Introduction

Johannes Saurer and Michael Rodi

The transition of fossil fuel-bound systems of energy generation and supply towards carbon neutrality is a common task of legal orders across Europe. All European Countries and the European Union are members of the Paris Agreement that aims to limit global warming to 2 degree better 1,5 degree Celsius.[1] As parties of the Paris Agreement they have committed to the goal of global carbon neutrality in the second half of the 20th century which requires – inter alia – the world wide decarbonization of energy systems to meet the obligations under international climate change law. The EU has launched a series of ambitious policy proposals including "Clean energy for all Europeans",[2] the European Green Deal[3] and Fit for 55.[4] The European Green Deal established the goal of Europe as the "first climate neutral continent" by 2050.[5] The European Climate Law of 2021 sets legally binding climate targets of greenhouse gas emission reduction in the EU of 55 % compared to 1990 by 2030 and to net zero by 2050.[6] Greenhouse gas emissions in the EU energy sector have already decreased

1 Paris (France), 12 Dec. 2015, in force 4 November 2016, available at: UNFCCC, 'The Paris Agreement' <http://unfccc.int/paris_agreement/items/ 9485.php> accessed 11 September 2024.

2 European Commission, Communication, 'Clean Energy For All Europeans' (2016) COM 860 final.

3 European Commission, Communication 'The European Green Deal' (2019) COM 640 final.

4 European Commission, Communication '"Fit for 55": delivering the EU's 2030 Climate Target on the way to climate neutrality' (2021) COM 550 final.

5 See Edoardo Chiti, 'Managing the ecological transition of the EU: The European Green Deal as a regulatory process' (2022) 59 Common Market Law Review 19 (25 ff.); Josephine van Zeben, 'The European Green Deal: The future of a polycentric Europe?' (2020) 26 European Law Journal 300 (300 ff.).

6 Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999 [2021] OJ L 243/1 (EU Climate Law), Art. 4 Sec. 1, Art. 2 sec 1.

significantly.[7] However, the production and use of energy is still responsible for more than 75 % of the EU's greenhouse gas emissions.[8] Thus, significant additional decarbonization efforts are necessary in the EU energy sector to reach climate neutrality in 2050.

The climate-based rationale for energy transition is complemented by rationales of energy autonomy and energy security.[9] The autonomy and security dimension of energy transition was reenforced in the RePower EU Plan of 2022[10] that reacted to the Russian invasion in Ukraine in 2022 and the interrelated natural gas-supply crisis.[11] The reduction of fossil fuel imports and the expansion of carbon-neutral energy in Europe are intertwined key elements of EU strategies for autonomy and security in energy supply.[12] A further goal is a fair and just energy transition[13] that is committed to procedural justice,[14] aims for equitable distribution of both benefits

7 According to the State of the Energy Union Report 2024, greenhouse gas emissions that are covered by the EU Emissions Trading System (EU ETS) have decreased by 47 % compared to 2005 levels, see European Commission, Communication 'State of the Energy Union Report 2024' (2024) COM 404 final 2.

8 European Parliament, 'Renewable Energy' (March 2024) <https://www.europarl.europa.eu/factsheets/en/sheet/70/renewable-energy> accessed 27 October 2024.

9 Severin Fischer, 'Global energy security and EU energy policy' in Rafael Leal-Arcas (ed), *EU Energy Law and Policy* (2nd ed. Edward Elgar 2024) 223 (232).

10 European Commission, Communication 'REPower EU Plan' COM (2022) 230 final.

11 See Ingmar von Homeyer/Sebastian Oberthür/Claire Dupont, 'Implementing the European Green Deal during the Evolving Energy Crisis' (2022) 60 Journal of Common Market Studies 125 (125 ff.); Penelope Crossley, 'From the climate change to war: the evolving role of renewable energy law and policy in meeting the EU's energy security challenges' in Rafael Leal-Arcas (ed), *EU Energy Law and Policy* (2nd ed. Edward Elgar 2024) 617 (619 ff.); see also International Energy Agency, 'World Energy Outlook 2024' (2024) 15, 257 f.

