



## Introduction

Energy is highly but not clearly regulated in international law. The legal sources on which the governance of energy is based are plentiful but scattered around a vast legal expanse, which has so far been addressed – with very rare exceptions<sup>1</sup> – through separate specialised accounts devoted to specific topics or branches. The purpose of this book is two-fold: to provide an overall account of the international law of energy understood as the entirety of international law seen from the prism of energy; and to rely on this account to analyse the implications of the ongoing energy transformation for international law.

Traditionally, only a limited part of the international legal aspects of energy attracted the attention of commentators. Most notable among these aspects were agreements for the joint development of hydrocarbons,<sup>2</sup> certain international proceedings relating to the expropriation of

<sup>1</sup> See, in particular, C. Redgwell, 'International Regulation of Energy Activities', in M. M. Roggenkamp et al. (eds.), *Energy Law in Europe: National, EU and International Regulation* (Oxford: Oxford University Press, 3rd ed. 2016), pp. 13–136; K. Talus (ed.), *Research Handbook on International Energy Law* (Cheltenham: Edward Elgar, 2014); R. Leal-Arcas, A. Filis, E. S. Abu Gosh, *International Energy Governance: Selected Legal Issues* (Cheltenham: Edward Elgar, 2015); J. E. Viñuales, 'Vers un droit international de l'énergie: Essai de cartographie', in M. G. Kohen, D. Bentolila (eds), *Mélanges en l'honneur du professeur Jean-Michel Jacquet: le droit des rapports internationaux économiques et privés* (Paris: LexisNexis, 2013), pp. 321–344; A. A. Fatouros, 'An International Legal Framework for Energy' (2007) 332 *RCADI* 355.

<sup>2</sup> See e.g. V. Becker-Weinberg, *Joint Development of Hydrocarbon Deposits in the Law of the Sea* (Berlin: Springer, 2014); N. Bankes, 'Recent Framework Agreements for the Recognition and Development of Transboundary Hydrocarbon Resources' (2014) 29 *International Journal of Marine and Coastal Law* 666; C. Scholfield, 'Blurring the Lines: Maritime Joint Development and the Cooperative Management of Ocean Resources' (2008) 7 *Issues Legal Scholarship* 1; A. E. Bastida et al, 'Cross-Border Unitization and Joint Development Agreements: An International Law Perspective' (2007) 29 *Houston International Law Journal* 355; D. M. Ong, 'Joint Development of Common Offshore Oil and Gas Deposits: "Mere" State Practice or Customary International Law?' (1999) 93 *American Journal of International Law* 771; H. Fox, *Joint Development of Offshore Oil and Gas* (London: BIICL, 1990); W. T. Onorato, 'Apportionment of an International Common

oil investments structured under ‘State contracts’,<sup>3</sup> disputes relating to the delimitation of maritime areas,<sup>4</sup> the prevention and compensation of oil spills<sup>5</sup> or some nuclear energy-related transactions.<sup>6</sup> More recently, there have been attempts to clarify the international law of energy

Petroleum Deposit’ (1977) 26 *International and Comparative Law Quarterly* 324; W. T. Onorato, ‘Apportionment of an International Common Petroleum Deposit’ (1968) 17 *International and Comparative Law Quarterly* 85.

<sup>3</sup> See e.g. Ch. Leben, ‘La théorie du contrat d’Etat et l’évolution du droit international des investissements’ (2004) 302 *RCADI* 197; S. Toope, *Mixed International Arbitration: Studies in Arbitration between States and Private Persons* (Cambridge: Grotius, 1990); C. Greenwood, ‘State Contracts in International Law – The Libyan Oil Arbitrations’ (1983) 53 *British Yearbook of International Law* 27; R. von Mehren, N. Kourides, ‘International Arbitrations between States and Foreign Private Parties: The Libyan Nationalization Cases’ (1981) 75 *American Journal of International Law* 476.

