

EUROPEAN ENERGY LAW REPORT XIV

ENERGY & LAW SERIES

*European Energy Law Report I*, Martha M. Roggenkamp and Ulf Hammer (eds.)

*The Regulation of Power Exchanges in Europe*, Martha M. Roggenkamp and François Boisseleau (eds.)

*European Energy Law Report II*, Martha M. Roggenkamp and Ulf Hammer (eds.)

*European Energy Law Report III*, Ulf Hammer and Martha M. Roggenkamp (eds.)

*European Energy Law Report IV*, Martha M. Roggenkamp and Ulf Hammer (eds.)

*A Functional Legal Design for Reliable Electricity Supply*, Hamilcar Knops

*European Energy Law Report V*, Martha M. Roggenkamp and Ulf Hammer (eds.)

*European Energy Law Report VI*, Martha M. Roggenkamp and Ulf Hammer (eds.)

*Electricity and Gas Supply Network Unbundling in Germany, Great Britain and The Netherlands and the Law of the EU*, Eckart Ehlers

*Legal Design of Carbon Capture and Storage*, Martha M. Roggenkamp and Edwin Woerdman (eds.)

*European Energy Law Report VII*, Martha M. Roggenkamp and Ulf Hammer (eds.)

*European Energy Law Report VIII*, Martha M. Roggenkamp and Ulf Hammer (eds.)

*European Energy Law Report IX*, Martha M. Roggenkamp and Olivia Woolley (eds.)

*EU Regulation of Cross-Border Carbon Capture and Storage*, Marijn Holwerda

*The Non-Discrimination Obligation of Energy Network Operators*, Hannah Kruimer

*European Energy Law Report X*, Martha M. Roggenkamp and Henrik Bjørnebye (eds.)

*A Legal Framework for a Transnational Offshore Grid in the North Sea*, Hannah Katharina Müller

*Prevention and Compensation for Transboundary Damage in Relation to Cross-Border Pipelines*, Mehdi Piri Damagh

*Handbook of Shale Gas Law and Policy – Economics, Access, Law and Regulation in Key Jurisdictions*, Tina Hunter (ed.)

*European Energy Law Report XI*, Martha M. Roggenkamp and Catherine Banet (eds.)

*European Energy Law Report XII*, Martha M. Roggenkamp and Catherine Banet (eds.)

*European Energy Law Report XIII*, Martha M. Roggenkamp and Catherine Banet (eds.)

*European Energy Law Report XIV*, Martha M. Roggenkamp and Catherine Banet (eds.)

EUROPEAN ENERGY  
LAW REPORT XIV

*Edited by*  
Martha M. ROGGENKAMP  
Catherine BANET



INTERSENTIA

Cambridge – Antwerp – Chicago

Intersentia Ltd  
8 Wellington Mews  
Wellington Street | Cambridge  
CB1 1HW | United Kingdom  
Tel: +44 1223 736 170  
Email: mail@intersentia.co.uk  
www.intersentia.com | www.intersentia.co.uk

*Distribution for the UK and  
Rest of the World (incl. Eastern Europe)*  
NBN International  
1 Deltic Avenue, Rooksley  
Milton Keynes MK13 8LD  
United Kingdom  
Tel: +44 1752 202 301 | Fax: +44 1752 202 331  
Email: orders@nbninternational.com

*Distribution for Europe*  
Lefebvre Sarrut Belgium NV  
Hoogstraat 139/6  
1000 Brussels  
Belgium  
Tel: +32 (0)800 39 067  
Email: mail@intersentia.be

*Distribution for the USA and Canada*  
Independent Publishers Group  
Order Department  
814 North Franklin Street  
Chicago, IL 60610  
USA  
Tel: +1 800 888 4741 (toll free) | Fax: +1 312 337 5985  
Email: orders@ipgbook.com

The Energy & Law Series is published in parallel with the Dutch series *Energie & Recht*.

Members of the editorial committee are:

Prof. Dr. Martha M. Roggenkamp, Groningen Centre of Energy Law and Sustainability, University of Groningen (editor in chief)

Prof. Dr. Kurt Deketelaere, Institute of Environmental and Energy Law, University of Leuven

Dr. Tom Vanden Borre, Chief Counsellor, Commission for the Regulation of Electricity and Gas (CREG) and University of Leuven

## European Energy Law Report XIV

© The editors and contributors severally 2021

The editors and contributors have asserted the right under the Copyright, Designs and Patents Act 1988, to be identified as authors of this work.

No part of this book may be reproduced, stored in a retrieval system, or transmitted, in any form, or by any means, without prior written permission from Intersentia, or as expressly permitted by law or under the terms agreed with the appropriate reprographic rights organisation. Enquiries concerning reproduction which may not be covered by the above should be addressed to Intersentia at the address above.

ISBN 978-1-83970-029-3

D/2021/7849/152

NUR 828

British Library Cataloguing in Publication Data. A catalogue record for this book is available from the British Library.