12 European Parliament, 'Four challenges of the energy crisis for the EU's strategic autonomy' (*European Parliament*, 2023) <https://www.europarl.europa.eu/RegData/etudes/BRIE/2023/747099/EPRS_BRI(2023)747099_EN.pdf> accessed 11 September 2024.

13 Raphael J. Heffron/Darren McCauley, 'The Concept of Energy Justice Across the Disciplines' (2017) 105 Energy Policy 658 (658 f.); Raphael J. Heffron/Louis de Fontenelle (eds), *The Power of Energy Justice & the Social Contract* (Palgrave Macmillan 2024); Kai Menzel/Jan Schmitz, 'Energy justice: microeconomics, political obstacles and remedies for a carbon neutral future', in Rafael Leal-Arcas (ed), *EU Energy Law and Policy* (2nd ed. Edward Elgar 2024) 402 (402 ff.).

14 Chiara Armeni, 'What justice? The scope for public participation in the European Union Just Transition' (2023) 60 Common Market Law Review 1027 (1038 ff.).

and burdens of energy services,[15] attenuates social and economic costs of energy transition in most affected regions[16] and assures the affordability of energy prices for consumer households and enterprises. Moreover, energy transition is linked to industrial policy goals. The EU aims to perpetuate and expand the role of European companies in world markets for energy transition technologies.[17]

Over the last decades, the most significant effect of energy transition in the European energy mix was the rise of renewable energies. The quantity of electricity generation from renewable sources increased tremendously with an ever growing share of "new" renewable energy technologies (wind, solar, biomass) compared to the "traditional" renewable energy technology hydropower. The rise of renewable energies was catalyzed by falling generation costs for renewable energies.[18] In recent years, EU-wide electricity production from renewable sources surpassed electricity production from fossil fuels.[19] In 2022 the EU produced 38,2 % of electricity from renewable energy sources, 20,1 % from gas fired plants and 15,9 % from coal fired power plants.[20] In the broader perspective of gross final energy consumption – that includes electricity, but also liquid fuels with particular importance for transport and heating – the share of renewable energies in the EU increased from under 10 % in the early 2000s to 23 % in 2022.[21] However, the significance of renewable energies in individual European countries

15 Marzena Czarnecka/Marcin Krazniewski, 'Solving Energy Justice in the European Union' in Raphael J. Heffron/Louis de Fontenelle (eds), *The Power of Energy Justice & the Social Contract* (Palgrave Macmillan 2024) 193 (194 f.).

16 Regulation 2021/1056/EU of the European Parliament and of the Council of 24 June 2021 establishing the Just Transition Fund [2021] OJ L 231/1.

17 European Commission, Communication 'A Green Deal Industrial Plan for the Net-Zero Age', COM (2023) 62.

18 See International Renewable Energy Agency, 'Renewable Power Generation Costs in 2023' (2024) 14 ff.

19 Eurostat, 'Electricity and Heat Statistics, Table 1: Gross electricity production by Fuel, EU, 2000–2022 (GWh)' (*European Commission*, August 2024) <https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Electricity_and_heat_statistics> accessed 26 October 2024.

20 Eurostat, (*European Commission*, August 2024) 'Electricity and Heat Statistics' <https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Electricity_and_heat_statistics> accessed 26 October 2024.

21 Eurostat, 'Electricity and Heat Statistics, Table 1: Gross electricity production by Fuel, EU, 2000–2022 (GWh)' (*European Commission*, August 2024) <https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Electricity_and_heat_statistics> accessed 26 October 2024.

is very different. While Sweden (66,0 %) and Denmark (41,6 %) are far above the EU average in the share of renewables in energy consumption, Germany (20,8 %), France (20,3 %), Italy (19,0 %) and Poland (16,9 %) are close to average or below.[22] Recent statistics for the former EU member state United Kingdom report a share of 42 % for renewable energies in electricity production (in 2022) and a share of 14 % for renewable energies in total energy supply (in 2021).[23]

Moreover, renewable energies became an increasingly relevant geographical factor. In many European regions renewable energy installations developed into integral elements of the landscape, of coastlines and of building infrastructure, e.g., onshore and offshore wind energy sites, photovoltaic sites, biomass facilities and roof top solar panels. However, the growing spatial significance of renewable energy installations also led to an increase of land-use conflicts including conflicts with agriculture, nature conservation and habitat protection policies. Accordingly, renewable energy expansion has become a focal point of public deliberation on energy transition concepts and strategies.[24]