<sup>4</sup> For a recent comprehensive statement of the law of maritime delimitation see Y. Tanaka, *Predictability and Flexibility in the Law of Maritime Delimitation* (Oxford: Hart, 2nd ed. 2019). For discussions focussed on energy see: K. Noussia, ‘On International Arbitrations for the Settlement of Boundary Maritime Delimitation Disputes and Disputes from Joint Development Agreements for the Exploitation of Offshore Natural Resources’ (2010) 25 *International Journal of Marine and Coastal Law* 63; M. Miyoshi, C. Schofield, *The Joint Development of Offshore Oil and Gas in relation to Maritime Boundary Delimitation* (Durham: International Boundaries Research Unit, 1999); G. H. Blake et al. (eds.), *The Peaceful Management of Transboundary Resources* (Berlin: Springer, 1995); R. Lagoni, ‘Oil and Gas Across National Frontiers’ (1979) 73 *American Journal of International Law* 215.

<sup>5</sup> See e.g. C. M. De la Rue, C. B. Anderson, *Shipping and the Environment: Law and Practice* (London: Routledge (Informa Law), 2nd ed. 2009); K. Le Couvreur, *La responsabilité civile à l’épreuve des pollutions majeures résultant du transport maritime* (Aix-en-Provence: PUAM, 2007); M. Jacobsson, ‘The International Oil Pollution Compensation Funds and the International Regime of Compensation for Oil Pollution Damage’, in J. Basedow, U. Magnus (eds.), *Pollution of the Sea: Prevention and Compensation* (Berlin: Springer, 2007), pp. 137–150; A. K.-J. Tan, *Vessel-Source Marine Pollution* (Cambridge: Cambridge University Press, 2005); E. Franckx (ed.), *Vessel-Source Pollution and Coastal State Jurisdiction The Work of the ILA Committee on Coastal State Jurisdiction Relating to Marine Pollution (1991–2000)* (The Hague: Kluwer, 2001); C. Wu, *Pollution from the Carriage of Oil by Sea: Liability and Compensation* (The Hague: Kluwer, 1996); D. Brubaker, *Marine Pollution and International Law: Principles and Practice* (London: Belhaven Press, 1993); J. W. Kindt, *Marine Pollution and the Law of the Sea* (Getzville NY: Hein & Co, 1986); A. Boyle, ‘Marine Pollution under the Law of the Sea Convention’ (1985) 79 *American Journal of International Law* 342; D. Abecassis, *The Law and Practice Relating to Oil Pollution from Ships* (London: Butterworths, 1978).

<sup>6</sup> See e.g. S. Tromans, *Nuclear Law: The Law Applying to Nuclear Installations and Radioactive Substances in Its Historic Context* (Oxford: Hart, 2nd ed. 2010); OECD, *International Nuclear Law. History, Evolution and Outlook* (Paris: OECD, 2010); F. Nocera (ed.), *The Legal Regime of Nuclear Energy: A Comprehensive Guide to International and European Union Law* (Cambridge: Intersentia, 2005).

through the prisms of trade,<sup>7</sup> foreign investment,<sup>8</sup> environmental protection,<sup>9</sup> human rights<sup>10</sup> or the law of the sea.<sup>11</sup> These accounts are based on the familiar framing of ‘branches’ of international law, following which energy issues are analysed branch-by-branch. Despite their contribution, the traditional and the more recent framings have an important shortcoming: they keep the conceptual siloes standing. Yet, it is not possible to understand the legal implications of the major energy transformation<sup>12</sup> the world is undergoing with partial or segmented analytical tools. This is for three main reasons.

First, different bodies of international law pursue multiple, different and potentially conflicting goals. The prevailing branch-based view of

<sup>7</sup> See e.g. A. Marhold, *Energy in International Trade Law* (Cambridge: Cambridge University Press, 2021); I. Espa, T. Cottier (eds.), *International Trade in Sustainable Electricity: Regulatory Challenges in International Economic Law* (Cambridge: Cambridge University Press, 2017); V. Pogoretsky, *Freedom of Transit and Access to Gas Pipeline Networks under WTO Law* (Cambridge: Cambridge University Press, 2017); D. Azaria, *Treaties on Transit of Energy via Pipelines and Countermeasures* (Oxford: Oxford University Press, 2015); Y. Selivanova (ed.), *Regulation of energy in International Trade Law: WTO, NAFTA and Energy Charter* (Alphen aan den Rijn: Wolters Kluwer, 2011).

