industry or 2) impede tradability on the market. Corresponding to the guidance given by the government, the accounting standard for ETS was intentionally designed to minimise the impact on the scheme.

Secondly, and more importantly, KASB wished to promulgate the accounting standard for ETS so that companies mandatorily adopting IFRS (referred to as 'K-IFRS adoption companies' hereafter) would be able to apply it to their accounts. Participants in the Korean ETS are designated on the basis of criteria in the ETS bill.<sup>47</sup> About 70 to 80 per cent of participants are KOSDAQ-listed companies that

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<sup>47</sup> According to the Korean ETS bill, installations emitting over 25,000 tCO<sub>2</sub>eq/year in 2012, entities emitting over 20,000 tCO<sub>2</sub>eq/year in 2013 and entities emitting 15,000 tCO<sub>2</sub>eq/year in 2015 must mandatorily participate in the scheme.

mandatorily apply IFRS to their financial statements.<sup>48</sup> Consequently, any new accounting model should be subject to the IFRS framework to the extent to which K-IFRS adoption companies can adopt Korean GAAP for emissions rights in line with IAS 8. In other words, the accounting standard for ETS should not give rise to any conflict with the IFRS framework. If conflict with IFRS occurred, K-IFRS adoption companies might not refer to the standard, even though the accounting standard for emissions rights was provided by KASB. In this regard, KASB had to set up an accounting standard for ETS compatible with the existing accounting standards, in particular IFRSs.

These two factors were articulated clearly in the documents provided by KASB. The factors to be considered are summarised as follows:

- 1) In accordance with the objective of the scheme to achieve the GHG emissions reduction target in the most effective way, the accounting standard for emissions rights must be set up in such a way as to minimise its impact on the operation of the scheme.
- 2) To enhance comparability between companies, the accounting standard for ETS should be established in a way that enables K-IFRS adoption companies to apply it to emissions rights.

In effect, these factors substantially affected KASB's choice of accounting model and rules.

In addition, it is noteworthy that KASB also took major stakeholders' interests into account. While conducting a preliminary interview in March 2013, I observed whom KASB perceived to be major stakeholders regarding accounting issues for ETS in Korea (See section 4.5). At an early stage in ETS development, in March 2013, KASB held the KAI forum as a form of public hearing. It invited POSCO: the largest emitter among Korean companies, the Ministry of Environment: the competent authority, Samjeong KPMG and Samil PwC: big four accounting firms.

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<sup>48</sup> Since Korea adopted IFRS in 2011, companies with total assets greater than 2 trillion KRW must mandatorily apply IFRS to quarterly and half-year reporting (KASB 2013). In the absence of IFRS for emissions rights to date, K-IFRS adoption companies may develop their own accounting policy to deal with emissions rights and related liabilities in line with IAS 8.

In addition to these participants, the Financial Services Commission and the South-East power company also consisted of a member of the technical committee consulting mainly on technical issues in the development of the accounting standard for ETS. Interestingly, KASB did not concentrate on all companies but focused on a few relevant companies, principally large emitters, who may have a big concern on this issue. Accordingly, the participants in the KAI forum and the member of technical committee constituted the major stakeholders whom KASB perceived had a significant interest the accounting issues for ETS. ASS 1 stated the background for calling them in due process in the development of the accounting standard for ETS:

KAI forum was held in order to identify a range of accounting issues arising from the ETS. Hence, we invited the relevant entities engaging in the Korean ETS such as large emitters, mainly companies, and accounting firms which might do research a wide range of ETS issues in the perspective of accounting. [...] We [KASB] made a form of a technical committee in order to mainly address technical issues. As a member of technical committee, we called POSCO, South-East power Co., Ministry of Environment, the Financial Services Commission, Samjeong (KPMG), and Samil (PwC) because we consider them giving the most appropriate advice for this issue (ASS 1).

On the basis of the participants in due process in the development of the accounting standard for ETS, the major stakeholders were identified: large emitters, accounting firms and the competent authority of ETS (government).

Although in the documents KASB did not apparently articulate stakeholders' interests as a factor to be considered, prominent stakeholders' interests needed to be taken into account as one of the most significant elements influencing its consideration. KASB paid close attention to the voices of stakeholders. In addition, it was observed that the main stakeholders, consisting mainly of large emitters, persistently raised their concerns regarding the anticipated accounting model with KASB throughout due process. In essence, the interests of stakeholders were a critical feature which was taken into consideration in the development of the accounting standard for ETS.

Based on the findings, the factors that KASB took into account in setting up the accounting standard for emission rights are shown in Figure 9.

**Figure 9: Factors considered in the case of KASB**

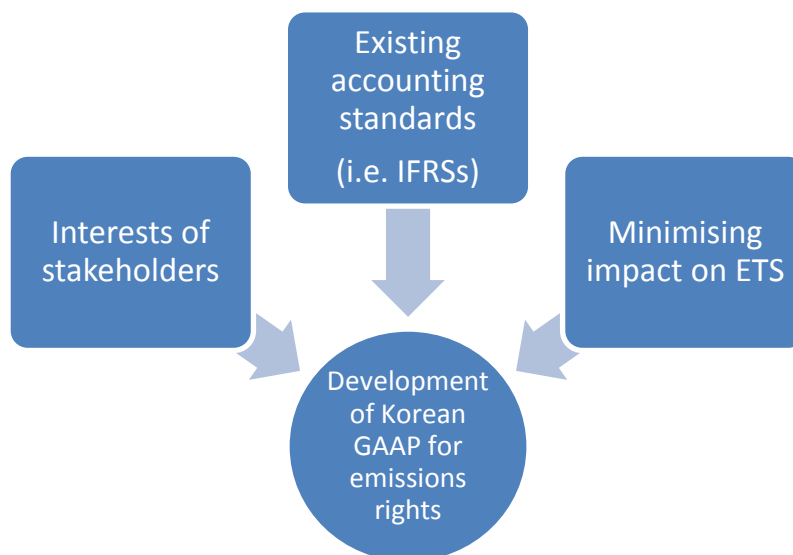


Figure 9 indicates how the factors affected the development of the accounting standard for ETS as constraints. The KASB had to 1) address the negative impact on financial and accounting numbers; 2) minimise the negative impact on the scheme and the carbon market; and 3) align with IFRSs. These factors substantially and significantly influenced KASB's choice of specific accounting models and rules.

#### **6.4. Features of Korean GAAP for emissions rights**

##### **6.4.1. Identifying accounting issues for emissions rights**

With the introduction of a new measure or policy, a high level of understanding is a critical premise for a high-quality outcome when developing accounting standards. Accordingly, the accounting standard setter must comprehend all the measures and processes of ETS in the development of an accounting standard for it.

Notably, KASB acknowledged a necessity for sufficient comprehension of all features and processes of ETS before identifying relevant accounting issues. In addition to the advanced professional and technical aspects of ETS, the Korean ETS was formulated as a consequence of political consultation in which a variety of interests were reflected. Thus, time-consuming efforts were required to gain a

complete understanding of the contents of the Korean ETS bill, including the background to the scheme, the aim and mechanism of its measures, and the process and its effects.

During the interviews, it was observed that KASB staff and board members had endeavoured to gain a comprehensive understanding of features of the Korean ETS. At the same time, KASB staff had made strenuous efforts to transform each process under the scheme into accounting events in order to shape accounting rules in accordance with each business activity which might occur under the scheme. Indeed, the findings demonstrate KASB's efforts to understand how the Korean ETS would operate, and consequently to identify and justify relevant accounting issues under ETS. For example, in KASB meetings held on 28 March and 11 April 2014 it was observed that KASB members had reviewed the main features of the Korean ETS bill and the relevant accounting issues regarding emissions rights. The meetings were held as a preliminary session before making a tentative decision on an appropriate accounting model for the ETS.<sup>49</sup>

The staff in KASB definitely had a very keen appreciation not only of general features and processes of ETS, but also of politically-related attributes under the Korean ETS. In this regard, KASB staff were capable of properly identifying and justifying accounting issues under the ETS. To this extent, they were able to develop a KASB staff proposal on emissions rights with a robust and adequate rationale.

Ascui and Lovell (2011) argue that the development of accounting standards for ETS within an existing accounting framework is doomed to failure due to a lack of appropriate appreciation of each process of ETS. In contrast to Ascui and Lovell's assertion, in the case of KASB, a high level of expertise and knowledge was acquired as a result of strenuous efforts to understand the Korean ETS.

In addition to a full understanding of all processes under ETS, KASB attempted to identify and justify accounting issues relating to emissions rights. KASB staff referred to all available existing accounting models and industry practice

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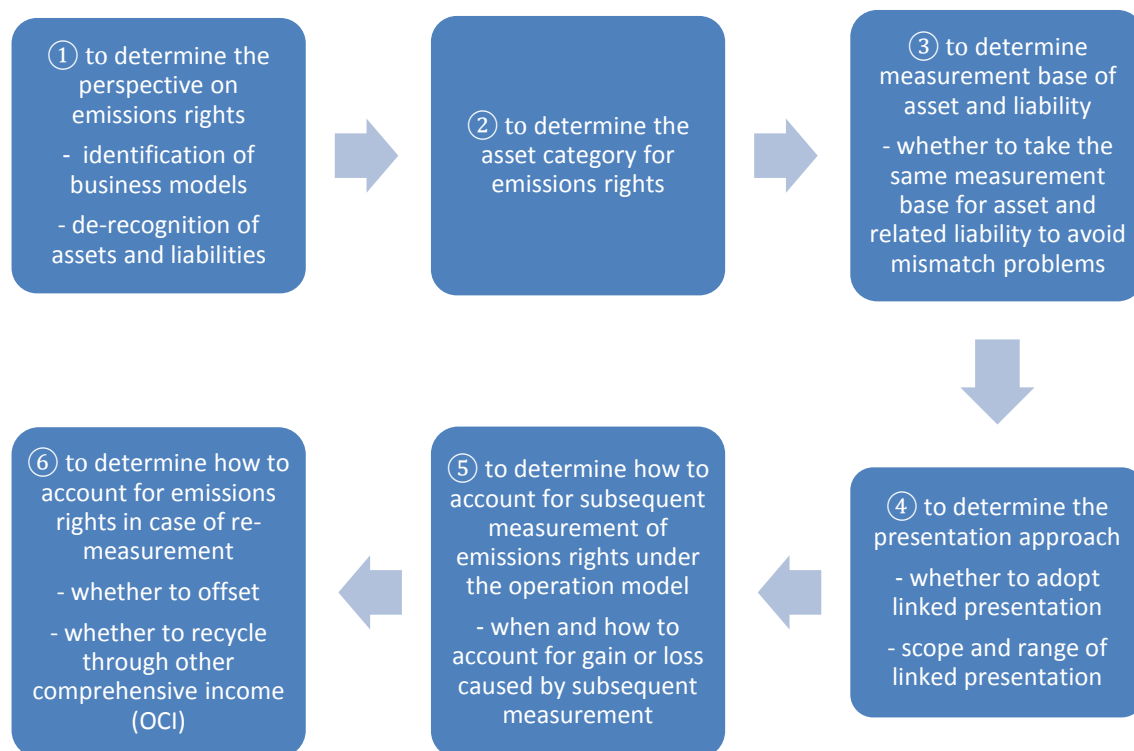
<sup>49</sup> A review of accounting models for ETS was undertaken in a later meeting held on 9 May 2014.



commonly used in Europe. For example, they referred mainly to IFRIC 3 (2004), ANC's proposal (2012), EFRAG's comment paper (2012), and a survey on accounting for emissions rights in Europe conducted by PwC and IETA in 2007. KASB staff worked on analysing and comparing all available accounting models taking all factors into consideration (see Section 6.3).

Based on the accounting issues identified, KASB set up a process for decision making in relation to accounting rules for emissions rights and related liabilities, as shown in Figure 10. The process in Figure 10 appears to have been beneficial as a way of identifying and elaborating accounting issues for ETS.

**Figure 10: Procedure for development of accounting rules for ETS**



(Source: Agenda paper of KASB meeting, March 2014: 'Review of the law relating to the ETS')

In accordance with the procedures shown in Figure 10, a set of accounting issues was identified on the basis of documents obtained from KASB and interviewees.

With regard to the main accounting issues, most interviewees in Korea pointed to free allowances. Unsurprisingly, due to 100 per cent free allocation in Phase I, the primary accounting issues were associated with the recognition, measurement and presentation of free allowances, which gave rise to contentious arguments and controversy among stakeholders.

### *Recognition of emissions rights*

KASB had to justify whether emissions rights could be recognised as an asset. According to the definition of an asset in the Conceptual Framework of Financial Accounting under Korean GAAP,, ‘an asset is a resource controlled by the entity as a result of past events and from which future economic benefits are expected to flow to the entity’ (para. 90). One interviewee (ASS 1) reckoned that emissions rights exactly fit the requirement of an asset, specifying that ‘emission rights are an economic resource controlled by the entity as a result of allocation from the government’. In addition, emissions rights are expected to be used to offset the obligation under ETS or may be sold, resulting in a cash inflow that must be capable of generating inflows (or decreasing outflows) of economic benefits. In this context, the same interviewee commented explicitly defining emission rights as assets:

In line with criteria for recognition of an asset in the Conceptual Framework of Financial Accounting, emissions rights should be recognised as assets on the grounds that emissions rights are capable of generating cash inflows or offsetting an entity’s statutory obligation under the ETS. In other words, it is highly probable that any future economic benefit associated with the item will flow to the entity. Furthermore, emissions rights can be measured at monetary value which can be observed on a market. This means that the item (emissions rights) entails a cost or value that can be measured with a high degree of reliability (ASS 1).

In terms of recognition of emissions rights as assets, no conflict has arisen, similarly to previous discussions relating to other accounting standard setters and in previous research. As a prerequisite for elaborating an accounting treatment,

KASB reached a solid conclusion that emissions rights should be regarded as assets.

### *Perspective on emissions rights*

It is important to make an assumption regarding the perspective on emissions rights because this assumption subsequently affects the determination of the measurement base and the timing of recognition and de-recognition of emissions rights. Acknowledging emissions rights to be an asset, one interviewee (ASS 1) referred to the attributes of emissions rights as various and complex, a non-physical substance akin to intangibles, with tradability akin to financial instruments, and a commodity akin to raw materials. Because of the complicated and various natures of emissions rights, similarly to the debate in the case of other standard setters, KASB struggled to justify the exact classification of emissions rights within existing asset categories.

In order to justify its perspective on emissions rights, KASB derived an idea from business models which had been introduced in ANC's proposal and EFRAG's comment paper. One interviewee (ASS 1) explicitly admitted the necessity of distinguishing different uses of emissions rights depending on the purpose of holding them. This interviewee also posited multiple simultaneous uses of emissions rights: emissions rights are primarily used for compliance purposes as well as being tradable at discretion. The same interviewee commented on the appropriateness of business models in accommodating a variety of features of emission rights:

Emissions rights can be variously used in all kinds of business activities due to the diverse nature of emission rights. [...] In this regard, the business model approach is appropriate to embrace the various attributes of emissions rights (ASS 1).

Under the premise of various uses of emissions rights in line with different intentions to hold or purchase them, KASB adopted the business models shown in Table 7.

**Table 7: KASB's decision on business models**

<b>Business model</b>	<b>Perspective on emissions rights</b>	<b>Existing accounting models</b>	<b>KASB's decision</b>
Compliance model (Production model)	Objective to be surrendered to the authority but can be freely traded	IFRIC 3 IASB's tentative decision EFRAG, European practice	Accept
	Commodity to be consumed in the production process	ANC (France)	Do not accept
Trading model	An investment object in the pursuit of capital gain	ANC (France) EFRAG	Accept

An accounting treatment for emissions rights can be elaborated separately in accordance with a certain type of business model. For example, in a compliance (production) model, two different perspectives on emissions rights are assumed. One is that emissions rights are regarded as a resource that an entity should surrender to the government for compliance under ETS, referred to as the 'compliance model'. The other is that emissions rights are a new type of commodity consumed during the production process, referred to as the 'production model', which ANC's proposal advocated. Meanwhile, in a trading model, emissions rights are seen as a type of object to be invested in in pursuit of capital gains over the short term.

Notably, one interviewee (ASS 1) declared that ANC's proposal was a well-developed accounting model for emissions rights on the basis of a robust and logical rationale, similar to the accounting model commonly used in the US. Nevertheless, this interviewee argued that ANC's proposal failed to reflect all the various attributes of ETS, especially as ANC's perspective on emissions rights focused mainly on the feature of being consumed in the production process like raw materials. The production model is based on the premise that emissions rights are only consumed during the production process, although an entity can sell emissions rights at its discretion. This interviewee stated that KASB's basic premise regarding the nature of emissions rights differed from ANC's perspective.

The same interviewee (ASS 1) reckoned that KASB did not adopt ANC's proposal as a whole owing to the imperfection of ANC's premise. Rather, KASB adopted

the compliance and trading business models. The interviewee explained this further:

We [KASB] did not take the business models all together proposed by the ANC because I consider the production model not to fully reflect all attributes of emissions rights, only focusing on the attribute of being consumed during the production process. Unlike the assumption made by the ANC, I believe companies are able to hold emissions rights in hand for the purpose of not only compliance with obligations under ETS but also pursuing capital gains at the same time (ASS 1).

In essence, KASB adopted the same logic as ANC on business models. Namely, under the business models, different accounting treatments for emissions rights can be elaborated in line with each business model. The interviewee (ASS 1) stated that ‘KASB made a decision that the compliance model and trading model would be adopted as the primary framework to determine a specific accounting treatment for emissions rights’. In effect, similarly to ANC’s proposal, business models were utilised as a structural pillar in elaborating accounting rules for emissions rights in Korea.

#### *Determination of an asset category for emissions rights*

In the KASB staff proposal suggested prior to the exposure draft (see Section 6.4.2), the classification of emissions rights was not confined to a specific category. Instead, the proposal suggested that emissions rights should be sub-categorised under the ‘other liquid asset’ category. Contrary to the classification in the KASB staff proposal, in the exposure draft emissions rights allocated for the entire commitment period (i.e. 2015 to 2017 for Phase I) are recognised and classified in the intangible asset category. When emissions rights are expected to be surrendered within a year, they are re-classified into an ‘other liquid asset’ category. The practice most commonly used in European companies (hereafter ‘European practice’) was taken as a primary framework model for the exposure draft. It appears that KASB also intended to be in line with European practice in terms of classification, so emissions rights were categorised as intangible assets.

#### *Initial and subsequent measurement of asset and liability*

In terms of the initial measurement of free allowances, there have been intense arguments amongst stakeholders on whether to measure them at fair value (fair value method) or at nil value (cost method). Emissions rights are designed to be tradable on the market, and it is therefore assumed that prices of emissions rights are reliably measurable. In effect, the fair value method was preferred by accounting standard setters as a default measurement base for emissions rights owing to the market mechanism of ETS. For example, IFRIC 3 and IASB's tentative decisions in 2008-2010 were based on a fair value approach to the measurement of emissions rights.

On the other hand, in practice, measuring free allowances at nil value has been predominantly advocated by stakeholders, especially preparers. Some preparers have explicitly supported the 'cost method', in which free allowances are recognised at nil value. In particular, the accounting model in which the cost method as a measurement base is combined with net presentation has been widely supported by preparers. Interviews with preparers (COM 1, COM 3, COM 8, COM 11, COM 12) conveyed a definite sense of being in favour of the cost method and net presentation. In particular, one interviewee (EXP\_ACC 2) viewed the cost method and net presentation as a more suitable accounting model for emissions rights in the Korean context. This interviewee stated his view on an appropriate accounting model for Korea:

From an accounting perspective, a gross approach might be more desirable; however, this approach may give rise to a degree of fluctuation arising from fair value measurement. On the other hand, from a practical point of view, a net approach might be more appropriate since accounting treatment under a net approach would make financial numbers non-volatile. Considering the fact that a net approach has been widely used in European practice, the cost measurement and net presentation under a net approach, as an easier and simpler accounting treatment for emissions rights, would be more suitable for Korean companies at the initial stage of ETS (EXP\_ACC 2).

Subsequently, under the compliance model, KASB staff considered two different measurement bases: cost method (at nil value) and fair value method. KASB staff

appeared to have advocated the fair value method of measuring initial and subsequent emissions rights because they believed that this method would provide more relevant and useful accounting information.

Along with measurement bases, three different presentation models were also considered: gross presentation, net presentation and linked presentation (see Section 5.3.2).

Interestingly, KASB staff devised different accounting models by matching each measurement base to a presentation method, as shown in Table 8. These different accounting models were analysed from various perspectives, including applicability in practice, the extent of influence on financial statements and transparency of accounting information.

**Table 8: Accounting models matching measurement with presentation**

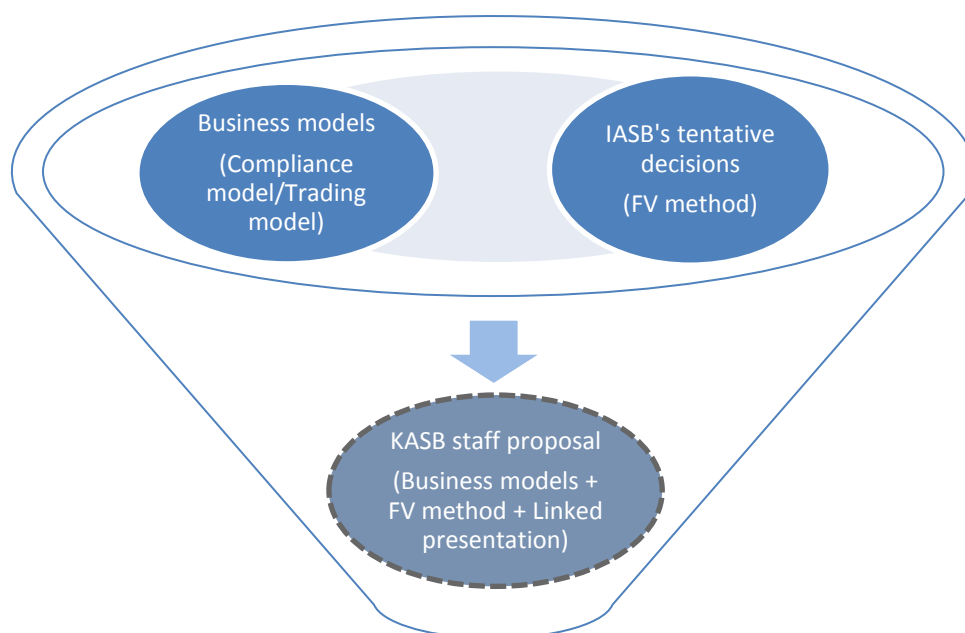
Model	Measurement	Presentation	Proposal or Standard
Type 1	Fair value	Gross presentation	IFRIC 3
Type 2	Fair value	Net presentation	Not applicable
Type 3	Fair value	Linked presentation	Staff proposal (KASB)
Type 4	Cost method	Gross presentation	Exposure draft (KASB)
Type 5	Cost method	Net presentation	ANC's proposal

Meanwhile, in terms of recognition of liability, KASB staff presented that a liability and a production cost should be recognised as emissions occurring irrespective of how many allowances are retained in hand. This view is different from IASB's tentative decision that a liability should be recognised when emissions rights are allocated (on Day 1). In contrast to IASB's tentative decisions, KASB determined that an obligation event occurs as emissions arise. Emissions rights (allocated or purchased) and liabilities (in accordance with emissions generated) should be recognised separately; they should not be netted as one unit of account. A liability should be recognised based on actual emissions and de-recognised when the allowances are surrendered to the government. Under the compliance model, de-recognition of emissions rights and related liabilities will also be settled when an entity surrenders emissions rights to the government.

#### 6.4.2. KASB staff proposal

Taking all existing accounting models into consideration and having justified the accounting issues based on the business models, KASB staff attempted to seek a suitable accounting treatment that would be more appropriate and applicable under Korean circumstances. The KASB staff proposal was devised by elaborating existing models and adding their own ideas to the models. Figure 11 presents how KASB staff elaborated the accounting models and devised their own proposal for the Korean context.

**Figure 11: KASB staff proposal, 2014**



The KASB staff proposal was formulated by adopting IASB's tentative decisions as a whole in terms of recognition, measurement and de-recognition. One interviewee (ASS 1) believed IASB's tentative decisions to be a superior model from the perspective of the accounting conceptual framework. For example, IASB made a tentative decision to measure initial and subsequent emissions rights and related liabilities at fair value. KASB regarded a fair value approach as delivering full presentation without causing a measurement mismatch issue, resulting in high-quality accounting information. In addition, KASB confronted the treatment of free allowances as the main accounting issue, akin to the situation in which IASB's



tentative decisions were made between 2008 and 2010 (for more detail, see Section 5.2). IASB's tentative decisions appear to have been the most suitable and applicable model for KASB. In this regard, KASB staff made a decision to adopt IASB's decisions in their entirety and to elaborate them in such a way as to add specific accounting treatment for issues on which IASB drew no conclusions, such as the presentation issue.

In essence, adopting IASB's tentative decisions in terms of recognition and measurement of an asset and a liability, the KASB staff proposal was that emissions rights and corresponding liabilities should be measured at fair value. Since free allowances were expected to be measured at fair value, some preparers argued that fair value measurement may have a significant impact on the financial statements of some large emitters, potentially aggravating the debt ratio. For example, one interviewee (COM 1) commented that emitters had insistently argued that 'a fair value approach may cause a sharp rise in the debt ratio as well as a degree of volatility of profit or loss arising from fluctuations in the market price of emissions rights'.

Although an accounting model combining fair value measurement with gross presentation was regarded as the best solution from the perspective of the accounting conceptual framework, KASB staff had to take into consideration the concerns of companies. As a second best, linked presentation was proposed in order to address the concerns of prominent preparers. Linked presentation is an accounting treatment in which emissions rights and related liabilities are displayed as being tied to one unit of account. One interviewee (ASS 1) posited that linked presentation would offset the negative impacts of the fair value method on the debt ratio and volatility of accounting numbers, addressing large emitters' main concern.

Another interviewee (ASS 2) highlighted applicability of linked presentation compatible with Korean GAAP. In fact, Korean GAAP for government grants allows linked presentation of 'government grants' and 'pension assets under management'. The same interviewee commented: 'extending the analogy of "government grant" presentation in Korean GAAP, linked presentation could be applied to free allowances'. KASB staff believed that free allowances could be

regarded as a type of government grant on the grounds that they are given to compensate for the costs of future compliance under the scheme. Since Korean GAAP for government grants allows linked presentation, it could be adopted for emissions rights at least in this context.

In addition, KASB staff believed that linked presentation provides more useful information than net presentation. In this context, one interviewee said:

While under net presentation a net amount of emissions rights and related liability is displayed on the balance sheet, linked presentation displays the effects of ETS in light of both emissions rights and emissions liabilities (ASS 1).

In effect, linked presentation was regarded as the most appropriate solution from not only the preparers' point of view but also the standard-setter's point of view in the sense of offsetting the negative impact on accounting numbers while providing more decision-useful information than net presentation. On the basis of a number of benefits of linked presentation, KASB staff formulated the new accounting model for emissions rights by combining fair value measurement with linked presentation. The KASB staff proposal was an accounting model that for the first time combined fair value measurement with linked presentation.

Notably, the staff proposal might be considered as an up-to-date model for emissions rights and related liabilities. It incorporates all strands of accounting issues and discussions addressed in relation to emissions rights hitherto. In addition, the accounting treatment in the staff proposal is specified by accommodating various interests of stakeholders.

Nevertheless, there was a critical concern in relation to linked presentation. According to the IFRS conceptual framework, gross presentation should be applied as a principle. In other words, assets and liabilities should not be offset. Linked presentation is exceptionally applied to only specific accounts (e.g. deferred tax liability) when specified in the individual IFRS. Accordingly, linked presentation may cause a conflict with the IFRS framework, as one interviewee suggested:

From an investor's perspective, they prefer all information in the form of gross assets and gross liabilities rather than netting or linked presentation. In addition, linked presentation has the potential to cause conflict with the conceptual framework of IFRS. In order to be more applicable in practice, net presentation could be the second best solution corresponding to the accounting treatment which has been commonly used in European companies in practice (ASS 4).

