

Current situation of the german wind energy industry – trends, problems, visions

Wolfram Axthelm,
CEO Bundesverband WindEnergie



Overview

1. BWE at a glance
2. Germany: engine in europe
3. Where we stand
4. Problems and outlook
5. Challenge of the future

1. Bundesverband WindEnergie at a glance

The BWE is one of the biggest associations for renewable Energies (over 20.000 members)

Political representation on federal and state level

Partner of 1.100 companies (manufacturers, producers, planning offices) and 2.200 associations operating windmills

well-known members such as Enercon, Vestas, WPD, Notus, EnBW, Enercity, Vattenfall

Partner and member of international associations and organizations (WindEurope, EREF, GWEC and WWEA)



2. Germany: engine in europe

Snapshot of operating wind turbine component manufacturing facilities in Europe*

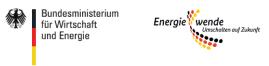


regulated energy sector –
industry grows with political
decisions

Developed an enormous
value chain since 1990 with
more than 135.000 employees
→ Strongest market in europe

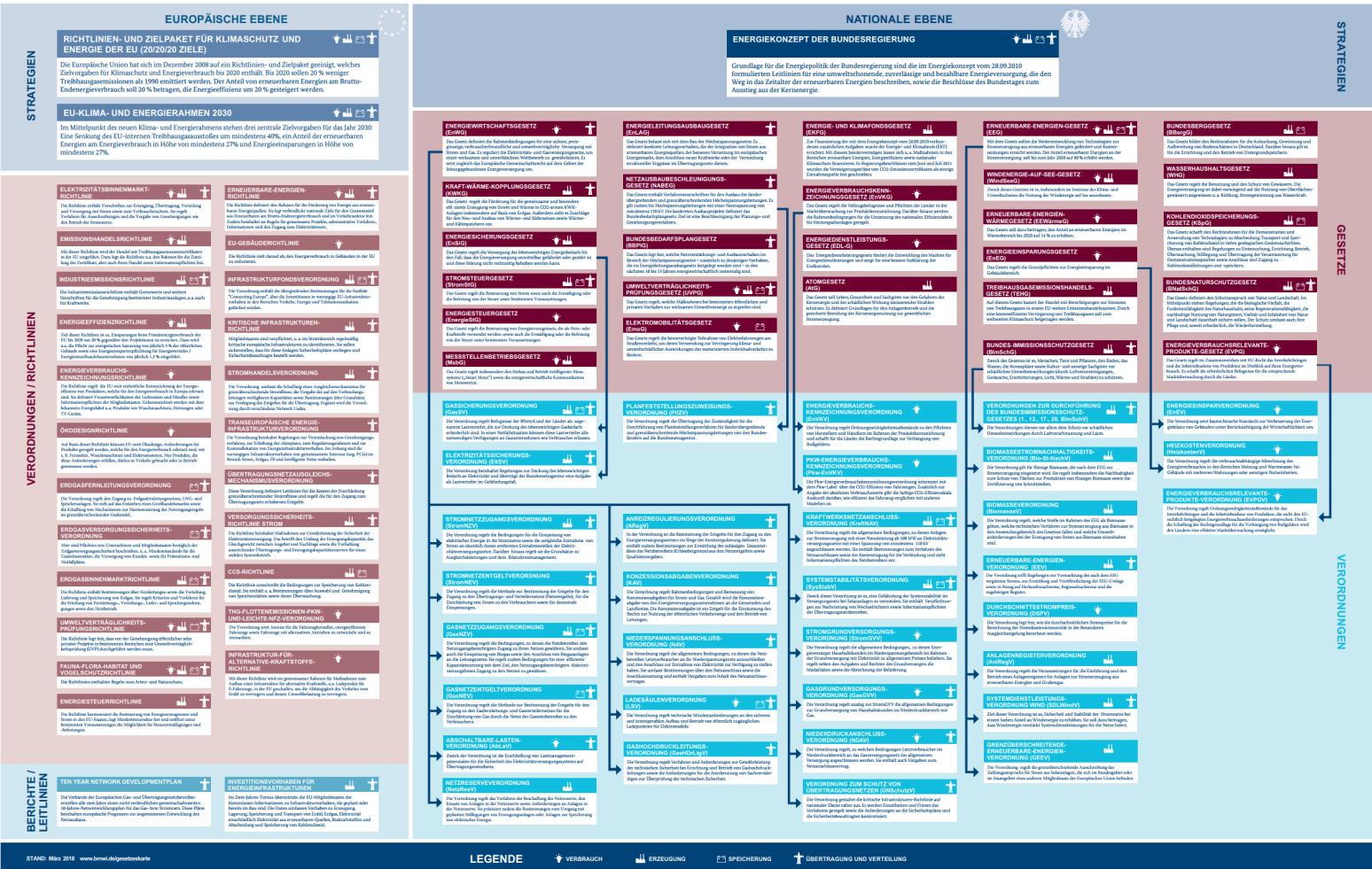
* Foundations not included

Energy sector: regulated and depending on politics



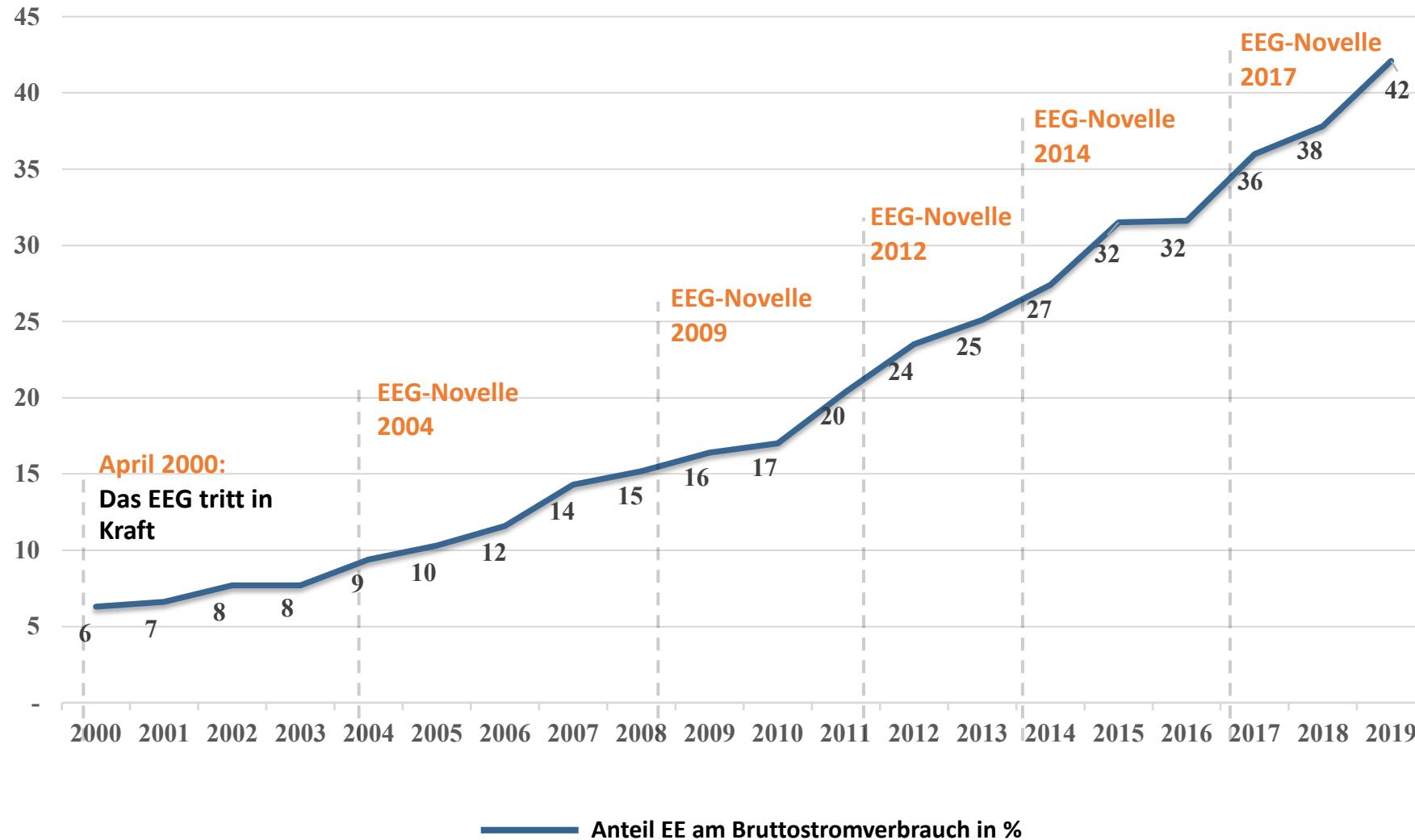
Gesetzeskarte für das Energieversorgungssystem

