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IX.4 Sustainable development, principles of environmental law and the energy sector

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Abstract

Energy policy and energy projects concerning all components of the energy chain (production, transport, storage, and consumption) will have an impact on the environment. This chapter presents the overarching objective of sustainable development, and analyses how it forces societies to reduce energy consumption, reduce carbon dioxide emissions in the energy sector, and shift to renewable and low-carbon or carbon-neutral energy sources. The chapter also discusses key principles of environmental law relevant to the energy sector: the precautionary, prevention, and the polluter pays principles; and the principle of environmental democracy entailing access to environmental information, public participation, and access to justice in environmental matters.

Keywords

Sustainable development, SDGs, ecological sustainability, principles of environmental law, energy sector

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IX.4.1 Introduction

All components of the energy chain – energy production, transport, storage, and consumption¹ – will have either a potential positive or negative impact on the environment. Fossil fuels may have substantially more adverse impacts than renewable energy

¹ For more on this, see: Chapter 2 of this book.

sources by most metrics, including pollution to air and water, damage to public health, wildlife and biodiversity loss, water and land usage, and greenhouse gas (GHG) emissions (contributing to global warming). Processes associated with the production and use of energy are largely responsible for anthropogenic climate change, which is contributing to biodiversity loss. Overcoming these challenges will require humankind to manage the planet's global environmental systems more proactively, and address the socioeconomic impacts precipitated by declines in vital environmental services associated with common resources (*i.e.* air, land, water, atmosphere, as well as animals and plants) and all other ecosystem services. In the context of energy policy, these challenges will force societies to reduce energy consumption, reduce GHG emissions in the energy sector, and shift to renewable and low-carbon or carbon-neutral energy sources.²

As a key element in the energy trilemma introduced in Chapter 3, environmental law is pivotal in achieving environmental sustainability. Environmental law, including climate change law and natural resources law, provides legal norms and policy mechanisms regulating the impact of the energy sector on the environment. It aims to provide protection to and improve the quality of all components of the environment. It consists of the body of law on national, regional, and global levels that relates to environmental problems and all activities that negatively impact the environment. This body of law is shaped by its own set of legal principles and is influenced by a range of non-legal factors, of which the impact of science, economic costs and public opinion are arguably the most relevant.

This chapter provides a brief introduction to environmental law by looking at it from a sustainable development perspective, which assists in placing the other chapters of this volume within the broader perspective of environmental protection. More specifically, this chapter provides a brief overview of the overarching objective of sustainable development (section IX.4.2). It furthermore introduces some of the key principles that shape environmental law (section IX.4.3).

IX.4.2 Sustainable development as an overarching objective?

While the concept of sustainable development is often linked to environmental law, sustainable development represents a paradigm that should underpin not just environmental law and policy, but all human action, including all human activities related to energy.³ The concept of sustainable development is relevant for environmental, social, economic, political and cultural discourses, both at local and global level, and both in public and private sectors. Moreover, it provides governments and legislators with a normative standard by which they should attempt to abide when drafting and implementing policies and regulations of a social, economic, or environmental nature.⁴

IX.4.2.1 The concept of sustainable development

In 1987, the report 'Our Common Future' by the Brundtland Commission popularised and gave shape to the idea of sustainable development, which was defined as 'development that meets the needs of the present without compromising the ability of future

² See, *e.g.*: Chapter 25 of this book.

³ Barral (2012) 377.

⁴ WCED (1987). See also: Sands and Peel (2018).

generations to meet their own needs'.⁵ Two elements are relevant. Firstly, the concept of needs, specifically the essential needs of poverty-stricken populations across the globe, which should be prioritised. Secondly, the idea of limitations imposed by the state of technology and social organisation on the ability of the environment to provide for present and future needs. The report submits that there is a need to integrate economic and ecological considerations in decision-making.⁶ The sustainable development concept has a longer history and can be recognised in the Stockholm Declaration of Principles of 1972.⁷ Arguably, it was elevated to paradigm status by the Rio Declaration in 1992⁸ (Principles 3 and 4), before being refined in 1997 through the acceptance of social development as one of the three – together with environmental protection and economic development – interdependent dimensions (pillars) of sustainable development.⁹ The Johannesburg Declaration in 2002 showed a commitment to this objective.¹⁰

