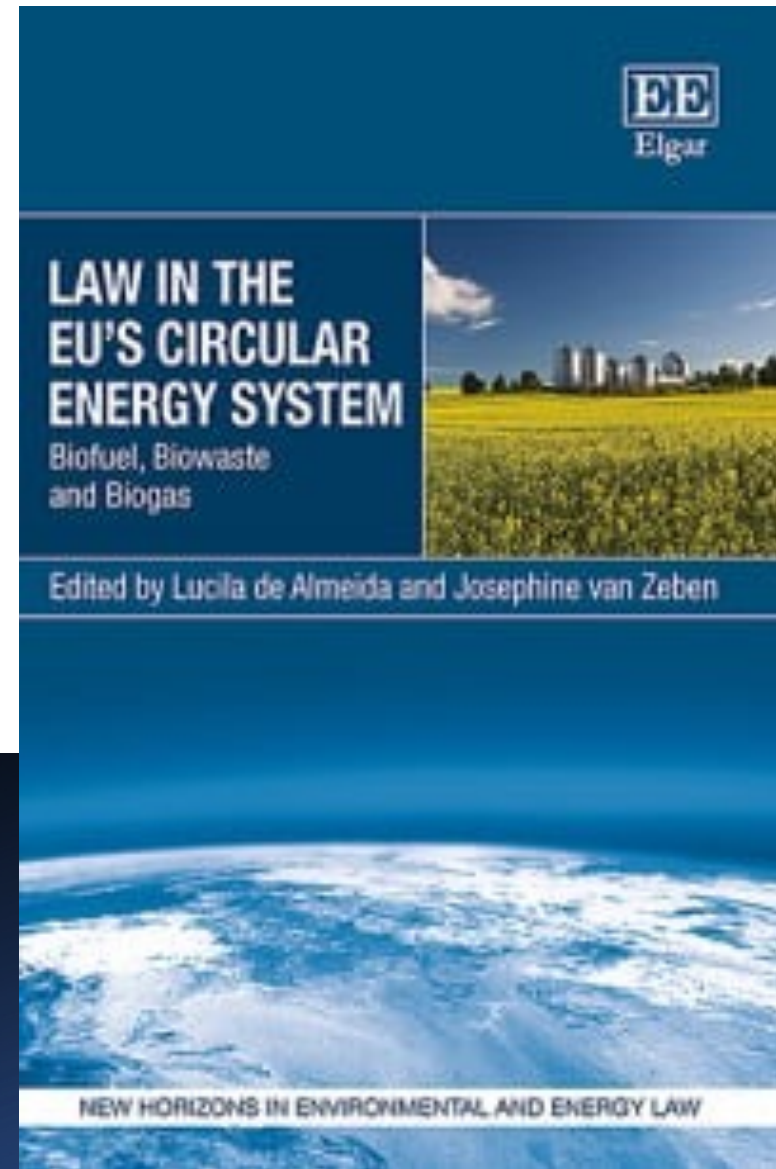


LAW IN THE EU'S CIRCULAR ENERGY SYSTEM Biofuel, Biowaste and Biogas

Edited by Lucila de Almeida and Josephine van Zeben

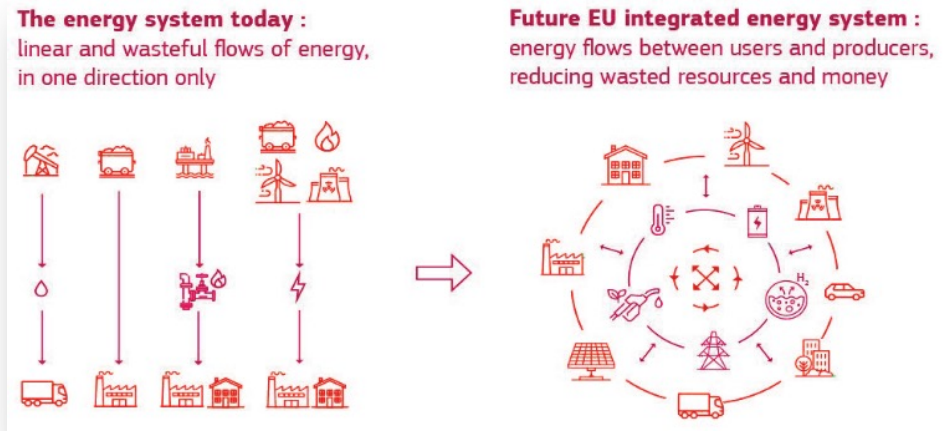
Contributors include: Edwin Alblas, Mirta Alessandrini, Álvaro Antón Antón, Aalt Bast, Lin Batten, Alie de Boer, Elisa Cavallin, Ilaria Conti, Benjamin Gomado, Allard Knook, Phillip Lugmayr, Maria Olczak, Andris Piebalgs, Madhura Rao, Piero Carlo dos Reis, Alberto Pototschnig, Agnieszka Smoleńska, Maciej M. Sokołowski, Geert van Calster.



Towards a more Circular Energy System: conceptual clarification

- **Energy system integration**

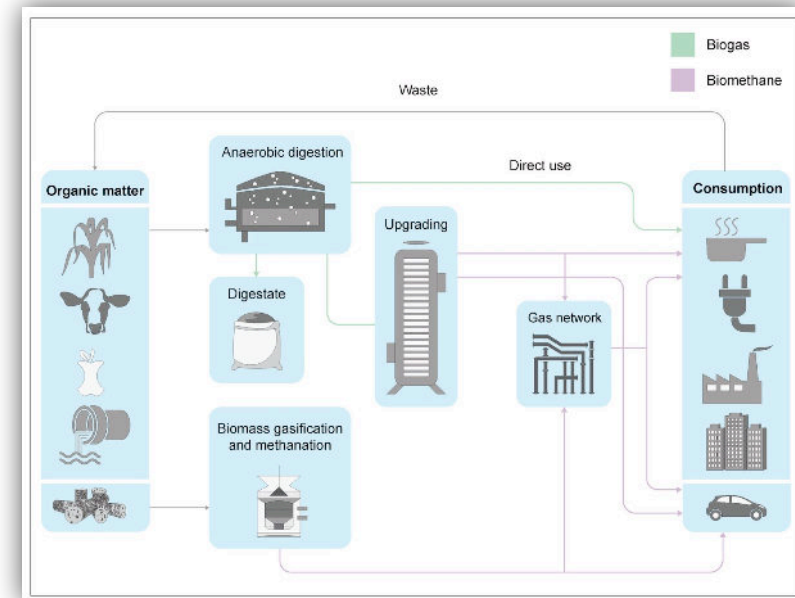
the coordinated planning and operation of the energy system 'as a whole', across multiple energy carriers, infrastructures, and consumption sectors – is the pathway towards an effective, affordable and deep decarbonisation of the European economy in line with the Paris Agreement and the UN's 2030 Agenda for Sustainable Development.



Source: European Commission, EU Strategy for Energy System Integration

- **Circular Energy System**

Incentivise the mobilisation of biological waste and residues from agriculture, food and forestry sectors and support capacity-building for rural circular energy communities through the new Common Agriculture Policy, Structural Funds and the new LIFE programme (from 2021 onwards).



Source: IEA

Towards a more Circular Energy System: drivers in the demand-side

The Fit for 55 Package (July 2021) – legislative proposals to revise the entire EU 2030 climate and energy framework, including the revisions of the Renewable Energy Directive, FuelEU Maritime and Aviation Initiative.

New EU Framework to decarbonise gas markets (December 2021) – legislative proposals to reform the gas sector setting targets for the replacement of natural gas by renewable gases (hydrogen 18.5 bcm; biogas 17 bcm by 2030).