Karte zentraler Strategien, Gesetze und Verordnungen



Bundesverband WindEnergie

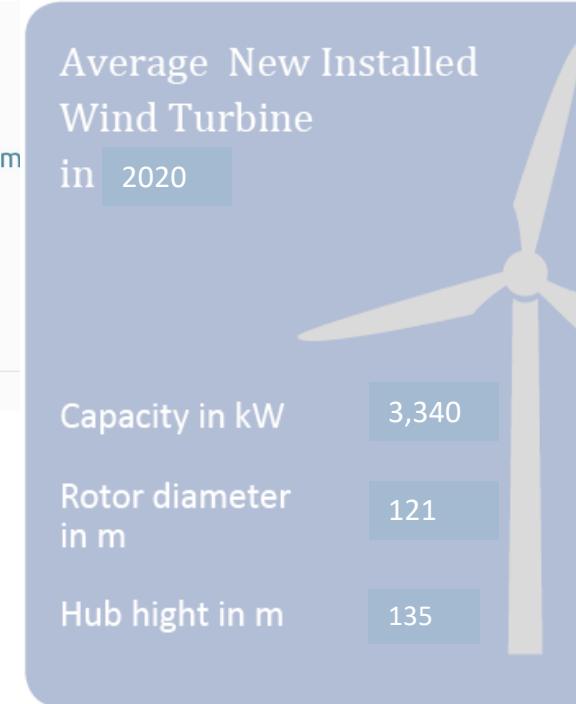
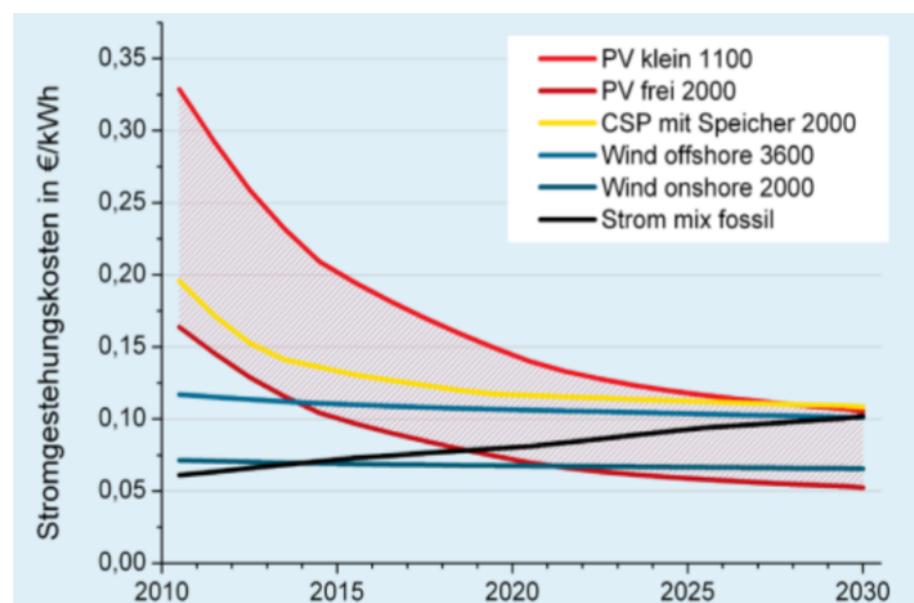
Share of renewable energies in total electricity consumption



Source: AGEE-Stat (2020): Zeitreihen zur Entwicklung der Erneuerbaren Energien in Deutschland

Turbine Technology Development

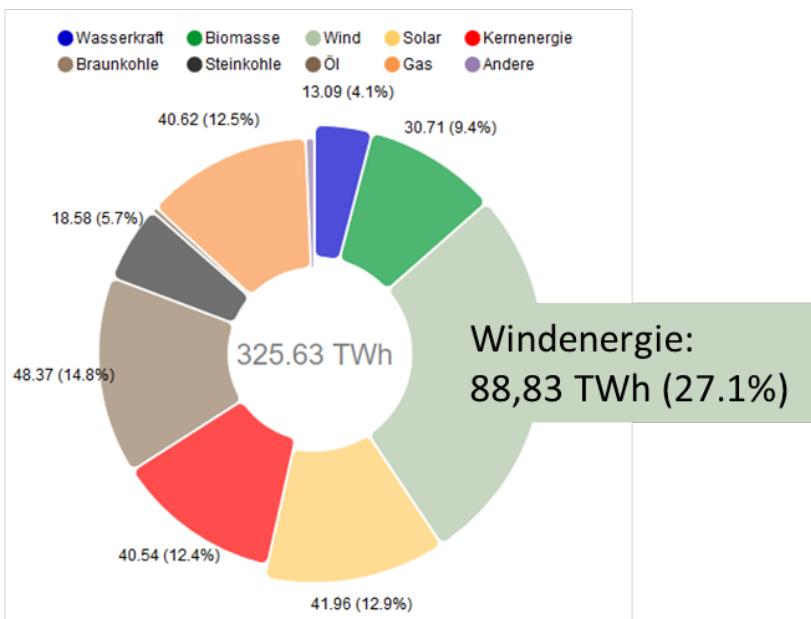
Average Turbine Technology and Cost Degression Through the Years