The objective of sustainable development is intrinsically evolutive in nature. Uncertainty as to what constitutes sustainable development is reflective of its open-ended nature; it is constantly evolving and changing through time. In a structured analysis, sustainable development consists of four main elements: the principle of sustainable use of natural resources (reducing and eliminating unsustainable patterns of production and consumption); inter-generational equity (preserving environmental capital for future generations and ensuring that it is transmitted in conditions equivalent to those in which it was received); intra-generational equity (states have common but differentiated responsibilities); and the principle of integration (environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it).¹¹ The concept weaves together ecological, economic, and social conditions conducive to human well-being.¹² *Ecological sustainability* appears the primary and most indispensable requirement for sustainable development in the sense that development may not endanger the natural systems that support life on earth. *Economic sustainability* derives from the linkage between economic growth and the capacity of societies to provide acceptable environmental conditions for all. The Brundtland report therefore emphasises the connection between economic development and ecological sustainability. *Social sustainability* demands that social needs, like personal security and personal development, must be met if complex societies are to thrive and to endure.

Environmental law scholars argue that implementing policy and law based on the definition of sustainable development provided by the Brundtland report (and that has developed since) can result in 'weak' sustainability.¹³ 'Strong' sustainability prioritises

⁵ WCED (1987).

⁶ Montini (2008) 523.

⁷ 'Declaration of the United Nations Conference on the Human Environment' (16 June 1972) UN Doc. A/CONF.14/48/Rev. 1, principles 4, 13, 15–20.

⁸ 'Rio Declaration on Environment and Development' (12 August 1992) UN Doc. A/CONF.151/26 (Vol. I) (Rio Declaration) principles 2–7, 10–11, 13, 15, 17–19.

⁹ GA Res S-19/2, 28 June 1997.

¹⁰ 'Johannesburg Declaration on Sustainable Development' (4 September 2002) UN Doc. A/CONF.199/20.

¹¹ See: Merkouris (2012) 39.

¹² Gaines (2014) 7–23.

¹³ Bosselmann (2016).

the ecological element over the economic and social elements, arguing that there is no alternative to preserving the earth's ecological integrity. These scholars conclude that ecological sustainability must be the central reference point of environmental law. Implementing this approach into law and policy could be considered the 'holy grail' of environmental law,¹⁴ as it would strive to preserve and protect ecosystems, their integrity and their services, and improve ecosystem resilience. Many of the more longstanding environmental policies and laws are however based on the formerly prevailing scientific understanding of the natural world as being predictable. Natural resource management allows for the behaviour of ecological systems to be predicted, important functional components to be discerned, and the outcome of interventions successfully predicted. Environmental standards may then be implemented accordingly. Ecological research however indicates that such policies will not be satisfactory, as ecosystems are dynamic and undergoing constant change.¹⁵ Environmental law should promote and not impede such an ecological approach,¹⁶ and allow for holistic and adaptive management of ecosystems, for example an ecosystem approach or some implementation of social-ecological resilience theory, including ecological governance.¹⁷

IX.4.2.2 Implementation: Sustainable Development Goals

While *Agenda 21* (adopted in 1992) was an important step in implementing sustainable development – prescribing comprehensive and detailed policies at all levels – results were disappointing.¹⁸ Changing course, the eight Millennium Development Goals (adopted in 2000, to be reached in 2015) were reflective of the shift from prescribing policies to setting time-bound, measurable, and achievable goals. Neither document, however, acknowledged energy's importance. 'The Future We Want', a document representing the outcome of the 2012 UN Conference on Sustainable Development (Rio+20), corrected this. It recognises that access to sustainable modern energy services contributes to poverty eradication, will save lives, improve health, and help to provide for basic human needs. The relevance of energy for sustainable development is further reflected in the 17 global goals for sustainable development (SDGs) adopted by the UN in 2015, to be reached in 2030.¹⁹ Energy is crucial for achieving almost all of the SDGs, from its role in combating climate change, to the eradication of poverty through advancements in health, education, water supply, and industrialisation. Furthermore, SDG 7 addresses energy directly: 'Ensure access to affordable, reliable, sustainable and modern energy for all'. Although the language is vague and aspirational – and many countries will be unable to provide a baseline for measuring progress – the SDGs are accompanied by detailed targets and indicators to monitor progress (though their utility is questionable). Some argue that the SDGs lack coherence and direction, and may therefore hinder political

¹⁴ Pardy (2005).