Against this backdrop, this volume explores the legal framework for energy transition at the European level and legal dimensions of energy transition experiences at the national level. The chapters assess convergences between national transition processes, particularly the integration into international and supranational climate and energy policies with harmonizing effects for national goals and instruments of energy transition. The authors analyze streamlining effects resulting from obligations of the EU and individual countries under the Paris Agreement and its characteristic bottom-up-approach that requires them to report specific decarbonization goals and implementation measures including in the energy sector.[25] However, the chapters also explore divergences resulting from specific national

22 Eurostat, 'Electricity and Heat Statistics, Table 1: Gross electricity production by Fuel, EU, 2000–2022 (GWh)' (*European Commission*, August 2024) <https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Electricity_and_heat_statistics> accessed 26 October 2024.

23 International Renewable Energy Agency (IRENA), 'Energy Profile United Kingdom' (*IRENA*, 31 July 2024) <https://www.irena.org/-/media/Files/IRENA/Agency/Statistics/Statistical_Profiles/Europe/United-Kingdom_Europe_RE_SP.pdf> accessed 26 October 2024.

24 See Jerzy Jendrośka/Alina Anapyanova, 'Towards a Green Energy Transition: RePowerEU Directive vs Environmental Acquis?' (2023) 23 elni Review 1 (1 ff.).

25 See Sabine Schlacke/Helen Wentzien/Eva-Maria Thierjung/Miriam Köster, 'Implementing the EU Climate Law via the 'Fit for 55' package' (2022) 1, oiab002, Oxford

choices between energy sources, e.g., concerning the role of coal, natural gas or nuclear power[26] in electricity generation, traditional structures of national economies and specific technological or resource-bound path dependencies.[27]

The book contributes to a growing body of literature on comparative aspects of the law of energy transition. Comparative research on transitory dimensions of energy law can build upon a range of scholarly works on comparative energy law in general perspective, in a regional perspective[28] or comparing national legal orders.[29] Recent focal points of the comparative discourse concerned energy transition as a dimension of comparative cli-

Open Energy 2 ff. <https://doi.org/10.1093/ooenergy/oiab002> accessed 10 November 2024.

26 In March 2024, the DG Energy of the European Commission reported that 12 EU countries include nuclear energy in their energy mix, see Directorate-General for Energy of the EC, 'In Focus: EU nuclear energy policy – why it matters to us all' (*European Commission*, 13 March 2024) <https://energy.ec.europa.eu/news/focus-eu-nuclear-energy-policy-why-it-matters-us-all-2024-03-13_en?pk_campaign=ENER%20Newsletter%20March%202024> accessed 26 October 2024.

27 Johannes Saurer/Jonas Monast, 'Renewable Energy Federalism in Germany and the United States' (2021) 10 Transnational Environmental Law 293 (316 f.)

28 Kim Talus, 'Energy Law' in: Jan M. Smits/Jaakko Husa/Catherine Valcke/Madalena Narciso (eds), *Elgar Encyclopedia of Comparative Law*, Vol. 2 (Edward Elgar 2023) 10 (10 ff.); the contributions in Adrian J. Bradbrook/Rosemary Lyster/Richard L. Ottinger/Wang Xi (eds), *The Law of Energy for Sustainable Development* (Cambridge University Press 2005) 291–404; for a comparison of energy law of regional organization see Jorge E. Viñuales, *The International Law of Energy* (Cambridge University Press 2022) 375 ff.

29 See, e.g., Helle Tegner Anker/Brigitte Egelund Olsen/Anita Rønne, 'Wind energy and the law: a comparative analysis (2009) 27 Journal of Energy & Natural Resources Law 145 (145 ff.); the contributions in Michèle Knodt/Jörg Kemmerzell (eds), *Handbook of Energy Governance in Europe* (Springer International Publishing 2022) Vol. 2.

mate change law,[30] the law of energy transition in federal systems,[31] energy transition in the Baltic Sea area[32] and comparative issues of energy justice.[33]

This volume adds to the comparative discourse a legal comparison of general perspectives on energy transition experiences in a plurality of European jurisdictions and specific aspects of renewable energy expansion. The research focus on renewable energies acknowledges the rise of renewable energies as the most significant effect of energy transition in the European energy mix over the last decades (see above), but that massive further expansion is necessary to reach climate neutrality until 2050. The comparative perspective is particularly helpful to put into contrast the different national renewable energy expansion pathways that led to significantly different results in the current national shares of renewables in energy consumption in individual European states (see above).