In spite of the innovativeness of the KASB staff proposal, most KASB members appeared to be rather sceptical about linked presentation due to its inconsistency with the IFRS framework. By and large, KASB members seemed to be doubtful about the applicability and acceptability of the accounting treatment in the KASB staff proposal when implemented in the Korean context.<sup>50</sup>

#### *6.4.3. Exposure draft and final version*

IASB had not explicitly presented an official opinion on linked presentation for emissions rights and related liabilities. In order to ensure that linked presentation could be used in this case, KASB consulted unofficially with IASB staff with regard to the linked presentation issue. In response, KASB was informed that linked presentation is allowed in only very exceptional cases in IFRS; it is not a generally accepted method of presentation under the IFRS conceptual framework, as described by one interviewee:

We've been told that if the KASB adopts linked presentation in relation to emissions rights and liabilities, it might give a signal to information users that the KASB would NOT follow IFRS (ASS 1).

Meanwhile, significant concern had been raised by most stakeholders in Korea with regard to the potential imperfection of the carbon market during the initial stages in Phase I. Although the Korean ETS was to be launched on 1 January 2015, several interviewees predicted that 'most participants may shun trading emission rights due to a high level of uncertainty of the scheme, in particular at the

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<sup>50</sup> This is inferred from observations when attending KASB meetings as an observer on 28 March and 11 April 2014.

beginning of the first phase' (EXP\_ACC2, EXP\_ACC 3, COM 1, COM 3, COM 5, COM 7, COM8, PO 1, PO 3, EXP\_CC 1, EXP\_CC 2). Rather, participants would tend to retain emissions rights (COM 1, COM 3, COM 5, COM 7, PO 1, PO 3, EXP\_CC 1, EXP\_CC 2, EXP\_CC2). In this context, one interviewee commented:

It is expected that no one is likely to take part in trading due to a high level of uncertainty of the market; accordingly, entities would tend to hold their allowances NOT sell them. This might result in a 'dormant market' for the time being (EXP\_CC 2).

Accordingly, it was anticipated that the Korean ETS market would remain 'dormant' (COM 8) for the time being at the beginning of Phase I. This might lead to unavailability of market prices for emissions rights. One KASB member acknowledged that an active market is a prerequisite for applying the fair value method to measurement of emissions rights (KASB meeting, 28 March 2014). Considering the inappropriateness of the fair value method in the Korean ETS market at the initial stage, KASB set aside the fair value method as a measurement base for emissions rights.<sup>51</sup>

These two critical concerns led to the deferral of the whole KASB staff proposal (KASB meeting, 11 April 2014) rather than immediate approval. Instead, KASB decided to consider two alternatives: one was an accounting model based on the most prevalent practice in Europe ('European practice')<sup>52</sup>; the other was the accounting model in the KASB staff proposal. Table 9 characterises these alternative models in terms of measurement and presentation methods.

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<sup>51</sup> The accounting model featuring a fair value method and linked presentation was eventually not approved. Instead, the exposure draft adopted a cost method approach which had been predominantly used in European companies (for more detail, see Section 6.4.3).

<sup>52</sup> KASB referred to the survey on accounting for emissions rights in Europe conducted by PwC and IETA in 2007. In terms of granted allowances and related liabilities, the survey demonstrates the most commonly used accounting treatment; categorisation – intangible assets; initial measurement – at nil value; valuation of liabilities – at carrying value of granted allowances. The survey shows a cost method is the accounting treatment which has been most pervasively used in practice. In the case of KASB, 'European practice' is referred to as the 'cost method' where granted allowances are measured at nil value and the related liabilities are measured at the carrying value of (granted) allowances.

**Table 9: Alternative accounting models for emissions rights and liabilities**

Alternative 1 (based on European practice)	Measurement of asset	At cost (in case of free allowances, at nil value)
	Measurement of liability	At carrying value of emissions rights (in case of excess emissions over emissions rights held, at fair value of emissions rights)
	Presentation	Gross presentation
Alternative 2 (based on KASB staff proposal)	Measurement of asset	At fair value (regardless whether allocation for free or purchased at own expense)
	Measurement of liability	At fair value
	Presentation	Linked presentation

Source: Abstracted from presentation material in KAI Forum (11 July 2014)

The Alternative 1 in above Table 9 corresponds to the Type 3 model in Table 8 while the Alternative 2 corresponds to the Type 4 model in Table 8 respectively.

With regard to the alternative models, KASB carried out a consultation process with stakeholders, including preparers and accounting experts (accounting firms and academics), before documenting an exposure draft. It was apparently attempting to seek legitimacy from the inputs of stakeholders for decision making on the two alternative models.

Most companies expected to participate mandatorily in the scheme were asked to comment on which accounting model would be more appropriate in the Korean context. Most stakeholders, including mainstream interest groups (e.g. large emitters), presented clear views in favour of alternative 1. Most companies presumably considered European practice to be more applicable and practical for K-IFRS adopting companies because it is easier and simpler to apply. In addition, most stakeholders regarded alternative 1 as a solution that would not have adverse impacts on financial statements.

With regard to presentation, it was observed that stakeholders' views on linked presentation were split into diverse strands. Some stakeholders expressed a sceptical perspective on linked presentation in the sense that K-IFRS adopting companies could not embrace linked presentation unless IASB explicitly allowed linked presentation for emissions rights and related liabilities. On the other hand, some stakeholders were in favour of linked presentation because it would not only provide more useful information but would also be the superior accounting model

in combination with the fair value method. Other companies preferred net presentation to gross presentation on the grounds that a net approach offers more useful information to information users. They appeared to believe that gross presentation may misguide information users; specifically, after a year, the reversibility of emissions rights is clearly predictable so this approach offers no valuable information. This view is in line with the users' perspective of which IASB had been aware during the 2008-2010 ETS project.

Before setting out documentation for an exposure draft, the consultation process demonstrates the extent to which stakeholders' inputs may affect a standard-setting body's decisions. In addition, the tentative decisions made by KASB regarding an exposure draft indicate the extent to which each alternative accounting method was supported or opposed by stakeholders in due process.

As a consequence of consultations on the alternative accounting models, the KASB staff proposal was again unapproved by KASB members because of 1) the possibility that linked presentation might be incompatible with the IFRS framework, and 2) imperfection in the Korean ETS market, meaning that market prices might not be sufficiently observable to allow the fair value method to be applied. In this context, one KASB staff explained it:

Although the KASB staff proposal could be more desirable with a better and firmer rationale, in light of the accounting conceptual framework, the proposal would not be applicable unless linked presentation is manifestly allowed under the IFRS framework. Accordingly, we could not approve the staff proposal as a whole (KASB staff, KAI Forum, 11 July 2014).

Subsequently, at a meeting held on 9 May 2014, KASB made a tentative decision to adopt alternative 1 for development of the exposure draft.<sup>53</sup> European practice

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<sup>53</sup> Abstract of KASB tentative decisions (KASB meeting, 09 May 2014): 1) Measure emissions rights at cost; thereby, free allowances are measured at nil value and purchased allowances are measured at cost to pay; 2) Recognise liability as emissions are produced; 3) Measure liability at carrying value, which is linked to measurement of emissions rights; 4) When emitting more than the amount of emissions rights held, a liability for excess emissions is recognised at the best estimate; 5) Asset and related liability are de-recognised when surrendering emission rights; 6) Asset and related liability are presented on a gross basis.

was adopted as the second best solution on the grounds that it would be more applicable to the Korean context. As the primary accounting framework, European practice, became a pillar on which to build the accounting standard for ETS in Korea.

KASB unveiled the exposure draft on 11 July 2014. Following the tentative decisions made in May 2014, the accounting treatment in the exposure draft was based primarily on European practice in terms of recognition, measurement and de-recognition of an asset and a liability. The exposure draft is distinctive in using a cost method for measurement and gross presentation. In terms of accounting issues not being observed in European practice, the exposure draft delivered more detail on accounting rules on a case-by-case basis, in line with the process of Korean ETS, including (partly) selling, banking (forwarding) and borrowing emissions rights.

On the way to the final outcome, the findings demonstrate that KASB inevitably conceded to a realistic model rather than an idealistic model. One interviewee (ASS 1) commented: 'this is a case where the degree of autonomy retained by the jurisdiction of the KASB was constrained to some extent due to the mandatory adoption of IFRS'.

The exposure draft as a whole was accepted and welcomed by most stakeholders. In particular, most preparers, including large emitters, were in favour of the accounting treatment in the exposure draft. Owing to measurement at cost, free allowances are measured at nil value. Consequently, the amounts of free allowances and related liabilities are displayed as a net amount in financial statements despite gross presentation. This means that companies do not need to be concerned about a negative impact on their debt ratio, at least during Phase I, as 100 per cent free allowances are being allocated.

The exposure draft was also based on business models consisting of a compliance model and a trading model. The accounting rules were elaborated separately in line with each business model. In practice, both activities may be concurrently carried out in many groups. In other words, the compliance model would be compatible with the trading model simultaneously in one entity. The

exposure draft was based on the assumption that large emitters could hold emissions rights not only for compliance but also for trading purposes. Accordingly, the exposure draft does not articulate any constraint on engaging in trading activities within the compliance model.

An entity may, without restriction, re-justify its business model and re-implement a different business model in line with its business strategy. Some stakeholders raised a concern that there might be a risk of earnings manipulation by deliberately changing from one business model to the other.<sup>54</sup> In response, one KASB staff articulated that ‘we [KASB] deliberately developed the accounting rules so that the new accounting standard for ETS does not give rise to any obstacle to the operation of ETS or the function of the market’. In particular, the accounting treatment in the exposure draft would not hamper companies’ decisions to hold or sell emissions rights. If a specific accounting rule were to restrict trading activities under the compliance model, it might to some extent diminish market liquidity, as explained by the same KASB staff:

The Korean government adopted a cap-and-trade scheme with the intention of enhancing the tradability of emissions rights on the market. In accordance with the intention of a cap-and-trade scheme, we do not prevent re-categorisation of the business model if an entity changes its intention to hold emissions rights. [...] If accounting standards for ETS strictly constrain transfers from one model to another, an entity may not meet be compliant in surrendering emissions rights because it might not purchase them on the market (KASB staff, KAI Forum, 11 July 2014).

On the other hand, one accounting expert raised some potential weaknesses of the exposure draft. In particular, a certain accounting treatment might be logically inappropriate in relation to the recognition of deferred income in the case of selling or borrowing emissions rights.

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<sup>54</sup> Such comments were made in the KAI forum (11 July 2014) and in the process of inviting comments on the exposure draft.



To some extent, the accounting model in the exposure draft seems to dismiss the accounting objective and principles which accounting standards should follow. [...] Admittedly, it is necessary to minimise the impact on industry when developing accounting standards; nonetheless, minimising the impact on industry is not the only factor to be considered, not being a principle that accounting standards must pursue (Accounting expert, KAI Forum, 11 July 2014).

In his response, the above expert implicitly highlighted stakeholder conflicts in respect to the above issue, which was essentially a case where the moral and decisional soundness of the above treatment gave away to the pragmatic interests of the powerful industry. Likewise, one accounting practitioner commented on the exposure draft, highlighting unreasonable accounting treatment arising from the cost method:

We [the institution] overall agree with the exposure draft; however, we have a different view on re-measurement of the remainder of emissions rights after surrendering, recognition of deferred income arising from selling and borrowing emissions rights, and categorisation of emissions liability (Accounting practitioner, KAI Forum, 11 July 2014).

In response to comments from accounting experts, one KASB staff explained:

We [KASB] acknowledge that the fair value method can resolve all weaknesses of accounting treatment on the exposure draft as you pointed out. However, one of the objectives for providing an accounting standard for emissions rights is preliminary prevention of various practices in the absence of authoritative accounting guidance (KASB staff, KAI Forum, 11 July 2014).

This staff conceded:

I believe that the fair value method would be the best and most desirable solution if used with linked presentation. Fair value method provides a robust rationale, and linked presentation resolves the critical concerns of companies. Nevertheless, we [KASB] do not ensure that K-

IFRS adopting companies are able to accept linked presentation. Accordingly, ultimately we do not approve the accounting model with fair value measurement and linked presentation (KASB staff, KAI Forum, 11 July 2014).

According to a minute of a KASB meeting held on 26 September 2014, KASB accepted some comments from stakeholders. There were some comments on accounting treatment, such as the subsequent measurement of emissions rights, recognition of deferred income in relation to borrowing, and categorisation of emissions liability. Notably, KASB undertook mainly minor changes in accounting treatment arising from the comments, rather than any fundamental change.

Consequently, the accounting standard for *Non-Public Entities 'Emission Rights and Liability to Deliver Allowances'* was finally approved at a KASB meeting held on 10 October 2014, officially entitled 'SKAS No.33 'Greenhouse-Gas Emission Permits and Emission Liability'.

In summary, when the exposure draft was unveiled, most stakeholders largely agreed with the exposure draft. There were some comments mainly on minor accounting treatments. This indicates that KASB formulated the exposure draft after a preliminary coordination of interests. It was formulated on the basis of the European practice model supported by most stakeholders. Consequently, most potential concerns raised by prominent stakeholders were addressed beforehand, resulting in unanimous support from most stakeholders.

## **6.5. Summary**

This chapter has presented the findings in relation to *Research Question 1* in the case of KASB.

In accordance with the general observations in relation to key accounting issue discussed in Section 5.2, for KASB the main accounting issue also originated from free allowances. In particular, KASB had to take several factors into account when developing its accounting standard for emissions rights by: 1) offsetting the negative impact of the accounting standard on accounting or financial numbers; 2) minimising the impact on the operation of ETS and the orderly function of the carbon market; and 3) being subject to the IFRS conceptual framework.

It has been observed that large emitters participated proactively in the standard-setting process and persistently called for the adverse effects of the anticipated accounting model on the accounting numbers, such as the debt ratio, to be offset.

Considering the concerns raised by industry, KASB staff devised an accounting model combining a fair value approach (adapted from IASB's tentative decisions), business models (adapted from ANC's proposal) and linked presentation. In particular, linked presentation is a noteworthy and highly applicable method in Korean circumstances. Linked presentation offsets effectively the negative impact on accounting numbers arising from fair value measurement. In effect, most stakeholders were largely in favour of linked presentation because it addressed the main concern of industry. However, the KASB staff proposal gave rise to concerns that linked presentation might conflict with the IFRS conceptual framework, and that imperfections in the Korean carbon market might lead to the inapplicability of fair value measurement. Remarkably, KASB undertook a preliminary consultation process with stakeholders on alternative accounting models prior to documenting an exposure draft. As a consequence of the consultation process, it determined to adopt an alternative solution to replace the KASB staff proposal. It approved the European practice as a primary framework for the exposure draft. Applying cost method, free allowances are recognised at nil value. In effect, the main concern of industry was effectively resolved in the exposure draft.

In the end, KASB finalised the accounting standard for emissions rights, the distinctive features of which are cost measurement and gross presentation. Most stakeholders supported the accounting standard, importantly guaranteeing that they would follow and adopt it on implementation.

The main accounting issues described in Chapters 5 and 6 were raised throughout the standard-setting process in which stakeholders participated in order to express their interests to the accounting standard setter. The next chapter will present how accounting issues are transformed into an accounting standard for emissions rights, highlighting the political aspects of the accounting standard-setting process.

## **7. Accounting standard-setting process for ETS**

### **7.1. Introduction**

This section presents and analyses the findings in relation to Research Question 2 (*How does the accounting standard-setting process proceed in the case of ETS?*) and its accompanying objectives. As mentioned in Chapters 3 and 4, accounting standards are an outcome refined through the accounting standard-setting process. Hence, it is necessary to explore the accounting standard-setting process in order to understand how to reach the desired outcome, an accounting standard for emissions rights.

Firstly, Sections 7.2 and 7.3 will present a number of observations derived from the interviews and document analysis in relation to the accounting standard-setting process in the cases of ANC and KASB. This will be followed in Section 7.4 by findings revolving around specific features of the inter-relationships between IASB and the national accounting standard setters in the case of the ETS project.

In incorporating the findings and research questions, some distinct themes emerge in relation to the accounting standard-setting process.

### **7.2. Case of ANC's proposal**

Details of the accounting standard-setting process in France were identified during an interview with ANC. When deciding to set an accounting standard for emissions rights, ANC initiated a 'working group consisting of investors, financial institutions (e.g. banks), preparers (e.g. companies), accounting expertise (e.g. accountants, academics), tax authorities, etc.' (ASS 7).

Notably, various stakeholders participated from the initial stage of the standard-setting process, since the working group comprised stakeholders including public accounting firms, professional accountancy bodies, preparers and users. The findings show that ANC fulfilled procedural due process (Johnson and Solomons, 1984) by facilitating stakeholders' participation in the process through the working group. Consistent with observations by Durocher and Fortin (2010) and Sinclair and Bolt (2013), procedural due process enabled ANC to ensure legitimacy in the standard-setting process in this case.

As explained in Section 5.4.2, most large emitters in France must apply IFRS in their financial statements. ANC tried to set the standard within the scope of the IFRS framework in order to guarantee ‘compatibility between French GAAP and IFRS’. In other words, ANC did not seek to promulgate a totally new type of accounting rule, so the standard for emissions rights was formulated by changing the existing accounting standards ‘at the margin’ (ASS 8). In accordance with this premise, the working group sought to issue an ‘interpretation’ in the form of French GAAP in line with the IFRS framework (ASS 8).

Interestingly, in the accounting standard-setting process, a so-called ‘bottom-up approach’, as shown in Figure 12, was undertaken in France (ASS 7). While standard setting was in progress, a draft of the proposal was entrusted to the working group constituted of various stakeholders. One interviewee (ASS 7) commented that the draft was ‘actually written’ as the outcome of the working group’s activities.

**Figure 12: ANC’s bottom-up approach**



In order to write a draft, it was essential to coordinate and adjust the various interests of stakeholders in relation to the accounting issues. In this regard, at the beginning of the standard-setting process, the working group played a primary role in consultation. In the working group, ‘consensus’ (ASS 7) needed to be reached as a result of a coordination process between the stakeholders. Consequently, the draft produced in the working group already reflected the interests of the stakeholders. In this context, one interviewee (ASS 7) said:

The way we do accounting standards here is different from what the IASB does. [...] We gather all the stakeholders in a working group. We try and sort of coordinate and come to an agreement. So basically it’s a

bottom-up approach, and so the text was actually written by the working group, approved by a group of specialists in accounting; it's a sort of bottom-up approach. So that when we produce something it's consensual (ASS 7).

This interviewee asserted that this attribute is substantially different from other standard-setting bodies. In both IASB and KASB, as a rule, the standard setting body itself is in charge of undertaking due process, and the standard setter, with reference to technical staff, is entirely responsible for documentation.

In essence, since the working group took charge of documenting the draft and accommodating the various interests of stakeholders, the bottom-up approach enabled stakeholders to play a substantial role in the decision-making process.

More importantly, in discussing how to actually deal with emissions rights in practice, the working group contributed to persuading ANC to seek a solution that addressed a variety of features of emissions rights. One interviewee (ASS 8) reckoned that the working group infused an insight in such a way that ANC referred to 'actual practice' where companies had dealt with emissions rights in the production process like 'physical raw material'. Importantly, the observation of practice gave ANC a critical insight into the actual treatment of emissions rights and the substantial effect of practice in light of internal management. The same interviewee acknowledged the clear role of companies in the development of the proposal:

Companies – major electricity, gas and companies using commodities – helped us because the first thing is that they told us this principle: they never, never produce or emit without thinking of the production cost linked to emission rights – never (ASS 8).

In essence, practice provoked ANC to acquire insights into an 'economic approach'. For the first time, ANC devised business models for emissions rights as an accounting standard aligned with real practice. Under these business models, specific accounting rules were elaborated relying on the actual treatment of emissions rights in practice (for more detail, see Section 5.4.). Owing to the

bottom-up and economic approach, ANC's proposal was developed with a robust rationale for each accounting issue relating to emissions rights.

In addition, the bottom-up approach may have raised awareness of users' needs from the beginning of the accounting standard-setting process. ANC believed that the working group was beneficial in enabling it to understand users' needs, a primary principle pursued by all accounting standard setters. One interviewee described the contribution of the bottom-up approach in light of users' needs:

With us it's a bottom-up approach. So basically, when you had the question 'what was the information that users wanted?' well, within the mechanics of the working group and the expert group and the board, you have users and they said that that's what they wanted (ASS 7).

In summary, on the basis of a bottom-up approach, ANC established the working group which was responsible for producing a draft of the proposal on emissions rights. Consisting of various stakeholders, the working group effectively coordinated a variety of interests on accounting issues for emissions rights from the beginning of the standard-setting process.

Since the various interests of all stakeholders had already been coordinated beforehand, it was anticipated that the accounting standard for emissions rights would be implemented with a high degree of acceptability and compliance amongst stakeholders. In effect, one interviewee reckoned that no problems would be reported following implementation:

A lot of companies apply this under IFRS as well – and I haven't heard a single person come and say that there was a problem (ASS 7).

Overall, ANC posited that the bottom-up approach contributed to a high degree of acceptability on implementation, enabling a shorter post-enactment period.

### 7.3. Case of Korean GAAP for ETS in 2014

#### 7.3.1. Accounting standard-setting process

Corresponding with the accounting standard-setting process shown in Figure 5, KASB established a timeline for an accounting standard for ETS to be published by November 2014. The consultation process continued throughout this process.

In contrast to ANC, KASB develops its accounting standards on the basis of a 'top-down approach', whereby KASB technical staff are mainly responsible for documentation, including a discussion paper, a draft of the accounting standard, agenda papers for KASB meetings, an exposure draft, etc. The ETS project was also based on a top-down approach.

Prior to the request from government, KASB was already aware of the necessity for authoritative accounting guidance on emissions rights in accordance with the commencement of the Korean ETS.<sup>55</sup>

Shortly after KASB initiated the ETS project, in March 2013 it held a 'KAI Forum', a type of public workshop, entitled 'The Emission Trading Scheme: Introduction and Accounting Issues'. The main purpose of this KAI Forum was to introduce the Korean ETS and to listen in advance to the various interests and opinions of stakeholders in relation to the expected accounting issues, thereby identifying the accounting issues that needed to be focused on. In addition to identifying accounting issues, core stakeholders attended the forum and explicitly articulated their concerns. Notably, amongst preparers, large emitters were identified as the main interest group in relation to accounting issues under the ETS.

Along with the KAI Forum, a technical committee for emissions rights was established in August 2013. The technical committee consisted of representatives of stakeholder interest groups in relation to the Korean ETS, including large emitters, representatives of preparers, accounting firms, the ETS task force team (in the Ministry of Environment), the Financial Supervisory Service and academics. It was facilitated as a kind of advisory group to deliver technical and professional

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<sup>55</sup> During the pilot interview with KASB in April 2013, it was noted that KAI had already embarked on an ETS project in order to set up accounting guidance for ETS.



views on certain issues. Accordingly, it mainly addressed highly technical issues,<sup>56</sup> for example the initial and subsequent recognition of emissions rights, measurement base for emissions rights, the corresponding entry of free allowances, recognition and measurement of liability, de-recognition of asset and liability, presentation in financial statements, and recognition of emissions rights in the case of borrowing and forwarding. Some large emitters such as POSCO and South-East Power Co. that participated in the technical committee consistently raised issues in relation to the potential financial impacts of applying different accounting models. Although the technical committee was not directly involved in the decision-making process, discussions in the technical committee significantly influenced the perspectives and views of KASB staff.

Having reviewed the accounting issues for emissions rights in KASB meeting (April 2014), KASB attempted to seek the appropriate accounting model. KASB member was concerned about the inapplicability of the accounting model in the KASB staff proposal. Consequently, KASB put forward undertaking a preliminary consultation with stakeholders including industry, accounting experts, auditors and regulators regarding the alternative accounting models prior to documentation of an exposure draft (see Section 6.4.3.). As a result of consultation, KASB member decided to adopt European practice for the development of an exposure draft (KASB meeting, May 2014).

As soon as the exposure draft had been unveiled, KASB undertook a consultation process, including public hearings (in the KAI Forum, 11 July 2014) and invitations for comment letters (from 11 July to 15 August 2014).

When the KAI Forum was held, a wide range of stakeholders attended including accounting consulting firms, government, preparers and academics. Panels were invited to take part in discussions on the exposure draft, and there were question and answer sessions from the floor to the panels. In the KAI Forum, KASB explained the details of the exposure draft, including the background, previous models that had been referred to, the main features and rationale of the KASB

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<sup>56</sup> Observed from minutes of the technical committee meeting held in November 2013.

staff proposal, and details of the accounting treatment on the exposure draft along with alternative treatments.

In consequence of the consultation process, the accounting standard for non-public entities, 'Emissions Rights and Liability to Deliver Allowances' was finalised in a KASB meeting on 11 October 2014.<sup>57</sup> KASB promulgated SKAS No.33 'Greenhouse-Gas Emissions Permits and Emissions Liability' on 24 December 2014 and it came into force on 1 January 2015.

Overall, Figure 13 demonstrates chronologically the procedures of the development of accounting standard for emissions rights and related liabilities in the case of KASB.

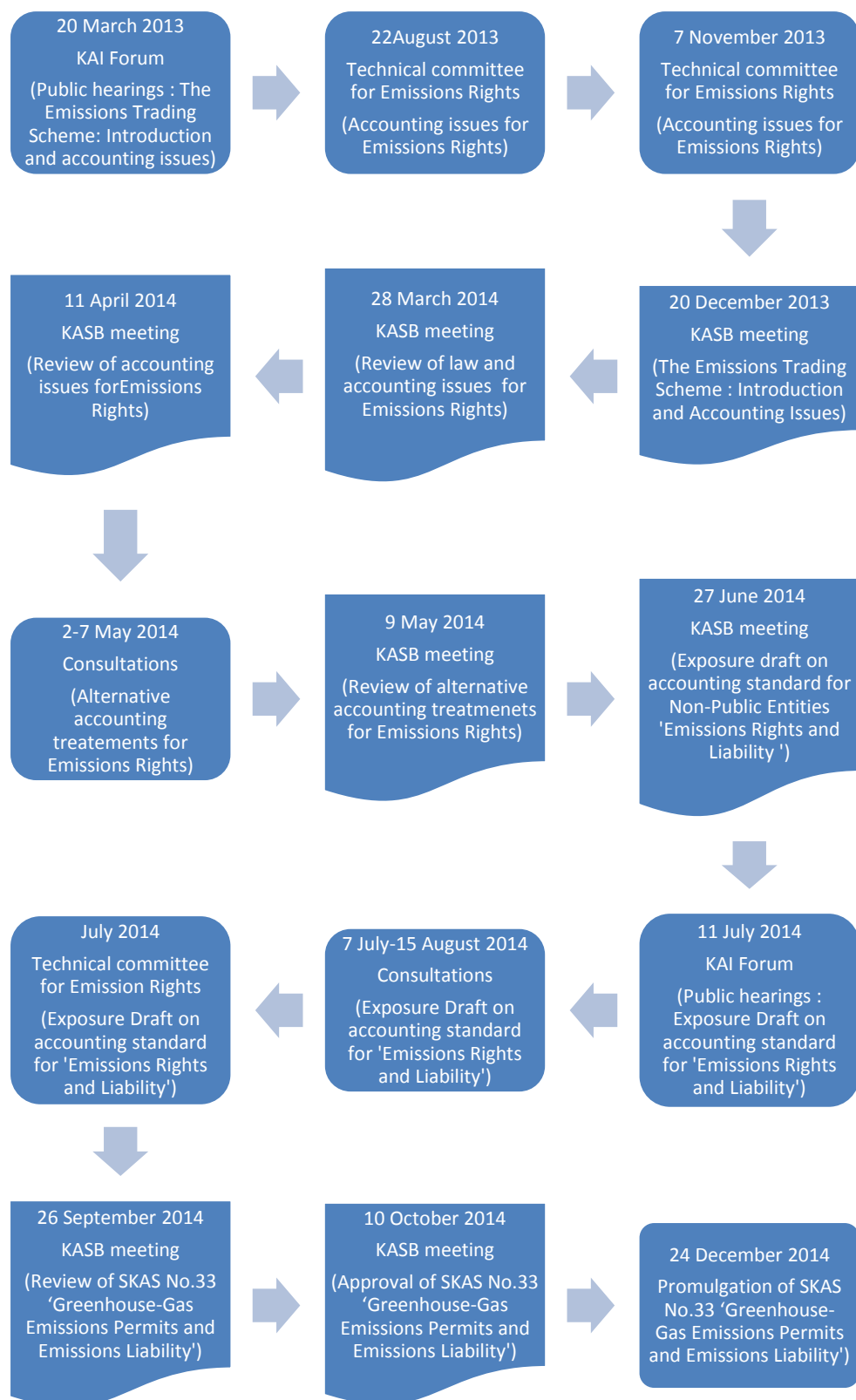
It was observed that KASB provided a wide range of opportunities for stakeholders to take part in order to express their opinions and interests regarding accounting issues for ETS. KASB fulfilled procedural due process by encouraging stakeholders to participate in either the technical committee or the KAI Forum (public meeting), and to respond to the exposure draft. In addition, it proactively sought stakeholders' views and opinions while conducting due process by inviting comments and feedback from stakeholders on the alternative accounting models ahead of documentation of the exposure draft.

