Impact of the Regulatory Framework on the Bioeconomy

# ENERGY SECTOR

This **fact sheet** discusses the **energy sector** as a part of the bioeconomy. It focuses on the **regulatory framework** and indicates **obstacles** which result from it. **Recommendations** to foster the transition towards renewables are collected from scientific literature and evaluated.

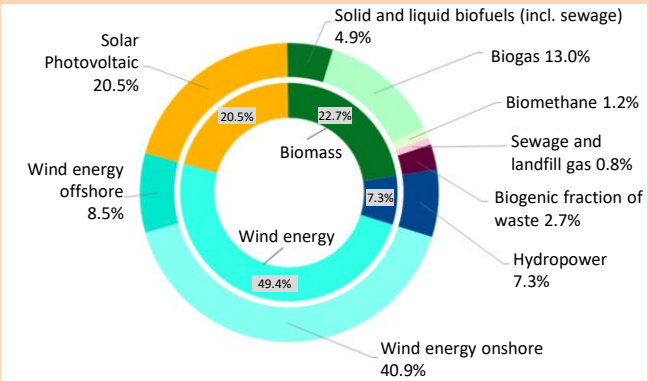
## ▶ Europeanization of the Energy Policy:

The energy sector is more and more regulated by European law. EU and national policies adapt to the global responsibility, implemented by the Paris Agreement [1].

**Renewable Energy (RE):** Based on an ambitious policy and regulatory framework as well as binding targets, the EU fosters the penetration of renewables. Renewable energy sources now represent at least **17.5%** (January 2019) of the final energy consumption in Europe [7].

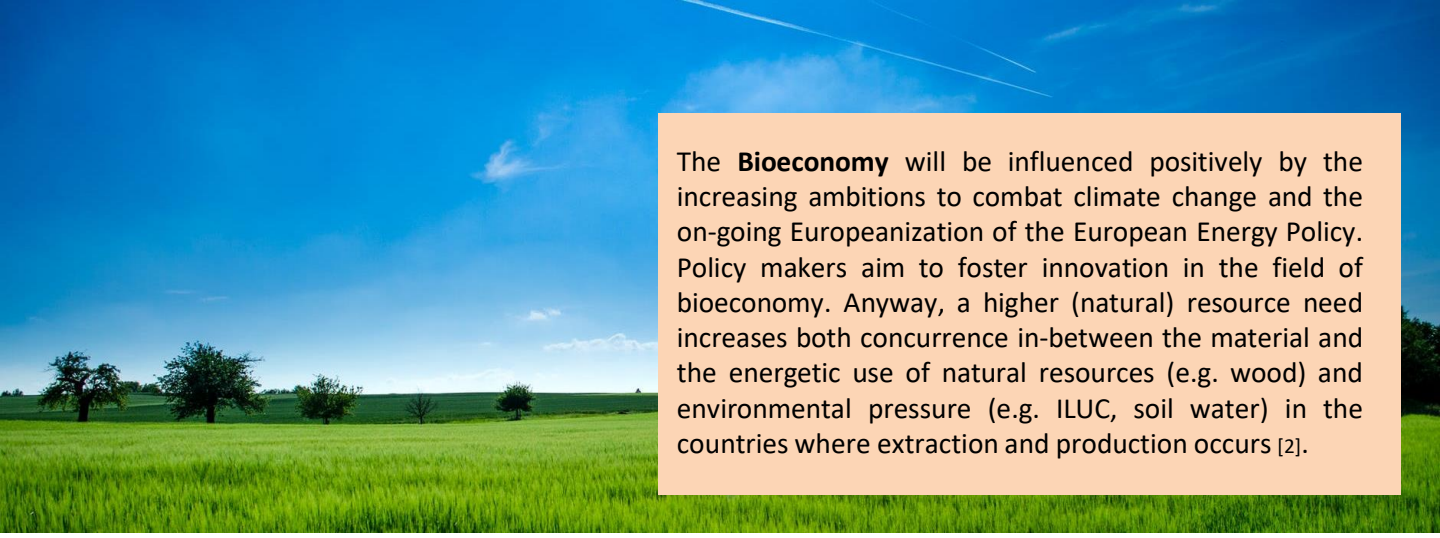
## Germany:

- 2018, **37.8%** (2008: 15.2%) of the total gross electricity consumption was covered by RE electricity, Goal 2040: 40-45%
- 2018, **13.9%** (2008: 10.8%) of the total final gross energy consumption for heating and cooling was satisfied by RE heat
- 2018, **5.6%** (2008: 6.0%) of the final energy consumption in the transport sector was covered by RE, Goal 2030: 30%
- **Biomass** accounts for 24% of renewable electricity generation, 87% of the renewables' share in total heat and cooling consumption and 88% of the renewables' share in final energy consumption in the transport sector (2017)
- REs ins Germany are affected significantly by the national regulatory framework