The volume assembles contributions on legal orders across Europe. The individual chapters focus on the supranational legal order of the European Union and a plurality of national jurisdictions including France, United Kingdom, Germany, Poland, Sweden, Denmark and Italy. The choice of legal orders represents energy transition experiences in a broad geographic spectrum including Western Europe, Mid-Europe and Eastern European, Northern Europe and Southern Europe. It enables the analysis of the significance of different geographic conditions for aspects of energy generation and supply. Moreover, the choice of legal orders enables the analysis of similarities and differences in terms of size of population and economic structures. The book analyzes France, United Kingdom, Germany, Poland and Italy as industrial states with comparable size of population. It assesses Denmark and Sweden are frontrunners in the share of energy of renewable energies in energy consumption (see above).

30 Michael Mehling, 'The Comparative Law of Climate Change: A research agenda' (2015) 24 RECIEL 341, 344 ff.; Jacqueline Peel/Hari M. Osofsky, *Climate Change Litigation* (Cambridge University Press 2015) 54 ff., 108 ff., 221 ff.; Daniel Farber, 'Climate Change Law', in: Jan M. Smits/Jaakko Husa/Catherine Valcke/Madalena Narciso (eds), *Elgar Encyclopedia of Comparative Law* (Vol. 1 (Edward Elgar 2023) 262 (262 ff.).

31 See the contributions in (2021) 10 Transnational Environmental Law 211–263 and Johannes Saurer/Jonas Monast, 'Symposium Foreword: The Law of Energy Transition in Federal Systems' (2021) 10 Transnational Environmental Law 205 (205 ff.).

32 Farid Karimi/Michael Rodi (eds), *Energy Transition in the Baltic Sea Area. Understanding Stakeholder Engagement and Community Acceptance* (Routledge 2022).

33 Raphael J. Heffron/Louis de Fontenelle (eds), *The Power of Energy Justice & the Social Contract* (Palgrave Macmillan 2024).

The coverage of jurisdictions extends beyond the spectrum of EU Member States to the United Kingdom as a former EU Member State that has pursued ambitious climate and energy transition policies over several decades and is still very much influenced by the European Union legal framework.[34]

Section A: EU Law Framework for Energy Transition

Section A addresses the legal framework for energy transition in EU law. The EU is an original party of the Paris Agreement and committed to reach climate neutrality in 2050 (see above). In the EU strategy towards climate neutrality the energy sector plays a central role (see above). As a supranational compound of nation states the EU relies on the member states to fulfil its decarbonization commitments. The core legal qualities of primacy and direct effect of EU law[35] and a broad spectrum of supranational implementation mechanisms[36] give significant legal power to EU legal acts addressed at the EU Member States. Thus, the EU's goals and instruments on energy transition are highly influential upon energy policies and legal concepts in the EU Member States.

In his contribution "European Climate and Energy Transformation Law", Michael Rodi presents international energy and climate law, the legislative competences of the Union, and EU climate and energy transition policies. Against the backdrop of increasingly ambitious climate targets, Rodi examines the system of energy and climate governance, with a particular focus on Regulation 2018/1999/EU on the Governance of the Energy Union and Climate Action. He further analyzes regulations in the areas of GHG emission mitigation, renewable energy law, energy efficiency law, and recent

34 See the analysis of Ana Stanič/Julian Bowden, 'Brexit and UK´s Renewable Energy and Climate Change Policies. Implications and Opportunities' in Ana Stanič/Silke Goldberg (eds), *Brexit and Energy Law: Implications and Opportunities* (Routledge 2023) 92 ff.