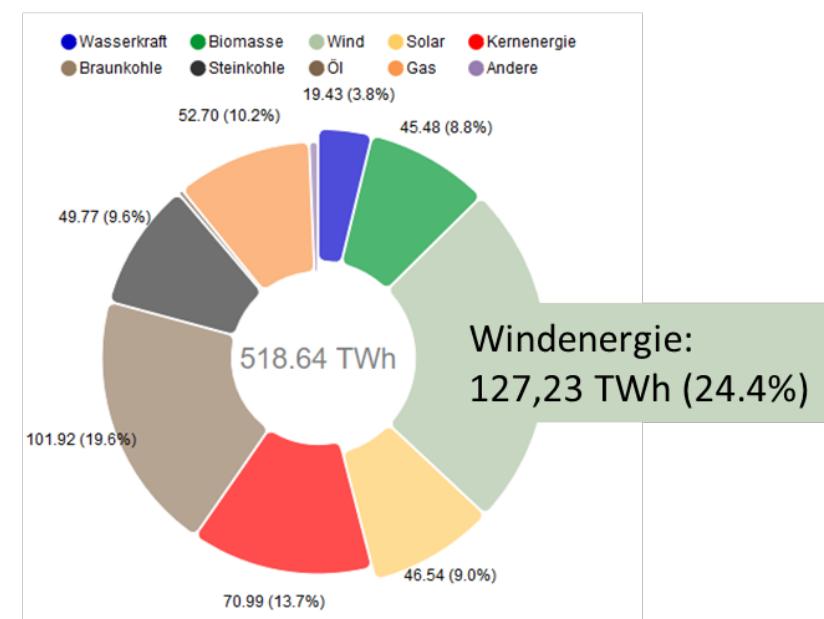
3. Where we stand

Prospects are good: wind moves to the center

Nettostromverbrauch DE 2020*



Nettostromverbrauch DE 2019

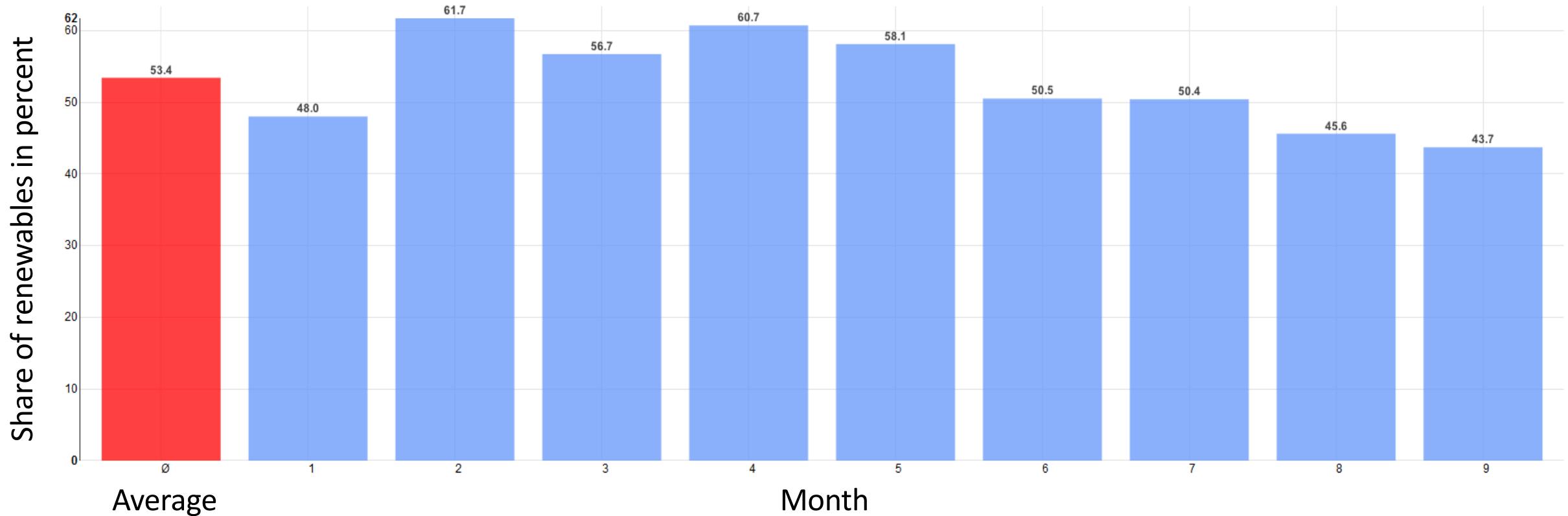


*Stand: 4.September 2020, 16:00 Uhr

Quelle: Fraunhofer ISE

Wind energy status quo: 2020 shows what the system is capable of

Over 50% renewables in total power generation in Germany 2020



Source: Fraunhofer ISE

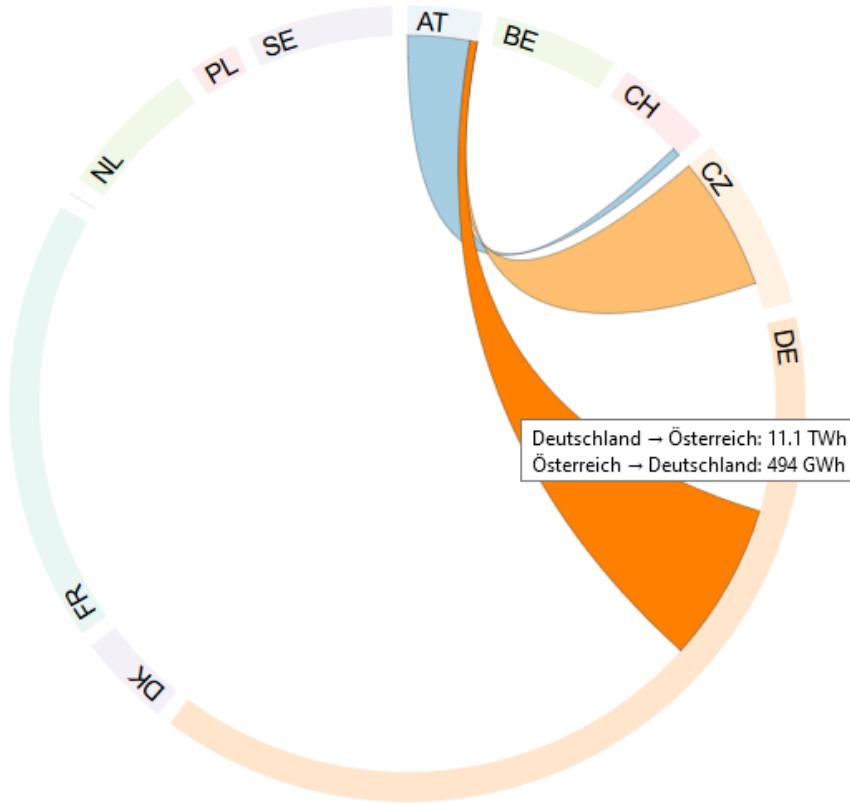
Prospects: Responsibility – not only for us