REPowerEU (March 2022) – propose new targets for the replacement of fuel gases from Russia (hydrogen 25-50 bcm; biogas 3.5 bcm by 2022 and 18 bcm by 2030).

RED III Provisional Agreement (March 2023) – transport (14.5% greenhouse gas intensity reduction or 29% share of renewable energy in final energy consumption), including a combined sub-target of 5.5% for advanced biofuels and renewable fuels of non-biological origin (RFNBOs), including a minimum level of 1% for RFNBOs

RED III Council (October 2023) – building, heating and cooling. the new rules set an indicative target of at least a 49% renewable energy share in buildings in 2030.



The screenshot shows the top navigation bar of the European Council website, including the logo and links for 'About the Institutions', 'Topics', 'Meetings', 'News and media', and 'Research and publications'. Below the navigation bar, there is a breadcrumb trail: 'Home > Press > Press releases'. The main content area features a blue circular icon, the text 'Council of the EU Press release 9 October 2023 10:07', and the headline 'Renewable energy: Council adopts new rules'. The sub-headline reads: 'The Council today adopted the new Renewables Energy Directive to raise the share of renewable energy in the EU's overall energy consumption to 42.5% by 2030 with an additional 2.5% indicative top up to allow the target of 45% to be achieved. Each member state will contribute to this common target.'

1. The EU's circular energy system and the Green Deal by Lucila de Almeida and Josephine van Zeben

PART 1 From Waste to Biofuels and Biogas

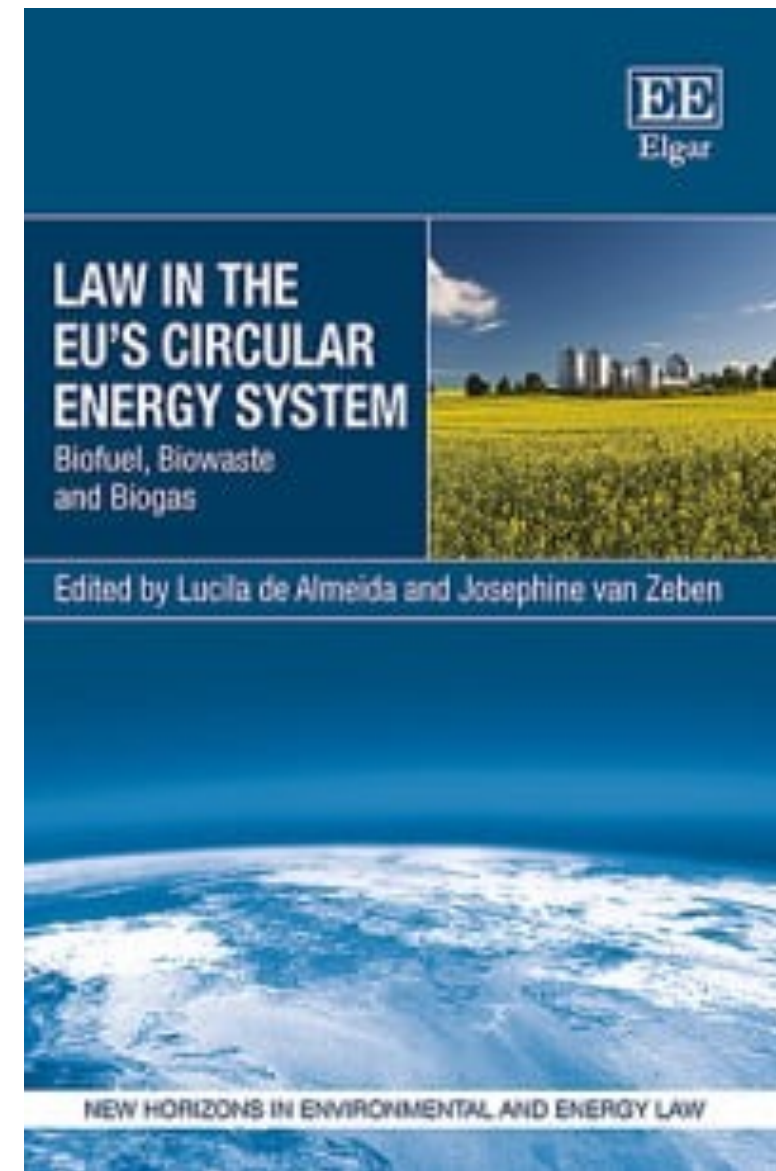
2. Waste in the circular energy system by Geert van Calster
3. Agricultural waste to biofuel and biogas: law and policy by Mirta Alessandrini, Edwin Alblas, and Lin Batten
4. Food waste to biogas and biofuel: law and policy by Madhura Rao, Aalt Bast, and Alie de Boer
5. Forestry waste to biofuel and biogas: law and policy by Elisa Cavallin