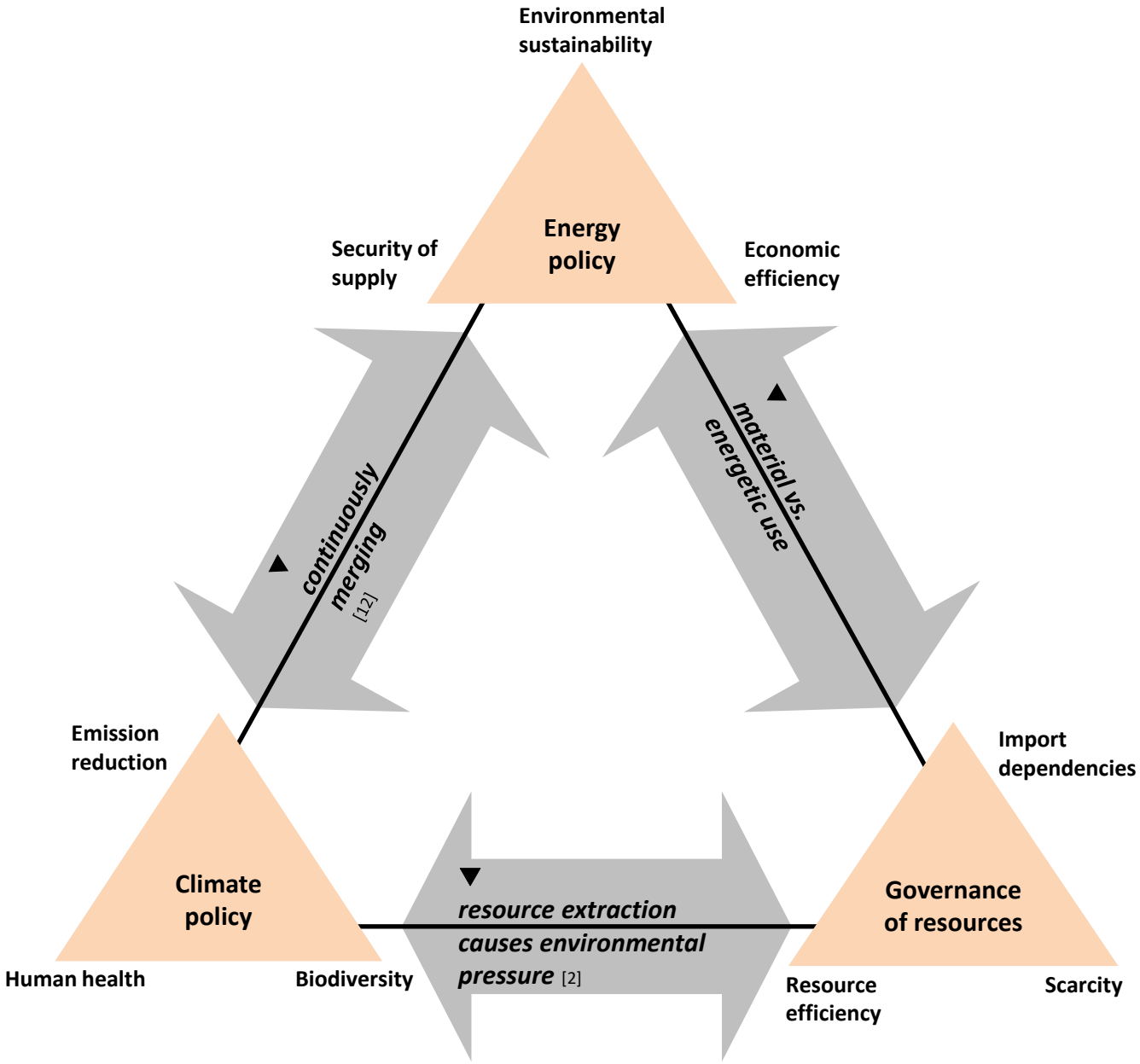



Electricity production from RE in Germany Total: 225.7 billion kWh (2018) ▶

[data & graphic: Federal Ministry for Economic Affairs and Energy, BMWI, 2018] [8]



The **Bioeconomy** will be influenced positively by the increasing ambitions to combat climate change and the on-going Europeanization of the European Energy Policy. Policy makers aim to foster innovation in the field of bioeconomy. Anyway, a higher (natural) resource need increases both concurrence in-between the material and the energetic use of natural resources (e.g. wood) and environmental pressure (e.g. ILUC, soil water) in the countries where extraction and production occurs [2].