<sup>8</sup> See e.g. P. D. Cameron, *International Energy Investment Law: The Pursuit of Stability* (Oxford: Oxford University Press, 2nd ed. 2018); M. Scherer, C. Amirfar (eds.), *International Arbitration in the Energy Sector* (Oxford: Oxford University Press, 2018); H. G. Burnett, L.-A. Brett, *Arbitration of International Mining Disputes* (Oxford: Oxford University Press, 2017); M. Erkan, *International Energy Investment Law: Stability through Contractual Clauses* (Alphen aan den Rijn: Wolters Kluwer, 2011).

<sup>9</sup> See e.g. D. Bodansky, J. Brunnée, L. Rajamani, *International Climate Change Law* (Oxford: Oxford University Press, 2017); P. D. Park, *International Law for Energy and the Environment* (London: Routledge, 2nd ed. 2013); A. J. Bradbrook et al. (eds.), *The Law of Energy for Sustainable Development* (Cambridge: Cambridge University Press, 2005); Gao Zhiguo (ed.), *Environmental Regulation of Oil and Gas* (London: Kluwer, 1998).

<sup>10</sup> See e.g. J. Ezirigwe, ‘Human Rights and Property Rights in Natural Resources Development’ (2017) 35 *Journal of Energy & Natural Resources* 201; D. N. Zillman et al. (eds.), *Human Rights in Natural Resource Development: Public Participation in the Sustainable Development of Mining and Energy Resources* (Oxford: Oxford University Press, 2002).

<sup>11</sup> N. Bankes, S. Trevisanut (eds.), *Energy from the Sea: An International Law Perspective on Ocean Energy* (Leiden: Martinus Nijhoff, 2015); H. Esmaeili, *The legal regime of offshore oil rigs in international law* (Aldershot: Ashgate, 2001). See further n. 1 and 2.

<sup>12</sup> Global Commission on the Geopolitics of the Energy Transformation, *A New World: The Geopolitics of the Energy Transformation* (IRENA, 2019) [*Geopolitics of the Energy Transformation*] (speaking of an ‘irreversible momentum for a global energy transformation’ and reviewing the evidence and the main drivers of the transformation, such as technological change relating to efficiency, transportation and renewable energy, environmental constraints and increasing public support).

international law does not capture the complex interactions arising from what economists call the ‘energy trilemma’,<sup>13</sup> i.e. the trade-offs presented by the pursuit of energy security, equity (access and affordability), and sustainability (mainly decarbonisation). By way of illustration, in *India – Solar Cells*,<sup>14</sup> the Appellate Body of the World Trade Organization (WTO) confirmed the panel’s findings that the local content requirements (LCRs) introduced by India as a condition for renewable energy generators to benefit from an advantageous support scheme was in violation of trade disciplines. This is a correct – yet not uncontroversial – application of international trade law, which typically restricts LCRs because of the inefficiencies and distortions they create.<sup>15</sup> However, unless India – as the second most populous country in the world and the third largest emitter of greenhouse gases – moves massively and rapidly into renewable energy, the mitigation goals pursued by the climate change regime will not be reachable. In an ideal world, India would do so without reverting to industrial policy to promote its own industry. But it may be politically unrealistic to expect such massive transfers of public money to producers of foreign equipment, even if the latter is cheaper and better. If one adds to this two-branch picture access to energy from a human rights perspective, as contemplated in Sustainable Development Goal 7 (SDG 7),<sup>16</sup> or the collective entitlement to the development of energy resources arising from the principle of self-determination,<sup>17</sup> then the trade-off is even more complex. The analysis of

<sup>13</sup> See World Energy Council, *World Energy Trilemma Index 2020* (London: WEC, 2020). This index has been prepared annually by the WEC since 2010, together with two consultancies.

<sup>14</sup> *India – Certain Measures Relating to Solar Cells and Solar Modules* (Complainant: United States), AB Report, 16 September 2016, WT/DS456/AB/R, WT/DS456/AB/R/Add.1.

<sup>15</sup> G. C. Hufbauer, J. J. Schott, C. Cimino-Isaacs, M. Vieiro and E. Wadam, *Local Content Requirements: A Global Problem* (New York: Columbia University Press, 2013).