¹⁵ Bosselmann (2016) 10.

¹⁶ Bosselmann and Taylor (2017).

¹⁷ See: Platjouw (2016); Woolley (2014); Giljam (2019).

¹⁸ UN Doc. A/CONF.151/4 (1992). See also: Dernbach (1997).

¹⁹ UN, 'About the Sustainable Development Goals' (*UN*) <<https://www.un.org/sustainabledevelopment/sustainable-development-goals/>> accessed 13 August 2020. See also: French and Kotzé (2018).

and legal acceptance of sustainable development.²⁰ Nonetheless, the acknowledgement of energy as a highly important theme within the SDGs will have profound effects on our societies, specifically concerning energy policy. The SDGs have become the planning priorities for the international community. The European Commission, for example, has stated that it will implement a new growth strategy to transform the European Union (EU) into a modern, resource-efficient and competitive economy, targeting zero net GHG emissions by 2050, decoupling economic growth from resource use, and ensuring that no person or place is left behind.²¹

IX.4.2.3 Legal perspective

The concept of sustainable development appears, as a preambular reference, in many international statements and declarations related to environmental, social, and economic issues. In either explicit or implicit forms, the concept can also be found in (binding) legal documents at international, regional and national levels.²² Some relevant examples are Article 3 of the United Nations Framework Convention on Climate Change (UNFCCC),²³ Articles 2(1)(a) and 10 of its Kyoto Protocol,²⁴ and Article 2 of the 2015 Paris Agreement.²⁵ Meanwhile, the International Court of Justice has referred to the term sustainable development as a ‘concept’ and as an ‘objective’.²⁶ Other international judicial institutions have identified the concept as having practical legal consequences in the sense that sustainable development ‘must add colour, texture and shading to our interpretation’ of legal documents.²⁷ At the EU level, Article 11 TFEU prescribes that the EU strives to integrate environmental protection in its policies and activities, with a view to promoting sustainable development.²⁸ Similarly, many regional agreements and national constitutions refer to the concept of sustainable development. However, most provisions relating to sustainable development in formally binding texts are flexible; not only because of the evolutive nature of the concept, but also because legal documents often refer to it as something to strive for, to stimulate, or to promote. In that sense, the concept is legally significant as a principle of interpretation to assist the resolution of either conflicts of norms or of interests in the judicial process.

²⁰ Bosselmann (2016) 5; ch 2.

²¹ Commission, ‘European Green Deal’ (Communication) COM(2019) 640 final. See also: Krämer (2020).

²² Barral (2012) 384.

²³ United Nations Framework Convention on Climate Change (adopted 9 May 1992, entered into force 21 March 1994) 1771 UNTS 107 (UNFCCC).

²⁴ Kyoto Protocol to the United Nations Framework Convention on Climate Change (adopted 11 December 1997, entered into force 16 February 2005) 2303 UNTS 162.

²⁵ Paris Agreement (adopted 12 December 2015, entered into force 4 November 2016) I-54113. See also: Cordonier Segger (2008).

²⁶ Concept: *Gabčíkovo-Nagymaros Project (Hungary v Slovakia)* (Judgment) [1997] ICJ Rep 7, para 140), including a dissenting opinion by Judge Weeramantry stating that ‘the principle of sustainable development is [. . .] a part of modern international law’. Objective: *Pulp Mills on the River Uruguay (Argentina v Uruguay)* (Judgment) [2010] ICJ Rep 14, para 177.

²⁷ E.g. WTO, *United States – Import Prohibition of Certain Shrimp and Shrimp Products*, WT/DS58/AB/R, (1999) 37 ILM 832.

²⁸ See also: The Treaty on European Union (consolidated version, 7 June 2016) 2016 OJ C 202/13, arts 3, 21(2)(f).