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▶ OBSERVATION: Ambitions to combat climate change influence Energy policies on all levels. **Climate policy and Energy policy are continuously merging** [12].

## REGULATORY FRAMEWORK:

### ▶ REGULATORY FRAMEWORK ENERGY (selection):

★ = relevant legal acts, some of them are discussed in this fact sheet

**INTERNATIONAL**

- European Energy Charter **1991**
- Energy Charter Protocol on Energy Efficiency and related Environmental Aspects (PEEREA) **1998**
- UN Agenda 2030 **SDG 7** **2015**

**EU**

- 2020 Climate and energy package **2009**
- Package: Clean energy for all Europeans **2016** ★
- Electricity Taxation Directive **2003**
- Indirect land use change impacts of biofuels (ILUC Directive) **2015**
- Regulation on the Governance of the Energy Union and Climate Action **2018** ★
- Renewable Energy Directives **2009 RED I** **2018 RED II** ★
- Energy Performance of buildings **2010, 2018** ★
- Energy Efficiency Directive **2012, 2018** ★
- Electricity Market Directive **2009, 2019**
- and more

**NATIONAL**

- Integrated Energy and Climate Programme **2008**
- Nat. Action Plan Energy Efficiency **2014**
- Biomass Ordinance **2001**
- Energy Saving Ordinance **2015**
- Renewable Energy Heat Act **2015**
- Combined Heat and Power Act **2016**
- Electricity Tax Act **2017**
- Renewable Energy Act **2018** ★
- Energy Performance of Buildings Act **2019**

**REGIONAL**

- Building code
- Federal Regional Planning Act
- Local / Municipalities Regulations ★

### ▶ REGULATORY FRAMEWORK CLIMATE (selection):

GOALS OF THE PARIS AGREEMENT:

- keeping a global temperature rise well below 2 degrees Celsius above pre-industrial levels
- pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius
- strengthen the ability of countries to deal with the impacts of climate change

- United Nations Framework of Climate Change **1994**
- Aarhus Convention **1998**
- Kyoto Protocol **2005**
- Doha Amendment **2012**
- IPCC Guidelines on Greenhouse Gas Inventories **2006**
- Paris Agreement **2015** ★
- UN Agenda 2030 Sustainable Development Goals (SDGs) **2015**
- Emission Trade System **2005** ★
- Effort-Sharing Decision **2009** ★
- Reg. on the integr. of land use, land use change and forestry (LULUCF) **2018**
- Integrated Energy and Climate Programme **2008**
- Climate Action Programme 2020 **2014**
- Climate Action Plan 2050 **2016**
- German Greenhouse Gas Emissions Trading Act **2019**
- Allocation Act **2012**
- Climate Protection Law of North Rhine-Westphalia **2013**
- Climate Protection Law of Rhineland-Palatinate **2014**
- Climate Protection Law of Schleswig-Holstein **2017**

▶ *A more comprehensive overview of the legal framework will be provided on the SYMOBIO Homepage.*

★ The *Clean Energy for all Europeans Package* of 2016 updates the European energy policy framework substantially [6]. The package includes 8 legislative acts. 4 have been published in 2018 (see below), 4 are scheduled to be published in 2019.

| New Legal Acts | Changes and Contents | ▶ Obstacles |
|---|---|---|
| **Renewable Energy Directive (EU) 2018/2001** | **New: neither national nor sectorial goals**<br>• Instead: EU goal **32%** gross final consumption of energy by 2030 (Art. 3 RED 2018)<br>**Instruments:**<br>+ **pledge-and-review-system:** National Plans (NECPs) are reviewed by the Commission. The Commission communicates recommendations | ▶ **The Governance System of the Energy Union is a soft and flexible control system, and the good will of the Member States is decisive for the success of the Governance System and the fulfilment of the EU Goals for the year 2030** [10,11]. |
| **Energy Efficiency Directive (EU) 2018/2002** | **New:** EU goal at least **32.5%** by 2030 (Art. 1 para. 1 EED)<br>**Instruments:**<br>• indicative national targets as contribution to the EU target<br>• Member States shall achieve cumulative end-use energy savings (Art. 7) | ▶ **It does not ensure the fulfilment of the climate protection goals** [11,13]. |
| **Energy Performance in Buildings (EU) 2018/844** | **Goal:** highly energy efficient and decarbonised building stock by 2050 (Art. 2a)<br>**Instruments:**<br>• Member States are obliged to establish a long-term renovation strategy for renovation of buildings (Art. 2a)<br>• Smart-home-Approaches: interoperability of the systems, smart readiness indicator, electromobility (Art. 8) | ▶ **Public participation is not specific enough:** Art. 10 & 11 of the Governance Regulation are vague [13]. |
| **Regulation on the Governance of the Energy Union and Climate Action (EU) 2018/1999** | **New: Umbrella function:** (uniform framework for the energy and climate policy of the EU)<br>• aims to unify obligations which had been separated in different sectors until now<br>**Instruments:**<br>• requires long-term strategies (Art. 15)<br>• requires integrated National Energy and Climate Plans (NECPs) (Art.3)<br>• the monitoring works through non-binding recommendations from the Commission (Art. 288 V TFEU) and a gap-filling-mechanism | ▶ **The new system does not provide any sanction mechanisms** (but: in extreme cases, infringement proceedings are possible) [12]. |