<sup>16</sup> Resolution 70/1, ‘Transforming our World: The 2030 Agenda for Sustainable Development’, 21 October 2015, UN Doc. A/RES/70/1, including a statement of 17 sustainable development goals (SDGs). On SDG 7 see S. Bruce, J. E. Viñuales, ‘SDG 7: Access to Affordable, Reliable, Sustainable and Modern Energy for All’, in J. Ebbesson, E. Hey (eds.), *The Cambridge Handbook on the United Nations Sustainable Development Goals and International Law* (Cambridge: Cambridge University Press, 2021), chapter 7.

<sup>17</sup> The dispute regarding the hydrocarbon deposits in the Timor Sea provides a good illustration of this complexity, as illustrated by Portugal’s unsuccessful claim before the ICJ in connection with the 1989 Timor Gap Treaty between Australia and Indonesia: *East Timor (Portugal v. Australia)*, *Judgment, I.C.J. Reports 1995*, p. 90. The status of the resources in the area remained highly disputed after Timor Leste’s independence, and it was only settled recently by means of conciliation process: *Conciliation between The*

how energy is relevant for a certain ‘branch’ of international law, such as trade law, or that of certain recurring tensions between branches, such as trade and environment, are important steps; but partial ones.

Secondly, the need for an integrative approach is even more acute at a time when the world seems already engaged in a necessary yet daunting energy transition of civilisational proportions from a fossil fuel-based energy matrix to a low-carbon one. Law is a strategic battlefield in this transition. As we learn from the literature on socio-technical transitions,<sup>18</sup> the early movers that thrive in a given socio-technical regime (e.g. the generation of electricity predominantly from the combustion of fossil fuels) normally struggle to move into a new regime (e.g. one based on renewable energies), whereas latecomers can more easily leapfrog. This is sometimes summarised with the expression ‘first in, last out; last in, first out’.<sup>19</sup> In such a context, law is a key instrument used by those industries and States attached to the present energy matrix to hinder the transition to a new one where they are less competitive. For example, the energy transition in Germany (*Energiewende*) has led to investment claims from foreign companies holding substantial investments in coal-fired and nuclear power plants.<sup>20</sup> Conversely, law is also used by the newcomers to accelerate the transition and thereby challenge the position of market leaders. Dozens of investment claims brought against countries such as Canada,<sup>21</sup> the Czech

*Democratic Republic of Timor-Leste and The Commonwealth of Australia*, PCA Case No. 2016–10, Press Release No. 9, 1 September 2017. For an overview of this process see G. Le Moli, J. E. Viñuales, ‘A Foundational Experiment: The Timor Leste-Australia Conciliation’, in C. Tomuschat, M. Kohen (eds.), *Flexibility in International Dispute Settlement* (Leiden: Nijhoff, 2020), pp. 156–177.

<sup>18</sup> See A. Grubler, ‘Energy transitions research: Insights and cautionary tales’ (2012) 50 *Energy Policy* 8; F. W. Geels, ‘Socio-Technical Transitions to Sustainability: A Review of Criticisms and Elaborations of the Multi-Level Perspective’ (2019) 39 *Current Opinion in Environmental Sustainability* 187.

<sup>19</sup> Grubler, *Energy transitions research*, at 12.

<sup>20</sup> See *Vattenfall AB, Vattenfall Europe AG, Vattenfall Europe Generation AG v. Federal Republic of Germany*, ICSID Case No. ARB/09/6, Award (11 March 2011) (embodying the parties’ settlement agreement of the same date); *Vattenfall AB and others v. Federal Republic of Germany*, ICSID Case No. ARB/12/12, pending. See also the related domestic proceedings: Judgment of the Federal Constitutional Court (6 December 2016), BVerfGE 143, 246; Order of the Federal Constitutional Court (29 September 2020), 1 BvR 1550/19. These and other cases are discussed in Chapter 8.

<sup>21</sup> See *Mesa Power Group, LLC v. Government of Canada*, UNCITRAL, PCA Case No. 2012–17, Award (24 March 2016); *Windstream Energy LLC v. Government of Canada*, PCA Case No. 2013–22, Award (27 September 2016).