The legal implications of sustainable development at the international level are restrained by the principle of state sovereignty. This principle implies that states have the sovereign right to exploit their own resources pursuant to their own environmental and developmental policies.²⁹ It is limited by the recognition that no transboundary harm may come to other states.³⁰ Considering that the environmental impact of relevant economic activities (e.g. the production of energy) can be linked to transboundary environmental harm (e.g. climate change or biodiversity loss), there may be scope to argue that ‘a better understanding of transboundary harm could serve as the basis for enhanced international cooperation, as would a stronger conceptual foundation for the international pursuit of sustainable development’.³¹ It could also incentivise the creation of a new international, legally binding treaty that could establish the universal right to an ecologically sound environment as a human right at the international level, capable of being invoked in international, regional, and national courts. Such a *Global Pact for the Environment*³² would strengthen environmental sustainability, and is under discussion in view of preparing a declaration in 2022, the 50th anniversary of the Stockholm Declaration.

IX.4.3 Environmental law principles and the energy sector

An array of environmental law principles are connected to realising (ecological) sustainability. Environmental law principles provide a foundation for the further development of environmental law, while effectively anchoring points to solve both environmental and legal problems.³³ Many of those principles are relevant for regulating components of the energy chain. Several principles that are closely related to sustainable development have already been touched upon in section IX.4.2. The following subsections provide a brief overview of a selection of further relevant environmental law principles.

IX.4.3.1 Precaution, prevention, and the polluter pays

This subsection presents several principles that are both explicitly adopted in Article 191(2) TFEU, and were considered by some to be the three foremost environmental principles to shape environmental law,³⁴ specifically in the EU: the precautionary, prevention, and polluter pays principles.

The precautionary principle originated in German law (*Vorsorgeprinzip*) in the 1970s, and has found its way into the (international) legal domain. It may be invoked when there is scientific uncertainty surrounding potentially dangerous environmental risks. The principle can be considered an environmental risk management tool in environmental decision-making.³⁵ The most well-known formulation is that of Principle 15 of the Rio Declaration: ‘Where there are threats of serious or irreversible damage, lack of full

²⁹ Rio Declaration principle 2. For more on this, see Chapter 1, Chapter 22, and Chapter 45 of this book.

³⁰ See: Gestri (2018); Lefeber (2018).

³¹ Hunter (2020).

³² See: UNGA Res 72/277 (10 May 2018). See <<https://globalpactenvironment.org/en/>>.

³³ Scotford (2017) 2. See Faure (2018).

³⁴ De Sadeleer (2002) 13.

³⁵ See, e.g.: Chapter 23, Chapter 31 and Chapter 53 of this book.

scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation'.³⁶ The application of the precautionary principle calls for a scientific evaluation of environmental risk for any project that is potentially harmful for the environment, including those related to energy. Only *uncertain* risks fall under the scope of precautionary principle.³⁷ Environmental scientific uncertainty is often related to the nature of ecosystems (complex, resilient, and adaptable), which does not allow for long-term predictability of risks. The precautionary principle comes to the fore in the field in response to the limitations of science in assessing complex and uncertain ecological risks.³⁸ In a world transitioning towards carbon neutrality, innovation will be necessary, and uncertain environmental risks are bound to occur.

The prevention principle asserts an obligation to require the prevention of damage to the environment, and otherwise to reduce, limit, or control activities which might cause or risk such damage. As this definition shows, the environmental law principle that environmental damage should be rectified at the source (*e.g.* Article 191(2) TFEU) is closely related to the prevention principle.³⁹ The latter can be found in the Rio Declaration (Principle 2), which submits that states have 'the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction'.⁴⁰ The principle implies that taking action is allowed and required at an early stage, and, if possible, before environmental damage has occurred (*e.g.* to combat climate change and to stop biodiversity loss). The often irreversible character of damage to the environment and the limitations inherent in the very mechanism for redressing of this type of damage highlights the importance of the principle. Relevant for the implementation are many forms of domestic environmental protection legislation: authorisation schemes, environmental quality standards, and the application of state of the art techniques to prevent or limit environmental harm. In general, it could be argued that it is of 'overriding importance in every effective environmental policy',⁴¹ including energy policy.