## PREFACE

The editors are very pleased to present the *European Energy Law Report XIV*. The *European Energy Law Report* is an initiative taken by the organizers of the European Energy Law Seminar which has taken place on a regular basis in the Netherlands since 1989. The aim of this seminar is to present an overview of the most important legal developments in the field of international, European Union (EU) and national energy and climate law. Whereas the first seminars concentrated on the developments at the European Community level, which were the results of the establishment of an Internal Energy Market, the focus has now gradually switched to the developments at the national level following the implementation of the EU directives on the internal electricity and gas markets, promoting renewable energy sources, mitigating climate change and securing energy supply. This approach can also be found in the present volume.

Similar to the previous *European Energy Law Reports*, this book includes chapters based on papers presented at the preceding European Energy Law Seminar (EELS), which is held on an annual basis. In this case, the book covers the main contents of the European Energy Law Seminars of 2020. Although a wide range of topics and developments were discussed at the seminar, we recognise that the common thread is energy transition and cross-border energy activities and their impacts. These issues are discussed in the five parts of this volume. As a preliminary matter, the book starts by presenting three developments that will have an impact on the EU and EU energy law (Part I). These are Brexit and its effects on the EU energy market, followed by a chapter on possible changes of the Energy Charter Treaty and their impact on energy transition, and a chapter reviewing the progression towards the EU's 20-20-20 goals. The next part (Part II) concentrates on EU case law and in particular on State aid cases in relation to renewable energy sources (and in particular offshore wind) and energy transition measures. Part III reviews some key legal and market developments as well as new infrastructure projects aiming at ensuring cross-border energy flow in Europe. The next two parts discuss two new developments relevant for the energy transition. First, Part IV discusses the concept of energy communities in the EU and the legislative framework adopted in Spain and the Netherlands. The last part of the book discusses the production and use of clean hydrogen in the EU, particularly Germany and the Netherlands, and in the North Sea area. The focus of both chapters is on green hydrogen.

We are grateful for the support of the speakers at the seminar and their cooperation in rewriting their papers for the purpose of this book. We also would like to thank the authors and co-authors who were not a speaker at the seminar but were willing to participate in this project so that we are able to provide you with a 'complete' picture of all topics discussed. Finally, we would like to acknowledge the help and support of the publisher in publishing this book. We are confident that these reports will continue to be part of an important and long-lasting tradition in this field.

Martha M. Roggenkamp and Catherine Banet  
Groningen/Oslo, 20 May 2021

# CONTENTS

<i>Preface</i> .....	v
<i>List of Abbreviations</i> .....	xix
<i>List of Contributors</i> .....	xxiii

## **Introduction**

Martha M. ROGGENKAMP and Catherine BANET .....	1
--	---

## **PART I. DEVELOPMENTS IN THE EU AND EU ENERGY LAW**

### **Chapter I. Brexit and the Energy Market: The UK Decoupled**

Silke GOLDBERG .....	11
1. Introduction .....	11
2. The EU–UK Relationship .....	13
2.1. The Deals that Could have Been .....	13
2.2. The Trade and Cooperation Agreement .....	14
2.2.1. Which Deal Model? .....	14
2.2.2. Governance .....	15
2.2.3. The Level Playing Field Provisions .....	16
2.3. The Regulatory Scaffolding of the New EU–UK Energy Cooperation .....	16
3. The Internal Energy Market .....	17
3.1. Regulatory and TSO Cooperation .....	18
3.2. Third-Party Access and Unbundling .....	19
3.3. Interconnectors .....	19
3.3.1. Use of Interconnectors .....	19
3.3.2. Exemptions .....	20
3.3.3. Congestion Management and Transmission Costs .....	21
3.4. Electricity Trading .....	21
3.5. The Single Electricity Market on the Island of Ireland (iSEM) .....	24
4. Climate Change, Renewable Energy and Carbon Pricing .....	25
4.1. Climate Change .....	25
4.2. Renewable Energy .....	25
4.3. The ETS and Carbon Pricing .....	26

5. The Nuclear Energy Sector . . . . .	27
5.1. New British Regulations . . . . .	28
5.2. Nuclear Cooperation Agreements . . . . .	28
6. Did Brexit ‘Get Done’? An Attempt at an Outlook . . . . .	29

**Chapter II. The EU’s Text Proposal for a Revised Energy Charter Treaty: Legal Consequences and the Practical Implications for the Energy Transition**

Cees VERBURG . . . . .	31
1. Introduction . . . . .	31
2. Narrowing the Scope of the Treaty: The Importance of Definitions . . . . .	34
2.1. Investment and Economic Activity in the Energy Sector . . . . .	34
2.2. Investor . . . . .	38
3. Investment Protection . . . . .	39
3.1. Removing Standards of Investment Protection . . . . .	40
3.2. Redefining and Clarifying the Content of Standards of Investment Protection. . . . .	41
3.3. Rearranging Standards of Investment Protection . . . . .	45
3.4. Consequences for the Energy Transition . . . . .	45
4. Clarifications, Exceptions and Derogations . . . . .	45
5. Dispute Settlement. . . . .	47
6. Conclusion . . . . .	51