PART 2 The Use of Biofuel and Biogas in the Circular Energy System

6. From gas to biogas from biowaste: heating, power generation, and cogeneration by Maciej M Sokołowski
7. Sustainable biofuels and gaseous biomass fuels from biowaste in the EU transport sector by Piero Carlo dos Reis, Phillip Lugmayr, and Benjamin Gomado
8. Methane emission in a circular Economy by Maria Olczak and Andris Piebalgs

PART 3 Cross Sectoral Issues

9. The Energy Tax Directive reform by Álvaro Antón Antón
10. EU law and policy shaping supranational and national investment in biofuel and biogas transition by Agnieszka Smoleńska
11. Energy State aid by Allard Knook
12. Renewable support schemes and Guarantees of Origin applied to renewable energy regulation by Alberto Pototschnig and Ilaria Conti
13. The (in)coherence (in)effectiveness nexus of the EU's circular energy system



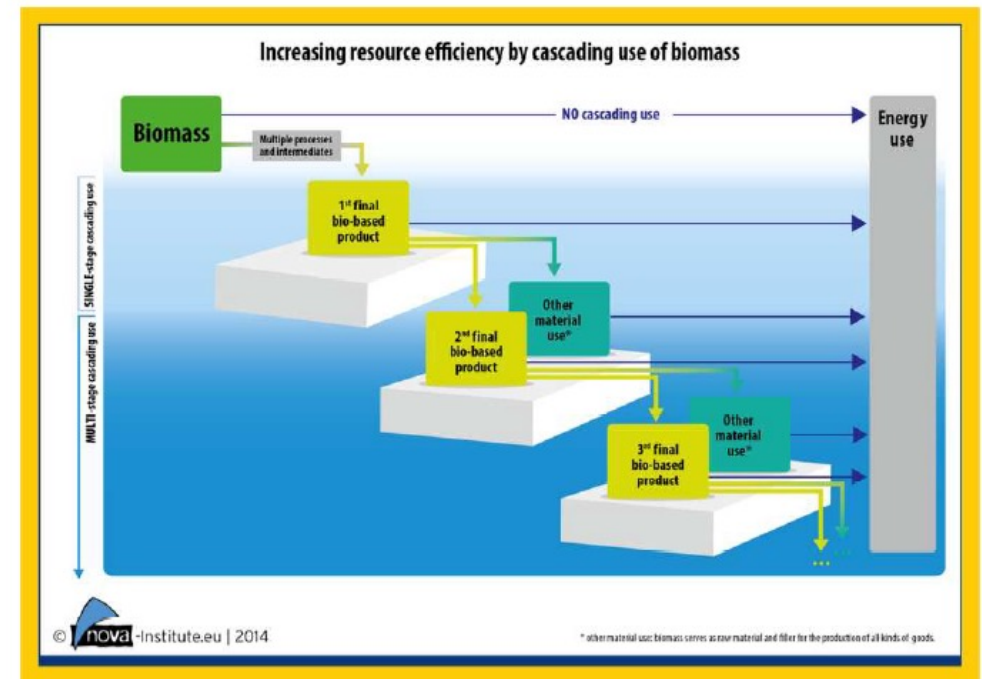
Forestry waste to biofuel and biogas: law and policy