The polluter pays principle entails that the polluter should bear environmental costs. The principle chiefly seeks to specify the allocation of pollution mitigation costs and control measures in order to encourage the rational use of scarce environmental resources, and to avoid distortions in international trade and investment. The polluter should bear the expense of carrying out the measures decided by public authorities to ensure a clean and healthy environment.⁴² The principle aims to internalise environmental costs for those who cause the environmental damage – (often) an external effect of production and consumption, for example energy. The Rio Declaration (Principle 16) submits that

³⁶ Sands and Peel (2018). See also: UNFCCC art 3(3); The Treaty on the Functioning of the European Union (consolidated version, 7 June 2016) 2016 OJ C 202/47 art 191(2); Commission, 'On the Precautionary Principle' (Communication) COM(2000) 1 final.

³⁷ De Sadeleer (2009).

³⁸ Sands and Peel (2018) 267–279.

³⁹ For more on this, see Chapter 29 of this book.

⁴⁰ De Sadeleer (2002) 66.

⁴¹ Krämer (1990) 61.

⁴² See: OECD, Recommendation on Guiding Principles Concerning International Economic Aspects of Environmental Policies, C(72)128.

states ‘should endeavour to promote the internalisation of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment’. Although there are many regulatory (economic) instruments that can be considered an implementation of this principle (e.g. environmental tax regulations), this principle is relevant in energy policy in the light of climate change: carbon pricing, emission limit values for coal-fired power plants, and/or emissions trading systems can all be implemented in accordance with the polluter pays principle.⁴³

IX.4.3.2 Access to information, public participation, and access to justice

Principle X of the Rio Declaration,⁴⁴ also known as the environmental democracy principle, places emphasis on three key components: access to environmental information, public participation, and access to justice in environmental matters.⁴⁵ The Aarhus Convention⁴⁶ of 1998 and the Escazú Agreement⁴⁷ of 2018 implement this principle by means of binding legal norms. Both frameworks focus on environmental matters, a term broadly defined so as to encompass energy policies. The following paragraphs focus on the key aspects concerning access to information, public participation, and access to justice, and their relevance for energy policy.⁴⁸

Access to environmental information and of the impact of potentially harmful activities is required to ascertain the safety of a living environment. Environmental law requires public authorities to provide environmental information and all factors that could bring a change in the environmental status, either upon request (passive duty) or of its own volition (active duty).⁴⁹ Environmental information in this context is defined broadly;⁵⁰ information about energy projects will often be subject to information access obligations.⁵¹ These duties are however subject to exceptions based on, *inter alia*, the confidentiality of commercial and industrial information.⁵²

Environmental law also requires that information on the (transboundary) environmental effects of any plan or project with a potentially significant impact on the environment – as many energy projects may have – is made available for the public and the public authority. Environmental impact assessments are used worldwide to

⁴³ Emissions trading schemes are discussed in Chapter 30 of this book.

⁴⁴ Rio Declaration (n 8).

⁴⁵ Bándi (2014) 4.

⁴⁶ Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (adopted 25 June 1998, entered into force 30 October 2001) 2161 UNTS 447 (Aarhus Convention).

⁴⁷ Regional Agreement on Access to Information, Participation and Justice in Environmental Matters in Latin America and the Caribbean (adopted 4 March 2018, not yet in force as of August 2020).

⁴⁸ See further: Etemire (2020); Squintani and Perlaviciute (2020); Van Wolferen and Eliantonio (2020).

⁴⁹ See, e.g.: Aarhus Convention arts 4–5.

⁵⁰ See, e.g.: *ibid* art 1(3).

⁵¹ See, e.g.: ECJ C-605/11P, *Finland v Commission* [2012] ECLI:EU:C:2013:738.

⁵² See, e.g.: Aarhus Convention art 4(3)–(4).

provide decision-makers and the concerned public with essential information to plan for environmentally friendly economic development.⁵³ Such assessments provide an analysis to determine the potential environmental impacts and the significance of such impacts, and propose measures to mitigate the negative impacts. Internationally, many sources of international commitments to perform an environmental impact assessment can be distinguished,⁵⁴ but the Espoo Convention⁵⁵ (1997) stands out as providing a binding obligation to its signatory parties.