35 See Bruno de Witte, 'Direct Effect, Primacy, and the Nature of the Legal Order' in Paul Craig/Gráinne De Búrca (eds), *The Evolution of EU Law* (3rd ed. Oxford University Press 2021) 187 (187 ff.) Martin Hedemann-Robinson, *Enforcement of European Union Environmental Law* (3rd ed. Routledge 2015) 30 ff.

36 Miroslava Scholten, 'Mind the trend! Enforcement of EU law has been moving to 'Brussels'', Journal of European Public Policy 24 (2017), 1348 (1350 ff.); the contributions in András Jakab/Dimitry Kochenov (eds), *The Enforcement of EU Law and Values* (Oxford University Press 2017).

legislation promoting net-zero technologies. Within the regulatory framework outlined by Rodi, national energy transition law is closely intertwined with EU law.

Johannes Saurer analyzes the "EU Law Framework for Expansion of Renewable Energies". He discusses the relevant competence norms for environment and energy (esp. Art. 191, 192 and 194 TFEU) and shows the most recent increase in EU goals on renewable energy expansion that came along with the amendment of the EU's Renewable Energy Directive 2018/2001/EU by Directive (EU) 2023/2413 of the European Parliament and of the Council of 18 October 2023 (RED III) and the significance of Regulation 2018/1999/EU on the Governance of the Energy Union and Climate Action for renewable energy expansion in the Member States. Moreover, Saurer illustrates that EU renewable energy law increasingly addresses national planning and permit granting procedures for renewable installations.

The contribution "Tomorrow's EU Framework for Sustainable Fuels: The emerging regulatory framework for hydrogen and related fuels" by Kim Talus and Sirja-Leena Penttinen explores the law of renewable fuels as a dimension of the European energy transition. The authors observe a "hydrogen boom" in the EU. They examine the relevant strategies of the EU (e.g., the Hydrogen Strategy of 2020) and objectives established in the Renewable Energy Directive for the deployment of renewable fuels. Talus and Penttinen distinguish different types of renewable fuels and the respective legal regime. The chapter places particular emphasis on the regulatory framework for hydrogen including the classification of "green hydrogen" under EU law.

Michael Mehling takes a transatlantic perspective on the energy transition law in Europe. In his contribution "Advancing the Energy Transition through Industrial Policy: Lessons from a Transatlantic Comparison" he analyzes the efforts of the U.S. and the EU to harness green industrial policies as a means of reaching climate targets alongside further social and economic objectives. According to Mehling, the U.S. relies on extensive fiscal incentives, centered around the Inflation Reduction Act, while the EU has established a detailed regulatory framework building up on the European Green Deal, including the Carbon Border Adjustment Mechanism, and the Critical Raw Materials Act. Mehling explores the merits and possible risks of the distinct approaches, providing guidance for other jurisdictions seeking to transform their industries.

Section B: General Perspectives on the Law of Energy Transition

Section B covers national approaches to energy transition in a general perspective. Countries analyzed are France, United Kingdom, Germany, Poland, Sweden, Denmark and Italy. Section B gives room to address national paradigms of energy transitions, choices on energy sources including on nuclear energy, phase-out concepts for coal and gas, frameworks for carbon capture storage and/or use (CCS/CCU) and green hydrogen, consequences of energy transition for infrastructure, e.g., grid line expansion, questions of energy storage facilities, issues of sector coupling concerning, e.g., mobility sector and heating sector and potential trade-offs between phase-out of fossil fuels, security of energy supply and affordability of energy prices.

Till Markus analyzes the distinctive features of the German energy transition. He gives an account of relevant provisions of the German federal constitution, e.g., on federal competence allocation in the energy sector and on ecological obligations of the state. Markus emphasizes that the trajectory the German energy transition encompasses phase-outs of nuclear and coal power. He highlights the significance of sector coupling for the decarbonization of the mobility and the heating sector and and describes hydrogen as an emerging element of energy transition.

Marie Lamoureux examines the development of France's legislation on energy transition, beginning with the "Energy Transition for Green Growth Act" of 2015 and the codification of the main objectives of energy transition in Article L. 100–4 of the French Energy Code. According to Lamoureux, the French energy transition is substantially based on a compromise between the use of nuclear energy and the promotion of renewable energy. She discusses the Nuclear Acceleration Act, adopted in June 2023, and the Renewable Energy Acceleration Act, adopted in March 2023, as measures aimed at facilitating energy transition in France.