by Elisa Cavallin

INTRO

- **The state of EU forests:**
 - Forest areas cover about 44% of the EU land area
 - Forested area has been generally stable over the last 20 years but has been subjected to pressures
- **Forestry activities and bioenergy:**
 - In the EU, bioenergy represents a big slice in renewable pie (59% in 2016)
 - 63% of all wood used in the EU was exploited for energy production (in 2015), with a big part of it being primary wood
 - Increasing the biomass pool? → Afforestation and reforestation and conversion to plantations might not be suitable or desirable
- **Forestry waste:**
 - Some biomass from harvesting operations should be left on site
 - Different types of residues have different ecological roles → removal = different impacts
- Generally, **circular use of wood and wood products and prioritisation of use of waste and residues within certain parameters** are key elements for sustainability → **intelligent pathways!**
- **Many new and older policy and legislative instruments relevant for forests**

THE STARTING POINT OF THE RESEARCH – PRINCIPLES & APPROACHES



THE STARTING POINT OF THE RESEARCH – FUNDAMENTAL QUESTIONS THAT GUIDED THE RESEARCH

- 1. Are the waste hierarchy and cascading principle operational with regards to the use of forestry materials for energy production, and, if so, to what extent? (Focus on both waste and renewables legislation)
- 2. Is there a regulatory distinction between forestry waste and raw materials? Is forestry waste valorised? How? (Focus on the renewables legislation)
- 3. What is the role of private schemes and standards for the use of forestry materials for energy production?

THE WASTE FRAMEWORK DIRECTIVE

- Scope of the WFD: WASTE MATERIALS (def. waste: Art 3(1))
- Forestry residues and waste?
 - Art 2(1)(f) Exclusion from the application of the WFD
“[...] other natural non-hazardous agricultural or forestry material used in farming, forestry or for the production of energy from such biomass through processes or methods which do not harm the environment or endanger human health”
- What are the potential consequences of the exclusion?
 - Effects on the application of the **waste hierarchy**
 - Effects on the **cascading use of biomass principle**



THE RENEWABLE ENERGY DIRECTIVE (II AND III)

- **Definitions of “biomass” and “forest biomass”** are inclusive of both products and waste → no clear distinction between waste and raw materials for energy generation in the definition of biomass → we need to look at the criteria

- Definitions are “attached” to criteria: **sustainability and LULUCF criteria for forest biomass** and **GHG emission savings criteria**



- Criteria are **instrumental for the renewable targets** expressed in the Directive and **for eligibility for support**
 - Criteria are **not strong enough** and **do not particularly incentivise the use of forestry waste materials over raw materials**;
- **Cascading principle and waste hierarchy do not have a big role**
 - **Regime for advanced biofuels** --> double counting of the energy content
 - **Proposal for REDIII?** It addressed some of the concerns but more is needed!

PRIVATE SCHEMES

- Role of schemes and standards should not be downplayed
- In the context of the RED, schemes can be used **to demonstrate compliance with criteria** → assessment of schemes by Commission + EC recognition (not mandatory)
- **Implementing Act on rules to verify sustainability, GHG emission savings, and Indirect Land-Use Change risk criteria** → to increase reliability, transparency and independent auditing
- Standards and schemes **may also be stronger than RED criteria**
- Can be an appealing option for organisations

Approved voluntary schemes and national certification schemes

The Commission has so far formally recognised 15 voluntary and national certification schemes