Export Surplus

In 2019 there has been an export surplus of nearly 61,3 TWh (2018: 45,6 TWh)

Most of these to Switzerland (13 TWh).

On the further ranks: Austria (11,1 TWh), Poland (10,1 TWh) and the Netherlands (9,1 TWh).

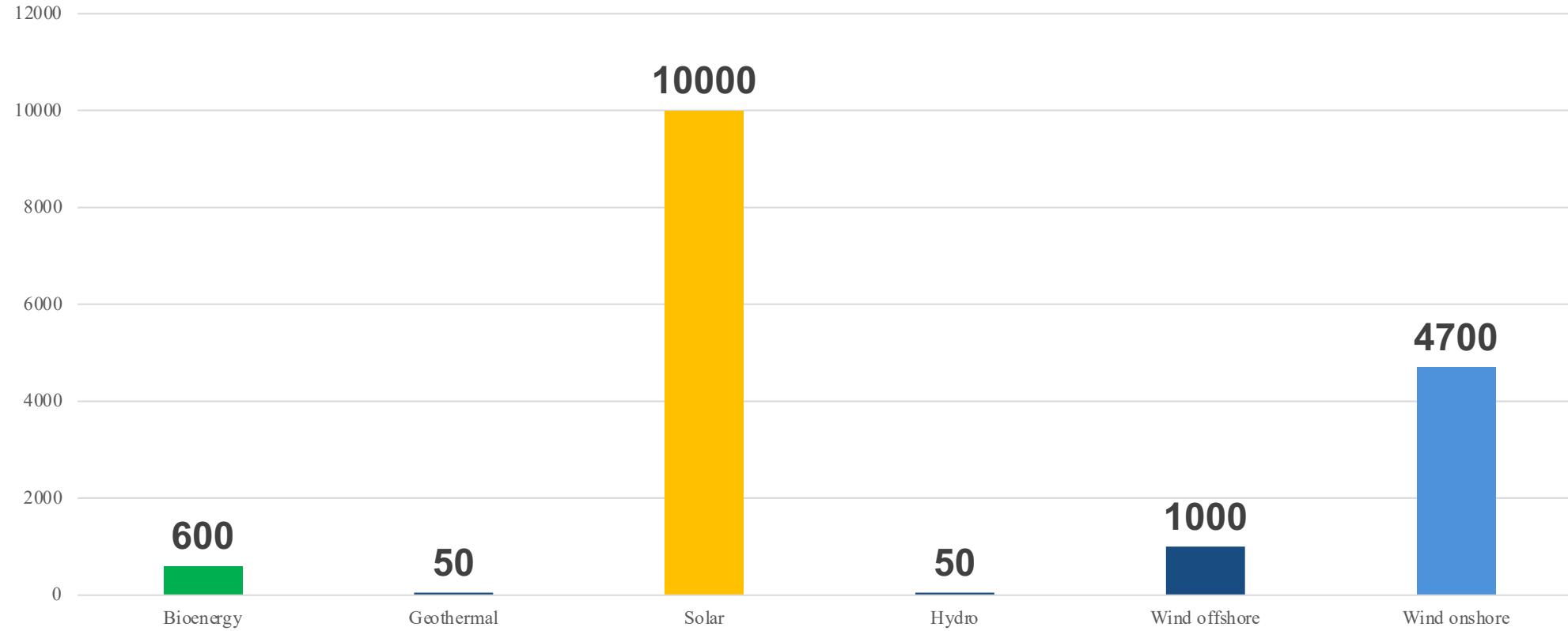


4. Problems and outlook

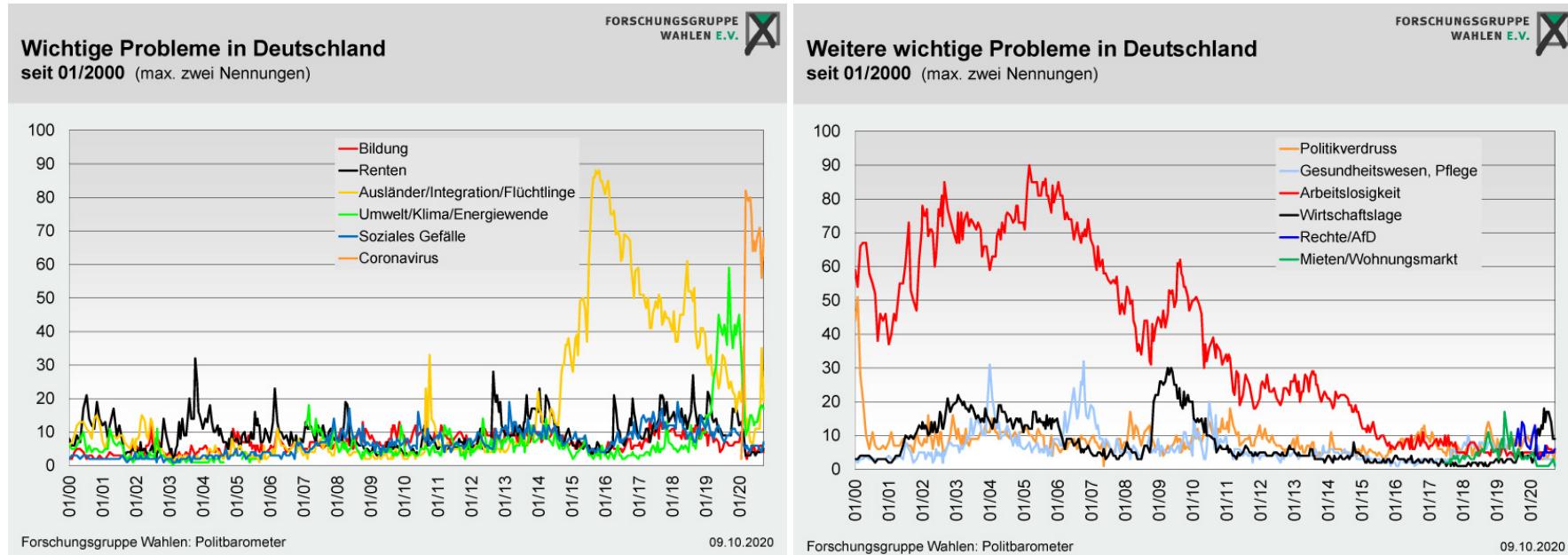
- Since the record breaking year 2017 with around 5.300 MW in new wind energy installations, expansion has dropped sharply
- Two Main reasons are:
 - **Lack of space permissions** (areas for windenergy need to be assigned and approved by state/municipal institutions)
 - **Problems of acceptance** (nature conservaion, lack of citizen's participation etc. leads to increasing lawsuits against windenergy projects)
- From 2021 we are facing a potential dismantling of 2.300 MW per year