Fabrizio Fracchia provides an overview of Italy's energy transition, outlining the key elements of Italian energy policy and its transition objectives. Fracchia identifies the National Recovery and Resilience Plan (NRRP) as central legislative framework for the Italian energy transition. Through the NRRP, Italy provides funding for energy transition projects, such as expanding electric recharging infrastructure and developing a hydrogen supply chain. He describes a multifaceted set of legal measures intended to support Italy's energy transition. Fracchia outlines the energy transition as a theoretical concept aimed at fulfilling intergenerational responsibilities.

Kate McKenzie and Chitzi Ogbumgbada provide an overview of the United Kingdom's energy transition law. They emphasize the country's distinctive legacy in establishing zero-emission strategies and codifying them into binding legislation. Their contribution underscores the significance of the Energy Act 2023, a legislative framework that builds upon various policies, including the Net Zero Strategy, the Hydrogen Strategy, and the Heat and Buildings Strategy. Key provisions of the Energy Act 2023 are highlighted, including energy security, the advancement of emerging technologies, carbon capture and storage, and the development of interconnectors. Additionally, McKenzie and Ogbumgbada address the problem of trade-offs in the process of energy transition.

Bent Ole Gram Mortensen examines the overarching aspects of energy transition law in Denmark, grounding his analysis in historical patterns of Denmark's energy production and consumption. Mortensen outlines the current legal framework for energy generation and supply in Denmark and provides a sector-by-sector analysis that highlights special features such as the high distribution of district heating (combined with an early and strict ban of other technologies), of biomass (with a high share of imports) and of offshore wind energy. He also addresses conflicts between the expansion of renewable energies and competing ecological goals such as nature conservation. Moreover, Mortensen explores options to enhance public acceptance of energy transition infrastructure.

Melina Malafry presents an overview on the law of energy transition in Sweden in general and the law of renewable energies in particular. She shows the country as a pioneer in decarbonization combining nuclear and renewable sources (with a strong contribution of hydropower and biomass). Malafry emphasizes contextual factors that have shaped Swedish energy transition including geography, natural resources and population density. In contrast to the comparatively high overall share of renewable energies, she notes the continued dominance on fossil fuels in sectors like transportation and specific industries including steel production. Malafry emphasizes the municipal planning monopoly and the Swedish Environmental Code as decisive factors in the realization of renewable energy projects.

Bartłomiej Nowak and Aleksandra Knap provide an analysis of Poland's energy law. They highlight the current predominance of fossil fuels, especially coal, in the national energy mix, while also discussing the transformative goals of Polish politics and legislation. Nowak and Knap describe the influence of obligations under EU law on the Polish energy transition

with the National Energy and Climate Plan (NECP) in the center. They emphasize the expansion of renewable energies, the plans to include nuclear power in the future national energy mix, the importance of hydrogen, the decarbonization efforts made in the mobility and heating sectors and the relevance of energy security concerns.

Section C: Special Focus: Law of renewable energy expansion in comparative perspective

Section C addresses legal dimensions of renewable energy expansion which is a common goal of energy policies of all countries analyzed in the book. The specific focus of section C. on the law of renewable energy expansion enables a particularly detailed analysis of goals, instruments and challenges in this dimension of energy transition. Section C. analyzes and discusses national commonalities and differences in the share of specific renewable energy technologies (esp. onshore and offshore wind energy; solar energy), land-use allocation for installations, conflicts with biodiversity protection and mechanisms to enhance participation and social acceptance. Moreover, section C. identifies legal techniques intended to accelerate the expansion of renewable energy on the national scale. Countries covered are Germany, France, Italy, the United Kingdom and Denmark. The law of renewable energy expansion in Sweden and Poland is covered as part of the chapters on these countries in Section B in general perspective.

Michael Fehling analyzes the development of Germany's regulatory framework for the promotion of renewable energy expansion and situates it in the country's multi-level governance structure. He emphasizes recent changes in promotion schemes and refinancing mechanisms for renewable energy expansion. Fehling describes and discusses the continuing efforts of the federal legislature in Germany to provide for additional land for renewable energy installations (e.g. Wind Areas Requirements Act), to accelerate permit procedures and to prioritize renewable energies over specific competing interests.