+ Biomass Biofuels voluntary scheme (BBVs)
+ Better Biomass
+ Bonsuoro EU
+ International Sustainability and Carbon Certification (ISCC EU)
+ KZR INIG system
+ REDcert
+ Red Tractor Farm Assurance Combinable Crops & Sugar Beet Scheme (Red Tractor)
+ Roundtable of Sustainable Biofuels EU RED (R3B EU RED)
+ Round Table on Responsible Soy EU RED (RTRS EU RED)
+ Scottish Quality Farm Assured Combinable Crops (SQC)
+ Trade Assurance Scheme for Combinable Crops (TA3CC)
+ Universal Feed Assurance Scheme (UFA3)
+ Sustainable Resources (SURE) voluntary scheme
+ Sustainable Biomass Program (SBP)
+ Austrian Agricultural Certification Scheme (AAC3)

In addition, the Commission has received **applications** for recognition under the directive from the following voluntary schemes and national certification schemes

Applications	EC positive technical assessment
U.S. Soybean Sustainability Assurance Protocol EU (SSAP EU)	✓
Programme for the Endorsement of Forest Certification (PEFC)	
European Renewable Gas Registry (ERGG) (only for certification of cross-border trade of biomethane)	
Better Biomass (extension of the scope to also cover forest biomass)	
Green Gold Label (GGL)	
ISCC (extension of the scope to also cover forest biomass)	
ISCC (extension of the scope to also RFNBOs and RCF)	
Certifi-Hy (RFNBOs)	
REDcert (RFNBOs)	

The recognition by the Commission is not a pre-requisite for certification. EU countries may accept evidence from voluntary schemes or national certification schemes set up by EU countries not recognised by the Commission if the competent authorities in those countries are confident about the quality of the certification services provided by these schemes.



**Agricultural Waste to Biofuel and
Biogas: Law and Policy
by Mirta Alessandrini, Edwin
Alblas & Lin Batten**

Presented by
Lin Batten

Date:
11 October 2023



Agriculture & Energy : Legal Framework

RED II

- To **eliminate** the consumption of **food and feed crops for energy** in the EU by 2030
- **Certified Low-ILUC** risk can count towards renewable production share of EU
- Provides classification and promotes certain biofuels e.g. **straw** and **animal manure**
- Rules for Calculating GHG Emissions on **Crop and Agricultural Residues**
- **No** substantial changes in **RED III** proposal