- With only 2 percent of Germany's national territory we can produce electricity a for climate neutral economy until 2050



Annual Expansion of renewable energies needed 2021 - 2030



Legislators look at polls: topics rearrange, emotionalization rises



Until march 2020: environment and climate become more important, connected with the fridays for future-movement

Legislators are surprised by that, react time-delayed

COVID-19: environment and climate stay important

But: Focus on „other important problems“: economic situation at 20%

4. Challenge of the future: not the integration in the existing energy market but a new market design

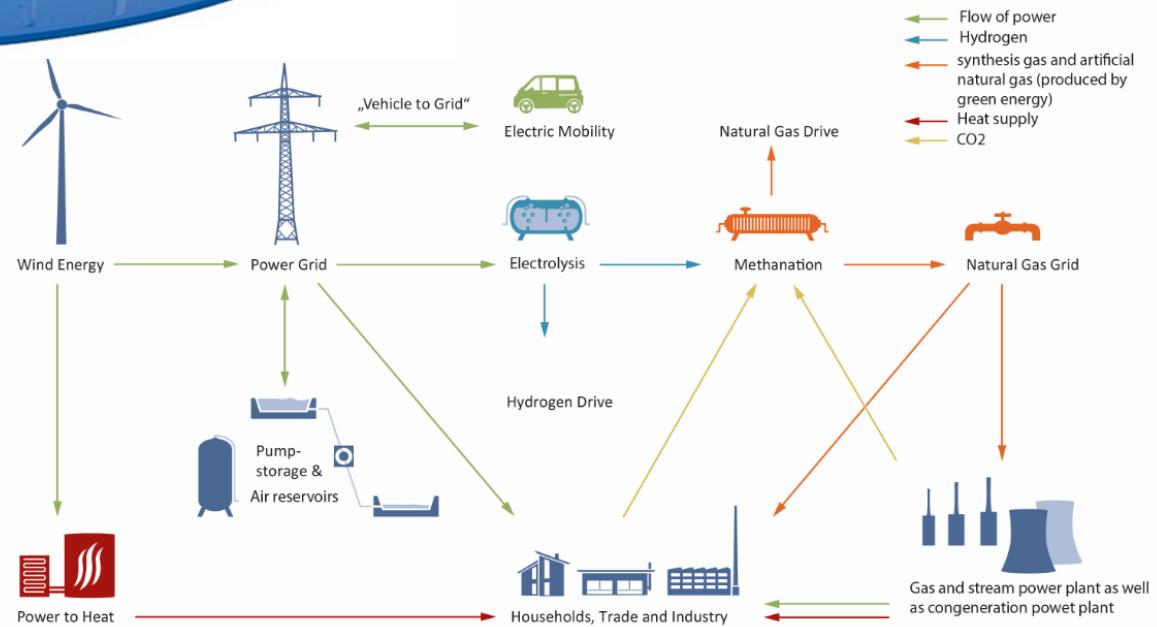
- Sector coupling and digitalization
- Flexibility
- Key principles of a new market design