**Chapter III. Review of the EU 20-20-20 Goals**

Mihai TOMESCU, Melanie SPORER and Suzanne DAEL . . . . .	55
1. Introduction . . . . .	55
2. Background for the 20-20-20 Targets . . . . .	56
2.1. Energy and Environmental Pressures . . . . .	56
2.2. Setting EU Climate and Energy Targets for 2020 and Beyond. . . . .	57
3. The Main EU Climate and Energy Policies for 2020 . . . . .	59
3.1. The Spark for EU Climate and Energy Policy Integration . . . . .	59
3.2. The EU Emission Trading Scheme and the Effort Sharing Decision . . . . .	60
3.3. The Renewable Energy Directive . . . . .	62
3.4. The Energy Efficiency Directive. . . . .	63
3.5. From Unintended Overlaps to Better Policy Design . . . . .	64



4.	Progress Towards Climate and Energy Targets. . . . .	67
4.1.	Progress Towards GHG Emissions Reductions Targets . . . . .	67
4.1.1.	Overall EU Progress Towards 2020/2030/2050 . . . . .	67
4.1.2.	National Progress Towards Greenhouse Gas Emission Targets . . . . .	69
4.2.	Progress Towards Energy Efficiency Targets. . . . .	70
4.3.	Progress Towards Renewable Energy Targets. . . . .	71
5.	Beyond 2020: Striving for Greater Coherence . . . . .	72
5.1.	Setting Sights on Comprehensive Sustainability: The European Green Deal. . . . .	72
5.2.	Expected Results from the Energy Union Strategy . . . . .	73
5.3.	Lessons Learned from the 20/20/20 Framework . . . . .	74

## PART II. EU CASE LAW

### Chapter IV. How is the Energy Sector Faring at the EU Courts?

	Francesco Maria SALERNO . . . . .	79
1.	Introduction . . . . .	79
2.	State Aid Cases: The Notion of State Resources. . . . .	80
2.1.	<i>Germany v. Commission</i> . . . . .	80
2.1.1.	Background to the Judgment . . . . .	80
2.1.2.	Could the EEG Surcharge be Considered a Levy? . . . . .	81
2.1.3.	Does the State have the Power to Dispose of the Funds? . . . . .	82
2.1.4.	Were TSOs ‘Administrators’? . . . . .	83
2.2.	<i>FVE Holýšov I and Others v. Commission</i> . . . . .	83
2.2.1.	Background to the Judgment . . . . .	83
2.2.2.	Was the Scheme Financed by a Levy? . . . . .	84
2.2.3.	Is there an Analogy with Schemes Analyzed in <i>Van Tiggele</i> , <i>Preussenelektra</i> and <i>Germany v. Commission</i> ? . . . . .	85
2.2.4.	Were TSOs and DSOs Acting as ‘Administrators’? . . . . .	85
3.	Energy Cases Stemming from Sector-Specific Energy Legislation. . . . .	86
3.1.	The <i>Poland v. Commission (OPAL)</i> Judgment. . . . .	86
3.1.1.	Background to the Judgment . . . . .	86
3.1.2.	Was the Exemption Decision in Breach of the Principle of Energy Solidarity? . . . . .	87
3.1.3.	Was the Exemption Decision Adopted in Breach of the Principle of Security of Energy Supply? . . . . .	88
3.2.	The <i>Repsol Butano</i> Judgment . . . . .	88
3.2.1.	Procedure . . . . .	88
3.2.2.	Is the <i>Federutility</i> Case Law Applicable? . . . . .	89

3.2.3.	Is a Maximum Price Measure for the Sale of Cylinders of Bottled LPG Compatible with the Principle of Proportionality? . . . . .	89
3.2.4.	Is a Measure for the Compulsory Home Delivery of Bottled LPG Compatible with the Principle of Proportionality? . . . . .	90
3.2.5.	Is the <i>Ratione Personae</i> Criterion Met by the Spanish Public Service Obligations? . . . . .	91
3.3.	The <i>Achema</i> Case: At the Interface between State Resources and SGEI. . . . .	91
3.3.1.	Background to the Judgment . . . . .	91
3.3.2.	Could the PIS Funds be Regarded as State Resources? . . . . .	92
3.3.3.	Could the Measure Confer a Selective Advantage? . . . . .	92
3.3.4.	Could RES Generation be Defined as SGEI Pursuant to the <i>Altmark</i> Case Law? . . . . .	93
4.	Conclusion . . . . .	94

**Chapter V. Energy Policy Objectives in Lithuania in the Light of Recent State Aid Cases**

	Rita PAUKŠTĖ . . . . .	97
1.	Introduction . . . . .	97
2.	EU Energy Policy Goals Shaping the Lithuanian National Energy and Climate Plan . . . . .	98
2.1.	EU Energy Policy Initiatives that Shaped National Energy Policy Objectives . . . . .	98
2.2.	Energy Policy and Energy Mix in Lithuania: Setting the Scene. . . . .	101
3.	Relevant State Aid Decisions . . . . .	104
3.1.	The New RES Support Scheme and Technology-Neutral Auctions . . . . .	104
3.2.	Late Notification of the RES Support Scheme Set Up in 2012 . . . . .	106
3.3.	The Energy-Intensive Users Scheme . . . . .	108
3.4.	Financing the Klaipėda LNG Terminal: Saga of Disputes. . . . .	109
4.	Conclusion . . . . .	113