In effect, the entire consultation process enabled KASB to communicate sufficiently with stakeholders, enabling a variety of interests to be accommodated effectively into the outcome. This indicates how, by conducting procedural due process, KASB's actions and decisions were conceived by its stakeholders to be legitimate (Burlaud and Colasse, 2011; Larson and Herz, 2013), justifiable (Sinclair and Bolt, 2013) and authoritative. This implies the achievement of institutional legitimacy by KASB in the standard-setting process for emissions rights.

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<sup>57</sup> As shown in Figure 13, accounting issues in relation to emissions rights were addressed seven times at KASB meetings. On 27 June 2014, the board approved an exposure draft reflecting the tentative decision made at the board meeting on 9 May 2014 where it reached general agreement to base the exposure draft on the European practice model. On 26 September 2014, the board decided to make a minor amendment reflecting some comments from stakeholders prior to the next meeting, and at the meeting on 11 October 2014, the board approved the standard for emissions rights.

**Figure 13: Development procedure for accounting standard for non-public entities 'Emissions Rights and Liability' in the KASB**



### *7.3.2. Stakeholders and their interests*

#### *Main stakeholders*

From the perspective of institutional legitimacy, it is important to identify stakeholders who will be affected by a new accounting standard (Durocher and Fortin, 2010). Stakeholders are perceived by managers who ultimately determine stakeholder salience on the basis of the perception of managers (Mitchell et al. 1997). This study identifies both general stakeholders and a mainstream interest group in relation to accounting issues under ETS on the basis of the extent KASB paid attention to stakeholders' interests in the development of accounting standard for ETS.

Unsurprisingly, the most prominent stakeholders were the large emitters who expected to be significantly affected by the new accounting standard for ETS. In particular, large companies in energy-intensive industries (e.g. steel and petrochemicals) and power generation companies (e.g. five electricity generation companies owned by the Korea Electricity Power Corporation)<sup>58</sup> constituted the main representatives amongst participants in the Korean ETS. Their emissions are regarded as material on the grounds that the aggregated emissions of the top 10 largest emitters are around 50 per cent of the total aggregated emissions of participants.<sup>59</sup> Accordingly, most large emitters, such as POSCO and the five electricity generation companies in Korea constituted a primary stakeholder group in relation to accounting issues for ETS.

#### *Main interests of stakeholders*

Through the KAI Forum and the technical committee, KASB was able to identify the main concerns raised by large emitters. These focused mainly on free allowances since all participants in the Korean ETS were expected to receive 100

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<sup>58</sup> In Korea, the electricity industry is dominated by the Korea Electricity Power Corporation (KEPCO), which has six power generation subsidiaries. Amongst them, the five electricity generation companies consist of Korea East-West Power Co.,Ltd., Korea South-East Power Co.,Ltd., Korea Southern Power Co., Ltd., Korea Western Power Co., Ltd, Korea Midland Power Co., Ltd.

<sup>59</sup> According to GHG emissions statistics provided by the Greenhouse Gas Inventory and Research Center of Korea (2014), POSCO (the largest steel maker in Korea) is the largest emitter in Korea. In addition, the aggregated emissions of the top 10 largest emitting companies were estimated to emit around 50% of total emissions in 2013.

per cent free allowances during Phase I. The core accounting issues relating to emissions rights were associated with the recognition and measurement of free allowances. The significant stakeholders, mostly large emitters, presented their concerns about the adverse impact on the accounting numbers. As a consequence of receiving a significant amount of free allowances, large emitters argued that an accounting treatment based on fair value measurement and gross presentation might worsen their debt ratio and increase the volatility of the accounting numbers.

For example, one large emitter persistently contended ‘the impact on the debt ratio’ because its financial statements might be more significantly affected, depending on the accounting model.<sup>60</sup> In particular, this interviewee (COM 1) was explicitly opposed to fair value measurement and gross presentation. He was concerned that recognition of emissions rights at fair value might have a serious effect on his financial statements, in particular the debt ratio, due to the significant level of emissions. He added further explanation regarding a potential problem of a fair value approach from the perspective of information users:

If the fair value method is used for recognition of free allowances along with respective presentation as a total of all free allowances and related liabilities arising from emissions, the debt ratio in particular may appear to increase significantly. Although no cash flows or economic resources outflow at the moment, information users may misunderstand and be wrongly guided by the accounting information (COM 1).

Furthermore, large emitters argued that the fair value method and gross presentation might give rise to a distortion in the financial numbers, ultimately misguiding investors. In this context, the same interviewee said:

The fair value method could cause unnecessary fluctuations by initially and subsequently measuring emissions rights at fair value. In addition,

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<sup>60</sup> COM 1 provided an estimation of the financial impact under a fair value model: ‘the company emits on average 40,000,000 CO<sub>2</sub> tonne/year. The total assets of the company are about KRW 40 trillion. In recognising a total amount of emissions as a liability given the assumption of a carbon price of KRW 10,000 (about € 7-8), the liability arising from emissions would be KRW 800 billion. This would be an almost 10% increase in total liabilities in recognising the liability as equivalent to 40,000,000 CO<sub>2</sub> tonne/year.’

gross presentation does not provide decision-useful information in the sense that both receiving free allowances and emitting *per se* do not accompany substantial cash flow in an entity. It is predictable that free allowances will be reversed when surrendering them to the government at the end of compliance year. [...] As long as the liabilities arising from emissions are recognised as a total amount as is, investors (information users) may be misguided by inappropriate accounting numbers which will be definitely reversed at the end of the compliance year (COM 1).

Similarly, the power generation companies were concerned about the adverse impact on the debt ratio. In particular, the subsidiary electricity generation companies belonging to the Korea Electric Power Corporation (KEPCO) expressed concern about a negative impact of the accounting standard for emission rights on their financial status. As KEPCO competes with a number of international electricity generation companies, it is arguably necessary that the accounting treatment for emissions rights should be in line with common practice in Europe.<sup>61</sup>

In addition, one representative of these companies mentioned that these five electricity generation companies are public organisations regulated by the government. The government evaluates the performance of public organisations, and the debt ratio is a critical index in this evaluation. These electricity generation companies were very anxious to retain their sound financial status, and therefore a good debt ratio.

Accordingly, the large emitters insisted on applying the accounting model using the cost method and net presentation. They argued that such a model would also have more decision-usefulness from a user's perspective and more applicability from a practical point of view.

It was observed that stakeholders exerted influence on KASB throughout the process, not only through formal lobbying methods but also in informal ways, including private meetings and telephone conversations with KASB staff. In

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<sup>61</sup> This was observed from panel discussions in the KAI Forum held on 11 July 2014.

particular, the most prominent interest group persistently expressed its concern, proactively taking part in the consultation process, including the KAI Forum and the technical committee.

### *Silent majority*

On the other hand, many interviewees in the position of preparers appeared to be uninterested in the accounting issues of ETS, irrespective of the size of emissions. In effect, most preparers (companies) did not take proactive action in response to the accounting issues in the standard-setting process.

Overall, the findings confirm that most companies remained a 'silent majority', consistently with the assertions of previous studies (e.g. Jorissen et al., 2012; Georgiou, 2002). This indifference may stem from a lack of resources in the organisation to respond to accounting issues, unawareness of the accounting issues, or an insignificant level of agenda priority in the organisation due to a lack of financial materiality. In this context, two interviewees commented:

Overall, the finance and accounting division and the division in charge of ETS operate separately. The thing is that staff in the accounting department do not know enough about ETS, while staff in charge of ETS do not know accounting either. Therefore, it is difficult to respond to accounting issues for ETS at the organisational level (ASS 1).

Considering the enormous sales volume and total assets, the influence of ETS on its financial statements is deemed to be fairly immaterial so the company may be indifferent in this issue (COM 6).

It seems that most companies regarded the financial impact of ETS as uncritical, so the accounting issues under ETS were not listed on group agendas. Rather, most companies were far more interested in how the allocation would be determined.<sup>62</sup> In addition, it was observed that several companies had been making efforts to re-construct their internal systems to adapt to the

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<sup>62</sup> Most interviewees viewed the most contentious matters regarding ETS in Korea as those relating to 'cap-setting and the amount of allocation' (COM 1, COM 2, COM 3, COM 5, COM 8, COM 9, COM 12, PO 3).

commencement of Korean ETS. In this context, two interviewees described how they had prepared for the start of the Korean ETS by building an internal carbon trading scheme:

We have been operating internally a pilot emissions trading scheme for several years. The period of the pilot project was a sort of 'learning-by-doing'; accordingly, we've accumulated a lot of experience and knowledge in relation to the trading scheme. We've been absolutely aware that the most important and urgent task under ETS is identifying the internal 'marginal reduction cost' (COM 3).

We've been working on developing the internal infrastructure, such as the re-construction of the working process at the group level: how to assess emissions in each unit; how to distribute the internal cap corresponding to the commencement of the Korean ETS. On top of that, I think, a 'hot potato' regarding ETS is determining the internal marginal reduction cost. To do this, we've been collaborating with other divisions. If the system is developed, we are going to develop a trading strategy such as the price and the quantity of allowances (COM 5).

Meanwhile, the findings reveal that most companies did not always remain in the 'silent majority'. While conducting the consultation on alternative accounting models prior to documenting the exposure draft, KASB invited comments from all stakeholders. Notably, KASB received a number of comments not only from industrial associations but also from individual companies. Most respondents showed their view in favour of accounting treatment based on the cost method during the consultation. Although they tended to remain in the silent majority, once a draft accounting standard had been issued, companies were likely to respond to the proposal more actively than expected.

Furthermore, the findings demonstrate that the opinions of most preparers (companies) were channelled through industry associations.

Korean companies tend to rely on their respective industry association in order to convey its interests. They perceive an industry association to represent its member's interests conveying voices of the member more effectively and



collectively on behalf of its member companies.<sup>63</sup> For this study, two interviewees commented on the role of industry association in the consultation process for ETS:

We (accounting division) will address accounting issues for emissions rights and related liabilities. However, as you know, IASB and KASB have not provided any official guidance so far. If KASB releases the draft of accounting standard for ETS, we may provide comments on the draft [...] The industry association normally ask us any opinion or comment whenever a certain issue arises. So it may do in the case of accounting issues for ETS when KASB conducts due process (COM 4).

Accounting standard setting for ETS is not a core concern for all companies. Some companies emitting a large quantity of CO<sub>2</sub> such as POSCO may have a significant concern on the accounting issues. I have been heard that POSCO has a big concern on accounting treatment of free allowances. [...] We (FKI) represent our member's views and interests with a particular issue arising. At the moment, we (FKI) have not collected the voices of our members in terms of accounting issues for ETS. However, I expect we would do sooner or later (COM 12).

According to an analysis of comments on the exposure draft delivered to KASB,<sup>64</sup> the most significant comments were provided by industry associations. This indicates that most companies in the silent majority tended to take advantage of industry associations to deliver their views and opinions. One interviewee acknowledged this tendency of preparers:

Once the exposure draft is given, comments from stakeholders in response to the exposure draft are only a few in reality. Normally, the organisations belonging to the KASB, mostly a form of association or

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<sup>63</sup> It comes from the author's judgment based on the work experience in the Ministry of Trade, Industry, and Energy since 2005.

<sup>64</sup> Agenda item 2 of KASB meeting, September 2014: 'SKAS No. 33 'Greenhouse gas emission permits and emission liability'.

representative of a certain industry, provide comments on behalf of their members; but it is not many (ASS 3).

This implies that KASB was able to ensure efficacy of consultation by using representative organisations rather than directly contacting individual entities that were unlikely to respond.

Moreover, it was observed that the accounting expertise group had a propensity not to present its views proactively. Nevertheless, once they participated in a particular consultation process, e.g. the technical committee, accounting experts tended to actively present their views on a certain issue from an accounting expert point of view. For example, in the KAI Forum in July 2014, one accounting expert expressed his position in favour of the fair value method and linked presentation proposed by the KASB staff paper. He suggested: 'it is better not to exclude linked presentation but to include it in the standard as an alternative presentation method so as to be chosen by companies'.

In addition, one accounting firm carried out research on accounting and taxation issues of emissions rights in Korea in 2013. This research paper suggested that the most applicable accounting model would be a cost method for measurement and a net approach for presentation (KPMG, 2013).

Furthermore, one interviewee (EXP\_ACC 4) considered a cost method and net presentation to be more decision-useful to information users. He was against the fair value measurement and gross presentation model because it did not present the substantial effects of an asset and a liability under ETS. In this context, he presented his view from a user's perspective:

As far as I'm concerned, I'm opposed to recognising free allowances at fair value on day one. I'm sceptical about presenting free allowances at fair value in the balance sheet because they must be returned to the government at the end of the compliance year. [...] From an information user's point of view, it is predictable that free allowances will be reversible sooner or later. I do not agree with recognition of free allowances at fair value; they should be measured at nil (EXP\_ACC 4).

In summary, a variety of interests and opinions was observed amongst stakeholders. The findings demonstrate that arguments from stakeholders were more likely to be raised when they disagreed rather than agreed. In particular, large emitters (preparers) argued mainly about the economic consequences, rather than the accounting conceptual consequences, to justify their position. On the other hand, the accounting expertise group, including accounting practitioners and academics, tended to make arguments on the basis of conceptual rather than economic consequences. The findings enable the extent of support for (or opposition to) specific accounting treatments of emissions rights amongst stakeholders (preparers, accounting experts, users) to be gauged to a large extent.

With regard to motivations for participation in the standard-setting process, the findings reveal whether or not a company might be motivated to engage in lobbying activities with regard to accounting issues for emissions rights. For example, preparers expecting significant economic impacts on their accounting numbers took part more proactively in the standard-setting process than those expecting little impact. This largely supports the identification in several previous studies of economic consequences as a motivation for lobbying activities (e.g. Orens et al., 2011; Georgiou, 2002; Jorissen et al., 2012; Kosi and Reither, 2014).

### *7.3.3. Effectiveness of stakeholders' participation*

Having examined the whole process, from the initial stage of the ETS project to the final outcome of the accounting standard for emissions rights, all procedures were beneficial for assessing the effectiveness of stakeholders' inputs. By comparing the accounting model featured in the KASB staff proposal with that in the exposure draft, a critical determinant can be inferred to have influenced KASB's decision making (see Section 6.3).

It was observed that prominent stakeholders attempted to participate proactively in the process and made strenuous efforts to reflect their interests in decision making on accounting rules. In response to preparers' calls to reduce the negative impact on accounting numbers arising from a particular accounting treatment, KASB took their concerns into account in the accounting standard-setting process from the beginning to the end of the process. In effect, stakeholders' concerns were the most significant factor affecting KASB's choice of a specific accounting model and

rule. Specifically, KASB proposed 'linked presentation' in the KASB staff proposal and a 'cost method' in the exposure draft in order to address the effect on financial statements. In effect, it is inferred that KASB took stakeholders' interests into consideration as a top priority throughout the standard-setting process.

Interestingly, the findings provide an empirical clue in terms of the effectiveness of lobbying activities. The interests of industry, motivated by the potential effects on accounting numbers (e.g. debt ratio), effectively drove KASB eventually to adopt a more applicable and acceptable model in practice. This indicates that KASB was substantially influenced by preparers' inputs. Accordingly, stakeholders' proactive participation in the process turned out to be particularly influential and effective in the Korean context.

Meanwhile, in terms of the effective timing of lobbying activities, the findings indicate that the pre-exposure draft stage is more effective than the post-exposure draft stage. One interviewee (ASS 1) believed that inputs at the pre-exposure draft stage could be more influential in terms of the decision making of standard setters. In this context, this interviewee supported the effectiveness of participation at the earlier stage of standard setting:

The KAI Forum will be held for public hearings on the exposure draft. When comments from stakeholders are suggested on the exposure draft, I'm not sure to what degree the comments will be adopted, although it is likely to more or less adopt comments that will not cause major changes. More importantly, it is more critical to deliver inputs prior to the exposure draft. Namely, in terms of reflection of interests, inputs at the discussion paper stage could be more effective than at the exposure draft stage. Accordingly, from the stakeholders' point of view, it is critical to express their interests through the technical committee before documenting an exposure draft (ASS 1).

At the earlier stage of the standard-setting process, there is more flexibility to adjust choices of accounting models or rules that may lead to the rejection of a specific accounting model being discussed. On the other hand, once an exposure draft has been unveiled, it will rarely be entirely overturned. When comments from

stakeholders sound reasonable, they may be accepted only as amendments rather than converting to a totally different accounting model. Overall, the previous interviewee (ASS 1) supports Sutton's (1984) assertion that lobbying activities at a pre-exposure draft stage are more productive because their influence on the rule-making body may be greater since the rule-makers' preferences are still undecided.

#### *7.3.4. Institutional legitimacy of KASB*

It was observed that the institutional legitimacy of KASB was clearly perceived by stakeholders. On the whole, the findings provide empirical evidence of the legitimacy of KASB being recognised by stakeholders. The institutional legitimacy of KASB was widely perceived by stakeholders as the only 'taken for granted' accounting institution in Korea. Any issued standards therefore would be expected to be automatically imbued with cognitive legitimacy. Most interviewees referred to compliance with the authoritative guidance provided by KASB, as supported by the following comments:

The KASB is the only organisation responsible for setting accounting guidance including Korean GAAP. Once the accounting standard is provided by the KASB and referred to as 'reasonable', most [K-IFRS adoption] companies are highly likely to follow the standard even if the standard is not mandatory. This is because the KASB promulgates it (EXP\_ACC 2).

We've adopted IFRS; however, IFRS for emissions rights has not been provided to date. Without IFRS for emissions rights, if the KASB provides accounting guidance, we would follow it. We cannot dismiss the accounting guidance provided by the KASB (COM 6).

It is predicted that we would follow the guidance once the accounting guidance has been provided by the authority, either the government or the KASB. The accounting guidance is just given [by the authority], not set up by ourselves at our discretion (COM 11).

Large emitters, which are mostly IFRS adoption companies, do not need to follow Korean GAAP for emissions rights because they can develop their own accounting

treatment for emissions rights under IAS 8 (see section 6.3). Nevertheless, the findings predict a high level of compliance with the accounting standard on emissions rights when they come into force in Korea.

In terms of the origin of KASB's institutional legitimacy, it inherently embraces legitimacy endowed by statutory law since it was founded on the basis of the Act on External Audit of Stock Companies (see Section 2.5). KASB is the only institution authorised to set Korean GAAP in Korea on the basis of the Act on External Audit of Stock Companies. Accordingly, stakeholders of KASB consider the accounting standards it provides to be authoritative and legitimate.

If Korean GAAP for ETS is provided by KASB within the IFRS framework (EXP\_ACC 3), several interviewees (e.g. ASS 3, ASS 4, EXP\_ACC 2, EXP\_ACC 3, COM 1, COM 4, COM 6) predicted that most K-IFRS adoption companies would prefer to use Korean GAAP and apply it to accounts for emissions rights and related liabilities. One interviewee commented in this context:

Although the (KOSDAQ) listed companies do not necessarily have to follow Korean GAAP, most listed companies would be likely to follow Korean GAAP for emissions rights as long as the KASB provides it as guidance for emissions rights. The premise is that Korean GAAP for emissions rights should be compatible with IFRS (EXP\_ACC 2).

Stakeholders would adopt and follow the accounting standard on emissions rights as long as it was provided by KASB. In effect, the institutional legitimacy of KASB which has been recognised by stakeholders is highly associated with the level of acceptability of the accounting standard on emissions rights. If provided by KASB, the accounting standard on emissions rights would be regarded by stakeholders as legitimate and authoritative guidance.

Meanwhile, accounting is the general starting point for corporate tax in Korea. According to the principles of taxation in Korea,<sup>65</sup> standards or practices of corporate accounting should be respected in assessing the tax base. One

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<sup>65</sup> The principles of taxation in Korea are set out in the 'Framework Act on National Taxes'.

interviewee (GOV 3) referred to the principle of 'priority of corporate accounting' in the context of corporate taxation. Consequently, if an accounting standard on emission rights were provided, Korean companies would be expected to adopt the standard for compliance with corporate taxation:

The accounting standards provided by the KASB are essentially related to corporate taxation. As the tax base for corporate taxation is assessed on the basis of corporate accounting, we cannot but comply with the accounting standards (COM 6).

Accordingly, the link between corporate tax and accounting standards contributes to the institutional legitimacy of KASB in Korea.

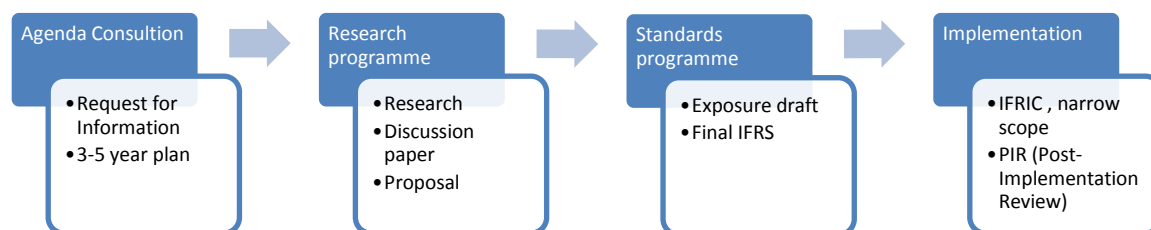
In summary, the findings present empirically the institutional legitimacy of KASB which its stakeholders commonly recognise. The stakeholders take KASB for granted as the only authoritative accounting standard setter in Korea. In this institutional setting, the accounting standards provided by KASB are regarded as being authoritative and legitimate. Accordingly, once an accounting standard on emissions rights was offered by KASB, it was anticipated that most companies in Korea would comply with it.

#### **7.4. Case of IASB's ETS project**

##### *7.4.1. IASB's ETS project to date*

Due process for IFRS consists of several consultation processes at a number of stages, including the agenda stage, the draft stage of a discussion paper, issuing of a discussion paper for comment, drafting of an exposure draft, publication of an exposure draft for comment, and drafting of an accounting standard, as shown in Figure 14. At each stage of due process, IASB involves all interested individuals and organisations from around the world.

**Figure 14: Standard-setting process for IFRS**



Following agenda consultation, a particular accounting issue will be dealt with as a research programme. The basic objective of a research project is to identify and define an accounting problem, and a research paper or discussion paper is written as a result of research on the issue. Recommendations are provided as to whether the accounting problem should be added to the agenda for proposal of an exposure draft. At the research project stage, all interested parties are encouraged to present their views and interests in the consultation process. In particular, co-working or co-operation with national accounting standard setters may take place right up to setting the IFRS.

As mentioned in Section 5.3, IASB's ETS project was deferred in November 2010. In 2012, according to one interviewee (ASS 6) it was resumed as a research project following agenda consultation. This interviewee described how the ETS project was evolving: 'the technical staff is working on analysing and updating various types of ETS in the world by gathering relative information'.<sup>66</sup> At the research programme stage, the ETS project focuses mainly on 'scoping and figuring out how the schemes work and what the issues are' (ASS 5).

The latter interviewee mentioned that the initial objective at the research project level is to identify and justify the accounting issues relating to a specific issue. Accordingly, the ETS project is at the stage of justifying the 'accounting problems' in relation to emissions rights, for example 'whether there is a problem', 'what are the dimensions?', 'what are the problems?', and 'where might we find solutions?'

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<sup>66</sup> While the interviews were being conducted, the ETS project has been proceeding since it was resumed as a research programme in 2012.



(ASS 5). In addition, a consultation process is undertaken to gather evidence: 'is there an issue?', 'is it a widespread issue?', 'is it a narrow issue?', or 'is it geographically widespread or not?'(ASS 5).

Following progress on the ETS project since 2012, a research paper on the ETS was released by IASB in November 2014 containing the main accounting issues previously discussed, including IFRIC 3, the tentative decisions made in the preceding project from 2008 to 2010, prevailing practice in the EU, and accounting standards (or proposals) developed by national accounting standard setters. Taking all discussions and analysis into consideration, IASB will decide whether the ETS project is added to the 'active agenda'.

Although the ETS project was added as a research project and a research paper was released, it appears that the ETS project still remains at the 'start-up stage' (ASS 5) of ultimately developing an IFRS. In other words, the ETS project has still to follow a number of procedures on the way to a final version of IFRS.

The ETS project has certainly lost its driving force compared with when the joint project was in progress between 2008 and 2010. The findings identify a number of factors leading to procrastination on the ETS project since it was deferred in 2010. Firstly, it appears that the ETS project has been demoted in terms of priority on IASB's agenda, whereas the ETS project was considered to be a significant agenda item during the joint IASB/FASB project. Following the 2007 financial crisis, IASB had urgently to address several critical issues. In this context, one interviewee said:

There were several big projects in relation to the financial crisis in 2007.

It was enormous work for the IASB during that time. Consequently, others (including the ETS project) were lower priority (ASS 4).

Secondly, and more importantly, the ETS has experienced shrinkage since the big players, including Australia and the US, relinquished the introduction of ETS at a national level. Consequently, demands for an international accounting standard for ETS are lower than ever before.

When IASB started the ETS project in December 2007, it was said to have been re-started in response to calls for an international accounting standard on emissions rights from several national accounting standard setters (IASB, 2007). In particular, Australia was a main demander, putting 'a lot of pressure' (ASS 5) on IASB at that time. Along with the EU, Australia and the US were the major stakeholders who drove IASB to propose the 2008-2010 ETS project.

However, ETS has spread less than expected; accordingly, calls for an accounting standard for ETS have decreased to the extent that IASB may feel less pressure on this issue. In this context, one interviewee stated:

It seemed that the ETS would have been more and more widespread; in fact, demands for the scheme turned out to be far less than anticipated. Namely, there were only a few countries to adopt the scheme or trade carbon. In effect, due to the lower pervasiveness of the scheme, the priority of the ETS project had been lowered (ASS 4).

In addition, other national accounting standard setters have come up with their own solutions in the absence of IFRS for emissions rights (Lovell, 2014). Having withdrawn IFRIC 3, it is predicted that IASB is unlikely to provide IFRS for emissions rights. Under these circumstances, some national accounting standard setters 'have figured out the answers for themselves' (ASS 5), for example standard-setters in France and Italy. As a result, pressure from other jurisdictions has also diminished.

In short, the impetus for setting up IFRS for emissions rights has diminished significantly because some major countries, including the US and Australia, have abandoned the scheme, and some national standard setters have introduced their own solutions to address this issue by themselves. Accordingly, IASB 'has felt less pressure from outside to do it quickly' (ASS 5), resulting in it being lower priority in IASB. By prioritising other projects IASB has thus been essentially short-sighted in respect of ETS as in the longer term it would be expected to be harder to develop a related standard given the expected already established differences in related recommended practice among national standard setters. On the other hand, national developments in France and Korea would inform any future IFRS.

Thirdly, from a preparer's point of view, most companies participating in the EU ETS have been accustomed to their own accounting policy. Without an IFRS for emissions rights, most have developed their own accounting treatment for emissions rights on the basis of IAS 8 paras. 10-12. As entities have been getting used to their own accounting rules for emissions rights, preparers would not want to change their accounting policy due to the 'locked-in effect'. It is therefore inferred that calls for an IFRS on emissions rights are unlikely to arise from preparers:

From a preparer's perspective – from a company perspective – a preparer never likes a change. [...] So never change something, even if it's a bad thing, though that's very often the perspective of the preparer; and therefore many European companies, in my personal view, don't feel any need to exert pressure on the IASB, to accelerate that project (EXE\_ACC 1).