| Clean energy for all Europeans | Emission Trade System (ETS) | Paris Agreement |
|---|---|---|
| **2016** | **2005** | **2015** |

## ▶ Obstacle

**The non-binding character of international law and some legal acts of the EU make it difficult to enforce them.**

▶ But the enforcement of a legal act does not only depend on its binding character. The embedment into a context of financial instruments supports the implementation of a law and may substitute sanctions. Furthermore, court procedures contribute to the effective interpretation of a law and may support compliance. Generally, the introduction of legal acts or amendments show long-term effects. In the context of the EU energy policy national implementation of Acts are of importance.

**Link energy policy and funds**

*Compliance supporting instruments*

**Link top-down law making and bottom-up approaches**

## ▶ Possible solution

### Linking structural funds/ state aid

to the Governance Regulation to fill up ambition or delivery gaps is a potential strategy to foster a sustainable energy and climate policy [10].

The authors of [10] see the

- European structural and Investment Funds (European Regional Development Fund, ERDF; European Social Fund, ESF; European Agricultural Fund for Rural Development, EAFRD)

as a potential instrument for this purpose.

## ▶ Possible solution

### Bottom-Up Approaches
### Litigation: Strategic Cases and Actio popolaris

are already an existing trend.
**Actio popolaris / class actions** are control instruments for the implementation of Environmental Law.
Fossil fuel-related projects face already resistance in court. The European Court of Justice supports the suability of the Environmental Law.
Furthermore, **strategic court cases** which link climate change to human rights and aim at holding governments and greenhouse gas emitters accountable for climate change are seeing success. [9,13,14]

## ▶ Observations & Challenges

▶ The **increasing ambitions of the Paris Agreement** require countries either to introduce new laws and policies, or to revise and strengthen their existing laws and policies. Countries already have to address issues of monitoring, reporting, and verification (MRV) in order to comply with the Paris Agreement; good conditions for the further development of the bioeconomy's energy sector [9].

▶ **Energy Policy and Climate Policy merge more and more** [12]. The Bioeconomy will be influenced positively by the increasing ambitions to combat climate change and the on-going Europeanization of the European Energy Policy. The governance of resources is tightly connected to energy and climate policies and through international trade it has an impact on environmental pressures [2].

▶ **Local differences** in the extension of renewable energies depend on differences in regional regulations and **federal climate laws** influence the extension of RE. For that reason, the local level is important. Furthermore, **decentralization of energy supply** is one of the key drivers of the energy transition [1].

▶ The revision of the Renewable-Energy-Directive (2018) requires the **gradual decrease** of the share of high indirect land-use change-risk **biofuels, bioliquids or biomass fuels** produced from food and feed crops to 0% until 2030 (Art. 26). The Directive prescribes that the Member States base their use of biomass on the principles of the **circular economy** and the **waste hierarchy.** The EU supports sustainable advanced biofuels like waste-based biofuels, but refuses food or crop-based biofuels. Some authors state that the sustainability criteria for bioenergy are not sufficient, especially when it comes to the energetic use of timber. [3,4].

## ▶ Possible solutions

▶ **The coupling of State Aid with non-binding Law** could boost projects which contribute to the transition to the bioeconomy [10].

▶ Top-down approaches of the energy and climate policy are not ambitious enough to face global warming in a sufficient manner. **New grassroots and local initiatives** are increasing. Court procedures contribute to the effectuation of laws [9,13,14].

## Conclusion & Forecast

In only two decades the number of climate laws and policies globally did rose from 72 (1997) to 1,500 (2018). The impact of climate policies on the energy policy and the promotion of renewables is expanding [8]. Furthermore, international ambitions are causing a legislative knock-on effect on national and even regional level. But still, the quantity of policies does not guarantee a sufficient approach against climate change and bottom-up approaches such as litigation do already complement legal acts. On European level, the further coupling of State Aid with Energy Law could have a notably impact on the energy sector and therefore on the bioeconomy.


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