**Chapter VI. Offshore Wind Farms and State Aid Rules: The Case of France**

	Guillaume DEZOBRY . . . . .	115
1.	Introduction . . . . .	115
2.	The Two Main State Aid Decisions Related to Offshore Wind Farms in France. . . . .	116
2.1.	Classic Tender: The Tenders Launched in 2011 and 2013 and the Commission’s Decision of 26 July 2019. . . . .	117

2.2.	Competitive Dialogue: The Tender Launched in 2016 and the Commission's Decision of 10 December 2018 . . . . .	118
3.	The Doubts about the Applicability of the 2008–2014 Guidelines to the Support Schemes Granted Through the 2011 and 2013 Tenders . . . . .	119
3.1.	The Application of the 2008 Guidelines Based on the Wrong Finding that the Aids were Unlawful . . . . .	120
3.1.1.	The Commission's Reasoning . . . . .	120
3.1.2.	The Six Aids may not be Unlawful . . . . .	120
3.2.	Applicability of the 2014–2020 EEAG to Assess the Compatibility of those Cases . . . . .	122
3.2.1.	Applicability of the EEAG to Notified (Lawful) Aids . . . . .	122
3.2.2.	The Double Classification (Ad Hoc and Individual Application) of the Six Projects and its Consequences . . . . .	122
4.	The Nature of the Aid: Operating Aid or Investment Aid . . . . .	124
5.	Connection Costs Borne by Transmission System Operators: Is it State Aid? . . . . .	125
6.	Conclusion . . . . .	126

## PART III. NEW DEVELOPMENTS IN CROSS-BORDER ENERGY GOVERNANCE

### Chapter VII. Cross-Border Electricity Trade in Europe: Towards an 'Electrical Schengen Area'?

	Christian SCHNELLER . . . . .	131
1.	Introduction . . . . .	131
2.	Cross-Border Trade and Congestion Management . . . . .	132
2.1.	Physical Constraints in the Transmission System . . . . .	133
2.2.	The German-Danish Border . . . . .	134
2.3.	Two Principal Options: Zonal and Nodal Pricing . . . . .	134
2.4.	The Development of Congestion Management in the Internal Electricity Market . . . . .	135
3.	New Rules for Capacity Allocation: Articles 14–17 Regulation (EU) 2019/943 . . . . .	137
3.1.	New Requirements for Bidding Zone (Re)Configuration . . . . .	138
3.2.	The Minimum Obligation to Provide 70% Cross-Border Trading Capacity . . . . .	139
3.3.	Consequences of the New Regulatory Regime . . . . .	140
3.3.1.	Time Pressure for Implementing Action Plans . . . . .	140
3.3.2.	Incentive to Accelerate (Intrazonal) Transmission Grid Development . . . . .	140
3.3.3.	Disincentive to Invest in Cross-Zonal Lines . . . . .	140

3.3.4.	Increase in Redispatch and Countertrading . . . . .	141
3.3.4.1.	Remedial Actions to be Used Either for Safety or for Trade Purposes . . . . .	141
3.3.4.2.	Increase in System Cost . . . . .	142
3.3.4.3.	Increase in CO <sub>2</sub> Emissions . . . . .	142
3.4.	Towards Ever-Smaller Bidding Zones? . . . . .	142
4.	Competition Law and Congestion Management . . . . .	143
4.1.	<i>Swedish Interconnector</i> and <i>DE/DK Interconnector</i> . . . . .	143
4.2.	Competition Law and Sector Regulation . . . . .	145
5.	Outlook: Towards an ‘Electrical Schengen Area’? . . . . .	147

## Chapter VIII. The New Nordic Balancing Model

	Astrid Skjønberg BRUNT . . . . .	149
1.	Introduction . . . . .	149
2.	Ongoing Changes in the Electricity and Balancing Markets . . . . .	150
2.1.	Power Markets and Power Trading . . . . .	150
2.2.	Wholesale Electricity Markets and Nordic Financial Markets . . . . .	152
2.3.	Day-Ahead and Intraday Markets . . . . .	152
2.4.	Balancing and Balancing Markets . . . . .	153
3.	The Current Nordic Balancing Model . . . . .	155
3.1.	The Nordic System Operation Agreement (SOA) . . . . .	155
3.2.	The Management of Balancing Operations by Nordic TSOs . . . . .	155
3.3.	The Nordic Balancing Products . . . . .	158
3.4.	Balancing Prices . . . . .	160
3.5.	eSett: Nordic Imbalance System . . . . .	160
3.6.	Drivers for Change in the Nordic Balancing Market . . . . .	161
4.	The New Nordic Balancing Model . . . . .	163
4.1.	The Legal Framework . . . . .	163
4.2.	The Nordic Balancing Model Projects and Roadmap . . . . .	164
4.3.	Design Principles for the New Nordic Balancing Model . . . . .	165
4.4.	Imbalance Settlement and Imbalance Settlement Price . . . . .	168
5.	Concluding Remarks . . . . .	169