Louis de Fontenelle analyzes the renewable energy law in France on the background of a strong nuclear energy tradition. He gives an account on legal developments since 2005 and puts specific emphasis on the most recent legislation designed to accelerate renewable energy deployment. De Fontenelle highlights legal mechanisms of funding and planning for renewable energies including the designation of renewable energy acceleration

zones. He explores a range of measures intended to boost public acceptance of renewable energies such as landscape integration and financial participation for local municipalities.

Chiara Mari analyzes Italy's legal framework for renewable energy expansion. She explains that Italy's goals are primarily set out in the National Recovery and Resilience Plan (NRRP) and the Plan for the Ecological Transition (PET). Mari highlights recent procedural reforms aimed at accelerating renewable deployment, such as simplifying procedures (e.g., with single authorization and unified permits). She explores public-private cooperations as an essential strategy for encouraging private investment in renewable projects. Mari argues that reducing informational asymmetries between government bodies and private entities is key to fostering mutual understanding and speeding up the expansion of renewable energy projects.

Agnieszka Ason addresses the expansion of renewable energies in the United Kingdom, emphasizing the crucial role of contracts for difference (CfD). Ason explains that during the past decade CfD have become the main instrument in supporting renewable energy generation. The CfD-system guarantees operators a "strike price" per unit of renewable energy that is determined in auctions. The government-owned Low carbon Contracts Company (LCCC) compensates the operator for the difference to market price. Ason highlights the UK's plans to extend the CfD-system to other clean energy projects, such as low-caron hydrogen.

Helle Tegner Anker and Bent Ole Gram Mortensen examine Denmark's legal framework for renewable energy expansion, emphasizing its primary focus on wind power onshore and offshore. In addition, the authors describe a growing importance of energy generated from solar and biomass. They analyze the influence of EU law and of national policy initiatives on Denmark's laws that support renewable energies in national electricity production including rules on funding, planning and permission procedures. Moreover, Anker and Gram Mortensen address issues of social acceptance of renewable energy installations including Denmark's local compensation schemes that were explicitly designed to with the purpose to boost public acceptance of wind energy.

The concluding essay "Comparing the Law of Energy Transition in Europe" by Christian Pielow and Kate McKenzie delivers a synthesis of key issues of the book and draws comparative conclusions.

Bibliography

Anker H T/ Olsen B E/ Rønne A, 'Wind energy and the law: a comparative analysis' (2009) 27 Journal of Energy & Natural Resources Law 145–178.

Armeni C, 'What justice? The scope for public participation in the European Union Just Transition' (2023) 60 Common Market Law Review 1027–1054

Bradbrook A J/Lyster R/Ottinger R L/Xi W (eds), *The Law of Energy for Sustainable Development* (Cambridge University Press 2005)

Crossley P, From the climate change to war: the evolving role of renewable energy law and policy in meeting the EU's energy security challenges, in: **Leal-Arcas R** (ed), *EU Energy Law and Policy* (2nd ed. Edward Elgar 2024) 617–641

Czarnecka M/Krazniewski M, 'Solving Energy Justice in the European Union' in **Heffron R J/de Fontenelle L** (eds), *The Power of Energy Justice & the Social Contract* (Palgrave Macmillan 2024) 193–197

de Witte B, 'Direct Effect, Primacy, and the Nature of the Legal Order' in **Craig P/De Búrca G** (eds), *The Evolution of EU Law* (3rd ed. Oxford University Press 2021) 187–227.