Republic,<sup>22</sup> Italy<sup>23</sup> or Spain<sup>24</sup> for amounts that reach billions of Euros illustrate the complexities entailed by this dimension of the energy

<sup>22</sup> See *Natland Investment Group N.V. and others v. Czech Republic*, PCA Case No. 2013–35, Partial Award (20 December 2017); *Antaris Solar GmbH and others v. Czech Republic*, UNCITRAL Rules, Award (2 May 2018); *Voltaic Network GmbH v. Czech Republic*, UNCITRAL Rules, Award (15 May 2019); *I.C.W. Europe Investments Limited v. Czech Republic*, UNCITRAL Rules, Award (15 May 2019); *Photovoltaik Knopf Betriebs-GmbH v. Czech Republic*, UNCITRAL Rules, Award (15 May 2019); *WA Investments-Europa Nova Limited v. Czech Republic*, UNCITRAL Rules, Award (15 May 2019); *Mr Jürgen Wirtgen, Mr Stefan Wirtgen, and JSW Solar (zwei) GmbH & Co.KG v. Czech Republic*, UNCITRAL Rules, Final Award (11 October 2017).

<sup>23</sup> See *Blusun S.A., Jean-Pierre Lecorcier and Michael Stein v. Italy*, ICSID Case No. ARB/14/3, Final Award (27 December 2016), Decision on Annulment (13 April 2020); *Eskosol S.p. A. in liquidazione v. Italy*, ICSID Case No. ARB/15/50, Award (4 September 2020); *CEF Energia BV v. Italy*, SCC Case No. 158/2015, Award (16 January 2019); *Belenergia S.A. v. Italy*, ICSID Case No. ARB/15/40, Award (6 August 2019); *Greentech Energy Systems A/S & Ors. v. Italy*, SCC Arbitration V (2015/095), Award (23 December 2018); *ESPF Beteiligungs GmbH, ESPF Nr. 2 Austria Beteiligungs GmbH, and InfraClass Energie 5 GmbH & Co. KG v. Italy*, ICSID Case No. ARB/16/5, Award (14 September 2020).

<sup>24</sup> See *Charanne and Construction Investments v. Spain*, SCC Rules, Award (21 January 2016); *Isolux Netherlands, BV v. Spain*, SCC Case V2013/153, Final Award (17 July 2016); *Eiser Infrastructure Limited and Energia Solar Luxembourg S.a.r.l. v. Spain*, ICSID Case No. ARB/13/36, Award (4 May 2017); *Masdar Solar & Wind Cooperatief U.A. v. Spain*, ICSID Case No. ARB/14/1, Award (16 May 2018); *Antin Infrastructure Services Luxembourg S.à.r.l. and Antin Energia Termosolar B.V. v. Spain*, ICSID Case No. ARB/13/31, Award (15 June 2018), Decision on the rectification of the award (29 January 2019); *NextEra Energy Global Holdings B.V. and NextEra Energy Spain Holdings B.V. v. Spain*, ICSID Case No. ARB/14/11, Decision on Jurisdiction, Liability and Quantum Principles (12 March 2019), Final Award (31 May 2019); *9REN Holding S.a.r.l. v. Spain*, ICSID Case No. ARB/15/15, Award (31 May 2019); *Cube Infrastructure Fund SICAV and others v. Spain*, ICSID Case No. ARB/15/20, Decision on Jurisdiction, Liability and Partial Decision on Quantum (19 February 2019), Final Award (26 June 2019); *SolEs Badajoz GmbH v. Spain*, ICSID Case No. ARB/15/38, Award (31 July 2019); *InfraRed Environmental Infrastructure GP Limited and others v. Spain*, ICSID Case No. ARB/14/12, Award (2 August 2019); *OperaFund Eco-Invest SICAV PLC and Schwab Holding AG v. Spain*, ICSID Case No. ARB/15/36, Award (6 September 2019); *BayWa r.e. Renewable Energy GmbH and BayWa r.e. Asset Holding GmbH v. Spain*, ICSID Case No. ARB/15/16, Decision on Jurisdiction, Liability and Directions on Quantum (2 December 2019); *Stadtwerke München GmbH, RWE Innogy GmbH et al. v. Spain*, ICSID Case No. ABR/15/1, Award (2 December 2019); *RREEF Infrastructure (G.P.) Limited and RREEF Pan-European Infrastructure Two Lux S.à r.l. v. Spain*, ICSID Case No. ARB/13/30, Award (11 December 2019); *RWE Innogy GmbH and RWE Innogy Aersa S.A.U. v. Spain*, ICSID Case No. ABR/14/34, Decision on jurisdiction, liability and certain issues of quantum (30 December 2019); *Watkins Holdings S.à r.l. and others v. Spain*, ICSID Case No. ARB/15/44, Award (21 January 2020); *The PV Investors v. Spain*, PCA Case No. 2012–14, Final Award (28 February 2020); *Hydro Energy 1 S.à r.l. and Hydroxana Sweden AB v. Spain*, ICSID Case No. ARB/15/42, Decision on Jurisdiction, Liability and Directions on Quantum (9 March 2020); *Cavalum SGPS, S.A. v. Spain*, ICSID Case No. ARB/15/34,