Sector Coupling and Digitalization



Unlocking the full potential
Converting renewable electricity into heat/cooling, mobility or gas (power-to-gas) is the most important project of the EU energy market.

- **More than electricity**
- The switch to renewable energies does not stop at the electricity sector. The future energy will include the sectors heath, industry and mobility.



Source: Bürgerenergie Thüringen

Flexibility

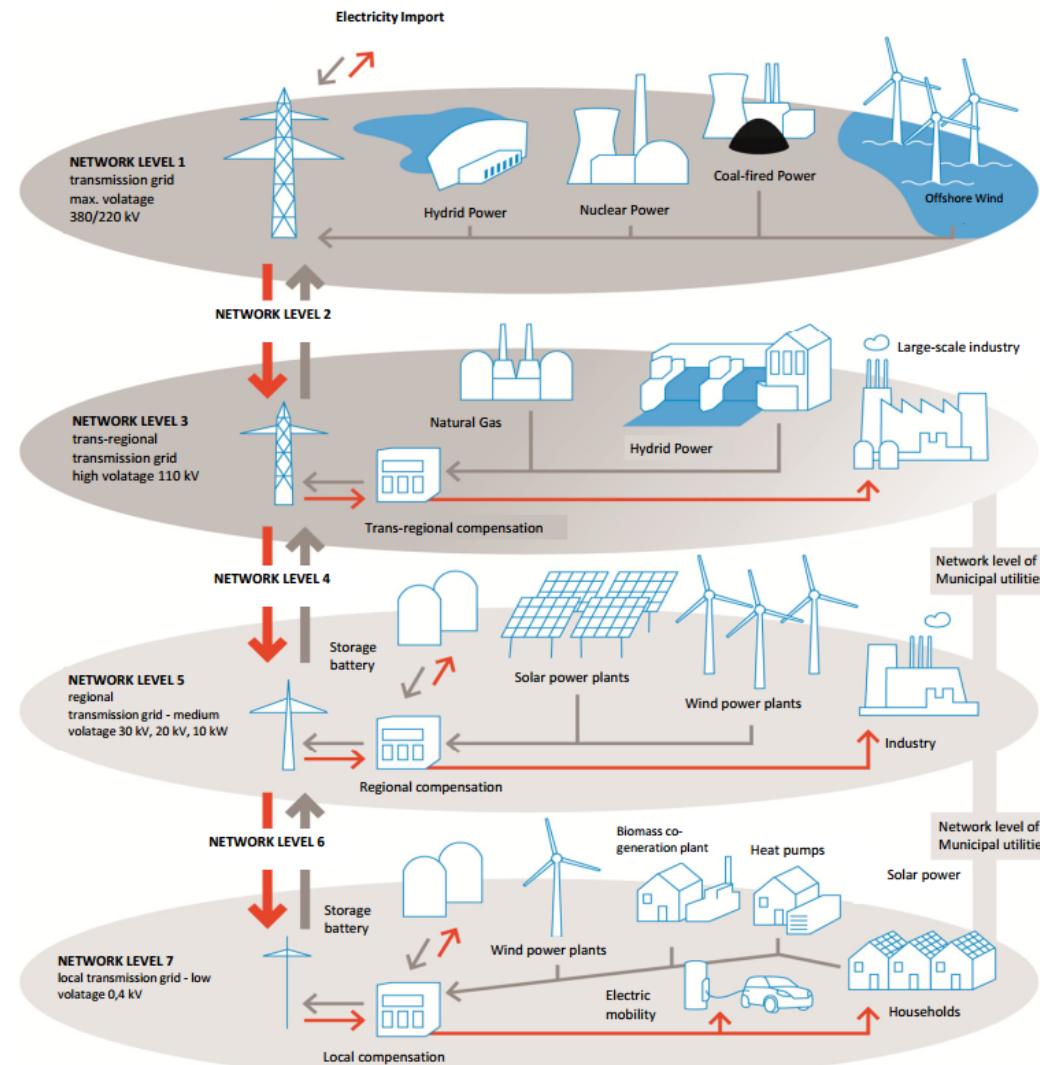
The grid is the key:
decentralized power generation and
deployment offer new opportunities
in the energy market.