## Chapter IX. The Contested Legal and Political Landscape of Nord Stream 2: In Uncharted Waters

	Vasyl CHORNYI and Anna-Alexandra MARHOLD . . . . .	171
1.	Introduction . . . . .	171
2.	Historical and Political Background to Nord Stream 2 . . . . .	171
3.	The Legal Regime of Nord Stream 2: EU and International Law Dimensions . . . . .	173

3.1.	EU Legal Rules for Natural Gas Pipelines . . . . .	173
3.1.1.	The EU Gas Directive . . . . .	173
3.1.1.1.	Unbundling . . . . .	174
3.1.1.2.	Third-Party Access . . . . .	177
3.1.1.3.	Tariff Regulation . . . . .	177
3.1.1.4.	Infrastructure Exemptions . . . . .	178
3.1.1.5.	Certification of TSOs . . . . .	178
3.1.2.	The 2019 Amendment to the EU Gas Directive and Implications for Nord Stream 2 . . . . .	179
3.2.	The Law of the Sea . . . . .	182
4.	Political and Legal Contestation . . . . .	185
4.1.	US Sanctions . . . . .	185
4.1.1.	‘Protecting Europe’s Energy Security Act of 2019’ . . . . .	185
4.1.2.	Updated CAATSA Section 232 Guidance . . . . .	187
4.2.	Litigation in the WTO and Other Fora . . . . .	189
4.2.1.	WTO Litigation . . . . .	190
4.2.2.	Energy Charter Treaty Arbitration . . . . .	192
4.2.3.	Litigation before the General Court of the EU . . . . .	193
5.	Conclusion: The Uncharted Waters of Nord Stream 2 . . . . .	193

## PART IV. ENERGY COMMUNITIES

### Chapter X. Energy Communities in the EU: Challenges for the Implementation of the EU Legal Framework

	Mikołaj JASIAK . . . . .	197
1.	Introduction . . . . .	197
2.	The Concept of an ‘Energy Community’ . . . . .	199
2.1.	One Concept, Multiple Names and Two Directives . . . . .	199
2.2.	Key Requirements . . . . .	201
2.2.1.	Incorporation . . . . .	201
2.2.2.	Purpose . . . . .	202
2.2.3.	Participation . . . . .	204
2.2.4.	Location . . . . .	206
2.2.5.	Governance . . . . .	207
3.	Roles and Responsibilities of the Energy Communities . . . . .	209
3.1.	Energy Communities as Market Actors . . . . .	209
3.1.1.	Non-Discriminatory Treatment . . . . .	209
3.1.2.	Rights and Obligations . . . . .	211
3.1.3.	The Enabling Framework . . . . .	212
3.2.	Energy Communities as DSOs . . . . .	213

4.	Energy Sales within a Community. . . . .	214
4.1.	EU Framework for Electricity (and Energy) Sharing . . . . .	214
4.2.	Contractual Relations within a Community. . . . .	216
5.	Conclusions . . . . .	217

**Chapter XI. Energy Communities in Spain: Legal and Societal Challenges**

David ROBINSON and Iñigo DEL GUAYO . . . . .	219
--	-----

1.	Introduction . . . . .	219
2.	Preconditions for Developing Energy Communities. . . . .	219
2.1.	EU Law Governing Energy Communities . . . . .	220
2.2.	Energy Communities and the Energy System . . . . .	222
3.	Legislative Background and Experience in Spain . . . . .	224
3.1.	The Existing Legal Framework. . . . .	224
3.1.1.	Closed Distribution Systems for Electro-Intensive Industries . . . . .	224
3.1.2.	Collective Self-Consumption . . . . .	225
3.1.3.	Renewable Energy Communities and the Integrated National Energy and Climate Plan. . . . .	226
3.2.	Incorporation of Energy Communities: The Role of Cooperatives . . . . .	229
3.3.	Future Regulatory Developments with an Impact on Energy Communities. . . . .	231
3.3.1.	The IDAE Guidelines. . . . .	231
3.3.2.	Promoting Energy Communities Through Auctions for Additional Renewable Generation Capacity. . . . .	232
3.3.3.	Public Consultation on the Regulation of Energy Communities . . . . .	234
3.3.4.	The Act on Climate Change and Energy Transition. . . . .	235
4.	Conclusions . . . . .	236

**Chapter XII. Energy Communities in the Netherlands: Learning from Local Energy Initiatives**

Lea DIESTELMEIER and Job SWENS . . . . .	239
--	-----

1.	Introduction . . . . .	239
2.	Community Energy Initiatives in the Netherlands: Development and Status Quo. . . . .	240
2.1.	The Concept of ‘Energy Communities’ . . . . .	240
2.2.	Development of Community Energy Initiatives in the Netherlands. . . . .	241