transition. Last but not least, law must accommodate the legitimate concerns of those who may be left behind by the transition. The political up-rise of the so-called *gilets jaunes* (yellow vests) against an attempted increase in fuel taxes by the French government is a stark reminder of the social dimension of the transition.<sup>25</sup> From the standpoint of international law and policy, this ‘inclusiveness’ dimension has gained prominence in the last two decades, whether through the rise of participatory rights or through explicit calls to ensure a just transition of the workforce.<sup>26</sup> These different pieces of the international legal puzzle can all be mobilised at the same time, with unclear interactional effects, in the struggles emerging from the energy transition, and focussing on only some of them may result in a skewed picture of how international law affects or is affected by this transition.

Thirdly, an overall view of the international law of energy would be useful in practice for the design and evaluation of energy policies from a legal standpoint. Depending on their legal form, energy policies may be consistent or inconsistent with different international norms and hence challenged before international courts and tribunals.<sup>27</sup> At present, such consistency is mainly assessed from a sectoral point of view (e.g. consistency with trade disciplines, investment disciplines, human rights or environmental law). In the absence of a transversal analytical framework, practicing lawyers are ill-equipped to provide more general assessments, despite the fact that the possibility of legal inconsistencies arising from different international obligations is far from theoretical. Some illustrations include the inconsistencies between the EU rules banning State aid and certain obligations arising from investment treaties<sup>28</sup> or the

Decision on Jurisdiction, Liability and Directions on Quantum (31 August 2020); *STEAG GmbH v. Spain*, ICSID Case No. ARB/15/4, Decision on Jurisdiction, Liability and Principles on Quantum (8 October 2020).

<sup>25</sup> See A. Chrisafis, ‘Who Are the Gilets Jaunes and What Do They Want?’, *The Guardian* (7 December 2018).

<sup>26</sup> See e.g. the ‘Silesia Solidarity and Just Transition Declaration’, adopted on the side of the twenty-fourth Conference of the Parties of the UN Framework Convention on Climate Change, held at Katowice, Poland, in December 2018, available at: <https://cop24.gov.pl/presidency/initiatives/just-transition-declaration/>. On the political context of the just transition see K. E. H. Jenkins, B. K. Sovacool, A. Blachowicz, A. Lauer, ‘Politicising the Just Transition: Linking global climate policy, Nationally Determined Contributions and targeted research agendas’ (2020) 115 *Geoforum* 138.

<sup>27</sup> See A. Boute, ‘Energy Trade and Investment Law. International Limits to EU Energy Law and Policy’, in M. M. Roggenkamp et al. (eds.), *Energy Law in Europe: National, EU and International Regulation* (Oxford: Oxford University Press, 3rd ed. 2016), pp. 137–185.

<sup>28</sup> This is at stake in many arbitration proceedings brought against EU Member States. See n. 22, 23 and 24. The intricate questions arising from these relations are epitomised by the

mismatch between non-discrimination obligations in trade and investment treaties<sup>29</sup> or, still, tensions between obligations arising from human rights or environmental law and obligations arising from trade or investment law.<sup>30</sup> Broad and facilitated consistency assessments would be useful because international claims often result from measures adopted by sub-national entities, with less resources for – and interest in – such assessments, for which the national State as such is responsible in international law.<sup>31</sup>