Lovell (2014) provides analysis of the extent to which IASB supported the establishment of the ETS project in the agenda consultation process in 2010 showing that significant numbers of respondents explicitly disagreed with re-starting the ETS project. The findings and implications of this study are largely aligned with Lovell's (2014) evidence.

Considering all the changes of circumstance surrounding the ETS project, it has been neither an urgent nor a critical issue for IASB since the ETS project was re-visited in 2010 at a research project level. As long as 'nothing big' in relation to the issues on ETS is found from an accounting perspective, the ETS project may not gain momentum for the next step of proceeding to the active agenda. Prioritisation of the ETS project over other projects in IASB is unlikely to occur now or in the foreseeable future as a result of procrastination in setting up an IFRS for emissions rights.

#### *7.4.2. Inter-relationship between IASB and national accounting standard setters*

In relation to the accounting issues on ETS, a high degree of inter-relationship was observed between IASB and other national accounting standard setters.

According to the Due Process Handbook (2013) and Charter (IASB, 2014a), the proactive participation of national accounting standard setters is greatly encouraged throughout due process in order to achieve the objective of IASB to provide useful information to information users. IASB describes the division of roles and functions between itself and national accounting standard setters:

The IASB is supported by a network of national accounting standard-setting bodies and regional bodies. [...] National accounting standard setting bodies and regional bodies involved with accounting standard-setting can undertake research, provide guidance on the IASB's priorities, facilitate and co-operate on outreach, encourage stakeholder input from their own jurisdictions into the IASB's due process and identify emerging issues (IASB, 2013, para 3.49).

In the standard-setting process, a consultation process is carried out in various ways, including invitation of comment letters, and participation in meetings or conferences. National accounting standard setters engage in the consultation process by undertaking research or expressing the interests of stakeholders to IASB.

In addition, in view of IASB's limited resources, the assistance of national standard setters is an indispensable element in developing a high-quality IFRS. Since an IFRS cannot cover all cases of accounting events arising around the world, the complementarity of national and regional GAAPs is broadly accepted. Furthermore, IFRS is dictated on a 'principle based approach' rather than a 'rule based approach'. Accordingly, national standard setters may need to set up their own national GAAP to specify more clearly a certain accounting issue not addressed under IFRS. One interviewee highlighted the role of national accounting standard setters in this context:

Considering the limited resources of the IASB, the national standard setters are expected to participate proactively in the IFRS development process. This is a way not only to save time but also to develop a high quality of standards for one another (ASS 4).

IASB therefore expected a high level of assistance from national accounting standard-setting bodies, including EFRAG, ANC and the Australian body, in order to develop the ETS project. In effect, a lot of work carried out by national accounting standard setters supports IASB in reducing its efforts and shortening the timeline. Highlighting a role of national accounting standard setters in the development of ETS project, one interviewee commented:

What we aim to do is to use input from other national standard setters as well, so particularly during that research phase they can help us with some of that research. So there's work that's been done by EFRAG; work has been done by some of the other European standard setters as well – the French have done some, I think the Italians have done some as well – which some of that's fed into the EFRAG work. And that'll be useful input to us, and it probably shortens the timeline for us a bit because they've already done some work. But the board will have to make its own decision, so it'll be just one of the inputs that we'll consider (ASS 5).

National accounting standard setters may contribute more critically, in particular when a certain accounting issue is being addressed at a research project level. Since IFRIC 3 was revoked in 2005, national accounting standard setters have conducted a wide range of research and have released a significant number of research papers on accounting issues relating to ETS. Furthermore, some national accounting standard setters have promulgated their own accounting standards on emissions rights. Consequently, national accounting standard setters are capable of helping to identify and justify accounting problems in the ETS project, enabling IASB to find answers quickly and easily.

In turn, IASB has made various efforts to facilitate the participation of national standard setters in the ETS project. For example, it has created a new body consisting of national accounting standard setters, called the Accounting Standards Advisory Forum (ASAF). One interviewee (ASS 5) mentioned that the ETS project was expected to be discussed in ASAF. This implies that ASAF plays a significant role in assisting IASB in the ETS project.

Overall, national accounting standard setters are expected to make a significant contribution to IASB in developing a high-quality accounting standard. They inspire IASB not only to identify accounting issues relating to ETS, but also to obtain evidence of implementation in practice. In this context, one interviewee (ASS 5) stressed the importance of assistance from national accounting standard-setting bodies in the ETS project.

Notably, the attitude of national accounting standard setters toward IASB was observed in relation to the ETS project. Specifically the findings demonstrate that, as national accounting standard setters, both ANC and KASB consistently showed a high degree of willingness to contribute to setting up IFRS for emissions.

In particular, ANC may be supportive in developing an IFRS from the perspective of 'post-implementation review' (ASS 7). Since an IFRS is established on the basis of a top-down approach, IASB must monitor how a new IFRS is implemented in practice for two to three years, in a process known as post-implementation review (PIR). In contrast to IASB's post-implementation review process, one interviewee (ASS 7) believed that the ANC proposal did not need to spend that long on the PIR process owing to the bottom-up approach in France (see Section 7.2). By curtailing the time for PIR, ANC expected that its proposal would provide a PIR reference to IASB:

IASB standards, if you did a post-implementation review, you would wait for two years of application to see. [...] So for the moment our way of contributing is probably going to be that next year, after two years of application, we're going to probably take a look at how things have been applied – do a type of post-implementation review. And when the IASB picks up the project again, the results of that could be available to them (ASS 7).

In essence, this interviewee believed that the French case would be beneficial for IASB in the sense of not only providing the idea of business models but also the consequences of their implementation.

In addition, the findings indicate the enthusiasm of KASB for making significant contributions to developing the ETS project. One interviewee (ASS 3) expected

that Korean GAAP for emissions rights would become a good reference for IASB's ETS project. In particular, most large Korean companies mandatorily apply IFRS, so the Korean case provides evidence to IASB in relation to how Korean companies adopt Korean GAAP for emissions rights, corresponding with IAS 8 similarly to the French case. One interviewee referred to the role of Korean GAAP for emissions rights as follows:

The KASB ultimately pursues participation in the process of developing IFRS, not just to adopt and use IFRS. From this perspective, the KASB provides Korean GAAP for emissions rights not only as a reference to specific accounting rules that IFRS does not give, but also as a reflective example of practice in Korea. I hope that Korean GAAP for emissions rights will be a material input to the IASB (ASS 3).

IASB has exhibited considerable interest in how emissions rights are actually dealt with in practice under mandatory IFRS. One interviewee (ASS 5) referred to the indirect impact of IFRS on how an entity develops its accounting policy in practice. The necessity of referring to practice in terms of the ETS project was further stated by this interviewee:

Another factor we would want to consider is what practices are people actually using under IFRS? And so it's quite possible, if there's some national GAAP that's relevant, that when people are applying IAS 8 they might be looking at the national GAAP and considering whether it meets the criteria in IAS 8. So it may well be there's some indirect influence as well on what people are doing in practice already under IFRS, so that will obviously be of interest to us (ASS 5).

Notably, a staff paper was published in November 2014, according to which it appears that the stance of IASB staff has changed significantly in terms of its perspective on emissions rights and related liabilities compared with the preceding discussions. Specifically, the IASB staff paper emphasises the necessity of considering the net position under the scheme, the so-called 'one unit of account' position. In addition, the staff paper asserts that an accounting model for ETS

should take into account the 'net effect' of the scheme. The staff paper describes this as follows:

The staff think that it is important for the IASB to consider the net position of the entity under the scheme; that is, to view the scheme as the unit of account. Any accounting model developed should, in our view, reflect the net overall effect of the scheme, even if the individual components of the scheme are presented separately (Summary of Accounting Issues, IFRS Staff paper, IASB Agenda ref. 6B, November 2014).

While the preceding discussions had apparently not accepted the net position due to inconsistency with the IFRS framework, the staff perspective has been radically overturned. This radical change in perspective on the net position is probably associated with practice in Europe, where a net approach has been predominantly adopted by companies. Moreover, it is presumed that IASB staff may have been influenced by the accounting models proposed by national accounting standard setters, such as ANC's proposal in 2012. This indicates that IASB is also affected by existing accounting models in developing accounting standards. In other words, previous accounting models for ETS that have been either extensively used in practice or developed by national accounting standard setters may significantly influence ensuing discussions of the ETS project in IASB.

In summary, the findings indicate that interactions take place between IASB and national accounting standard setters. IASB is assisted by national accounting standard setters in various ways. In relation to the ETS project, IASB is able to refer to numerous studies which have been implemented by national accounting standard setters. Moreover, the accounting models for emissions rights devised by national accounting standard setters may inspire IASB to find an appropriate solution as it continues with the ETS project. In addition, practice evolving under national GAAPs delivers evidence to IASB to enable it to make an appropriate and reasonable decision.



In turn, the findings urge national standard setters to engage more proactively in the process in order to develop a high-quality IFRS. The desirable role of national accounting standard setters was described by one interviewee:

National standard setters need to act more proactively, creatively, and preventively rather than taking a passive position. In particular, given the mandatory adoption of IFRS, national standard setters need to enhance a sense of responsibility for participating in the accounting standard-setting process for IFRS. [...] If or when setting up national GAAP for emission rights soundly in line with the conceptual framework, national standard setters had better more proactively input their (national) accounting standards to the IASB (ASS 4).

In essence, in accordance with the willingness of national accounting standard setters, IASB should increase their involvement in the IFRS development process. Active interactions between IASB and national accounting standard setters are conducive to a high quality as well as a high degree of acceptability of IFRS. To this extent, it would ultimately contribute to the achievement of institutional legitimacy for IASB.

## **7.5. Summary**

This chapter has presented the findings in relation to *Research Question 2* and related objectives. By exploring accounting standard setting for emissions rights in the cases of IASB, ANC and KASB, the key findings have been identified to be in accordance with assertions of previous studies on accounting standard setting. In particular, the findings largely support the political aspects of the accounting standard-setting process.

ANC takes a bottom-up approach in which relevant stakeholders are involved in the accounting standard-setting process from the beginning. Technically, a draft version of an accounting standard is documented by a working group consisting of various stakeholders. The bottom-up approach allows a variety of interests to be adjusted and reflected from the working group stage. Notably, ANC sought a solution from practice, looking at how companies managed emissions rights in their businesses. Aligned with actual practice, ANC was the first to develop

business models in an accounting standard for emissions rights. Owing to the bottom-up approach and business models, ANC's proposal was implemented with a high degree of acceptability and applicability in practice.

With regard to KASB, the overall findings reveal how accounting standard setting proceeded in Korea. In particular, lobbying activities have been closely investigated, and several key attributes have been identified, including motivation, methods and timing.

In line with a number of previous studies, large emitters were mainly motivated by economic consequences. They participated in the standard-setting process through a range of methods, both formal and informal. On the other hand, most stakeholders tended not to respond. The overall result is in accordance with previous studies.

In terms of timing, lobbying at the pre-exposure draft stage may have a greater effect than at the post-exposure draft stage on the decision making of accounting standard setters. This result is largely consistent with Sutton's (1984) assertion.

Investigation of the case of KASB was conducted from the initial to the final stage of the standard-setting process. The findings demonstrate how the final outcome was promulgated as a consequence of political compromise in the form of a more practical and applicable model in the Korean context, accommodating the interest of a wide range of stakeholders.

Notably, the findings shed light on inter-relationships between IASB and national accounting standard setters. IASB is encouraging national accounting standard setters to participate more actively in the IFRS-setting process. In particular, it is showing significant interest in how companies account for emissions rights in practice, using national GAAPs or relying on IAS 8. In turn, ANC and KASB show robust willingness to contribute to making progress on the ETS project. Since ANC and KASB have developed their own accounting models for emissions rights, they expect these accounting models to provide a good reference for IASB in proceeding with the ETS project.

Based on the empirical findings described in Chapters 5, 6 and 7, in the next chapter, interpretation and deeper analysis of findings will be developed by intertwining the theoretical lens introduced in Chapter 3.

## **8. Discussion and Conclusions**

### **8.1. Introduction**

As described in Chapter 1, this study is concerned with identifying how complicated and unresolved accounting issues in relation to ETS are managed in the standard-setting process, thereby drawing out elements which render accounting standards for emissions rights desirable and appropriate in specific circumstances. Empirically, this study focuses mainly on the case of KASB. The accounting models addressed in IASB's tentative decisions in 2008-2010 and ANC's proposal in 2012 have substantially influenced the development of Korean GAAP for emissions rights; accordingly, this study extends these cases and addresses two specific research questions as follows.

*Research Question 1:* How does the accounting standard setter tackle accounting issues under ETS in the standard-setting process in order to achieve the most appropriate accounting standard?

*Research Question 2:* How does the accounting standard-setting process proceed in the case of ETS?

The main findings in relation to *Research Questions 1 and 2* have been presented in Chapters 5, 6 and 7. This chapter highlights the key findings and implications of this study. In particular, Section 8.2 provides a summary of the main findings and implications, which are presented as major recurring themes emerging in the course of addressing the two research questions and associated objectives, as set out in Section 4.2. Section 8.3 highlights the contributions of this study from empirical and theoretical perspectives. Section 8.4 presents the limitations of this study and some implications for further study.

### **8.2. Findings and implications**

#### *8.2.1. Main accounting issues in relation to ETS*

In accordance with the analysis of most extant studies (e.g. Bebbington and Larrinaga-Gonzalez, 2008; Cook, 2009; Haupt and Ismer, 2013), the key accounting issues for ETS originate mainly from free allowances. Due to the

distinctive attributes of emissions rights, several knock-on issues arise, such as the classification, recognition and measurement of allowances.

The key accounting issues addressed by IASB, ANC and KASB are identified in Table 10. Breaking down the detailed accounting issues for each accounting standard setter makes it clear that, in the different contexts, each accounting standard-setting body focused on specific aspects of accounting issues because of a variety of considerations that they had to take into account.

**Table 10: Summary of key accounting issues**

Standard-setter	Title of project	Related ETS	Main accounting issue
International Accounting Standards Board (IASB)	ETS project (2008-2010)	Phase II (2008-2012) of the EU ETS	How to account for emissions rights and the corresponding entry. Should a gain or liability be recognised on Day 1?
Autorité des normes comptables (ANC)	Proposals for Accounting of GHG Emission Rights (2012)	Phase III (2013-2020) of the EU ETS	How to account for emissions rights (including free allocation and auctioning) in association with various business activities under ETS subject to the existing accounting framework.
Korean Accounting Standards Board (KASB)	Korean GAAP for emission rights and liability for non-listed entities (2014)	Phase I (2015-2017) of the Korean ETS	How to account for free allowances subject to the existing accounting framework, minimising the impact of accounting treatment on accounting numbers.

*IASB's tentative decisions in the period 2008-2010: the 'Day 1 issue'*

In its tentative decisions made in the period 2008 to 2010, IASB mainly addressed accounting issues in relation to free allowances. The most contentious issue was associated with recognising the corresponding entry for free allowances on the day of receipt, the so-called the 'Day 1 issue'. The findings allow a number of plausible reasons to be inferred as to why the Day 1 issue was most problematic at that time.

Firstly, the fair value (FV) approach may have been a determinant. While IASB was working on the ETS project with FASB between 2008 and 2010, fair value measurement was perceived as the dominant approach (Georgiou and Jack, 2011) to be pursued by both parties. Emissions rights can be regarded as financial instruments because they are tradable and the value can be faithfully observed in the market. In line with the FV approach as the prevailing criterion for measurement, discussions were dominated by this approach. Along with IFRIC 3, the tentative decisions in 2008-2010 were made on the basis of an FV approach. In effect, a high degree of dependency on the FV approach made the Day 1 issue keenly controversial.

Secondly, the IASB's attempt to address the Day 1 issue without causing conflict with the existing conceptual framework may result in problematisation of this issue. The Day 1 issue may have given rise to a potential mismatch problem in the recognition of a liability on Day 1 (see Section 5.3). IASB attempted to address this issue by following existing norms and practices, which would be beneficial for an organisation to ensure institutional legitimacy (Suchman, 1995). In particular, existing conceptual frameworks and accounting standards are a primary source of legitimacy for accounting rules and standards. In relying on existing accounting standards and the conceptual framework, IASB intended to seek an appropriate solution for emissions rights without creating flaws in the existing framework. Previous studies (e.g. Lovell et al., 2010; Lovell and MacKenzie, 2011; Lovell, 2014; Ratnatungan and Jones, 2012) point out the inappropriateness of the existing accounting framework to deal with technical complexities in relation to emissions rights. Nevertheless, IASB could not set aside the existing framework at that time. The intention of staying within the existing framework resulted in the Day 1 issue being controversial and ultimately unresolved.

Thirdly, as a supranational accounting standard setter, IASB is responsible for implementing IFRS so as to achieve harmony between a number of accounting standards in different jurisdictions, enhancing the usefulness of accounting information, and improving the quality of accounting information. Furthermore, International accounting standards are pervasive and profoundly influential on its stakeholders. Admittedly, IASB has a different perspective from other national

accounting standard setters. In this regard, it was presumed that IASB would shed more light on the Day 1 issue, which entailed more fundamental and significant accounting issues. Although the presentation issue was regarded as critical from an industry point of view, it seemed to be far less critical than the Day 1 issue from the IASB perspective. Accordingly, the board did not reach any decision on the presentation issue. This provides an important clue to identifying different perspectives in terms of the key accounting issues between IASB and national accounting standard setters, as well as between IASB and preparers.

In summary, IASB sought to achieve a solution for emissions rights within the existing accounting framework. It did not explicitly admit the various uses of emissions rights with different intentions in business. Subject to the conventional accounting framework, IASB may pursue a set of accounting rules 'in a single and uniform way' for emissions rights (Lovell, 2014). This may ultimately be ascribed to a failure to address the complexities in relation to accounting issues for ETS.

#### *ANC's Proposal in 2012: the pursuit of an 'umbrella' accounting model*

In the case of ANC, the main accounting issues in relation to ETS originated substantially from a significant change in the EU ETS, whereby auctioning became the default method for allocation from Phase III (2013-2020). From a business perspective, companies must bear increasing costs in association with purchasing emissions rights. ANC acknowledged the necessity for new accounting guidance to tackle various types of business activity which might emerge in Phase III of the EU ETS onward. Consequently, it decided to issue new accounting guidance for emissions rights which could be comprehensively applied to numerous types of business from EU ETS Phase III onward. The new accounting guidance would play a role as an 'umbrella' accounting model which would be able to cover diverse types of business.

ANC intended to set up new accounting guidance within the existing accounting framework, in particular IFRS and French GAAP. This was developed in such a way as to apply to most French companies using IFRS. Consequently, the findings show that ANC took an 'incremental approach', by which a new accounting

standard was deliberately developed by changing existing accounting standards 'at the margin' (ASS 8) rather than creating a totally new model.

Notably, ANC sought a solution on the basis of practice by referring to how companies actually accounted for emissions rights in doing their business. ANC took an 'economic approach', drawing on logic from actual practice. Companies treat emissions rights in the same way as a commodity, wherein the cost of emissions rights is reflected in production costs. By referring to actual practice, ANC created the concept of emissions rights as a so-called 'new administrative raw material', as a sub-category of inventory.

The economic approach enabled ANC to devise business models for ETS: a production model and a trading model. The idea of an economic approach has essentially the same logic as the 'activity-based model' suggested by KPMG in 2008, in which different accounting models are applied depending on the type of business activity. In essence, ANC was the first to propose that business models should emerge as a form of accounting standard. In line with each business model, accounting rules were elaborated, compatible with IAS 2: *Inventories* and French GAAP.

In this way, ANC emphasised the benefits of business models from the stakeholders' perspectives. From the preparers' (companies') point of view, in the production model, companies are able to freeze production costs arising when purchasing emissions rights. For managerial accounting, this is important in setting a product price in the internal budgeting process. Freezing production costs is a critical element in determining the marginal cost and setting up a pricing strategy.

From the users' point of view, users are able to directly and immediately assess the position of a company and what risk it may face in relation to emissions rights and related liabilities under ETS.

In addition, the findings indicate the significant contributions of the business models from an accounting framework point of view. The business models may be considered to be the most advanced accounting model of emissions rights since IFRIC 3 was withdrawn. Remarkably, accounting treatment under the business



models is able to address the mismatch problems under IFRIC3 because the same unit of account is used for emissions rights and related liabilities.

The specific accounting treatment under the business models was developed in line with IFRS and French GAAP. Harmonisation with the existing model resulted in the establishment of a robust and sound rationale in elaborating accounting rules, making new accounting guidance more likely to be persuasive and acceptable to institutional environments. Since the accounting rules in both the production model and the trading model are in accordance with IFRS and French GAAP, ANC's proposal is considered legitimate by institutional environments, including companies, accounting specialists and other accounting standard setters. Since the business models were devised by properly incorporating practice, ANC's proposal is also highly applicable to companies, ensuring a high level of compliance and acceptability.

In the pursuit of legitimacy, Burlaud and Colasse (2011) stress the necessity of 'dual reasoning', whereby the accounting standard setter must balance the conceptual framework with practice. The standard setter's task is clearly facilitated if the conceptual framework is drawn from practice, as opposed to some abstract scientific theory or an amalgam of the two as often the case (Dean, 2008). In line with Burlaud and Colasse's (2011) view, ANC achieved legitimacy on the basis of such dual reasoning so as to be compatible with the existing accounting framework and to reflect practice. Through this balanced approach, ANC resolved the complexities in relation to accounting issues under ETS.

Unlike IASB, ANC succeeded in dealing with the technical complexities in relation to emissions rights. A solution was sought within the existing accounting framework, as IASB intended. The main reason for success was the economic approach taken under the premise of the various uses of emissions rights in business. In essence, the accounting standard turned out to be conceptually and technically sound and generally acceptable, and ANC was able to achieve legitimacy in the standard setting of emissions rights.

*Korean GAAP for emissions rights in 2014: Tackling negative impact on accounting numbers*

Similarly to other accounting standard setters, KASB had to address the key accounting issues associated with free allowances. The findings show that KASB confronted a number of constraints: 1) tackling the negative impact on financial and accounting numbers; 2) minimising the adverse impact on the scheme and the carbon market; and 3) aligning with IFRSs. These factors substantially and significantly influenced KASB's choice of specific accounting models and rules.

From the beginning of the standard-setting process, large emitters persistently called for the adverse impact on the financial numbers (in particular, the debt ratio) to be offset. At the same time, in line with the request from government, the accounting standard for ETS was not to undermine the orderly functioning of the carbon market or the ability of ETS to achieve the national reduction target cost-effectively.

KASB devised its accounting models by elaborating previous models, referring mainly to IFRIC 3, IASB's tentative decisions (2008-2010) and ANC's proposal (2012). In addition, KASB developed accounting models in such a way as to offset the negative financial effects on companies, minimise the effect on the ETS, and remain subject to the IFRS framework. For example, KASB staff devised an accounting model combining business models (adapted from ANC's proposal) and the FV approach (adapted from IASB's tentative decisions) with linked presentation. This proposal deserves attention because it is the most recent version of an accounting model for emissions rights on the basis of an FV approach and linked presentation.

However, concerns were raised about the proposal: 1) linked presentation may cause conflict with the IFRS framework; and 2) imperfection of the Korean ETS market may bring about inability to observe market price, so the FV approach may be inappropriate for the time being. Due to the anticipated practical constraints, the KASB staff proposal was not approved. Instead, KASB adopted European practice for the exposure draft, entailing cost measurement and gross presentation.

In short, due to the incompatibility of linked presentation with the IFRS conceptual framework and inapplicability of the FV approach at the start of the Korean ETS, KASB had to renounce the accounting model with FV measurement and linked

presentation. It compromised with a more applicable model, using a cost method and gross presentation, which has prevailed in practice.

In the process of reaching a final outcome, both accounting models (the KASB staff proposal and the exposure draft) reveal how KASB attempted to address the concerns of industry by eliminating the anticipated adverse effects of the accounting rules on accounting/financial numbers. In contrast to other cases in this study, the issue about the competitiveness of industry turned out to be a primary concern of which KASB took account throughout the standard-setting process. In effect, amongst various factors, the interests of industry appeared to be the most influential element for KASB in making a decision on accounting rules for emissions rights.

In summary, the adoption of business models enabled KASB to resolve the technical complexities in relation to emissions rights. In addition, KASB attempted to devise an appropriate solution in response to the various interests of stakeholders. Finally, KASB compromised with a model which had been pervasively used in Europe, as a result of which most stakeholders are largely in favour of Korean GAAP for emissions rights.

Based on the accounting issues probed in this research, Table 11 summarises the accounting treatments for emission rights and related liabilities proposed by the accounting standard setters. This comprises some of the findings in association with *Research Question 1*. KASB staff's attempt to propose a standard which would be an amalgam of IASB's and ANC's guidelines is readily noticeable – as well as the eventual considerable similarities of the exposure draft issued with ANC's proposal.

**Table 11: Summary of accounting treatments for emissions rights and related liabilities**

	<b>European practice surveyed in 2007*</b>	<b>IASB's tentative decisions in 2008-2010</b>	<b>ANC's proposal in 2012</b>	<b>KASB staff proposal in 2014</b>	<b>Exposure draft of the KASB in Jul. 2014</b>
Business models	Not applicable	Not applicable	Production model and trading model	Compliance model and trading model	Compliance model and trading model
Trading model					
Initial and subsequent measurement of asset	Not applicable	Not applicable	Measuring at fair value less costs to sell (changes in fair value → in P/L)	Measuring at fair value (changes in fair value → in P/L)	Measuring at fair value (changes in fair value → in P/L)
Compliance/Production model					
Classification	Intangible assets (65%)	Not applicable	Inventory	Other current asset	Intangible assets
Initial measurement of asset	At cost (free allowances: at nil value)	At fair value	At cost (free allowances: at nil value)	At fair value	At cost (free allowances: at nil value)
Subsequent measurement of asset	- Not revaluation (79%) - Not amortisation/depreciation (86%)	At fair value	Not applicable	At fair value	At cost
De-recognition of asset	Surrendering or selling	Surrendering or selling	Emitting	Surrendering or selling	Surrendering or selling

Recognition of liability	When emitting	- When allocating free allowances - When emitting more than emissions rights being held	Only when emissions exceed emissions rights being held	- When allocating free allowances, recognise 'allocating liability' - As emissions arise, 'allocating liability' is replaced with 'surrendering liability'	When emitting
Initial measurement of liability	- At carrying value - For excessive emissions, at the best estimates	At fair value	At the best estimates of the outflow of resources	At fair value	- At carrying value - For excessive emissions, at the best estimates
De-recognition of liability	When surrendering	When Surrendering	When purchasing	When Surrendering	When surrendering
Presentation	Not applicable	Not applicable	Gross presentation	Linked presentation	Gross presentation

\* Surveyed by PwC and IETA in 2007

### *Factors affecting the development of accounting standards for ETS*

From the findings in the cases of IASB, ANC and KASB, factors that essentially influenced the development of accounting models for emissions rights have been derived. These common determinants can be classified into three types as follows.

#### *1) The legal and economic context of ETS*

Hopwood and Miller (1994) refer to the 'constitutive role' of accounting in social processes. Under the premise that accounting is constructed by the social, cultural and political environment (Burchell et al., 1980), it inherently reflects aspects of

laws and policies in the context of the social contract (see also Nobes, 1998, 2006a, 2006b for detailed discussions of these differences).

When introducing a new policy measure, society calls for accounting rules to be set up in accordance with the characteristics of the new measure, e.g. ETS in this context. As ETS was introduced, the necessity for accounting reporting under the scheme was raised. In response to a surge of calls for authoritative accounting guidance on reporting activities under ETS, the accounting standard-setting bodies initiated the development of accounting standards consistent with the legal and economic context of ETS.

The findings reveal that accounting standards for ETS embrace features and attributes of the legal and economic context of the scheme. When developing accounting standards for ETS, accounting standard setters attempted to incorporate every feature of the scheme into the standard because all procedures under the scheme comprise the accounting events that need to be reported.

While the basic design features of ETS are similar, once at the implementation stage, each scheme varied widely (see Section 2.2.3). Each had specific design features which deliberately took account of economic, industrial or political circumstances. In other words, ETS has been operated differently, reflecting the various circumstances of each country. The findings indicate that the legal and economic context of schemes has significantly affected the construction of sets of rules as accounting standards. Consequently, accounting standards for ETS may have different features and attributes from country to country.