3.	The Legal Framework for Local Community Energy Initiatives in the Netherlands . . . . .	244
3.1.	Support Scheme for Collective Generation . . . . .	244
3.1.1.	The Postal Code Rose Regulation. . . . .	244
3.1.1.1.	<i>De Vlaas</i> . . . . .	246
3.1.1.2.	<i>Leyzicht in de Zon</i> . . . . .	248
3.1.2.	Recent Developments: PCRR Replaced by Subsidy Scheme . . . . .	249
3.2.	Experimenting with Future Organisational Forms . . . . .	250
3.2.1.	A Regulatory Sandbox. . . . .	250
3.2.2.	<i>Schoonschip</i> . . . . .	252
3.2.3.	<i>Collegepark Zwijsen</i> . . . . .	254
3.2.4.	Recent Developments: Termination of the DED . . . . .	255
3.3.	Assessment . . . . .	255
4.	Implementing the EU Legal Framework on Energy Communities in the Netherlands. . . . .	256
4.1.	A New Energy Act. . . . .	256
4.2.	Draft Provisions Governing Energy Communities . . . . .	257
4.2.1.	Legal Form, Governance and Participation . . . . .	257
4.2.2.	Purpose . . . . .	258
4.2.3.	Activities . . . . .	259
4.3.	Assessment . . . . .	261
5.	Conclusion . . . . .	262

## PART V. CLEAN HYDROGEN: REGULATORY FRAMEWORKS

### Chapter XIII. Green Hydrogen Developments in the EU: Cross-Border Cooperation between Germany and the Netherlands

	Ruven FLEMING . . . . .	267
1.	Introduction . . . . .	267
2.	Hydrogen and its Technicalities . . . . .	269
3.	The EU . . . . .	271
3.1.	Hydrogen Policy and the Hydrogen Strategy . . . . .	271
3.1.1.	Hydrogen and the Industrial Sector. . . . .	272
3.1.2.	Hydrogen Networks and Supply. . . . .	273
3.1.3.	The Transport Sector . . . . .	274
3.1.4.	Hydrogen Investments and Support . . . . .	274
3.2.	The EU Legal Framework . . . . .	275
3.2.1.	The Renewable Energy Directive . . . . .	276
3.2.2.	The Electricity Directive and the Gas Directive . . . . .	277

3.2.3.	The Fuel Quality Directive and the Directive on Alternative Fuels Infrastructure . . . . .	279
3.2.4.	Primary EU Law . . . . .	280
3.3.	Summary . . . . .	281
4.	Hydrogen Developments in Germany and the Netherlands . . . . .	281
4.1.	National Hydrogen Strategies . . . . .	281
4.1.1.	The German Hydrogen Strategy . . . . .	282
4.1.2.	The Dutch Hydrogen Strategy . . . . .	283
4.2.	National Legal Frameworks . . . . .	284
4.2.1.	Defining ‘Green’ Hydrogen . . . . .	285
4.2.2.	Pipelines and Hydrogen Supply . . . . .	286
4.2.3.	Hydrogen as a Fuel . . . . .	287
4.2.4.	Fuelling Infrastructure . . . . .	288
4.3.	Cross-Border Hydrogen Developments . . . . .	288
4.3.1.	Political Ambitions . . . . .	289
4.3.2.	Cross-Border Hydrogen Trade: Admixing and Gas Quality Standards . . . . .	290
4.3.3.	Cross-Border Transport and Fuel Quality . . . . .	291
5.	Conclusion . . . . .	292

**Chapter XIV. The Regulatory Framework for Green Hydrogen Developments in the North Sea**

	Liv Malin ANDREASSON . . . . .	295
1.	Introduction . . . . .	295
2.	Green Hydrogen Developments Offshore: Policy and Technical Background . . . . .	297
2.1.	EU and National Hydrogen Policies . . . . .	297
2.2.	Power-to-Gas Technology Offshore . . . . .	298
3.	Development of Green Hydrogen in the North Sea: Legal Framework . . . . .	299
3.1.	Electricity Input for Hydrogen Production . . . . .	299
3.1.1.	Jurisdiction Over and Regulation of Submarine Electricity Cables . . . . .	300
3.1.2.	Cable Connecting an Offshore Wind Farm and an Offshore Electrolyser . . . . .	301
3.1.3.	Cable Connecting an Offshore Electrolyser to the Offshore Grid . . . . .	303
3.1.4.	Assessment . . . . .	304
3.2.	Hydrogen Production . . . . .	304
3.2.1.	Production of Hydrogen from Existing Platforms Producing Hydrocarbons . . . . .	305



3.2.2. Reuse of Existing Platforms for Hydrogen	
Production .....	306
3.2.3. Development of New Platforms for Hydrogen	
Production .....	309
3.2.4. Assessment .....	309
3.3. Hydrogen Transport .....	310
3.3.1. Use of Existing Pipelines.....	310
3.3.2. Reuse of Existing Pipelines.....	312
3.3.3. Development of New Pipelines.....	313
3.3.4. Assessment .....	313
4. Conclusion .....	314