Against this background, this book reframes, in two main ways, how energy is analysed in international law. It moves the focus (1) away from certain specific techniques (such as joint development agreements) or branches of international law (trade, investment, environment etc.) and onto a transversal perspective: the international law of energy as the entirety of international law read through the prism of energy; and (2) away from a predominant emphasis on fossil fuels, particularly oil, and onto the ongoing energy transformation towards a more efficient and low-carbon energy matrix. It does so as a means to make a more general theoretical point, namely that the energy transformation is increasingly finding expression in the laws shaping international energy transactions (entitlements over resources and the ability to conduct the activities to put them to use) and not only in those which regulate to ‘negative

decision of the Court of Justice of the European Union in *Slovakia v. Achmea*, JEU, ‘C-284/16’ (2018). For an analysis of the wider implications see J. R. Basedow, ‘The *Achmea* Judgment and the Applicability of the Energy Charter Treaty in Intra-EU Investment Arbitration’ (2020) 23 *Journal of International Economic Law* 271.

<sup>29</sup> See N. DiMascio, J. Pauwelyn, ‘Nondiscrimination in Trade and Investment Treaties: Worlds Apart or Two Sides of the Same Coin?’ (2008) 102 *American Journal of International Law* 48.

<sup>30</sup> See E. Vranes, *Trade and the Environment: Fundamental Issues in International Law, WTO Law, and Legal Theory* (Oxford: Oxford University Press, 2009); T. Cottier, J. Pauwelyn, E. Burgi (eds.), *Human Rights and International Trade* (Oxford: Oxford University Press, 2005); P.-M. Dupuy, E.-U. Petersmann, F. Francioni (eds.), *Human Rights in International Investment Law and Arbitration* (Oxford: Oxford University Press, 2009); Viñuales, *Foreign Investment and the Environment* (Cambridge: Cambridge University Press, 2012).

<sup>31</sup> See Vienna Convention on the Law of Treaties, 23 May 1969, 1155 UNTS 331 [VCLT], Article 27 (‘A party may not invoke the provisions of its internal law as justification for its failure to perform a treaty’; International Law Commission, Responsibility of States for Internationally Wrongful Acts, UN General Assembly Resolution 56/83, 12 December 2001, Annex, Article 4(1) (‘The conduct of any State organ shall be considered an act of that State under international law . . . whatever its character as an organ of the central Government or of a territorial unit of the State’).



externalities' (the adverse effects on those not participating in the transactions and the environment).

Making this point and fleshing out its implications requires a long analytical detour, which can be summarised as follows. Chapter 1 of the book introduces the conceptual foundations of the international law of energy, namely the characterisation of energy as a legal object (a resource, a product, a technology, and an activity), the purposes of global energy governance (availability, security of supply, diversification, efficiency, safety, access and sustainability), the structure of international energy transactions (entitlements over energy, the enabling and protection of the transactions, and the regulation of its negative externalities), and the main approaches or patterns followed in their regulation (the foundational, ad hoc and centralised approaches). Chapters 2 to 7 rely on this conceptual architecture to study the entirety of international law from the prism of energy as a legal object. Each approach is presented in two chapters. Chapters 2 and 3 introduce the foundational approach, highlighting the rules that confer and allocate entitlements over energy, those that enable and protect investment, trade and transit in energy, and those that seek to regulate the negative externalities of such transactions. Chapters 4 and 5 analyse the ad hoc approach focussing on agreements for the joint development of hydrocarbons, hydroelectric projects in shared watercourses, pipelines, offshore windfarms and cross-border electricity transmission lines. Chapters 6 and 7 examine the centralised approach focussing first on the international legal regime for nuclear energy and then on certain regimes which are organised along the lines of producer/consumer (e.g. the Organization of Petroleum Exporting Countries and the International Energy Agency), promotion (e.g. the International Renewable Energy Agency) and regional organisations (e.g. the EU energy union, the Latin American Energy Organization and the ASEAN). In each chapter, the analysis fleshes out the implications of the ongoing energy transformation. But all these different strands are brought together and expanded in Chapter 8, which is specifically devoted to international law and the energy transformation. The conclusion summarises all these strands and highlights the current legal 'front lines' in the struggle between a well-established but dangerous socio-technical regime based on fossil fuels and an emerging one based on renewable energies, which is full of promise but also of uncertainty.