Public participation is a key aspect of decision-making in environmental law, certainly for a successful energy transition to a carbon neutral society.⁵⁶ Access to information is therefore vital if the public are to be empowered to partake in decision-making. Public participation is usually not defined in legal documents, but political and social sciences refer to the processes organised by responsible parties to engage both key stakeholders and the general public in the planning, development, and implementation of policies.⁵⁷ The legal framework places emphasis on the need to ensure public participation and introduces a series of obligations that aim at ensuring compliance with the two key factors for effective participation, *i.e.* early engagement (participation shall be allowed at a stage when all policy and implementation options are still open) and giving people a real voice (giving the public the opportunity to influence any decisions).⁵⁸

Early engagement requires the public to be *notified* about the project and the public participation procedure. The responsible party should set *reasonable timeframes* for effective participation, at a stage when *all options are on the table*. Under the Aarhus Convention, for example, it is relevant that ‘events on the ground’, such as the availability of certain technological choices, have not effectively eliminated alternative options.⁵⁹ Public participation should start *prior* to a permit application, while public authorities retain responsibility for the procedure.⁶⁰ The public must be allowed to submit views⁶¹ in writing or orally.⁶² The responsible authority shall take the views into account in the sense that it shall provide reasons for their rejection or acceptance.⁶³ However, the public do not have a right to veto the decision.⁶⁴ Finally, the decision-maker should *inform* the public about the final decision and of how the submitted views have been taken into account.

⁵³ See, *e.g.*: Convention on Environmental Impact Assessment in a Transboundary Context (adopted 25 February 1991, entered into force 10 September 1998) 1989 UNTS 309 (Espoo Convention).

⁵⁴ See: Craik (2008) ch 4.

⁵⁵ Espoo Convention (n 53).

⁵⁶ For more on this in the context of wind energy in the EU, see Chapter 37 of this book.

⁵⁷ Bidwell (2016).

⁵⁸ Lind, Kanfer and Earley (1990); Fung (2006).

⁵⁹ UNECE (2014) 145.

⁶⁰ See, *e.g.*: Aarhus Convention Compliance Committee, ‘Report concerning Lithuania’ (12 May 2011) ECE/MP.PP/2008/5/Add.6, para 82.

⁶¹ Aarhus Convention art 6; Aragão (2019).

⁶² UNECE (2014) 153.

⁶³ *ibid* 155.

⁶⁴ See: Aarhus Convention Compliance Committee, ‘Report concerning European Union and the United Kingdom of Great Britain and Northern Ireland’ (13 January 2014) ECE/MP.PP/C.1/2014/5 para 93.

The final pillar of environmental democracy is access to justice. Access to justice serves to ensure the effectiveness of the obligations about access to information and public participation,⁶⁵ while also seeking to ensure that all environmental standards are enforced. It is especially in regard to the latter perspective that international environmental law may bring change to domestic frameworks regulating access to justice. Legal systems differ in how access to justice is interpreted, with standing, costs, time limits, and the scope of the judicial review procedure varying across states. International regulatory frameworks by and large establish only a limit to the discretionary powers of states. However, both the Aarhus Convention and the Escazú Agreement press signatories to open their judicial review system to legal suits brought by parties that would normally not have standing. Article 9(2) of the Aarhus Convention, for example, requires under certain circumstances that standing be granted to non-governmental organisations *as if* they had a legitimate interest or a subjective right, regardless of whether they actually have one. Moreover, Article 9(3) of the Aarhus Convention potentially leads to so-called *action popularis*, which explains the resistance encountered by EU states with a stricter regime in place.

IX.4.4 Conclusion

Energy policy and energy projects may impact our environment and health. This chapter serves to remind the reader that there is a strong and inherent link between energy policy and environmental protection. Within the concept of sustainable development – and within the concept of the energy trilemma – ecological sustainability serves as a necessary prerequisite for economic and social development, and provides the need for fundamental change in the way humankind manages the planet’s global environmental systems, specifically those related to the energy sector. The ever-growing body of environmental law plays a pivotal role in achieving this ‘strong’ sustainability. This chapter provided a brief global overview of the overarching concept of sustainable development and its implementation in the political arena by way of the introduction of SDGs, and in the legal domain by showing the promise of a Global Pact for the Environment in 2022, a legally binding treaty that could establish the universal right to an ecologically sound environment as a human right at the international level. The chapter also provided a brief introduction to a selection of principles of environmental law relevant for all components in the energy chain – principles that may clarify and assist in interpreting existing environmental and energy law, and serve as the basis of new environmental standards and legal instruments.

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⁶⁵ Van Wolferen and Eliantonio (2020).

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