## LIST OF ABBREVIATIONS

ACE	Area Control Error
ACER	Agency for the Cooperation of Energy Regulators
AEA	Annual Emission Allocations
AEDEN	Spanish Association for Energy Law
aFRR	Frequency Restoration Reserves with automatic activation
AG	Advocate General
AOF	Activation Optimisation Function
ATC	Available Transfer Capability
ATR	Auto Thermal Reforming
BEIS	Business, Energy and Industrial Strategy
BImSchG	Federal Control of Pollution Act
BIT	Bilateral Investment Treaty
BNetzA	German regulatory authority
BRP	Balancing Responsible Party
BSP	Balancing Service Provider
CAATSA	Countering America's Adversaries Through Sanctions Act
CAPA	Coopérative des artisans pêcheurs associés
CARE	Climate and Renewable Energy (package)
CCfD	Carbon Contracts for Difference
CDM	Clean Development Mechanism
CDS	Closed Distribution System
CEC	Citizens' Energy Communities
CEN	European Committee for Standardization
CEP	Clean Energy Package for All Europeans
CETA	Comprehensive and Economic Trade Agreement
CfD	Contract for Difference
CJEU	Court of Justice of the European Union
CMF	Capacity Management Function
CMM	Capacity Management Module
CNG	Compressed Natural Gas
CP	Contracting Parties
CRE	Commission for Energy Regulation (Ireland)
CS	Continental Shelf
DAFI	Directive on Alternative Fuels Infrastructure
DCF	Discounted Cash Flow
DED	Dutch Experimentation Decree

DSO	Distribution System Operator
EAES	Economic Activity in the Energy Sector
EAN code	European Article Number code
EBGL	Electricity Balancing Guideline, Commission Regulation (EU) 2017/2195 of 23 November 2017 establishing a guideline on electricity balancing
EC	European Commission
ECC	Energy Charter Conference
ECHR	European Convention on Human Rights
ECJ	European Court of Justice
ECT	Energy Charter Treaty
EDF	Electricité de France
EEA	European Environment Agency
EEAG	Guidelines on State aid for environmental protection and energy
EED	2012 Energy Efficiency Directive
EEG	Renewable Energy Sources Act (Erneuerbare-Energien-Gesetz)
EEO	Energy Efficiency Obligation
EEZ	Exclusive Economic Zone
EFET	European Federation of Energy Traders
ENTSO-E	European Network of Transmission System Operators for Electricity
ENTSO-G	European Network of Transmission System Operators for Gas
EnWG	Energy Industry Act (Energiewirtschaftsgesetz)
EPP	Energy Port Peelland
ERO	Energy Regulatory Office (Czech Republic)
ESD	Effort Sharing Decision
ESR	Effort Sharing Regulation
ESSOC	État au service d'une société de confiance
ETS	Emissions Trading Scheme
EU	European Union
Euratom	European Atomic Energy Community
FCR	Frequency Containment Reserves
FCR-D	Frequency Containment Reserves for Disturbance Situations
FCR-N	Frequency Containment Reserve for Normal Operation
FET	Fair and Equitable Treatment
FQD	Fuel Quality Directive
FRR	Frequency Restoration Reserves
GHG	Greenhouse Gases
GoO	Guarantees of Origin
GW	Gigawatts
GWh	Gigawatt-hour
H <sub>2</sub>	Hydrogen
H <sub>2</sub> O	Water

HOA	Homeowner Association
HVDC	High-Voltage Direct Current
IAEA	International Atomic Energy Agency
ICS	Investment Court Systems
ICSID	Investment Centre for Settlement of Investment Disputes
ID	Intraday
IDEA	Institute for Energy Diversification and Saving (Spain)
IEA	International Energy Agency
IEM	Internal Energy Market
IIA	International Investment Agreement
IN	Imbalance Netting
INT NC	Network Code on Interoperability and Data Exchange Rules
IPCC	Intergovernmental Panel on Climate Change
ISDS	Investor-State Dispute Settlement
iSEM	Single Electricity Market on the Island of Ireland
ISP	Imbalance Settlement Period
ITO	Independent Transmission Operator
JI	Joint Implementation
L-GAS	Low-calorific Gas
LEC	Local Energy Community
LNG	Liquefied Natural Gas
LPF	Level Playing Field
LPG	Liquefied Petroleum Gas
MEOP	Market Economy Operator Principle
MFN	Most Favoured Nation
mFRR	Frequency Restoration Reserves with manual activation
MIC	Multilateral Investment Court
MS	Member State
MW	MegaWatt
NAFTA	North American Free Trade Agreement
NCA	Nuclear Cooperation Agreement
NCECP	National Commission for Energy Control and Prices (Lithuania)
NDAA	National Defense Authorization Act
NECP	National Energy and Climate Plans
NEEAP	National Energy Efficiency Action Plans
NRA	Dutch National Regulatory Authority
NREAP	National Renewable Energy Action Plans
NS2	Nord Stream 2
O <sub>2</sub>	Oxygen
ODE	Organisatie Duurzame Energie
OFTO	Offshore Transmission Owner
ONR	Office of Nuclear Regulation
OPAL	Ostsee-Pipeline-Anbindungsleitung