From an accounting perspective, accounting standards for ETS may be applied to both a cap-and-trade and a baseline-and-credit scheme because both schemes are fundamentally based on the same mechanism (as described in Section 2.4.1). Nevertheless, in reality, cap-and-trade schemes have more commonly been adopted by a number of countries to date.

Accordingly, when setting up accounting standards for ETS, the accounting issues tend to focus on cap-and-trade schemes rather than baseline-and-credit schemes. For example, both the Korean ETS and the EU ETS are based on a cap-and-trade scheme. IASB narrowed its scope to cap-and-trade schemes when working on its

joint project with FASB. In devising its accounting rules, KASB also took into consideration the cap-and-trade objective on which the Korean ETS is based. KASB highlighted that the accounting standard was to be set up so as not to hamper the 'tradability' of emissions rights.

In addition, accounting standards for ETS incorporate specific attributes relating to the commitment period of the scheme. For example, ANC recognised the structural change in the scheme from Phase III (2013-2017), and was initially motivated to tackle the substantially increasing costs resulting from auctioning. By contrast, KASB concentrated on accounting issues relating to free allowances because the Korean ETS in Phase I (2015-2017) delivers 100 per cent free allocation.

Interestingly, the findings imply that, due to technical difficulties, accounting standards do *not* reflect all features of ETS. Some processes under the scheme cannot be converted to accounting terms corresponding with its legal and economic context due to the complexities of the mechanism. For example, an offsetting mechanism is commonly included in most schemes to provide flexibility as a substitute for obtaining emissions rights. Each scheme sets up different rules for offsetting, including a limit on the use of offsetting credits and an exchange rate for offset credits per allowance. From an accounting perspective, it is difficult to set up a general accounting treatment because of the wide range of offset credits depending on the scheme or the offsetting project. One interviewee (EXP\_ACC 1) acknowledged that the offsetting mechanism may give rise to a very complicated accounting issue in relation to how to deal with various types of offset credits, such as recognition issues or the equivalent ratio of free allowances. In this regard, some accounting guidance intentionally excludes accounting for an offsetting mechanism.

Affecting the accounting standard for ETS, the economic attributes in the Korean context can be drawn on. The findings show how KASB took the economic circumstances in Korea into account in the development of accounting standard for ETS.

The Korean economy circumstance has affected the design of ETS in Korea. Korean government set the national reduction target committing the reduction of greenhouse gas emissions by 30% by 2020 in line with business as usual (BAU) scenario. In order to achieve the national reduction target, the Korean government introduced a wide range of measures in accordance with Green Growth policy including ETS. Although ETS is regarded the most effective measures to reduce carbon emissions in theory, a number of companies in heavy industries, mostly energy-intensive manufacturing sectors, had been strongly against the government policy. In addition, they argued that the introduction of ETS would give rise to an increase of costs resulting in deteriorating the competitiveness of industry, at a time which it was already facing rigorous competition from Chinese companies in the global market. In the past five decades, manufacturing industries have been regarded as an essential pillar to the Korean economy's growth, so the Korean government had to take the interests of the manufacturing industry into consideration. Due to the importance of manufacturing industry in the Korean economy, the Korean government decided to provide 100 per cent of grandfathering permits allocating emissions rights for free for the purpose of easing burdens on manufacturing industries.

While free allowances are beneficial for companies in compensating for the costs arising from emissions, recognition or valuation of free allowances in the financial statement may give a rise to extra burden in respect of accounting. Companies in the heavy industries had persistently delivered KASB their interests in relation to the accounting treatment of free allowances in the development of accounting standard for ETS. KASB was not able to disregard their concerns because they constitute important stakeholders, affected by the accounting standards in Korea. Furthermore, the economy's growth rate had remained at around 3-4 per cent since mid-2013; the Korean government did not intend to give rise to a negative shock on economy when Korean ETS embarked in 2015. The economic circumstances and the importance of voices of manufacturing industry led KASB to set up the accounting standard for ETS in the way of incorporating the interests of companies.



In summary, the findings are in line with Hopwood and Miller's (1994) view that accounting is influenced by policy measures. The accounting standard setters explored in this study initiated the setting of accounting standards for emissions rights corresponding with the commencement of a scheme or specific phase of ETS. In particular, in the standard-setting process, accounting standard for ETS in Korea was developed in accordance with diverse attributes of the scheme which reflected the specific economic circumstances surrounding it.

## 2) *Subject to existing accounting standards and models*

Previous research points out the need for a radical rather than an incremental approach to developing accounting standards for ETS. For example, Lovell (2014) argues that the existing accounting framework may not be appropriate to embrace the complex attributes of emissions rights. In contrast to the assertion of previous studies, the findings reveal that, in reality, accounting standard-setting bodies explicitly rely on the existing accounting framework and standards along with preceding accounting models. In other words, accounting treatment for emissions rights has developed in an incremental manner within existing accounting frameworks and standards.

The findings indicate a robust pattern of accounting standard setters seeking solutions within existing accounting frameworks, such as IFRS. For example, since both France and Korea has adopted IFRS mandatorily, most listed companies in those countries must apply IFRS to their financial statements. The IFRS conceptual framework constituted a boundary within which the new accounting standards for ETS in both France and Korea were built in accordance with IFRS.

In addition, it was commonly observed that preceding debates and existing standards were used as references for accounting standard setters in devising the most appropriate model. In other words, existing accounting standards and previous discussions provided the starting point for new accounting standards. This indicates that new accounting standards for ETS inevitably end up as new interpretations of previous models by elaborating and updating existing models.

In summary, in contrast to assertions of previous research (e.g. Lovell et al., 2010), a radical or utterly new approach did not emerge in standard setting for emissions rights. Rather, the findings demonstrate that the accounting standard setters explicitly took an incremental approach, elaborating rules within the existing accounting framework. In accordance with Lovell and MacKenzie's (2011) findings, the findings of this study confirm 'path dependency' or 'inertia', whereby solutions were achieved within the existing framework. To this extent, despite being a newly-introduced policy measure, accounting standards for emissions rights appear within the existing frameworks rather than as a totally new form of standard.

Nevertheless and despite the dependency on the existing conceptual framework, the lack of an existing IFRS standard allowed national standard setters such as ANC and KASB to attempt to develop solutions both morally sound and pragmatically acceptable by their key stakeholders, even though these meant that they were acting 'at the borders' of the current practice allowed under IASB guidance. This meant that, although the national standard setters could not debate and change the fundamental bases (such as measurement) of IASB's framework, in the absence of guidance they could still offer potential solutions to practical problems and thus offer a basis and ultimately influence future standards issued by IASB.

### *3) Practices in accounting for emissions rights*

The findings suggest 'current practice' is a factor affecting the development of accounting standards for ETS. Since IFRIC 3 was revoked and IASB has not provided accounting guidance for emissions rights hitherto, companies participating in the EU ETS have the liberty to develop their own accounting policy to address emissions rights and related liabilities on the basis of IAS 8 (see Section 3.2.2). Consequently, a variety of accounting treatments has emerged in practice.

Interestingly, the findings indicate that accounting standard setters are very interested in how companies account for emissions rights in practice, given the freedom of accounting treatment under mandatory IFRS. In particular, referring to

practice may matter more with regard to ETS because IFRS-adopting companies have been accustomed to their own accounting rules, and therefore would not call for the setting up of new accounting standards for emissions rights. This implies that analysis of practice is a preliminary step to developing more acceptable and applicable accounting rules for ETS. In essence, referring to practice is critical for *ex post* standard setting where a variety of accounting treatments already exists in practice.

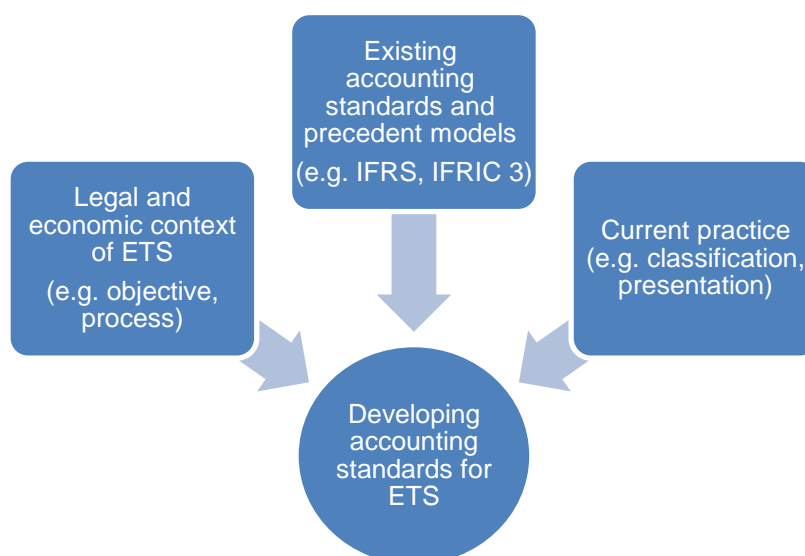
For example, ANC sought a solution from practice by examining how companies actually dealt with emissions rights in their businesses. ANC perceived that emissions rights were managed similarly to raw materials in the production process. Indeed, referring to practice provoked ANC to develop business models to tackle the complex attributes of emissions rights.

In addition, KASB reviewed the main accounting treatments used in practice by European companies for emissions rights and related liabilities in the absence of an international accounting standard, which was surveyed by PwC and IETA in 2007 (see Section 3.2.2). It provided an adequate reference for KASB to identify commonly used accounting treatments for free allowances in terms of recognition, classification and reporting. Now that Korean ETS Phase I (2015-2017) has commenced, 100 per cent of allowances are allocated for free. In a context akin to EU ETS Phase I, it was worthwhile for KASB to refer to European practices surveyed in 2007.

In summary, three recurring elements are drawn from the findings, as shown in Figure 15. Affected by these factors, accounting standard setters attempt to develop the most appropriate accounting model. These factors provide a comprehensive framework for assessing how accounting standards for ETS are initiated and developed in various contexts.

Although common attributes are drawn upon in Figure 15, these factors differently affect the development of accounting standards for ETS. In different contexts the factors vary.

**Figure 15: Factors affecting development of accounting standards for ETS**



In effect, standard setters seek appropriate solutions in different settings, for example with different types of scheme or allocation mechanisms. This implies that a desirable or appropriate model of accounting standard for ETS may be achieved through reciprocity between the stakeholders, the legal and economic circumstances and the accounting standard setter, rather than by pursuing a single right answer.

#### *8.2.2. Political aspects of accounting standard-setting process*

The findings of this study provide empirical evidence of the political aspects of the accounting standard-setting process. This study probes almost all procedures in standard-setting for emission rights in the case of KASB. To a large extent, the findings support the previous literature regarding the political aspects of the accounting standard-setting process. They unravel the political attributes operating not only in the coordination of various interests of stakeholders but also in compromising between idealistic and practical (acceptable) models. In addition, the findings indicate that accounting standards are the result of a political process in which various interests and constraints are adjusted and compromised.

#### *Lobbying activities in the accounting standard-setting process*

In exploring the Korean accounting standard-setting process, the participation of stakeholders was observed at various stages throughout the process. Significant

findings for accounting standard-setting have been identified in terms of the participation and lobbying activities of stakeholders. On the whole, the findings are in accordance with the literature in relation to lobbying activities in the standard-setting process, as discussed in Section 3.3.3.

1) *Motivation: economic motives*

The findings demonstrate that the motivation of preparers (companies) actively engaged in the standard-setting process is associated with the economic consequences of the anticipated accounting standard. In due process, large emitters consistently articulated their interests and concerns. For instance, large emitters presented their concerns about the negative impact on accounting numbers. Since a significant amount of free allowances was expected to be allocated, they argued that the debt ratio might worsen under an accounting model with fair value measurement and gross presentation. Overall, the findings are consistent with those of most previous studies (e.g. Morris, 1986; Deakin, 1989; Orens et al., 2011; Georgiou, 2002; Jorissen et al., 2012, Reither, 2014) that a negative impact on a firm's cash flow or accounting numbers is a significant factor driving preparers to engage in the standard-setting process. The findings also support positive accounting theory (Watts and Zimmerman, 1986) to a large extent.

Meanwhile, it has been revealed that most companies in Korea were largely dismissive of accounting issues relating to emissions rights. Although most were expected to be affected by the new accounting standard, they were prone to non-participation in the standard-setting process. These findings empirically support Jorissen et al.'s (2012) argument. From the findings, various reasons for a silent majority in the accounting standard-setting process are inferred as follows.

Firstly, a lack of resources in the organization to respond to accounting issues may be ascribed to remaining most stakeholders in silence. In particular, the accounting issues for ETS require a high degree of expertise and understanding in the disciplines of both ETS and accounting. Unsurprisingly, the matters of accounting were addressed in a finance/accounting-related division while the issues regarding ETS were dealt with in an environment-related division in most

companies. Therefore, most companies may not effectively respond to these accounting issues.

In accordance with Tutticci et al.'s (1994) findings, another plausible reason is that the issues may not be of interest to them since the new accounting standard may not have a significant impact on their accounting numbers. Some interviewees (preparers) viewed these accounting issues as 'insignificant' so they would not respond. This may keep them from participating in the accounting standard-setting process as they remain in the silent majority group.

In addition, a lack of awareness of how to engage in the accounting standard-setting process may lead companies to remain in silent majority. Some companies were not even aware of the fact that KASB was creating an accounting standard for emissions rights. In line with Walker and Robinson's (1993) contention, due to a lack of awareness, companies were unable to become involved in the process.

In addition, several comments on the exposure draft were provided by industry associations. The findings indicate that most companies depended on representative organisations, and most apparently remained silent during the process. These findings are compatible with those of previous studies (e.g. Gavens et al., 1989, Georgiou, 2010, Jorissen et al., 2013) that companies do not make individual submissions; rather they tend to input through special interest groups, such as industry associations, which represent their interests.

On the whole, the findings support those of previous research (e.g. Robinson, 1993; Tutticci et al., 1994; Georgiou, 2002) regarding motivations for participation or non-participation. In addition, the findings offer an indication that stakeholders may not necessarily respond to accounting issues with the same intensity of motivation.

## *2) Timing: effectiveness at pre-exposure draft stage rather than at post-exposure draft stage*

In terms of the most effective timing for lobbying activities, previous studies are inconsistent. Interestingly, the findings of this study indicate that participating in a consultation process prior to publishing the exposure draft may be more effective

than presenting an opinion on the exposure draft itself. Arguably, the findings imply that lobbying at the early stage of the standard-setting process is more effective in influencing the standard setter's decision making. In the case of KASB, despite of the importance of a role of comment letters, which are an essential means in due process, comment letters received at the later stage of the standard-setting process such as at post-exposure draft stage could not significantly affect KASB's suggestions, as there was little room for changes left on the exposure draft.

These findings are largely in line with those of Sutton (1984, p.711, cited in Jorissen et al., 2012) that 'lobbying is likely to be most successful if it takes place before a civil servant sets pencil to paper for the first time to write a proposal'. The findings indicate that stakeholders need to participate more proactively in the consultation process at pre-exposure draft stage, for example on discussion papers, in order to influence the staff's considerations effectively.

### 3) *Methods: various methods used*

In accordance with Sutton's (1984) assertion that various methods are used in lobbying activities, the findings demonstrate that stakeholders exerted influence on KASB using not only formal lobbying methods but also informal methods, including private meetings and telephone conversations with project staff. For example, one of the most prominent stakeholders was observed to involve itself at several stages throughout the standard-setting process, including as a technical committee member, meeting with technical staff in the KASB, making speeches at public hearings and submitting comment letters.

Moreover, as previously mentioned, most preparers relied on industrial associations to convey their opinion. Preparers may have believed that industry associations could adequately represent their views on their behalf.

### 4) *Effectiveness: empirical evidence of effectiveness of lobbying activity*

Sutton (1984) indicates the necessity for further empirical study regarding the effectiveness of lobbying activities, even though it is hard to observe 'lobbying outputs'. In accordance with Sutton's (1984) implication, the findings allow the

assessment of factors that played a critical role in affecting KASB's decision making. The findings demonstrate how effectively stakeholders' concerns influenced KASB's choice of accounting models. Throughout the process, it was observed that KASB sought effective measures to tackle the negative impact on accounting numbers of the anticipated accounting treatment. For example, on the one hand, in the KASB staff proposal, linked presentation was suggested in order to address the adverse effects of recognition of free allowances at fair value. In linked presentation, a net amount of emissions rights and related liabilities is displayed on the balance sheet. On the other hand, in the exposure draft, European practice was adopted as the primary accounting model. In applying a cost method as the measurement base, free allowances are measured at nil value; accordingly, no financial disadvantage arises and the interests of industry are effectively reflected.

Both accounting models suggested by KASB entail specific accounting treatments to offset the potential negative impact on accounting numbers. In effect, the findings indicate the effectiveness of preparers' inputs in the extent to which lobbying activities were influential in decision making on a specific accounting rule or model.

#### *Political aspects of accounting standard setting*

As the accounting standard for ETS in Korea has been shown to be the result of political compromise, this study provides empirical evidence of the political nature of accounting standard setting.

Table 12 presents two types of model which KASB addressed in its standard setting-process for emissions rights: one is that of the KASB staff proposal; the other is that in the exposure draft which was finalised as Korean GAAP for emissions rights.



**Table 12: Summary of main features of accounting models for emissions rights and liabilities in the case of KASB**

KASB Staff proposal	Factors consideration	Exposure draft
Business models: - Compliance model - Trading model	<b>Minimising impact on trading and operation of ETS:</b> → No restrictions on transforming from one business model to another	Business models: - Compliance model - Trading model
Measurement base: FV method	<b>Practice:</b> → Abandoning FV method	Measurement base: Cost method
Presentation: Linked presentation	<b>Offsetting negative impact on accounting numbers:</b> → Linked presentation, Cost method	Presentation: Gross presentation
	<b>Subject to IFRS framework:</b> → Abandoning linked presentation	

At first, KASB staff proposed an accounting model on the basis of the fair value method and linked presentation. Having considered the concerns raised in relation to this model, it then sought a second best model from European practice. By adopting European practice, KASB released the exposure draft, distinctive features of which include the cost method and gross presentation.

Table 12 indicates how the accounting standard for emissions rights in Korea was compromised from an idealistic to a more practical and applicable model, reflecting the factors taken into consideration. The exposure draft was the outcome of this compromise.

The findings provide an empirical example confirming the dynamics of the political nature of the accounting standard-setting process. A variety of interests of stakeholders throughout the accounting standard-setting process influenced KASB to choose a particular accounting model or rule. In particular, as shown in Table 12, KASB sought to set accounting rules by aligning with the interests of stakeholders in order to ensure a high degree of acceptability from stakeholders of the final outcome. In effect, KASB achieved 'exchange legitimacy', according to

Suchman's (1995) typology. In addition to accommodating prominent stakeholders' interests, KASB made a settlement by means of 'conforming environments'. To prevent potential conflict with the IFRS conceptual framework, adopting European practice was a safer way to ensure legitimate promulgation. KASB ended up compromising the legitimacy of the result; Korean GAAP for emissions rights exemplifies the outcome as a consequence of political compromise. This implies that accounting standards need to be regarded in the context of political choice rather than in the context of high technical expertise.

*Understanding the function of institutional legitimacy in the accounting standard-setting process*

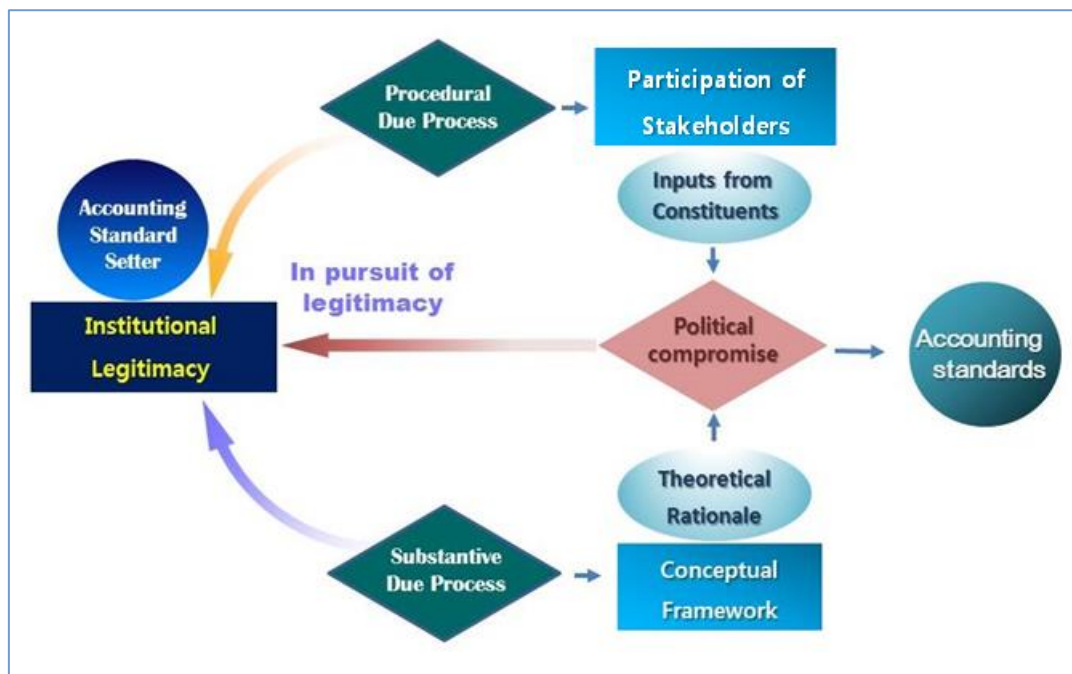
In the context of legitimacy, the isomorphism described by DiMaggio and Powell (1983) was observed in terms not only of undertaking due process but also in decision-making by accounting standard setters. From the procedural aspect, all three accounting standard setters in this study undertake due process in a homogeneous way. Due process evolved in the standard-setting process, commonly involving: 1) setting the agenda; 2) project planning; 3) developing and releasing a discussion paper; 4) developing and releasing an exposure draft; 5) post-enactment. The findings show how accounting standard setters made efforts to achieve procedural legitimacy by ensuring the 'rightness' of due process. For example, both ANC and KASB attempted to listen to stakeholders by facilitating their participation in the standard-setting process. In addition, the accounting standard setters attempted to build a firm and robust rationale for a set of accounting rules by relying on the existing accounting conceptual framework. The findings confirm the accomplishment of the prerequisite conditions for legitimacy in due process – 'procedural due process' and 'substantive due process' – described by Johnson and Solomons (1994).

In addition, from the decisional aspect, stakeholders' interests have been effectively reflected in the outcome since accounting standard setters, in particular KASB, attempted to set accounting rules to be more acceptable and applicable in practice. From the findings, it is inferred that accounting standard setters tend to make decisions in pursuit of a high degree of acceptability of outcome by responding to stakeholders' interests and relying on prevailing practices. In other

words, accounting standard setters set accounting rules in such a way as to guarantee the legitimacy of the outcome, developing accounting standards for emissions rights in an incremental manner by means of ‘changing at the margin’, as referred to in the foregoing models. This indicates that the accounting standard setters in this study achieved institutional legitimacy, specifically pragmatic legitimacy, in exchange for providing a compromise solution which most stakeholders believe to be ‘appropriate, proper, or even desirable’ given particular circumstances.

Returning to a figure previously given in Section 3.3.3 (previously Figure 6, now Figure 16 below), institutional legitimacy is used as a theoretical lens for better understanding of the accounting standard-setting process. In particular, in light of legitimacy management strategy (Johnson and Solomons, 1984; Suchman, 1995; Richardson and Eberlein, 2011; Durocher and Fortin, 2010), it is possible to delineate how institutional legitimacy functions in the context of the standard-setting process in the cases of ANC, KASB and IASB.

**Figure 16: Legitimacy in context of accounting standard-setting process**



#### 1) *Institutional legitimacy of ANC*

The findings indicate that ANC achieved institutional legitimacy by means of a bottom-up approach and in an incremental manner by making changes ‘at the

margin'. In comparing ANC's decision-making process with those of the other two accounting standard setters, a remarkable difference is observed: the ANC relied on a 'bottom-up' approach whereas IASB and KASB relied on a 'top-down' approach reflecting also the differences in the economic and legal context discussed earlier (see section 7.2).

The findings imply the efficacy of a bottom-up approach in terms of compliance and acceptability. Various interests were incorporated from the very first stage of the standard-setting process (in the working group); consequently, the accounting standard for emissions rights was implemented with a high degree of acceptability in France.

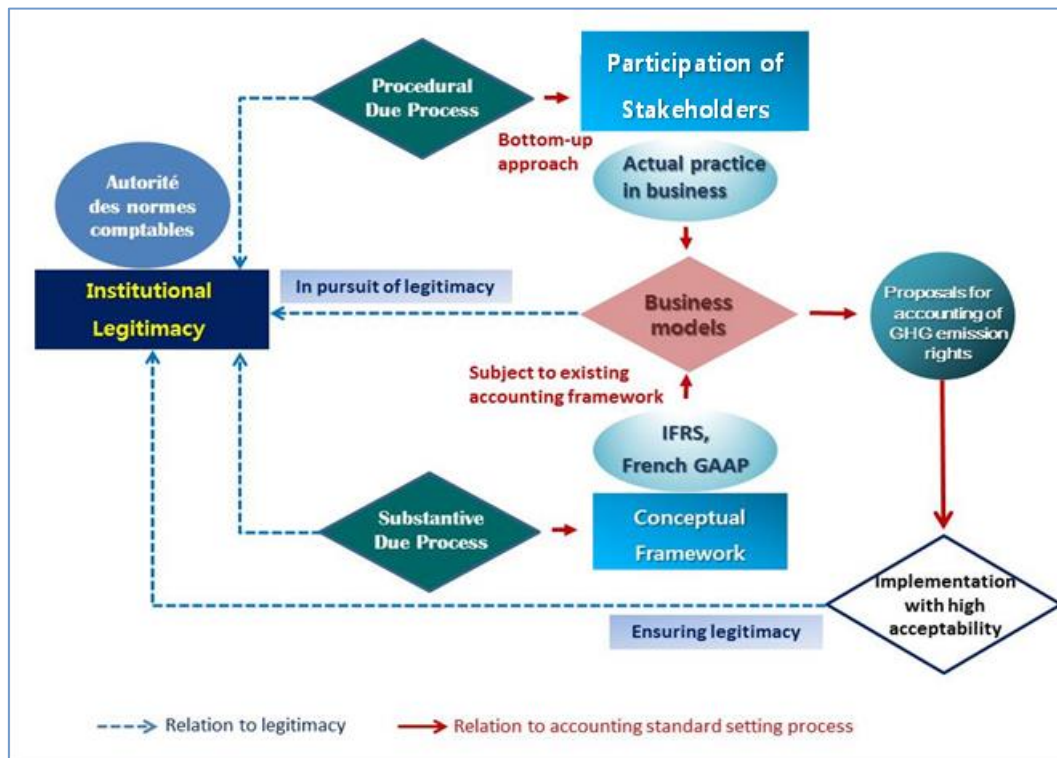
A bottom-up approach may contribute to enhancing institutional legitimacy because it results in a highly consensual outcome. Specifically, it can be inferred that ANC achieved 'procedural legitimacy' by following proper procedure. Various stakeholders participated in the process and provided inputs, and a proposal was produced based on these inputs. The accounting standard-setting process in France is in line with Larson and Herz's (2013) suggestion that the active involvement of stakeholders in due process enhances acceptance and compliance. A high level of acceptability and compliance reinforces the institutional legitimacy of ANC.

Moreover, ANC attempted to ensure that the outcome of accounting standard setting would be perceived as legitimate. It devised business models applicable to various types of business in accordance with IFRS and French GAAP. From a legitimacy management strategy perspective, the accounting standard was promulgated 'within a preexisting institutional regime' (Suchman, 1995, p.587). By setting the accounting standard within the existing accounting framework, ANC was able to ensure that it was largely accepted by most French companies that mandatorily use IFRS.