European Commission, Communication 'The European Green Deal' COM (2019) 640 final

European Commission, Communication 'REPower EU Plan' COM (2022) 230 final

European Commission, Communication 'A Green Deal Industrial Plan for the Net-Zero Age' COM (2023) 62

European Commission, Communication 'State of the Energy Union Report 2024' COM (2024) 404 final 2

European Commission, Communication 'Clean Energy For All Europeans' COM (2016) 860 final

European Commission, Communication 'Fit for 55': delivering the EU's 2030 Climate Target on the way to climate neutrality' COM (2021) 550 final

European Parliament, 'Four challenges of the energy crisis for the EU's strategic autonomy' <https://www.europarl.europa.eu/RegData/etudes/BRIE/2023/747099/EPRS_BRI(2023)747099_EN.pdf> accessed 11 September 2024

Farber D, 'Climate Change Law' in **Smits J M/Husa J/Valcke C/Narciso M** (eds), *Elgar Encyclopedia of Comparative Law* (Vol. 1 Edward Elgar 2023) 262–270

Fischer S, 'Global energy security and EU energy policy' in **Leal-Arcas R** (ed), *EU Energy Law and Policy* (2nd ed. Edward Elgar 2024) 223–236

Hedemann-Robinson M, *Enforcement of European Union Environmental Law* (3rd ed. Routledge 2015)

Heffron R J/de Fontenelle L (eds), *The Power of Energy Justice & the Social Contract* (Springer Nature 2024)

Heffron R J/McCauley D, '*The Concept of Energy Justice Across the Disciplines*' (2017) 105 Energy Policy 658–667.

Huhta K/Romppanen S, 'Comparing Legal Disciplines as an Approach to Understanding the Role of Law in Decarbonizing Societies' (2023) 12 Transnational Environmental Law 649–670

International Energy Agency, 'World Energy Outlook 2024' (2024) <https://www.iea.org/reports/world-energy-outlook-2024> accessed 10 November 2024

International Renewable Energy Agency, 'Renewable Power Generation Costs in 2023' (2024) <https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2024/Sep/IRENA_Renewable_power_generation_costs_in_2023.pdf> accessed 10 November 2024

Jendrośka J/Anapyanova A, 'Towards a Green Energy Transition: REPowerEU Directive vs Environmental Acquis?' (2023) elni Review 1–5

Karimi F/Rodi M (eds), *Energy Transition in the Baltic Sea Area. Understanding Stakeholder Engagement and Community Acceptance* (Routledge 2022)

Knodt M/Kemmerzell J (eds), *Handbook of Energy Governance in Europe* (Vol. 2 Springer International Publishing 2022)

Mehling M, 'The Comparative Law of Climate Change: A research agenda' (2015) 24 RECIEL 341–352

Peel J/Osofsky H M, 'Climate Change Litigation' (Cambridge University Press 2015)

Romppanen S/Huhta K, 'The Interface between EU Climate and Energy Law' (2023) 30 Maastricht Journal of European and Comparative Law 45–62

Saurer J/Monast J, 'Renewable Energy Federalism in Germany and the United States' (2021) 10 Transnational Environmental Law 293–320

Saurer J/Monast J, 'Symposium Foreword: The Law of Energy Transition in Federal Systems' (2021) 10 Transnational Environmental Law 205–210

Schlacke, S/ Wentzien H/ Thierjung E/ Köster M, 'Implementing the EU Climate Law via the 'Fit for 55' package' Oxford Open Energy (Vol. 1 2022), oiab002, https://doi.org/10.1093/ooenergy/oiab002 accessed 10 November 2024

Scholten, M 'Mind the trend! Enforcement of EU law has been moving to 'Brussels'' (2017) 24 Journal of European Public Policy 1348 ff.

Stanič A/Bowden J, 'Brexit and UK´s Renewable Energy and Climate Change Policies. Implications and Opportunities' in **Stanič A/Goldberg S** (eds), *Brexit and Energy Law: Implications and Opportunities* (Routledge 2023) 92 ff.

Talus K, 'Energy Law' in **Smits J M/Husa J/Valcke C/Narciso M** (eds), *Elgar Encyclopedia of Comparative Law* (Vol. 2 Edward Elgar 2023) 10–16

UNFCCC, 'The Paris Agreement' <http://unfccc.int/paris_agreement/items/9485.php> accessed 11 September 2024

Van Zeben J, *'The European Green Deal: The future of a polycentric Europe?'* (2020) 26 European Law Journal 300–318

Viñuales J E, *The International Law of Energy* (Cambridge University Press 2022)

Von Homeyer I/Oberthür S/Dupont C, 'Implementing the European Green Deal during the Evolving Energy Crisis' (2022) 60 Journal of Common Market Studies 125–136–136