Agriculture & Energy : Legal Framework

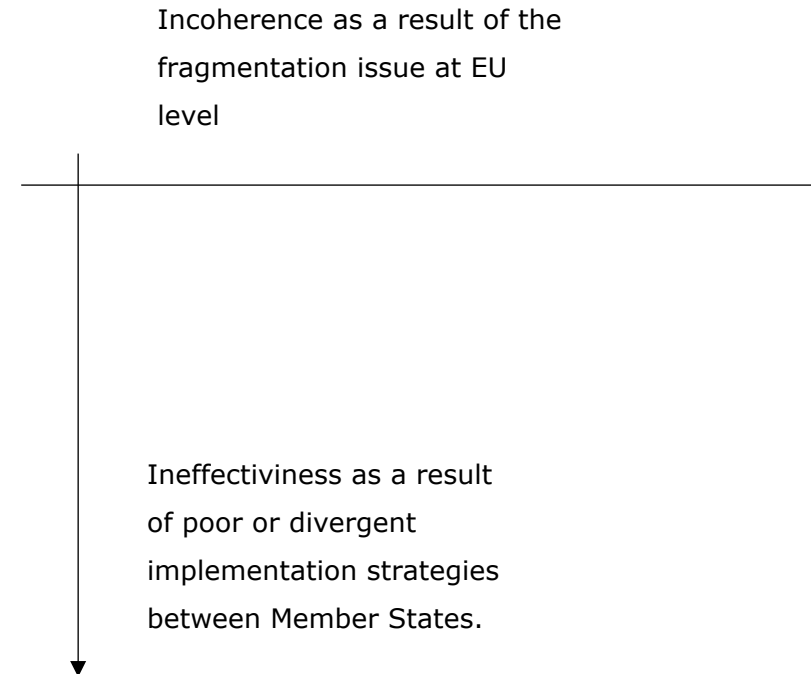
2023 CAP National Strategic Plans

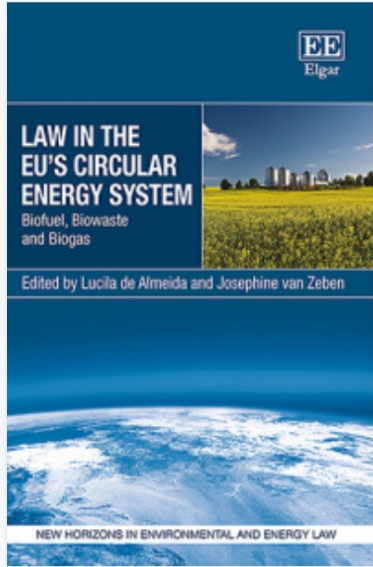
- Impact Indicator 12: “[...] Sustainable production of renewable energy from agriculture and forestry”
 - R.15: **Advancement of the production** of bio-based renewable energy in agriculture.
 - R.16 **Share of CAP Investment Support** for the production of renewable energy of biomaterials.
- **No distinction** between energy crops or agricultural waste.
- **18 Member States** have included in their NSP investment intervention for the promotion of biogas from **agricultural waste streams**.



Conclusion: The Coherence-Effectiveness nexus

Coherence-Effectiveness nexus check whether the multiple measures implementing the Green Deal are fit for purpose. I call it the Incoherence-Ineffectiveness Nexus. The general purpose of this research is to assess whether the interplay between different measures does not raise concerns about the effectiveness of the intervention as a whole because the measures are 'at war with each other'. Since the measures proposed under the Green Deal cross various domain areas and sectors, the legal reforms are proposed by and debated within expert groups or committees that rarely dialogue with each other – i.e., silos. Silos-thinking engenders incoherence between measures proposed in different silos, which would ultimately lead to the ineffectiveness of the Green Deal.





Hardback

Law in the EU's Circular Energy System

Biofuel, Biowaste and Biogas

Edited by Lucila de Almeida, Abreu Chair in ESG Impact, NOVA School of Law and Centre for Research on Law and Society (CEDIS), Portugal; Part-time Professor, European University Institute, Robert Schuman Centre for Advanced Studies, Florence School of Regulation, Italy and Josephine van Zeben, Professor and Chair, Law Group, Wageningen University, the Netherlands

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[More Information](#)

[Critical Acclaim](#)

[Contributors](#)

'This excellent edited collection makes an important contribution to legal scholarship on making energy supplies sustainable. Its exploration of relationships between the waste, agriculture, food and forestry sectors and the energy sector, of their respective regulatory frameworks, and of related policy and legal contexts shines a light on key interactions for achieving circular economies in the EU and elsewhere. Coverage of legal issues raised by the integration of biofuels and biogases into energy systems and concerning the decarbonisation of heating and transport is also most welcome. The volume's examination of these hitherto underexplored areas will prove useful for scholars both in the EU and also in other jurisdictions who are looking to learn from the EU's experience with developing laws for managing waste streams and exploiting their energy-producing potential. The editors are to be commended for assembling this valuable volume.'

– Olivia Woolley, Durham University Law School, UK

'This is an impressive book detailing a range of contemporary problems and potential solutions from a cross-sectoral perspective in the paradigm shift from a linear to a circular energy system. By adopting an energy systems perspective, this edited collection provides a much-needed contribution analysing the complex legal and regulatory environment for biofuels and gases in the European Union and their interrelationship.'

– Sirja-Leena Penttinen, Energy Authority, and UEF Law School, Finland

'Lucila de Almeida and Josephine van Zeben have assembled a top-notch roster of experts to consider EU policies regarding the circular energy system. The result is not just an essential guide to this emerging field, but also a nuanced account of law's role in effecting systemic reform.'

– Bruce Huber, University of Notre Dame, US

LAW IN THE EU'S CIRCULAR ENERGY SYSTEM

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