Applying the framework in Figure 16 to the case of ANC, Figure 17 shows how the institutional legitimacy of ANC functions in the standard-setting process. Applying the legitimacy management strategies of Suchman (1995), ANC has achieved legitimacy by ensuring procedural legitimacy in the standard-setting process and

positioning the standard within the existing accounting framework. Since ANC's proposal was well-implemented with a high degree of compliance, stakeholders might therefore consider the accounting standard proper or appropriate or, in other words, legitimate. In light of 'consequential legitimacy', where organisations are judged by accomplishment (Suchman, 1995), it is presumed that a high level of compliance on implementation may enhance the institutional legitimacy of ANC.

**Figure 17: Institutional legitimacy of ANC**



## 2) *Institutional legitimacy of KASB*

The findings provide empirical evidence with regard to the institutional legitimacy of KASB. In the case of accounting standard setting for emissions rights, KASB ensured institutional legitimacy by undertaking due process. It ensured stakeholders' participation in the process and, in turn, prominent stakeholders were observed to influence KASB's decision making, a process generally referred to as lobbying in the standard-setting process. Moreover, KASB attempted to set accounting rules by resolving the concerns raised by prominent stakeholders. The final outcome was achieved by means of compromising with a more practical accounting model compatible with IFRS in order to ensure a high level of applicability and acceptability. Following Suchman (1995), in exchange for

accommodating stakeholders' interests in the outcome, KASB ensured 'pragmatic legitimacy' or 'exchange legitimacy' by attracting support from stakeholders.

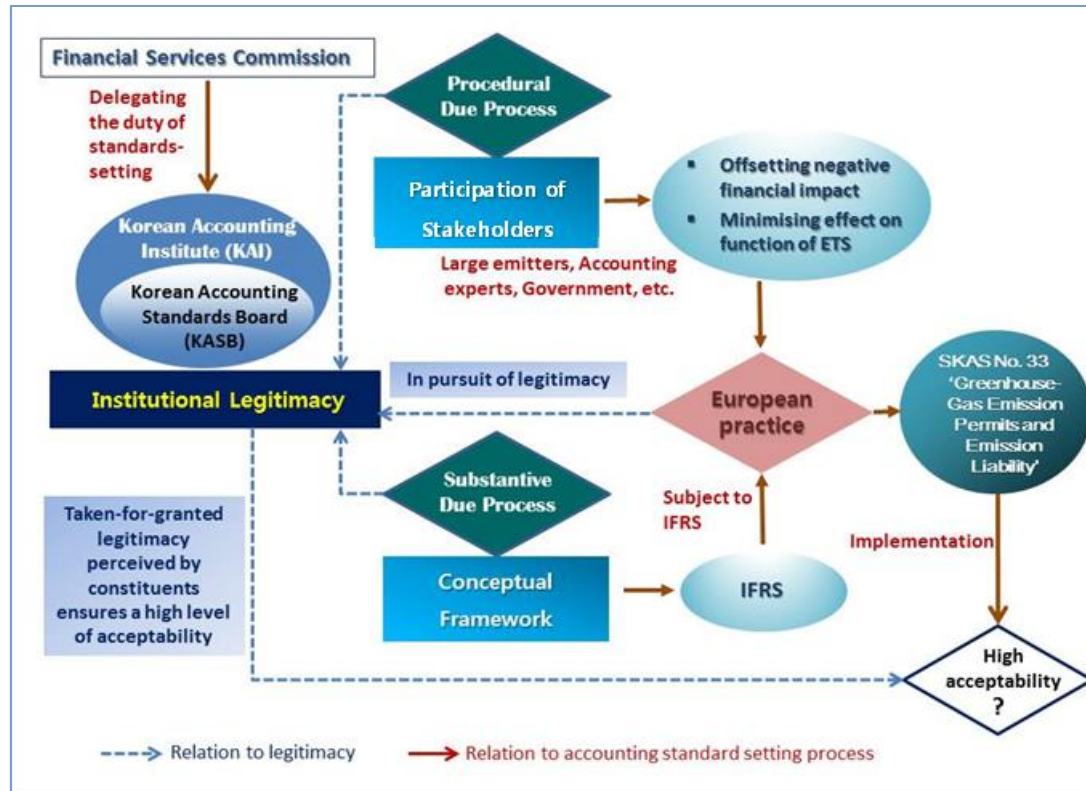
It was observed that stakeholders in Korea attribute institutional legitimacy to KASB. The Financial Services Commission delegates the duty for accounting standards to KASB according to the Act on External Audit of Stock Companies (see Section 2.5). When it was set up, KASB was embedded with institutional legitimacy endowed by statutory law. Corresponding to the legitimacy referred to by Durocher et al. (2007) and Johnson and Solomons (1984), the regulative component of KASB ensures its legitimacy. Most stakeholders perceive KASB to be the only institution entitled to be in charge of accounting standards in Korea.

Notably, the interviewees indicated a significant degree of cognition of the institutional legitimacy of KASB. Although K-IFRS adoption companies are not required to adopt the accounting standards for non-listed entities, it is anticipated that most preparers that use IFRS mandatorily will accept SKAS No.33 because they consider the accounting guidance provided by KASB to be authoritative and legitimate. In effect, once an accounting standard has been provided by KASB, preparers will generally adopt and follow it. The findings reveal a prevailing and solid 'taken-for-granted' perception of the institutional legitimacy of KASB, which is expected to contribute to ensuring a high degree of acceptability and compliance of Korean GAAP for emissions rights at the implementation stage.

Applying the framework in Figure 16 to the case of KASB, Figure 18 presents how KASB achieved legitimacy in the matter of ETS. Unlike the case of ANC, the case of KASB indicates how the legitimacy perceived by stakeholders works in the accounting standard-setting process, in particular at the implementation stage. As long as accounting guidance is provided by KASB, most stakeholders in Korea will follow it without dissent because they consider its accounting guidance to be legitimate and authoritative. These beliefs about legitimacy lead to a high level of compliance. The findings indicate KASB's institutional legitimacy reflects society's values in the Korean context. Institutional legitimacy of KASB stemmed from the authority endowed by the government on the basis of statutory law. In addition, a tendency to pursue uniformity amongst Korean companies may be important ensuring a new accounting standard is well implemented, which would be a

significant element to intensify institutional legitimacy by strengthening its cognitive as well as pragmatic element. It implies institutional legitimacy of KASB reflects not only the authority but also society's value in Korea.

**Figure18: Institutional legitimacy of KASB**



On the whole, in line with previous studies (e.g. Johnson and Solomons, 1984; Burlaud and Colasse, 2011; Richardson and Eberlein, 2011; Sinclair and Bolt, 2013; Bamber and McMeeking, 2016), the findings largely support the significance of legitimacy in ensuring not only the survival of the standard setter but ultimately the efficacy of accounting standards. Standards and standard setters therefore retain a reciprocal relationship in that regard – as standards issued by a legitimate, widely acceptable standard setter would tend to be more widely acceptable and generally adopted, whilst standards generally accepted by preparers and other stakeholders will further strengthen the legitimacy of the standard setter. In the legitimacy context therefore, standard setters go up and down with their standards.

### 3) *Interrelationship between IASB and national accounting standard setters*

The findings in the context of IASB are different from national accounting standard setting bodies. It is necessary to interpret the institutional legitimacy of IASB from

a different angle, as IASB is a supranational accounting standard setter. In particular, this study sheds light on the institutional legitimacy of IASB in the context of its interrelationship with national accounting standard setters.

The findings show how interactions and cooperation take place between IASB and national accounting standard setters. In relation to the ETS project, IASB was assisted by national accounting standard setters in various ways.

According to the IFRS due process book, IASB encourages national accounting standard setters to participate in the IFRS-setting process. Considering the limited resources of IASB, the role of national accounting standard setters is viewed as critical to achieving high-quality international accounting standards. In effect, IASB expects national accounting standard setters to contribute to the development of the ETS project by assisting it in several respects.

For example, a significant accumulation of research on ETS developed by national accounting standard setters provides good reference material for IASB to advance the ETS project. Since IASB has not provided an accounting standard for emissions rights since the withdrawal of IFRIC 3, some national accounting standard setters, including ANC and KASB, have already developed national GAAPs for emissions rights based on extensive research. Reflecting stakeholders' interests under different circumstances, extant accounting models for emissions rights may also provide numerous inputs into IASB to enable it to choose an appropriate solution.

In addition, IASB shows considerable interest in how emissions rights are actually dealt with in practice where IFRS is mandatorily applied. When developed in line with the IFRS framework, national accounting standards for emissions rights may be widely adopted in practice. By referring to accounting treatments under local GAAPs, IASB is able to observe how emissions rights are actually dealt with in the absence of IFRS; to this extent, it is able to assess the desirability of accounting models in terms of acceptability and compliance.

In this regard, as expected, in line with Georgiou's (2010) assertion, national accounting standard setters are the most influential stakeholders of IASB in the context of ETS issues. In relation to ETS issues, KASB and ANC comprise key



stakeholders for IASB because they have already set accounting standards for emission rights.

IASB has recently changed its view on 'one unit of account', where emissions rights and related liabilities are treated as net in the same account. In fact, IASB did not address whether or not to accept the concept of one unit of account while making tentative decisions in its joint project with FASB. However, an IASB staff paper published in November 2014 indicates the acceptability of a net approach.<sup>67</sup> Presumably, the change of stance toward a net approach was influenced by practice that has evolved in Europe. In addition, it is presumed that IASB may have gained insights from extant accounting models of emissions rights such as ANC's proposal. It is plausible that the preceding accounting models may have influenced IASB's change of view. Therefore, the change of perspective on 'one unit of account' might be regarded as a result of 'institutional isomorphic pressures for change' (Carpenter and Feroz, 2001, p.570) in pursuit of institutional legitimacy.

ANC and KASB have shown willingness to help develop high-quality international accounting standards. In relation to the ETS project, ANC and KASB expect national GAAPs to be solid references to enable IASB to proceed with the ETS project. For example, ANC expects to contribute to the development of IFRS in terms of a 'post-implementation review'. In this regard, collaboration between IASB and ANC could be arranged to address the issue of how companies in France account for emissions rights under French GAAP, being subject to IFRS. In addition, KASB also expects that Korean GAAP for emissions rights will provide IASB with a reference by which to assess the appropriateness of accounting treatment under Korean GAAP. This may be helpful for IASB in assessing the different effects of national GAAPs for emissions rights under mandatory adoption of IFRS across different jurisdictions, e.g. France and Korea.

Meanwhile, the findings indicate the difficulty in setting globally accepted accounting standards. Despite that setting a standard for ETS hasn't been a priority for IASB as yet, it may soon be considering developing some formal

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<sup>67</sup> Staff paper, 'Emission Trading Schemes: Summary of accounting issues' (IASB Agenda ref. 6B, IASB, 2014).

guidance although there are fewer stakeholders that now need to agree on. IASB's concurrent attempt to develop standards whilst re-developing a conceptual framework (in its own ongoing struggle to ensure morally correct standards from both due process and decisional points of view, whilst also adhering to pragmatic interests of stakeholders and indeed market developments) naturally further entails that further revisions are deemed to take place. The study thus further gives credit to Durocher and Fortin's (2010) arguments as well as Young's (2003, 2006) earlier skepticism about user oriented conceptual frameworks offering symbolic as opposed to substantive value and having questionable role in practical context.

Despite IASB seemingly generally adopting a 'top-down' approach, in the case of ETS it may eventually benefit from a 'bottom up' type of engagement. This is because, in its original inability to develop a related standard, IASB encouraged national standard setters to develop their own models. As the study has revealed, standard setters thoroughly engaged with stakeholders to develop standards which were morally sound, pragmatically acceptable and were in accord with IASB's conceptual framework (including the framework's exposure draft currently debated). Whilst organisations around the world will be practicing the new models espoused by ANC and KASB, IASB's job then becomes easier in developing some future formal guidance in a form of IFRS, as there will already be some related national standard practice in place which will have already been rigorously tested. Hence ANC's and KASB's standards could act as 'pilot' attempts for IASB to introduce related regulation and ultimately benefit from a seemingly rare opportunity where a 'bottom-up' approach in standard-setting is applied in that context. One hopes that IASB will reflect on this (seemingly good) practice and revise its decision making models to become more inclusive and reflect wider practitioner concerns. The findings thus stress the importance of closer interactions between IASB and national accounting standard setters. More frequent interactions and more active cooperation would contribute not only to the achievement of high-quality international accounting standards, but also to the legitimacy of IASB.

Overall, the findings provide clues as to how interactions may take place between IASB and national accounting standard setters in addressing ETS issues over time. In accordance with Kwak et al. (2010), the findings indicate the significant role of national standard setters in the sense that they are able to fill a gap which IASB cannot achieve by itself.

As a supranational accounting standard-setting body, IASB is responsible for developing high-quality and globally acceptable IFRS. To accomplish its role, IASB should encourage national accounting standard setters to participate as much as possible in the accounting standard-setting process. Larson and Herz (2013) regard the participation of significant stakeholders as a core factor in legitimacy. From the perspective of institutional legitimacy, ANC's and KASB's proactive participation and involvement in the ETS project are essential for IASB to enhance its legitimacy. The 'willingness' or 'intention' of national standard setters implies that they are pursuing a greater role for themselves in shaping IFRS. The contribution of national accounting standard setters in the IFRS-setting process might also increase the legitimacy of IASB.

The findings also indicate what national standard setters should do in order to make a significant contribution to the ETS project. In response to IASB's efforts, national standard setters need to involve themselves more proactively in the due process of IFRS in order to achieve a high-quality IFRS. Generally, early involvement is perceived to be more effective (Jorissen et al., 2012; Kwak et al., 2010). One interviewee highlighted the necessity for 'proactive participation in the process including direct interaction with the project staff at the earlier stage' (ASS 4).

In addition to engagement at an early stage, national standard setters need to make efforts to communicate proactively with IASB technical staff. More active and sustainable communication with the technical staff in charge of the ETS project would effectively support the search for an appropriate solution because technical staff may need greater assistance from other accounting standard setters to make progress at this stage.

In summary, the findings stress the importance of interactions between IASB and national accounting standard setters. In light of institutional legitimacy, this implies that tighter interactions and more active co-operation would contribute not only to achieving high-quality international accounting standards, but also to sustaining the institutional legitimacy of IASB.

### 8.2.3. *Features of desirability*

#### *Core principles: Decision-usefulness and cost-benefit analysis*

It is generally observed that accounting standard setters, when developing accounting standards, attempt to be in line with two basic principles of accounting: decision-usefulness and cost-benefit analysis. To be specific, accounting information should be decision-useful for information users. Decision usefulness has been the ultimate criterion to justify accounting standards (Durocher and Fortin, 2010), in that accounting standards should enhance the usefulness of financial reporting. At the same time, the accounting standard setter must consider the cost in relation to producing accounting information. In essence, cost-benefit analysis is a core principle linking decision usefulness to production costs. Existing accounting frameworks, including the conceptual framework of IFRS, require judgments on the usefulness of accounting information as well as cost-benefit analyses.

With regard to decision-usefulness, the findings do not present explicit evidence of the position of users in the standard-setting process. The findings largely support the assertions of previous studies (e.g. Durocher and Fortin, 2010; Georgiou, 2004, 2012; Jorissen et al., 2013; Larson, 2007; Sutton, 1984) that preparers tend to participate more than users in the standard-setting process. Due to a lack of truly pragmatic users' participation or inputs into the standard-setting process, preparers' inputs are more likely to be highlighted throughout the process. This indicates that the user-oriented principle remains only in the conceptual framework, not emerging in a more practical context. This may be in line with Young's (2003, p.629) assertion that 'Users remain shadowy figures within the paragraphs of financial accounting standards'. In view of the fact that the notion of 'primacy of users' is associated with institutional legitimacy as a core criterion of 'rightness' of decision (Georgiou and Jack, 2011), the findings provide a policy implication in

light of legitimacy, that accounting standard setters need to be more aware of users' needs and interests and better facilitate their participation in the standard-setting process.

*Example of 'desirable' accounting models for emissions rights: the business model approach*

The accounting standard setters investigated in this study attempted to seek the most appropriate and proper solution given particular circumstances. In other words, the accounting models were devised in the process of pursuing an 'effective' or 'applicable' solution under different circumstances and constraints.

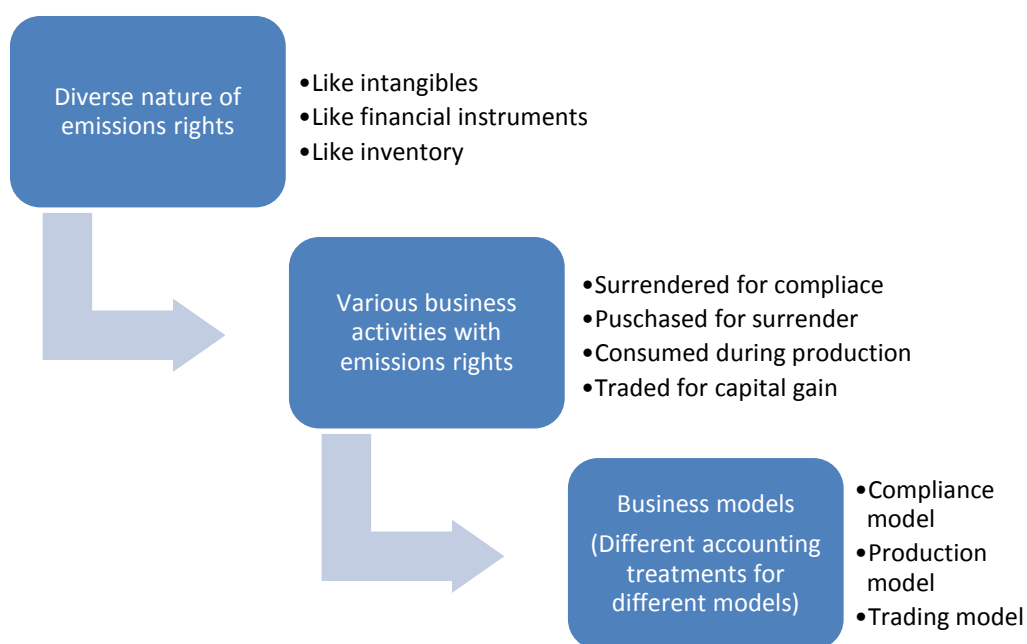
The findings reveal that the business models proposed by ANC exemplify empirically the idea of 'desirable' features of accounting models in line with the research questions of this study.

It is commonly observed that accounting standard setters start by justifying and defining the nature of emissions rights. Emissions rights cannot be fitted exactly into existing asset categories because of their unique attributes. Due to various characteristics of emissions rights, all relevant accounting treatment within the existing accounting framework can be applied to emissions rights, depending on their intended use.

It can be inferred that business models are devised to underpin business activities rather than focusing on the attributes of emissions rights *per se*. The business models enable accommodation of various characteristics of emissions rights by defining what an entity is doing with them.

Under the premise of different aspects of emissions rights and different uses in various businesses, any relevant accounting treatment can be differently elaborated depending on the type of business being conducted. The underlying logic for business models is presented in Figure 19.

**Figure 19: Logic of business models under ETS**



Different accounting treatments are applied to different business activities depending on the purpose of the purchase or use of emissions rights as a part of the business. The acknowledgement of different uses of emissions rights formulates the premise that different accounting rules can be applied to the same item. In turn, accounting treatments for emissions rights can be differently set up depending on different intentions in holding emissions rights.

ANC took a 'business model approach', being the first to introduce business models as an accounting standard. Since it intended to set accounting guidance to be used for a variety of business activities under ETS, the business models were the best solution for ANC to satisfy all conditions. Indeed, the ANC's pragmatic business model approach illustrates how the practical solution is deduced from practice rather than a theory.

Notably, the business model approach provides an empirical example of how a desirable accounting model is sought. It is worth noticing that the business model approach may be the most appropriate solution to address the technical complexities in relation to accounting issues for emissions rights. In other words, due to the umbrella treatment of various uses of emissions rights, business models may provide the most appropriate method to tackle the 'unresolved tension' referred to by Lovell et al. (2013). In addition, business models may

ensure significant acceptability in practice, in the sense of reflecting actual practice. In virtue of a number of attributes of the business model approach, it is suggested that the adoption of business models may be extended to other jurisdictions where an accounting standard for emissions rights needs to be set up.

#### *Desirable features of accounting standard for emissions rights*

Underpinning the political aspects of the accounting standard-setting process, this study has explored how accounting standard setters come up with solutions in practice. Indeed, the accounting standard for emissions rights turned out to be accomplished as a result of compromising with a more acceptable and applicable standard under particular conditions, rather than adopting the best answer from a theoretical point of view. This confirms that accounting standards are prone to be a political outcome rather than the result of highly professional expertise, since they are achieved through a process of political compromise.

Previous studies on the standard-setting process reiterate that accounting standard setting proceeds in a political way, as various interests are accommodated into the outcome. In line with previous research, the findings of this study reveal political aspects of the accounting standard-setting process. In particular, this study sheds light on the institutional behavioural mechanism to produce a legitimate outcome. Consequently, the findings demonstrate the strenuous attempts of accounting standard setters to put forward desirable, proper and appropriate accounting standards for emissions rights within various constraints.

For example, ANC's proposal is considered to be legitimate by stakeholders as the most desirable and appropriate solution, resolving a number of conditions and constraints. In the case of Korean GAAP for emissions rights, the findings reveal that the final version has been achieved as a consequence of political compromise. While the KASB staff proposal was regarded as more desirable from both the theoretical and practical point of view, KASB compromised with a more practical model on the basis of European practice. As a result, most stakeholders in Korea are in favour of the final version of the standard for emissions rights. Most will

perceive the standard to be legitimate and authoritative as long it is provided by KASB.

In summary, the findings provide evidence of the political nature of the standard-setting process. As a consequence of a highly political functioning in the standard-setting process under various circumstances, accounting standards for emissions rights vary. In other words, accounting standards for emissions rights cannot be rolled into a single absolute accounting model consisting of a desirable set of accounting rules.

With regard to desirable features of accounting standards for emissions rights, the findings uphold the absence of a perfect model in the pursuit of a desirable set of accounting rules for ETS. In line with Demski's (1973) impossibility theorem, it is impossible to achieve an absolute, complete or perfect solution of which the substance can be feasibly delineated. Rather, the findings imply that the desirability or appropriateness of accounting standards is judged by stakeholders in the context of legitimacy. In other words, the desirability or appropriateness of accounting standards is *de facto* an *ex-post* perception, as accounting standards are considered legitimate within institutional environments. This is associated with the extent to which accounting standards are acceptable from stakeholders' points of view. Not only soundness of rationale but also acceptability in practice are critical determinants in judging the desirability and appropriateness of accounting standards.

In essence, the findings indicate that the key determinant of desirability and appropriateness of accounting standards for emissions rights stems from the general perceptions or beliefs of stakeholders. If stakeholders perceive the promulgation to be legitimate, which means desirable, proper and appropriate given particular circumstances, the accounting standard will be considered to be the most appropriate solution. The findings exemplify that the accounting standard setter must commit to making decisions on specific accounting rules or models in such a way that the accounting standard for emissions rights is largely approved as legitimate by stakeholders.



In order to ensure the legitimacy of the outcome, two dimensions can be derived from the standard-setting process: procedural and decisional. On the procedural dimension, a proper procedural process that ensures stakeholders participate is a critical determinant in engendering procedural legitimacy in stakeholders' beliefs. Accordingly, guaranteeing stakeholders' participation in the standard-setting process is a key prerequisite for an outcome which stakeholders believe to be legitimate. On the decisional dimension, political compromise, in which various interests are coordinated and reflected, is conducive to enhancing stakeholders' perception of institutional legitimacy. From a legitimacy perspective, the accounting standard setter is likely to make choices in response to stakeholders' interests in order to gain legitimacy. In turn, stakeholders may be satisfied with a set of accounting rules which reflect their interests; hence they will perceive the outcome to be desirable, proper and appropriate. In essence, the problematic accounting issues for emissions rights and related liabilities under ETS can be resolved in the standard-setting process. The findings indicate that the solution can be found in pursuit of legitimacy.

In summary, the whole process of standard setting influences stakeholders' perceptions of the legitimacy of the final outcome. Relying on institutional legitimacy, which is relatively stable in stakeholders' minds, stakeholders judge whether the accounting standard for emissions rights is legitimate. In effect, the desirability or appropriateness of the accounting standard is determined by legitimation. Therefore, accounting standard setters need to facilitate as much constituent participation as possible. In addition, effective responsiveness to stakeholders' interests is even more critical for legitimation. Ultimately, it will be beneficial to enhance institutional legitimacy in association with roles, goals and objectives.

### **8.3. Contribution**

The study has made some important contributions to accounting research as well as accounting practice in respect of ETS.

This research contributes to enhancing practical understanding of accounting for ETS. Empirical research on accounting issues in relation to ETS has so far been scant and this study offers some unique insights on the accounting issues and the

accounting standard-setting process in relation to ETS. The study offers examples of how complexities in relation to accounting issues for emissions rights were addressed by each accounting standard setter following the withdrawal of IFRIC 3. By specifying the problematic accounting issues and practical accounting models which were actually tackled by the accounting standard setters, the findings provide tangible solutions for dealing with the complexities in association with the distinctive attributes of emissions rights. From a practical point of view, the accounting models explored in this study may be considered by other jurisdictions in need of developing the accounting standard for emissions rights and ultimately influence future developments.

The study also offers unique insights into the accounting standard-setting process of Korea. Due to factors such as linguistic limitations, the relatively short history of KASB, and limited access to data very few studies have looked at Korean standard setting to date. This study is believed to be the first exploration of lobbying behaviour and of the accounting standard-setting process in the Korean context. In this regard, this study broadens and enhances understanding of the standard-setting process in the Korean context. Moreover, this study provides policy implications for KASB. The findings indicate the importance of preparers' associations in the accounting standard-setting process in Korea. Since Korean companies tend to rely on industry associations to represent their voices, the role of preparers' associations needs to be highlighted in terms of developing well-balanced and justified standards. Thus, the findings may be of interest to KASB in persuading them to facilitate the participation of preparers' associations in the standard-setting process.

The study advances legitimacy theory by offering a framework particularly applicable to the accounting standard setting process, which also incorporates stakeholder theory research. The study finds theoretical support for the framework and further contributes to the related literature by comprehensively reviewing legitimacy conflicts. The findings indeed showcase that in the context of accounting standard setting, regulators pursue legitimacy in several forms, including moral, pragmatic and cognitive. Findings nevertheless showcase that these forms may in cases be in conflict. For example, adhering to the conceptual

framework (and achieving cognitive legitimacy) may be in conflict with pragmatic stakeholder concerns or with morally sound arguments. Findings indicate that stakeholder theory antecedents such as stakeholder power (e.g. IASB) and urgency (e.g. particular interests of companies affected) may assist organisations (i.e. national standard setters) achieve legitimacy and mediate potential legitimacy conflicts and thus ultimately influence the outcome.

Standard setters may not only prioritise stakeholders (and thus violate the legitimacy theory's expectation of neutrality in this context, as per Bamber and McMeeking, 2016) but also legitimacy types to ensure wider acceptability of actions. For both ANC and KASB, adherence to essentially the most powerful stakeholder's (i.e. IASB) guidance based on its framework agenda, not only suggests pragmatic legitimacy is granted but it also benefits cognitive legitimacy (through isomorphism). Among the two, gaining cognitive legitimacy was more challenging for ANC as it was among the first to attempt to develop a 'dual-model' approach, which whilst it was borderline acceptable by IASB, it provided 'dual reasoning' benefits by also following established (and preferred) business practice. Whilst KASB clearly made every effort to follow IASB's suggestions, their decision to subsequently essentially adopt ANC's key recommendations made achieving cognitive legitimacy less problematic (and in doing so, it essentially 'cognitively' benefited not only itself but further strengthened the legitimacy of ANC's earlier adoption). Both ANC and KASB also gained pragmatic legitimacy by addressing other powerful stakeholders' (i.e. industry's) concerns, which particularly for KASB was those expressed by the heavy industry which has been the powerhouse of its economic development for over 50 years and has been under fierce competition by Chinese and Indian competitors recently.