PAP	Primary Allocation Point
PCRR	Postal Code Rose Regulation
PEESA	Protecting Europe's Energy Security Act
PNIEC	National Integrated Energy and Climate Plan
PPE	Multi-Annual Energy Programme
PSI	Public Interest Services in the Electricity Sector
PSO	Public Service Obligation
PtG	Power-to-Gas
REC	Renewable Energy Community
RED	Renewable Energy Directive
REDII	Renewables Directive
REMIT	Regulation on Wholesale Energy Market Integrity and Transparency
RES	Renewable Energy Sources
ResCoop	European Federation on Renewable Energy Cooperatives
RVO	Rijksdienst voor Ondernemend Nederland
SAP	Secondary Allocation Point
SGEI	Services of General Economic Interest
SME	Small and Medium-Sized Enterprise
SMR	Steam Methane Reforming
TACCC	Transparent, Accurate, Complete, Consistent and Comparable
TCA	Trade and Cooperation Agreement
TEP	Third Energy Package
TFEU	Treaty on the Functioning of the European Union
TPA	Third-Party Access
TSO	Transmission System Operator
TWh	Terrawatt-hour
TYNDP	Ten-Year Network Development Plans
UK	United Kingdom
UNCITRAL	United Nations Commission on International Trade Law
UNCLOS	United Nations Convention on the Law of the Sea
UNFCCC	United Nations Convention on Climate Change
US	United States
USMCA	United States-Mexico-Canada Agreement
VIU	Vertically Integrated Undertaking
WTO	World Trade Organization

## LIST OF CONTRIBUTORS

*Liv Malin Andreasson*

PhD researcher, Groningen Centre of Energy Law and Sustainability, Faculty of Law, University of Groningen, the Netherlands. Email: l.m.andreasson@rug.nl

*Catherine Banet*

PhD, Associate Professor, Scandinavian Institute of Maritime Law, Energy and Resources Law Department, University of Oslo, Norway. Email: catherine.banet@jus.uio.no

*Astrid Skjønborg Brunt*

General Counsel International and European Affairs, Statnett, Oslo, Norway. Email: astrid.brunt@statnett.no

*Vasyl Chornyj*

Global Trade Advisory, Deloitte, the Netherlands. Email: vchornyj@deloitte.nl

*Suzanne Dael*

Expert in Climate Change Mitigation and Energy, European Environment Agency, Copenhagen, Denmark. Email: Suzanne.Dael@eea.europa.eu

*Guillaume Dezobry*

PhD, Partner, FIDAL, Paris; Associate Professor, University of Amiens, France. Email: guillaume.dezobry@fidal.com

*Lea Diestelmeier*

PhD, Assistant Professor, University of Groningen, the Netherlands. Email: l.diestelmeier@rug.nl

*Ruven Fleming*

PhD, Assistant Professor, Groningen Centre of Energy Law and Sustainability, Faculty of Law, University of Groningen, the Netherlands. Email: r.c.fleming@rug.nl

*Silke Goldberg*

MA PgDL, Partner, Herbert Smith Freehills LLP, London, UK and External PhD Researcher, University of Groningen, the Netherlands. Email: Silke.Goldberg@hsf.com

*Iñigo del Guayo*

PhD, Professor of Administrative Law, University of Almeria, Spain. Email: iguayo@ual.es

*Mikolaj Jasiak*

Principal Advisor – Digitalisation & Distributed Generation, ECS Consulting, Brussels, Belgium. Email: m.jasiak@ecsconsulting.org

*Anna-Alexandra Marhold*

PhD, Assistant Professor, Grotius Centre for International Legal Studies, Leiden University, the Netherlands. Email: a.a.marhold@law.leidenuniv.nl

*Rita Paukštė*

Associate Partner, TGS Baltic, Vilnius, Lithuania. Email: rita.paukste@tgsbaltic.com

*David Robinson*

PhD, Senior Research Fellow, Oxford Institute for Energy Studies, Email: David.robinson@oxfordenergy.org

*Martha M. Roggenkamp*

PhD, Professor of Energy Law, Groningen Centre of Energy Law and Sustainability, Faculty of Law, University of Groningen, the Netherlands. Email: m.m.roggenkamp@rug.nl

*Francesco Maria Salerno*

Partner, Gianni, Origoni, Grippo, Cappelli & Partners, Brussels, Belgium. Email: fsalerno@gop.it

*Christian Schneller*

PhD, Head of the Legal Department of TenneT until July 2020, currently at Ohms Rechtsanwälte, Berlin and E-Bridge Consulting, Bonn/Oosterbeek, Germany/the Netherlands. Email: schneller@ohmslaw.de

*Melanie Sporer*

Expert on Climate Change Mitigation, European Environment Agency, Copenhagen, Denmark. Email: Melanie.Sporer@eea.europa.eu

*Job Swens*

Renewable Energy Consultant, J-OB, Rotterdam, the Netherlands. Email: job.swens@j-ob.nl

*Mihai Tomescu*

Energy and Environment Expert, European Environment Agency, Copenhagen, Denmark. Email: Mihai.Tomescu@eea.europa.eu

*Cees Verburg*

PhD, Attorney-at-Law, Pels Rijcken, the Netherlands and Fellow at the Groningen Centre of Energy Law and Sustainability (GCELS), University of Groningen, the Netherlands. Email: cees.verburg@pelsrijcken.nl