Whilst both standard setters prioritised cognitive and pragmatic legitimacy elements, they seemed to be least concerned about the theoretical soundness of their suggested accounting treatments and thus the impacts on the moral legitimacy. As it became particularly evident in KASB's case, despite that the staff proposal incorporated arguments which had a higher decisional validity, they eventually had to abort it due to the realisation that 'markets' could not currently support this approach. KASB's decision thus gives credit to arguments earlier

expressed by Chambers (1998), Deen (2008) and Whittington (2010), which emphasised the increased subjectivity in measurement in financial reporting. The study indeed provides evidence that, “[i]n reality, markets are imperfect and incomplete, so that ideal unique market prices are not available for all assets and liabilities” (Whittington, 2010, p. 104) When moral legitimacy is sacrificed, standard setters may highlight their adherence to rules/due process (which would ensure procedural legitimacy) in order to compensate for the loss in decisional legitimacy (i.e. which would require going for the actually more valid/theoretically sound option).

The study has demonstrated therefore that standard setting is not a product of an objective, linear process but rather an outcome of a continuous conflict among stakeholders with different degrees of power and urgency per specific situation, which reach temporary compromises, subject also to the degree of changeability of interests (Monciardini, 2016). When as in the case of ETS, the standard has inherent issues of contention (such as measurement and accounting treatments), these conflicts and variations in treatments become even more evident as recent research on the wider but related field on non-financial reporting also indicates (e.g. Costa and Agostini, 2016; Fallan, 2016; Luque-Vilchez and Larrinaga, 2016; Monciardini, 2016).

The study has further demonstrated the impact of lobbying activities in the accounting standard setting process. It particularly contributes evidence from interviews to that from analysing comment letters, which has so far been the case. The study explores various attributes of stakeholders’ participation in the standard-setting process for emissions rights in the Korean context. Several characteristics have been identified in terms of the motivations, methods and timing of lobbying activities. The findings have shown how lobbying behaviours exhibit patterns similar to the findings of previous studies of accounting standard-setting bodies. It confirms previous literature (e.g. Sutton, 2007; Jorissen et al., 2013) finding preparers to be the most active stakeholder group, and particularly at the national level. It would be natural to expect that the lower the level of resolution, the higher the impact of lobbying activities would be.

#### **8.4. Limitations and suggestions for further research**

Limitations of the study may be identified in both the methodological and the theoretical points of view. Due to the fact that observations were conducted on the basis of predominantly a single country (South Korea) and a single issue (ETS), this is constraining the generalisability of the results to other countries or issues. Future research could adopt a different methodological design, such as surveys using questionnaires and focus on more countries to produce more generalizable findings.

This study is limited to a single issue with the cases of IASB, ANC, and KASB showing how accounting standard setters addressed accounting issues for emissions rights and related liabilities in the accounting standard-setting process. The accounting models explored in this study could potentially influence other jurisdictions which need to develop accounting standards for ETS. However, as discussed earlier, the findings are heavily influenced by the specific social, political and economic context examined and their relevance to other standard setters in the matter of accounting issues for emissions rights is unknown. In this regard, in order to ensure validation of the main findings in this study, further research may be necessary in relation to how the accounting models found in this study would evolve. In particular, based on the accounting models proposed by ANC and KASB, it would be valuable conducting research on how the accounting models affect other accounting standard setters to develop accounting standards for emissions rights from the perspective of legitimacy.

The findings were interpreted using a theoretical framework developed on the basis of the reviewed relevant literature. In spite of examining how the framework worked in a particular case, it is necessary to explore the applicability of the framework in other research settings in order to validate it.

Moreover, this study does not involve the analysis of the financial results corresponding with particular accounting models explored in this study. The most contentious arguments in relation to accounting issues for ETS in this study were largely associated with measurement base – e.g. fair value or cost measurement. Hence, it is clear that further research is meaningful for assessing the impact or appropriateness of measurement base for emissions rights and related liabilities

from various perspectives. To this extent, it is worth conducting further empirical research on how financial statements (or financial numbers) may be influenced depending on different accounting treatment for emissions rights and related liabilities with a variety of variables – i.e. industry and firm size.

In addition, this study explains only a part of aspects or attributes of lobbying activities in the accounting standard-setting process. For example, the study provides empirical evidence to demonstrate some motivations of stakeholders' participation, but cannot cover all drivers of participation in the process. Furthermore, due to the limited size of the sample investigated for this study, only certain features of the behaviours and interests of prominent stakeholders could be observed. Accordingly, the findings do not allow identification of the extensive range of attributes of stakeholders' lobbying behaviours widely identified in previous studies. To this extent, this study does not include analysis of various aspects of stakeholders who lobby or do not lobby, for example a comparative analysis of preparers and users, or of large and small and medium-sized firms, as this was not a prime objective.

The study has primarily relied on interviews for data collection purposes and has therefore not extensively considered comment letters. It would be valuable to conduct further research on the role of comment letters in the standard setting process in Korea to not only verify the study's findings but also explore whether the findings from analysing comment letters in other jurisdictions also apply in the Korean context.

## Appendix 1: Accounting treatment under IFRIC 3

Several previous studies (e.g. Black, 2013; Cook, 2009; Ratnatunga and Jones, 2012; Haupt and Ismer, 2013; Starbatty, 2010) have provided analyses of accounting treatments under IFRIC 3. Based on a review of a strand of papers analysing IFRIC 3, the main features of accounting treatments under IFRIC 3 are presented as follows.

The International Financial Reporting Standards Interpretation Committee (IFRIC) issued IFRIC 3 *Emission Rights* in 2004. IFRIC 3 provided guidance on how to account for emissions rights and obligations under ETS within existing accounting standards. IFRIC 3 dealt only with cap-and-trade schemes.

According to IFRIC 3, emissions allowances, regardless whether they are allocated for free or purchased, are defined as intangible assets in accordance with IAS 38 *Intangible Assets*. Emissions allowances, whether granted (free) or purchased, are initially recognised at fair value. If allowances are allocated for less than fair value (e.g. free allowances), IFRIC 3 recommends that the corresponding entry is recognised as a government grant on the grounds that they are ‘government’s transfers of resources to an entity in return for past or future compliance with certain conditions relating to the operating activities of the entity’(Cook, 2009, p.461). On the day of receipt of free allowances, in accordance with IAS 20 *Accounting for Government Grants and Disclosure of Government Assistance*, the grant is recognised as deferred income on the balance sheet (Starbatty, 2010). Subsequently, the deferred income is recognised as income in a systematic manner over the compliance period, regardless whether the allowances are sold or held (Haupt and Ismer, 2013; Starbatty, 2010). Initial entry of an asset is carried as follows:

Dr) Allowances (intangible asset)    XX (at fair value)

Cr) Government grant	XX
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As for the subsequent measurement of emissions rights, in accordance with IAS 38 either a 'cost model' or a 'revaluation model' must be applied. When applying the cost model, the allowances are subsequently measured at cost less

amortisation and impairment. A revaluation model can be also applied because emissions rights are tradable on an active market. With a revaluation model, allowances are subsequently revalued at fair value. According to the revaluation model, an increase in the carrying amount of allowances as a result of revaluation is recognised in other comprehensive income (OCI), which is under 'equity' (Starbatty, 2010).

In summary, the subsequent measurement of emission rights is taken as either:

- a) at its cost less accumulated amortisation and impairment losses; or
- b) at a revalued amount, being its fair value at the date of revaluation less any subsequent accumulated amortisation and any subsequent accumulated impairment losses.

The subsequent entry of an asset is carried as follows:

Dr) Deferred income	XX		
		Cr) Income	XX (Income Statement)
Dr) Allowances	XX (revaluation at fair value)		
		Cr) OCI	XX (Balance Sheet)

Meanwhile, a liability occurs corresponding to the obligation to deliver emissions rights to the government. The recognition of a liability is separate from the recognition of the asset (EFRAG, 2012). As emissions arise, a liability should be recognised because of the occurrence of an obligation to surrender allowances equivalent to emissions which are produced during a commitment period. This liability is treated as a provision under IAS 37 *Provisions, Contingent Liability and Contingent Assets*. According to IAS 37, a liability is measured at the best estimate of the expenditure required to settle the present obligation. The present market price of allowances may be used as a reference for the best estimate (Starbatty, 2010). Thus, changes in the value of obligations as a result of revaluation are reflected in the income statement. Initial entry of a liability is carried as follows:



Dr) Emission expense                      XX (income statement)

Cr) Emission liability      XX (at market price of allowances)

With regard to presentation, under IFRIC 3, assets and liabilities should be displayed at gross value. In other words, offsetting (or netting off) emissions rights held and emissions liabilities is not allowed (Warwick and Ng, 2012).

A summary of accounting treatment under IFRIC 3 is presented in Table App 1.

**Table App 1: Summary of accounting treatment under IFRIC 3**

(adapted from Cook, 2009, p.462)

	Classification	Measurement basis	Revaluation	Recognition in I/S
Allowances	Intangible asset (IAS 38)	Fair value	B/S (equity)	
Grants	Government grant (IAS 20)	Fair value of allowances on receipt	Not applicable	Deferred income in line with emissions
Emissions	Contingent liability (IAS 37)	Fair value of allowances when recognising liability	I/S (profit or loss)	Expense as producing emissions

## Appendix 2: Illustration of financial results under different accounting models

Returning to a table previously given in Section 3.2.2 (previously Table 3, now Table App 2 below), each accounting approach has a different accounting treatment for emissions rights and related liabilities, which have been used to advantage by companies participating in the EU ETS.

**Table App 2: Approaches applied in practice**

(Adapted from Starbatty, 2010, p.47)

	Approach 1	Approach 2	Approach 3
Initial recognition – Allocated allowances	At market value on date of issue; corresponding entry to government grant (deferred income)		At cost; allowances for grants are at nil value.
Initial recognition – Purchased allowances	At cost		
Subsequent measurement of allowances	Subsequently measured at cost or market value, subject to review for impairment		Subsequently measured at cost, subject to review for impairment
Subsequent measurement of government grant	Government grant is amortised on a systematic and rational basis over compliance period		Not applicable
Recognition of liability	Recognise liability as emissions are produced		Recognise liability as emissions are produced. The liability is not present until emissions produced exceed allowances held by participant
Measurement of liability	At market value of allowances corresponding to actual emissions	At carrying value of allowances on hand to cover actual emissions; plus market value of allowances to cover excessive emissions	At carrying value of allowances on hand to cover actual emissions (nil or cost); plus market value of allowances to cover excessive emissions

Approach 1 is based on fair value measurement, as for the accounting treatment under IFRIC 3. For the initial measurement, free allowances are measured at market value on the date of receipt. In terms of subsequent measurement, either a

cost model or a revaluation model may be applied. Revalued emissions rights in the revaluation model are recognised in OCI under equity.

Approach 2 is basically the same as Approach 1 except for the way of measuring liability. Emissions rights are initially measured at market value. Subsequently, either the cost method or the revaluation method is applied. The liability is measured at the carrying amount of emissions allowances held. Any amount of emissions in excess of allowances on hand is measured at the market price of emissions rights at the date of reporting.

Approach 3 is the so-called 'net approach', in which emissions allowances are measured at nil value and the liability is recognised when actual emissions exceed the equivalent amount of allowances on hand.

Each accounting approach in Table App 2 is applied below to exemplified transactions in order to illustrate their financial results on financial statements:

- 1 January 201X

Assuming that 1 unit of emission rights represents 1 CO<sub>2</sub> tonne, company A receives 100 units of free allowances to emit 100 CO<sub>2</sub> tonnes for a compliance year from 1 January to 31 December. On the day of receipt, the market price of emissions rights is 10/unit.

- 31 December 201X

Company A emits 110 CO<sub>2</sub> tonnes over the compliance period. The market price of emissions rights is 12/unit.

By creating the entries, the net position on the balance sheet and the net effect on profit/loss in the income statement are demonstrated in Table App 3.

**Table App 3: Financial results under different accounting treatment**

	Approach 1	Approach 2	Approach 3
1Jan	Dr) emissions rights 1000 (100x@10) Cr) government grant 1000		No entry* * Allowances are measured at nil value
31Dec (cost model)	Dr) emissions expense 1320 Cr) emissions liability 1320 (110x@12)	Dr) emissions expense 1120 Cr) emissions liability 1120 (100x@10 + 10x@12)	Dr) emissions expense 120 Cr) emissions liability 120(10x@12)
	Dr) government grant 1000 Cr) emissions income 1000		Not applicable
(revaluation model)	Dr) emissions rights 200 (100x@(12-10)) Cr) OCI* 200 * Other Comprehensive Income (under equity in B/S)		Not applicable
Balance Sheet (B/S) and Income Statement (I/S) with cost model			
B/S (31Dec 201X)	Asset Emissions rights 1000 Liability Emissions liability <u>1320</u> Net asset (320)	Asset Emissions rights 1000 Liability Emissions liability <u>1120</u> Net asset (120)	Liability Emissions liability <u>120</u> Net asset (120)
I/S (31Dec 201X)	Emissions income 1000 Emissions expense <u>1320</u> Net income (320)	Emissions income 1000 Emissions expense <u>1120</u> Net income (120)	Emissions expense <u>120</u> Net income (120)
Balance Sheet (B/S) and Income Statement (I/S) with revaluation model			
B/S (31Dec 201X)	Asset Emissions rights 1200 Liability Emissions liability 1320 Equity OCI <u>200</u> Net asset (320)	Asset Emissions rights 1200 Liability Emissions liability 1120 Equity OCI <u>200</u> Net asset (120)	Liability Emissions liability <u>120</u> Net asset (120)
I/S (31Dec 201X)	Emissions income 1000 Emissions expense <u>1320</u> Net income (320)	Emissions income 1000 Emissions expense <u>1120</u> Net income (120)	Emissions expense <u>120</u> Net income (120)

As shown in Table App 3, Approach 1 gives rise to significantly different net results on the balance sheet and the income statement compared with the other two approaches (i.e. Δ320 vs. Δ120). Regardless of the amount of emissions rights held, the emissions liability and corresponding expense should be

recognised at the fair value of emissions rights. Recognising both the asset and the liability at a gross amount may have a significant impact on the financial numbers compared with other approaches.

Meanwhile, the net effect on profit/loss under Approaches 2 and 3 turns out to be equivalent (i.e.  $\Delta 120$  in Table App 3). However, the balance sheet is different. Under Approach 2, the asset and the liability are displayed at a gross amount while under Approach 3 a net amount of liability is only shown as much as actual emissions exceed the equivalent amount of emissions rights held by an entity. According to Approach 3, the accounting treatment is apparently simpler and easier as a whole. Although the net effect on profit/loss is equal under Approaches 2 and 3, in terms of the impact on the debt ratio, Approach 3 may be more beneficial as it demonstrates a lower level of debt ratio if an entity is holding a sufficient amount of emissions rights to offset actual emissions. In effect, Approach 3 has been predominantly used in practice.

## **Bibliography**

- Adams, C. and Narayanan, V. (2007). The 'standardization' of sustainability reporting. *Sustainability Accounting and Accountability*, 70-85.
- Aguilera, R.V., Rupp, D.E., Williams, C.A. and Ganapathi, J. (2007). Putting the S back in corporate social responsibility: A multilevel theory of social change in organizations. *Academy of management review*, 32(3):836-863.
- Allen, A. and Ramanna, K. (2013). Towards an understanding of the role of standard setters in standard setting. *Journal of Accounting and Economics*, 55(1):66-90.
- Altheide, D.L. (2000). Tracking discourse and qualitative document analysis. *Poetics*, 27(4):287-99.
- ANC (2012). *Proposals for Accounting of GHG Emission Rights Reflecting Companies' Business Models*. Paris: Autorité des Normes Comptables.
- Anderson, D. and Suzuki, T. (2014). Financialisation of global markets: The role of private sector accounting standard setting. *Law and Financial Markets Review*, 8(1):20-6.
- Andrew, J., Kaidonis, M.A. and Andrew, B. (2010). Carbon tax: Challenging neoliberal solutions to climate change. *Critical Perspectives on Accounting*, 21(7):611-8.
- Ang, N., Sidhu, B.K. and Gallery, N. (2000). The incentives of Australian public companies lobbying against proposed superannuation accounting standards. *Abacus*, 36(1):40-70.
- Ascui, F. (2014). A review of carbon accounting in the social and environmental accounting literature: What can it contribute to the debate? *Social and Environmental Accountability Journal*, 34(1):6-28.
- Ascui, F. and Lovell, H. (2011). As frames collide: Making sense of carbon accounting. *Accounting, Auditing & Accountability Journal*, 24(8):978-99.

- Ascui, F. and Lovell, H. (2012) Carbon accounting and construction of competence. *Journal of Cleaner Production*, 36:48-59.
- Atkinson, P. and Coffey, A. (2004). Analysing documentary realities. In D. Silverman (ed.), *Qualitative Research*. London: Sage Publications Ltd, pp.56-75.
- Bailey, I. and Maresh, S. (2009). Scales and networks of neoliberal climate governance: The regulatory and territorial logics of European Union emissions trading. *Transactions of the Institute of British Geographers*, 34(4):445-61.
- Baldwin, R. (2008). Regulation lite: The rise of emissions trading. *Regulation & Governance*, 2:193-215.
- Bamber, M. and McMeeking, K. (2016). An examination of international accounting standard-setting due process and the implications for legitimacy. *British Accounting Review*, 48(1):59-73.
- Barker, R. and Schulte, S. (2015). Representing the market perspective: Fair value measurement for non-financial assets. *Accounting, Organizations and Society*. Available at: doi:10.1016/j.aos.2014.12.004.
- Barrett, S. (2010). *Why Cooperate? The Incentive to Supply Global Public Goods*. Oxford: Oxford University Press.
- Bebbington, J. and Larrinaga-Gonzalez, C. (2008). Carbon trading: Accounting and reporting issues. *European Accounting Review*, 17(4):697-717.
- Black, C.M. (2013). Accounting for carbon emission allowances in the European Union: In search of consistency. *Accounting in Europe*, 10(2):223-39.
- Bloomberg New Energy Finance (2013). *South Korea's Emissions Trading Scheme: White Paper*. London: Bloomberg Finance L.P.
- Booth, P. and Cocks, N. (1990). Critical research issues in accounting standard setting. *Journal of Business Finance & Accounting*, 17(4):511-28.

- Bowen, F. and Wittneben, B. (2011). Carbon accounting: Negotiating accuracy, consistency and certainty across organisational fields. *Accounting, Auditing & Accountability Journal*, 24(8):1022-36.
- Bowen, G.A. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal*, 9(2):27-40.
- Botzem, S. (2012). *The Politics of Accounting Regulation: Organizing Transnational Standard Setting in Financial Reporting*. Cheltenham: Edward Elgar.
- Braun, M. (2009). The evolution of emissions trading in the European Union: The role of policy networks, knowledge and policy entrepreneurs. *Accounting, Organizations and Society*, 34(3-4):469-87.
- Bryman, A. and Bell, E. (2011). *Business Research Methods*, 3rd ed. Oxford: Oxford University Press.
- Burchell, S., Clubb, C., Hopwood, A., Hughes, J. and Nahapiet, J. (1980). The roles of accounting in organizations and society. *Accounting, Organizations and Society*, 5(1):5-27.
- Burlaud, A. and Colasse, B. (2011). International accounting standardisation: Is politics back? *Accounting in Europe*, 8(1):23-47.
- Cairns, D. (2013). Fair value and financial reporting. In C. v. Mourik and P. Walton (eds), *The Routledge Companion to Accounting, Reporting and Regulation*. London: Routledge, pp.128-43.
- Callon, M. (2009). Civilizing markets: Carbon trading between in vitro and in vivo experiments. *Accounting, Organizations and Society*, 34(3):535-548.
- Carlson, C., Burtraw, D., Cropper, M. and Palmer, K.L. (2000). Sulfur dioxide control by electric utilities: What are the gains from trade? *Journal of Political Economy*, 108(6):1292-326.
- Carpenter, V.L. and Feroz, E.H. (2001). Institutional theory and accounting rule choice: An analysis of four US state governments' decisions to adopt



- generally accepted accounting principles. *Accounting, Organizations and Society*, 26(7):565-96.
- Chambers, R.J. (1998). Wanted: Foundations of accounting measurement. *Abacus*, 34(1):36-47.
- Chang, H.J., Park, H.J. and Yoo, C.G. (1998). Interpreting the Korean crisis: financial liberalisation, industrial policy and corporate governance. *Cambridge Journal of Economics*, 22(6):735-46.
- Chua, W.F. (1988). Interpretive sociology and management accounting research: A critical review. *Accounting, Auditing & Accountability Journal*, 1(2):59-79.
- Clarkson, M.B.E. (1995). A stakeholder framework for analyzing and evaluating corporate social performance. *Academy of Management Review*, 20(1): 92-117.
- Clò, S. (2009). The effectiveness of the EU emissions trading scheme. *Climate Policy*, 9(3):227-41.
- Convery, F., Ellerman, D. and de Perthuis, C. (2008). The European carbon market in action: Lessons from the first trading period. *Journal for European Environmental & Planning Law*, 5(2):215-33.
- Convery, F.J. (2009). Origins and development of the EU ETS. *Environmental and Resource Economics*, 43:391-412.
- Convery, F.J. and Redmond, L. (2007). Market and price developments in the European Union emissions trading scheme. *Review of Environmental Economics and Policy*, 1(1):88-111.
- Cook, A. (2009). Emission rights: From costless activity to market operations. *Accounting, Organizations and Society*, 34(3):456-68.
- Corbin, J.M. and Strauss, A., eds (2008). *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*, 3rd ed. Thousand Oaks, CA: Sage Publications.

- Costa, E. and Agostini, M. (2016). Mandatory disclosure about environmental and employee matters in the reports of Italian-listed corporate groups. *Social and Environmental Accountability Journal*, 1-24.
- Cracea, A. (2012). Direct tax treatment of greenhouse gas emission allowances within the European Union. *European Taxation*, 52(12), sec 4.1.
- Creswell, J.W., ed. (2003). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, 2nd ed. Thousand Oaks, CA: Sage Publications.
- Creswell, J.W., ed. (2013). *Qualitative Inquiry and Research Design: Choosing among Five Approaches*, 3rd ed. Los Angeles, CA: SAGE Publications.
- Danjou, P. and Walton, P. (2012). The legitimacy of the IASB. *Accounting in Europe*, 9(1):1-15.
- Dean, G. (2008). EDITORIAL. *Abacus*, 44(2):i-viii.
- de Villiers, C., Rinaldi, L. and Unerman, J. (2014). Integrated Reporting: Insights, gaps and an agenda for future research. *Accounting, Auditing and Accountability Journal*, 27(7):1042-67.
- Deegan, C. (2000). *Financial Accounting Theory*. New York: McGraw Hill Book Company.
- Deegan, C. (2002). Introduction: The legitimising effect of social and environmental disclosures – A Theoretical Foundation. *Accounting, Auditing & Accountability Journal*, 15(3):282-311.
- Deegan, C. and Unerman, J., eds (2006). *Financial Accounting Theory*, European edition. Maidenhead: McGraw Hill Education.
- Deephouse, D.L. and Suchman, M. (2008). Legitimacy in organizational institutionalism. In R. Greenwood, C. Oliver, R. Suddaby and K. Sahlin (eds), *The SAGE Handbook of Organizational Institutionalism*. London: SAGE Publications Ltd, pp.49-78.
- Demski, J.S. (1973). The general impossibility of normative accounting standards. *The Accounting Review*, 48(4):718-23.

- Denscombe, M. (1998). *The Good Research Guide: For Small-Scale Social Research Projects*. Buckingham: Open University Press.
- Denzin, N.K. and Lincoln, Y.S. (2005). Introduction: The discipline and practice of qualitative research. In N.K. Denzin and Y.S. Lincoln (eds), *The SAGE Handbook of Qualitative Research*. London: SAGE Publications, pp.1-32.
- DiMaggio, P.J. and Powell, W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 48:147-60.
- Durocher, S. and Fortin, A. (2010). Standard-setting institutions' user-oriented legitimacy management strategies. *Qualitative Research in Accounting & Management*, 7(4):476-504.
- Durocher, S., Fortin, A. and Cote, L. (2007). Users' participation in the accounting standard-setting process: A theory-building study. *Accounting, Organizations and Society*, 32(1-2):29-59.
- EC (2003a). Communication from the Commission on guidance to assist Member States in the implementation of the criteria listed in Annex III to Directive 2003/87/EC establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC, and on the circumstances under which force majeure is demonstrated. European Commission, COM/2003/0830 final.
- EC (2003b). 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.
- EC (2005). Communication from the Commission: Further guidance on allocation plans for the 2008 to 2012 trading period of the EU Emission Trading Scheme. European Commission, COM/2005/0703 final.
- EC (2009). 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.

EC (2013). *The EU Emissions Trading System*. Luxembourg: European Commission.

EFRAG (2012). *Draft Comment Paper on Emissions Trading Schemes*. Brussels: European Financial Reporting Advisory Group.

EFRAG (2013). *Emissions Trading Schemes: Feedback Statement on Comment Papers*. Brussels: European Financial Reporting Advisory Group.

Egenhofer, C. (2007). The making of the EU emissions trading scheme. *European Management Journal*, 25(6):453-63.

Ellerman, A. (2004). *The U.S. SO<sub>2</sub> Cap-and-Trade Programme*. Paris: OECD Publishing.

Ellerman, A.D. and Buchner, B.K. (2007). The European Union emissions trading scheme: Origins, allocation, and early results. *Review of Environmental Economics and Policy*, 1(1):66-87.

Ellerman, A.D., Convery, F.J. and De Perthuis, C. (2010). *Pricing Carbon: The European Union Emissions Trading Scheme*. Cambridge: Cambridge University Press.

Engels, A. (2009). The European Emissions Trading Scheme: An exploratory study of how companies learn to account for carbon. *Accounting, Organizations and Society*, 34(3):488-498.

Fallan, E. (2016). Environmental reporting regulations and reporting practices. *Social and Environmental Accountability Journal*, 36(1):34-55.

Fereday, J. and Muir-Cochrane, E. (2006). Demonstrating rigor using thematic analysis: A hybrid approach of inductive and deductive coding and theme development. *International Journal of Qualitative Methods*, 5(1): art. 7.

Flick, U. (2006). *An Introduction to Qualitative Research*, 3rd ed. London: SAGE.

- Fogarty, T.J., Hussein, M.E.A. and Ketz, J.E. (1994). Political aspects of financial accounting standard setting in the USA. *Accounting, Auditing & Accountability Journal*, 7(4):24-46.
- Fornaro, J.M., Winkelman, K.A. and Glodstein, D. (2009). Accounting for emissions: Emerging issues and the need for global accounting standards. *Journal of Accountancy*, July:40-47.
- Freeman, R.E. (1984). *Strategic management: A stakeholder approach*. Boston: Pitman.
- Freeman, R.E. (1994). The politics of stakeholder theory: Some future directions. *Business ethics quarterly*, 4(4):409-421.
- Freeman, R.E. and Reed, D.L. (1983). Stockholders and stakeholders: A new perspective on corporate governance. *California management review*, 25(3):88-106.
- Freestone, D. (2009). The international climate change legal and institutional framework: An overview. In D. Freestone and C. Streck (eds), *Legal Aspects of Carbon Trading: Kyoto, Copenhagen and Beyond*. Oxford: Oxford University Press, Ch. 1.
- FSC (2014). *Act on External Audit of Stock Companies* (in Korean). Seoul: Financial Services Commission.
- Gavens, J.J., Carnegie, G.D. and Gibson, R.W. (1989). Company participation in the Australian accounting standards setting process. *Accounting & Finance*, 29(2):47-58.
- Georgiou, G. (2002). Corporate non-participation in the ASB standard-setting process. *The European Accounting Review*, 11(4):699-722.
- Georgiou, G. (2004). Corporate lobbying on accounting standards: Methods, timing and perceived effectiveness. *Abacus*, 40(2):219-37.

- Georgiou, G. (2005). Investigating corporate management lobbying in the UK accounting standard-setting process: A multi-issue/multi-period approach. *Abacus*, 41(3):323-47.
- Georgiou, G. (2010). The IASB standard-setting process: Participation and perceptions of financial statement users. *The British Accounting Review*, 42(2):103-18.
- Georgiou, O. and Jack, L. (2011). In pursuit of legitimacy: A history behind fair value accounting. *The British Accounting Review*, 43(4):311-23.
- Giner, B. (2014). Accounting for emission trading schemes: A still open debate. *Social and Environmental Accountability Journal*, 34(1):45-51.
- Giner, B. and Arce, M. (2012). Lobbying on accounting standards: Evidence from IFRS 2 on share-based payments. *The European Accounting Review*, 21(4):655-91.
- GIR (2014). *Details of Target Management System in 2013*. Seoul: Greenhouse Gas Inventory and Research Center of Korea.
- Gledhill, R., Dolson, M., French, R., Rose, J. and Marcu, A. (2007a). *Trouble-Entry Accounting – Revisited: Uncertainty in Accounting for the EU Emissions Trading Scheme and Certified Emission Reductions*. London: PricewaterhouseCoopers and International Emissions Trading Association.
- Gledhill, R., French, R., Rose, J. and Johnson, J. (2007b). *Trouble-Entry Accounting*. London: PricewaterhouseCoopers and International Emissions Trading Association.
- Gray, R. (2001). Thirty Years of Social Accounting, Reporting and Auditing: What (If Anything) Have we Learnt? *Business Ethics: A European Review*, 10(1):9-15
- Gray, R. (2002). The social accounting project and Accounting, Organizations and Society: Privileging engagement, imaginings, new accountings and pragmatism over critique? *Accounting, Organizations and Society*, 27:687-708.

- Gray, R, Kouhy, R and Lavers, S. (1995). Corporate Social and Environmental Reporting: A Review of the Literature and a Longitudinal Study of UK Disclosure. *Accounting, Auditing and Accountability Journal*, 8(2):47-77.
- Gray, R, Owen, D and Adams, C. (1996). *Accounting and Accountability*. Harlow: Prentice Hall.
- Gray, R., Adams, C.A., and Owen, D. (2014). *Accountability, Social Responsibility and Sustainability*. Harlow: Prentice Hall.
- Guba, E.G. and Lincoln, Y.S. (2005). Paradigmatic controversies, contradictions, and emerging influences. In N.K. Denzin and Y.S. Lincoln (eds), *The Sage Handbook of Qualitative Research* (3rd ed.). Thousand Oaks, CA: Sage, pp.191-215.
- Guthrie, J.E. and Parker, L.D. (1989). Corporate Social Reporting: A Rebuttal of Legitimacy Theory. *Accounting and Business Research*, 9(76):343-352.
- Hasnas, J. (1998). The normative theories of business ethics: A guide for the perplexed. *Business Ethics Quarterly*, 8(1):19–42.
- Haupt, M. and Ismer, R. (2013). The EU emissions trading system under IFRS: Towards a ‘true and fair view’. *Accounting in Europe*, 10(1):71-97.
- Hepburn, C. and Stern, N. (2008). A new global deal on climate change. *Oxford Review of Economic Policy*, 24(2):259-79.
- Hitomi, K. (2002). Historical trends and the present state of Korean industry and manufacturing. *Technovation*, 22(7):453-62.
- Hodges, R. and Mellett, H. (2002). Investigating standard setting: Accounting for the United Kingdom’s private finance initiative. *Accounting Forum*, 26(2):126-51.
- Hood, C. (2010). *Reviewing Existing and Proposed Emissions Trading Systems*. Paris: International Energy Agency.
- Hopwood, A.G. and Miller, P., eds (1994). *Accounting as Social and Institutional Practice*. Cambridge: Cambridge University Press.

- Horton, J., Macve, R. and Struyven, G. (2004). Qualitative research: Experiences in using semi-structured interviews. In C. Humphrey (ed.), *The Real Life Guide to Accounting Research*. Amsterdam: Elsevier, pp.339-57.
- Hybels, R.C. (1995). On legitimacy, legitimation, and organizations: A critical review and integrative theoretical model. *Academy of Management Proceedings*, 1995(1):241-245.
- Hyun, O. (1999). *Korea's corporate governance system under the remedies*. Paris: OECD.
- IASB (1984). *IAS 20: Accounting for Government Grants and Disclosure of Government Assistance*. London: IASB.
- IASB (2004a). *IAS 36: Impairment of Assets*. London: IASB.
- IASB (2004b). *IAS 38: Intangible Assets*. London: IASB.
- IASB (2005). *IAS 37: Provisions, Contingent Liabilities and Contingent Assets*. London: IASB.
- IASB (2007). *IASB Meeting December 2007*. Available at: <http://www.ifrs.org/Current-Projects/IASB-Projects/Emission-Trading-Schemes/Meeting-Summaries/Pages/IASB-Meeting-December-2007.aspx> [accessed 21 May 2015].
- IASB (2010a). *Balance Sheet Presentation of the Assets and Liabilities in an Emission Trading Scheme*. London: IASB.
- IASB (2010b). *Emission Trading Schemes: Background and History*. London: IASB.
- IASB (2010c). *Initial and Subsequent Measurement of Purchased Allowances (Assets) in a Cap and Trade Scheme*. London: IASB.
- IASB (2010d). *Recognition of a Liability for Emissions in Excess of Initial Allocation, and Measurement of Liabilities in an Emission Trading Scheme*. London: IASB.



- IASB (2010e). *The Conceptual Framework for Financial Reporting*. London: IASB.
- IASB (2013). *IASB Due Process Handbook*. London: IFRS Foundation.
- IASB (2014a). *Charter: The IASB and Other Accounting Standard-Setters*. London: IASB.
- IASB (2014b). *Emission Trading Schemes: Summary of Accounting Issues*. London: IASB.
- IASB (2014c). *Emissions Trading Schemes: Background Scheme Information*. London: IASB.
- IASB (2014d). *The Research Programme*. London: IASB.
- IASB (2015). *Pollutant Pricing Mechanisms (formerly Emissions Trading Schemes)*. London: IASB
- Jaehn, F. and Letmathe, P. (2010). The emissions trading paradox. *European Journal of Operational Research*, 202(1):248-54.
- Johnson, S.B. and Solomons, D. (1984). Institutional legitimacy and the FASB. *Journal of Accounting and Public Policy*, 3(3):165-83.
- Jones, R. and Yoo, B. (2012). *Achieving the 'Low Carbon, Green Growth' Vision in Korea*. Paris: OECD.
- Jordan, G. (1991). Effective lobbying: The hidden hand. In G. Jordan (ed.), *The Commercial Lobbyists*. Aberdeen: Aberdeen University Press.
- Jorissen, A., Lybaert, N., Orens, R. and Van Der Tas, L. (2012). Formal participation in the IASB's due process of standard setting: A multi-issue/multi-period analysis. *The European Accounting Review*, 21(4):693-729.
- Jorissen, A., Lybaert, N., Orens, R. and Van Der Tas, L. (2013). A geographic analysis of constituents' formal participation in the process of international accounting standard setting: Do we have a level playing field? *Journal of Accounting and Public Policy*, 32(4):237-70.

- Jorissen, A., Lybaert, N. and Vande Poel, K. (2006). Lobbying towards a global standard setter: Do national characteristics matter? An analysis of the comment letters written to the IASB. In G. Gregoriou and M. Gaber (eds), *International Accounting: Standards, Regulations, Financial Reporting*. Oxford: Butterworth Heinemann, pp.1-40.
- KAI and KASB (2008). *KAI/KASB 2007 Annual Report* (in Korean). Seoul: Korean Accounting Institute.
- Kang, S., Oh, J. and Kim, H. (2012). *Korea's Low Carbon Green Growth Strategy*. Paris: OECD.
- KASB (2003). *The Conceptual Framework for Financial Report* (in Korean). Seoul: Korean Accounting Standards Board.
- KASB (2011a). *Preface to Statements of Korean Accounting Standards* (in Korean). Seoul: Korean Accounting Standards Board.
- KASB (2011b). *The Conceptual Framework for Financial Reporting under K-IFRS*. Seoul: Korean Accounting Standards Board.
- KASB (2013). *IFRS Adoption and Implementation in Korea, and the Lessons Learned*. Seoul: Korean Accounting Standards Board.
- KASB (2014a). *Agenda Paper: SKAS No. 33 'Greenhouse gas emission permits and emission liability'* (in Korean). Seoul: Korean Accounting Standards Board.
- KASB (2014b). *KAI Forum: Exposure draft of 'Greenhouse-Gas Emission Permits and Emission Liability'* (in Korean). In *KAI Forum*. Seoul: Korean Accounting Institute.
- KASB (2014c). *Review of the Law of the Korean ETS* (in Korean). Seoul: Korean Accounting Institute.
- KASB (2014d). *SKAS No. 33: Greenhouse Gas Emission Permits and Emission Liability* (in Korean). Seoul: Korean Accounting Institute.

- Kleinman, G. and Hossain, D. (2009). Issue networks, value structures and the formulation of accounting standards: An exercise in theory building. *Group Decision and Negotiation*, 18(1):5-26.
- KOFIA (2013), *2013 Capital Market in Korea*. Seoul: Korea Financial Investment Association (KOFIA).
- Königsgruber, R. (2009). A political economy of accounting standard setting. *Journal of Management & Governance*, 14(4):277-95.
- Kosi, U. and Reither, A. (2014). Determinants of corporate participation in the IFRS 4 (Insurance Contracts) replacement process. *Accounting in Europe*, 11(1):89-112.
- Kossoy, A. and Guigon, P. (2012). *State and Trends of the Carbon Market 2012*. Washington DC: Carbon Finance at the World Bank.
- KPMG (2008). *Accounting for Carbon: The Impact of Carbon Trading on Financial Statements*. London: KPMG LLP.
- KPMG (2013). *Research on accounting and taxation issues of emissions rights* (In Korean). Seoul: Greenhouse Gas Inventory and Research Center (GIR).
- Kruger, J., Oates, W.E. and Pizer, W.A. (2007). Decentralization in the EU emissions trading scheme and lessons for global policy. *Review of Environmental Economics and Policy*, 1(1):112-33.
- Kvale, S. and Brinkmann, S., eds (2009). *Interviews: Learning the Craft of Qualitative Research Interviewing*, 2nd edition. London: Sage.
- Kwak, S.-K., Park, K.-H., Lee, M. and Hwang, L.-S. (2010). The role of the national accounting standards setter after the adoption of the International Financial Reporting Standards in South Korea. *Korean Accounting Journal*, 19(2):505-41.
- Kwok, W.C.C. and Sharp, D. (2005). Power and international accounting standard setting: Evidence from segment reporting and intangible assets projects. *Accounting, Auditing & Accountability Journal*, 18(1):74-99.

- Larrinaga, C. (2014). Carbon accounting and carbon governance. *Social and Environmental Accountability Journal*, 34(1):1-5.
- Larson, R. (2007). Constituent participation and the IASB's International Financial Reporting Interpretations Committee. *Accounting in Europe*, 4(2):207-54.
- Larson, R. and Herz, P. (2013). A multi-issue/multi-period analysis of the geographic diversity of IASB comment letter participation. *Accounting in Europe*, 10(1):99-151.
- Larson, R.K. (2002). The IASC's search for legitimacy: An analysis of the IASC's Standing Interpretations Committee. *Advances in International Accounting*, 15:79-120.
- Lee, S. (2010). *Emissions Trading Scheme: Economic Costs and Problematic Issues* (in Korean). Seoul: Korea Economic Research Institute.
- Lillis, A.M. (1999). A framework for the analysis of interview data from multiple field research sites. *Accounting & Finance*, 39(1):79-105.
- Lindblom, C.K. (1993). The implications of organizational legitimacy for corporate social performance and disclosure. Paper read at Critical perspectives on Accounting Conference, New York.
- Lohmann, L. (2009). Toward a different debate in environmental accounting: The cases of carbon and cost-benefit. *Accounting, Organizations and Society*, 34:499-534.
- Lovell, H. (2014). Climate change, markets and standards: The case of financial accounting. *Economy and Society*, 43(2):260-84.
- Lovell, H., Bebbington, J., Larrinaga, C. and Sales de Aguiar, T.R. (2013). Putting carbon markets into practice: A case study of financial accounting in Europe. *Environment and Planning C: Government and Policy*, 31(4):741-57.

- Lovell, H. and MacKenzie, D. (2011). Accounting for carbon: The role of accounting professional organisations in governing climate change. *Antipode*, 43(3):704-30.
- Lovell, H., Sales de Aguiar, T.R., Bebbington, J. and Larrinaga-Gonzalez, C. (2010). *Accounting for Carbon*. London: Certified Accountants Educational Trust.
- Luthardt, U. and Zimmermann, J. (2009). A European view on the legitimacy of accounting procedures: Towards a deliberative-accountability framework for analysis. *Research in Accounting Regulation*, 21(2):79-88.
- Luque-Vílchez, M., and Larrinaga, C. (2016). Reporting models do not translate well: Failing to regulate CSR reporting in Spain. *Social and Environmental Accountability Journal*, 36(1):56-75.
- MacKenzie, D. (2009). Making things the same: Gases, emission rights and the politics of carbon markets. *Accounting, Organizations and Society*, 34(3):440-55.
- Mahoney, R.J. (1997). Shareowners, stakeholders, and enlightened self-interest. *Business and the Contemporary World*, 9:325-336.
- Mann, R.F. (2009). The case for the carbon tax: How to overcome politics and find our green destiny. *Environmental Law Reporter*, 39:10118-126.
- May, T. (2001). *Social Research: Issues, Methods and Process*, 3rd ed. Buckingham: Open University Press.
- McKeith, J. and Collins, B. (2013). *Financial Accounting and Reporting*, 2nd ed. New York: McGraw-Hill Higher Education.
- McKerchar, M. (2010). *Design and Conduct of Research in Tax Law and Accounting*. Sydney: Lawbook Co.
- McKerchar, M. (2012). Designing and administering surveys. In L. Oats (ed.), *Taxation: A Fieldwork Research Handbook*. London: Routledge, pp.34-42.

- Merrill, A.P. (1991). The inefficient politics of standard setting. *Journal of Accounting Education*, 9:399-404.
- Meyer, J.W. and Rowan, B. (1977). Institutionalized organizations: Formal structure as myth and ceremony. *American Journal of Sociology*, 83(2):340-63.
- Miller, P. and Power, M. (2013). Accounting, organizing, and economizing: Connecting accounting research and organization theory. *The Academy of Management Annals*, 7(1):557-605.
- Milne, M. J., and Grubnic, S. (2011). Climate change accounting research: keeping it interesting and different. *Accounting, Auditing and Accountability Journal*, 24 (8):948-977.
- Mitchell, R.K., Agle, B.A., and Wood, D.J. (1997). Towards a theory of Stakeholder identification: Defining the Principle of Who and What Really Counts. *Academy of Management Review*, 22(4):853 -86.
- Monciardini, D. (2016). The 'Coalition of the Unlikely' Driving the EU Regulatory Process of Non-Financial Reporting. *Social and Environmental Accountability Journal*, 36(1):76-89.
- Moore, D.R.J. (2011). Structuration theory: The contribution of Norman Macintosh and its application to emissions trading. *Critical Perspectives on Accounting*, 22(2):212-27.
- MOCIE, FKI, and AT Kearney (2006). *Industrial innovation strategies for 2015*. Seoul: Federation of Korean Industries
- MOSF (2014). *Direction for the 3-year Plan for Economic Innovation* (in Korean). Seoul: Ministry of Strategy and Finance.
- Napier, C. (2013). English-language theories of financial reporting. In C. v. Mourik and P. Walton (eds), *The Routledge Companion to Accounting, Reporting and Regulation*. Abingdon: Routledge, pp.93-109.

- Nasi, J., Nasi, S., Phillips, N. and Zyglidopoulos, S. (1997). The evolution of corporate social responsiveness: An exploratory study of Finnish and Canadian forestry companies. *Business and Society*, 36(3):296-321.
- Neu, D., Warsame, H. and Pedwell, K. (1998). Managing public impressions: Environmental disclosures in annual reports. *Accounting, Organizations and Society*, 23(3):265-282.
- Neuman, W.L. (1994). *Social Research Methods: Qualitative and Quantitative Approaches*, 2nd ed. Boston: Allyn and Bacon.
- Nobes, C.W. (1998). Towards a General Model of the Reasons for International Differences in Financial Reporting. *Abacus*, 34(2):162-186.
- Nobes, C.W. (2006a). A Judgemental International Classification of International Financial Reporting Practices. *Journal of Business, Finance and Accounting*, 10(1):1-19.
- Nobes, C.W. (2006b). The Survival of International Differences under IFRS: Towards a Research Agenda. *Accounting and Business Research*, 36(3):233-245.
- Oats, L. (2012a). Gathering and interpreting qualitative data. In L. Oats (ed.), *Taxation: A Fieldwork Research Handbook*. London: Routledge, pp.19-25.
- Oats, L. (2012b). On methods and methodology. In L. Oats (ed.), *Taxation: A Fieldwork Research Handbook*. London: Routledge, pp.9-18.
- OECD (2001). *Domestic Transferable Permits for Environmental Management*. Paris: OECD Publishing.
- OECD (2002). *Implementing Domestic Tradable Permits*. Paris: OECD Publishing.
- OECD (2004). *Greenhouse Gas Emissions Trading and Project-Based Mechanisms*. Paris: OECD Publishing.
- OECD (2009a). *Roundtable on Competition Policy, Industrial Policy and National Champions*. Paris: OECD Publishing.

- OECD (2009b). *Responding to the Economic Crisis: Fostering Industrial Restructuring and Renewal*. Paris: OECD Publishing.
- OECD (2012a). *Industrial Policy and Territorial Development: Lessons from Korea*. Paris: OECD Publishing.
- OECD (2012b). *OECD Economic Surveys: Korea*. Paris: OECD Publishing.
- OECD (2014). *Industry and Technology Policies in Korea*. Paris: OECD Publishing.
- OECD/IEA (2005). *Act Locally, Trade Globally: Emissions Trading for Climate Policy*. Paris: International Energy Association Publications.
- Orens, R., Jorissen, A., Lybaert, N. and Van Der Tas, L. (2011). Corporate lobbying in private accounting standard setting: Does the IASB have to reckon with national differences? *Accounting in Europe*, 8(2):211-34.
- Owen, D. (2004). Adventures in social and environmental accounting and auditing research: a personal reflection. *The Real Life Guide to Accounting Research*, pp.23-36.
- Owen, D. (2008). Chronicles of wasted time? A personal reflection on the current state of and future prospects for social and environmental accounting research. *Accounting, Auditing and Accountability Journal*, 21(2):240-267.
- Park, C., Jung, D., Kim, B., Lee, Y. and Park, H. (2012). *Are You Ready for Trading Carbon?* (in Korean). Seoul: Doyosei.
- Park, H. and Hong, W.K. (2014). Korea's emission trading scheme and policy design issues to achieve market-efficiency and abatement targets. *Energy Policy*, 75(1):73-83
- Parker, L.D. (2005). Social and environmental accountability research: A view from the commentary box. *Accounting, Auditing and Accountability Journal*, 18(6):842-860.
- Parker, C.N., ed. (2012). *Comparative International Accounting*, 12th ed. Harlow: Pearson.



- Parsons, T. and Jones, I. (1960). *Structure and process in modern societies* (Vol. 3). New York: Free Press.
- Pasfield, B. and Paeffgen, E. (2013). How to enforce a carbon tax: Lessons from the Montreal protocol and the US experience with the ozone depleting chemicals tax. *Vermont Journal of Environmental Law*, 14:389-409.
- PCGG (2010a). *Green Growth Korea: 2009 White Paper* (in Korean). Seoul: Presidential Committee on Green Growth.
- PCGG (2010b). *Road to Our Future: Green Growth*. Seoul: Presidential Committee on Green Growth.
- PCGG (2012a). *Public Hearing for the Presidential Decree on Korean ETS* (in Korean). Seoul: Presidential Committee on Green Growth.
- PCGG (2012b). *Korea Will Launch Emissions Trading Scheme in 2015* (in Korean). Seoul: Presidential Committee on Green Growth, Prime Minister's Secretariat.
- Perks R.W. (1993). *Accounting and Society*. Chapman and Hall: London.
- PMO (2010). *Framework Act and its Presidential Decree on Low Carbon and Green Growth* (in Korean). Seoul: Prime Minister's Office (PMO).
- PMO (2012). *The Act and its Presidential Decree on Allocation and Trading of Greenhouse Gas Emission Permits* (in Korean). Seoul: Prime Minister's Office (PMO).
- Pohlmann, M. (2009). The European Union emissions trading scheme. In D. Freestone and C. Streck (eds), *Legal Aspects of Carbon Trading*. Oxford: Oxford University Press, pp.338-66.
- Pope, J. and Owen, A.D. (2009). Emission trading schemes: Potential revenue effects, compliance costs and overall tax policy issues. *Energy Policy*, 37(11):4595-603.
- Quirke, B. (1996). Putting communication on management's agenda. *Journal of Communication Management*, 1(1):67-79.

- Ratnatunga, J. and Jones, S. (2012). An inconvenient truth about accounting: The paradigm shift required in carbon emissions reporting and assurance. In S. Jones and J. Ratnatunga (eds), *Contemporary Issues in Sustainability Accounting, Assurance and Reporting*. Bingley: Emerald Group Publishing, pp.71-100.
- Reinaud, J. and Philibert, C. (2007). *Emission Trading: Trends and Prospects*. Paris: OECD/IEA.
- Richardson, A. and Eberlein, B. (2011). Legitimizing transnational standard-setting: The case of the International Accounting Standards Board. *Journal of Business Ethics*, 98(2):217-45.
- Richardson, A.J. (1987). Accounting as a legitimating institution. *Accounting, Organizations and Society*, 12(4):341-355.
- Richelle, I. (2008). Emission trading: Accounting and tax regime in Belgium. *Bulletin for International Taxation*, 62(8/9):414-21.
- Schalow, C.M. (1995). Participation choice: The exposure draft for post-retirement benefits other than pensions. *Accounting Horizons*, 9:27-41.
- Schaltegger, S. and Csutora, M. (2012). Carbon accounting for sustainability and management: Status quo and challenges. *Journal of Cleaner Production*, 36: 1-16.
- Schmalensee, R. and Stavins, R.N. (2013). The SO<sub>2</sub> allowance trading system: The ironic history of a grand policy experiment. *The Journal of Economic Perspectives*, 27(1):103-22.
- Sinclair, R. and Bolt, R. (2013). Third sector accounting standard setting: Do third sector stakeholders have voice? *Voluntas: International Journal of Voluntary and Nonprofit Organizations*, 24(3):760-84.
- Skjærseth, J.B. and Wettstad, J. (2008). Implementing EU emissions trading: Success or failure? *International Environmental Agreements: Politics, Law and Economics*, 8(3):275-90.

- Skjærseth, J.B. and Wettestad, J. (2009). The origin, evolution and consequences of the EU emissions trading system. *Global Environmental Politics*, 9(2):101-22.
- Skjærseth, J.B. and Wettestad, J. (2010). Fixing the EU emissions trading system? Understanding the post-2012 changes. *Global Environmental Politics*, 10(4):101-23.
- Solomon, J. and Maroun, W. (2012). *Integrated reporting: the influence of King III on social, ethical and environmental reporting*. London: Association of Chartered Certified Accountants.
- Solomon, J.F., Solomon, A., Norton, S.D. and Joseph, N.L. (2011). Private climate change reporting: An emerging discourse of risk and opportunity? *Accounting, Auditing & Accountability Journal*, 24(8):1119-48.
- Solomons, D. (1978). The politicization of accounting. *Journal of Accountancy*, 146.5 (1978):65-72.
- Starbatty, N. (2010). *Emission Trading Schemes Research Paper*. London: International Accounting Standards Board.
- Stechemesser, K. and Guenther, E. (2012). Carbon accounting: A systematic literature review. *Journal of Cleaner Production*, 36:17-38.
- Stern, N.H. (2006). *The Economics of Climate Change*. London: HM Treasury.
- Suchman, M.C. (1995). Managing legitimacy: Strategic and institutional approaches. *Academy of Management Review*, 20(3):571-610.
- Sutton, T.G. (1984). Lobbying of accounting standard-setting bodies in the UK and the USA: A Downsian analysis. *Accounting, Organizations & Society*, 9(1):81-95.
- Tandy, P.R. and Wilburn, N.L. (1992). Constituent participation in standard-setting: The FASB's first 100 statements. *Accounting Horizons*, 6(2):47-58.
- Teixeira, A. (2014). The International Accounting Standards Board and Evidence-Informed Standard-Setting. *Accounting in Europe*, 11 (1):5-12.

- Tsutsumi, M., Jones, R.S. and Cargill, T.F. (2010). *The Korean financial system: Overcoming the global financial crisis and addressing remaining problems*. Paris: OECD.
- Tutticci, I., Dunstan, K. and Holmes, S. (1994). Respondent lobbying in the Australian accounting standard-setting process: ED49 – A case study. *Accounting, Auditing & Accountability Journal*, 7(2):86-104.
- Uddin, N. and Holtedahl, P. (2013). Emission trading schemes: Avenues for unified accounting practices. *Journal of Cleaner Production*, 52:46-52.
- United Nations (1998). *Kyoto Protocol to the United Nations Framework Convention on Climate Change*. Herndon, VA: United Nations.
- UNWCED (1987). *United Nations World Commission on Environment and Development, 1987: Our Common Future*. Link: <http://www.un-documents.net/our-common-future.pdf>.
- van Bommel, K. (2014). Towards a legitimate compromise?: An exploration of Integrated Reporting in the Netherlands. *Accounting, Auditing and Accountability Journal*, 27(7):1157-89.
- Venmans, F. (2012). A literature-based multi-criteria evaluation of the EU ETS. *Renewable and Sustainable Energy Reviews*, 16(8):5493-510.
- Vespermann, J. and Wald, A. (2011). Much ado about nothing? An analysis of economic impacts and ecologic effects of the EU-emission trading scheme in the aviation industry. *Transportation Research Part A: Policy and Practice*, 45(10):1066-76.
- Vourvachis, P. and Woodward, T. (2015). Content analysis in social and environmental reporting research: Trends and challenges. *Journal of Applied Accounting Research*, 16(2):166-195.
- Walker, R.G. and Robinson, P. (1993). A critical assessment of the literature on political activity and accounting regulation. *Research in Accounting Regulation*, 7(1):3-40.

- Warwick, P. and Ng, C. (2012). The 'cost' of climate change: How carbon emissions allowances are accounted for amongst European Union companies. *Australian Accounting Review*, 22(1):54-67.
- Watts, R.L. and Zimmerman, J.L. (1978). Towards a positive theory of the determination of accounting standards. *Accounting Review*, 53(1):112-34.
- Weber, M. (1978). *Economy and society: An outline of interpretive sociology*. University of California Press.
- Weetman, P., Davie, E.S. and Collins, W. (1996). Lobbying on accounting issues: Preparer/user imbalance in the case of the operating and financial review. *Accounting, Auditing & Accountability Journal*, 9(1):59-76.
- Wemaere, M., Streck, C. and Chagas, T. (2009). *Legal Ownership and Nature of Kyoto Units and EU Allowances*. Oxford: Oxford Scholarship Online.
- Westphal, L.E. (1990). Industrial policy in an export-propelled economy: Lessons from South Korea's experience. *Journal of Economic Perspectives*, 4(3):41-59
- Westphal, L.E., Rhee, Y.W. and Pursell, G. (1981). *Korean industrial competence: Where it came from*. Washington D.C.: World Bank.
- Whittington, G. (2008a). Fair value and the IASB/FASB conceptual framework project: An alternative view. *Abacus*, 44(2):139-68.
- Whittington, G. (2008b). Harmonisation or discord? The critical role of the IASB conceptual framework review. *Journal of Accounting and Public Policy*, 27(6):495-502.
- Whittington, G. (2010). Measurement in financial reporting. *Abacus*, 46(1):104-110.
- Yang, J., Jee, H. and Choi, E. (2010). *Let's start learning IFRS* (in Korean). Seoul: Hanbit Biz Inc.
- Young, J. (2003). Constructing, persuading and silencing: The rhetoric of accounting standards. *Accounting, Organizations and Society*, 28(6):621-38.

- Young, J.J. (2006). Making up users. *Accounting, Organizations and Society*, 31(6):579-600.
- Young, J.J. and Williams, P.F. (2010). Sorting and comparing: Standard-setting and 'ethical' categories. *Critical Perspectives on Accounting*, 21(6):509-21.
- Zeff, S.A. (2002). Commentary on 'political' lobbying on proposed standards: A challenge to the IASB. *American Accounting Association*, 16(1):43-54.
- Zeff, S.A. (2012). Political lobbying on accounting standards: US, UK and international experience. In C. Nobes and R. H. Parker (eds), *Comparative International Accounting*. New York: Pearson Education, pp.233-63.