Centralized energy supply

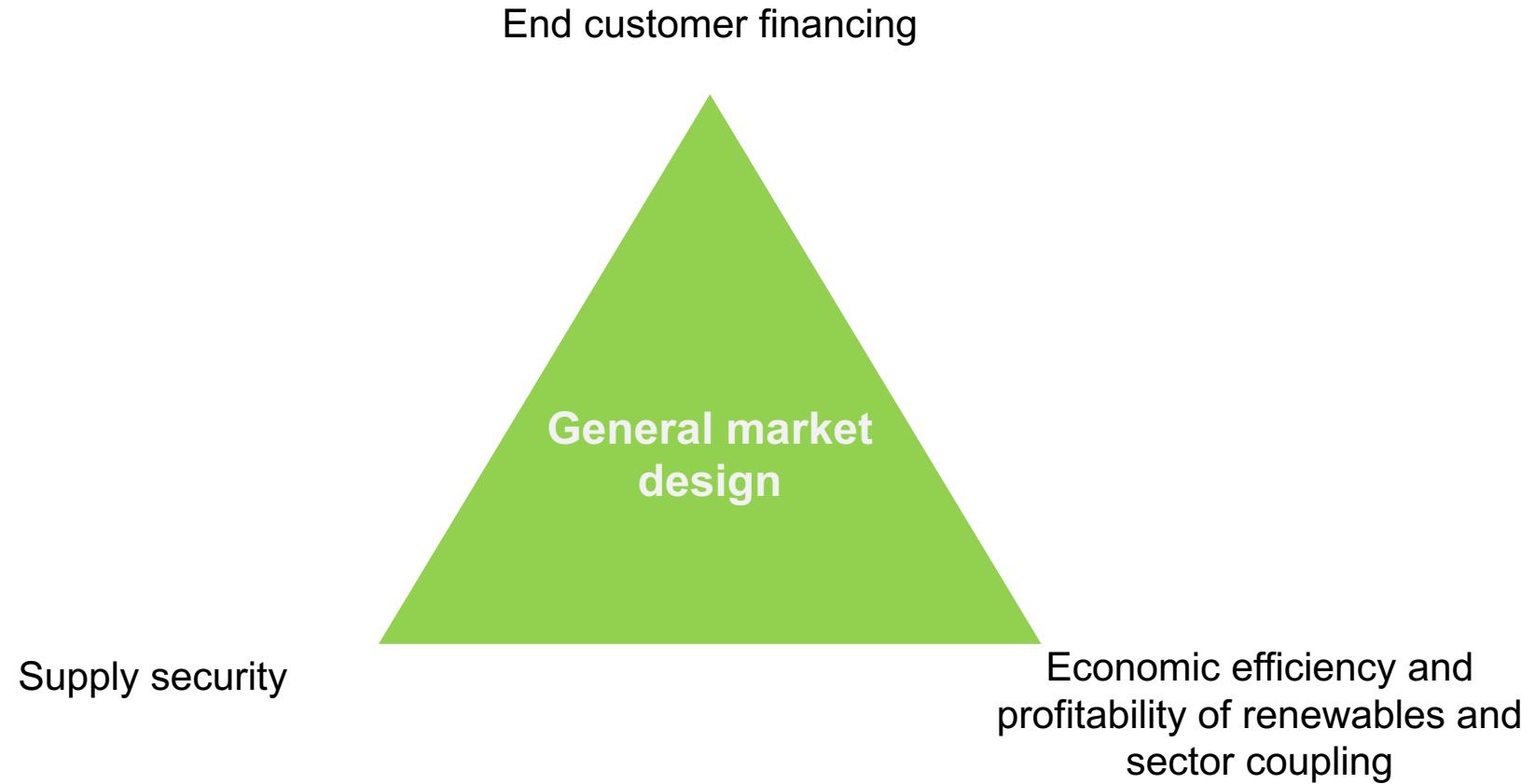
Chances for local energy producers

Transformation through all grid levels

Decentralized energy supply



New electricity market design: key principle

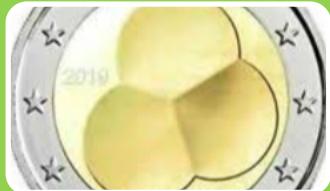


Main topics of a new electricity market design



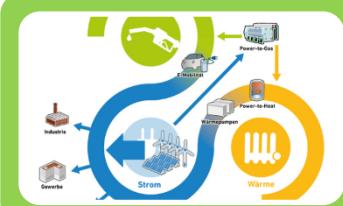
Supply Security

- Additional flexibility for feed-in gradients
- Compliance of the „n-1“ criteria („shutdown in hours of negative prices“)
- Assumption of grid-services of fossil plants



End Customer Financing

- Price stability for end customer
- Levy/Allocation stability
- Stimulation for flexibility at the end consumers



Profitability of renewables and sector coupling

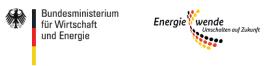
- Stable or higher market value of renewables
- Reducing negative market prices in number and amount
- Integration of other sectors in electricity sector



Key questions general electricity market

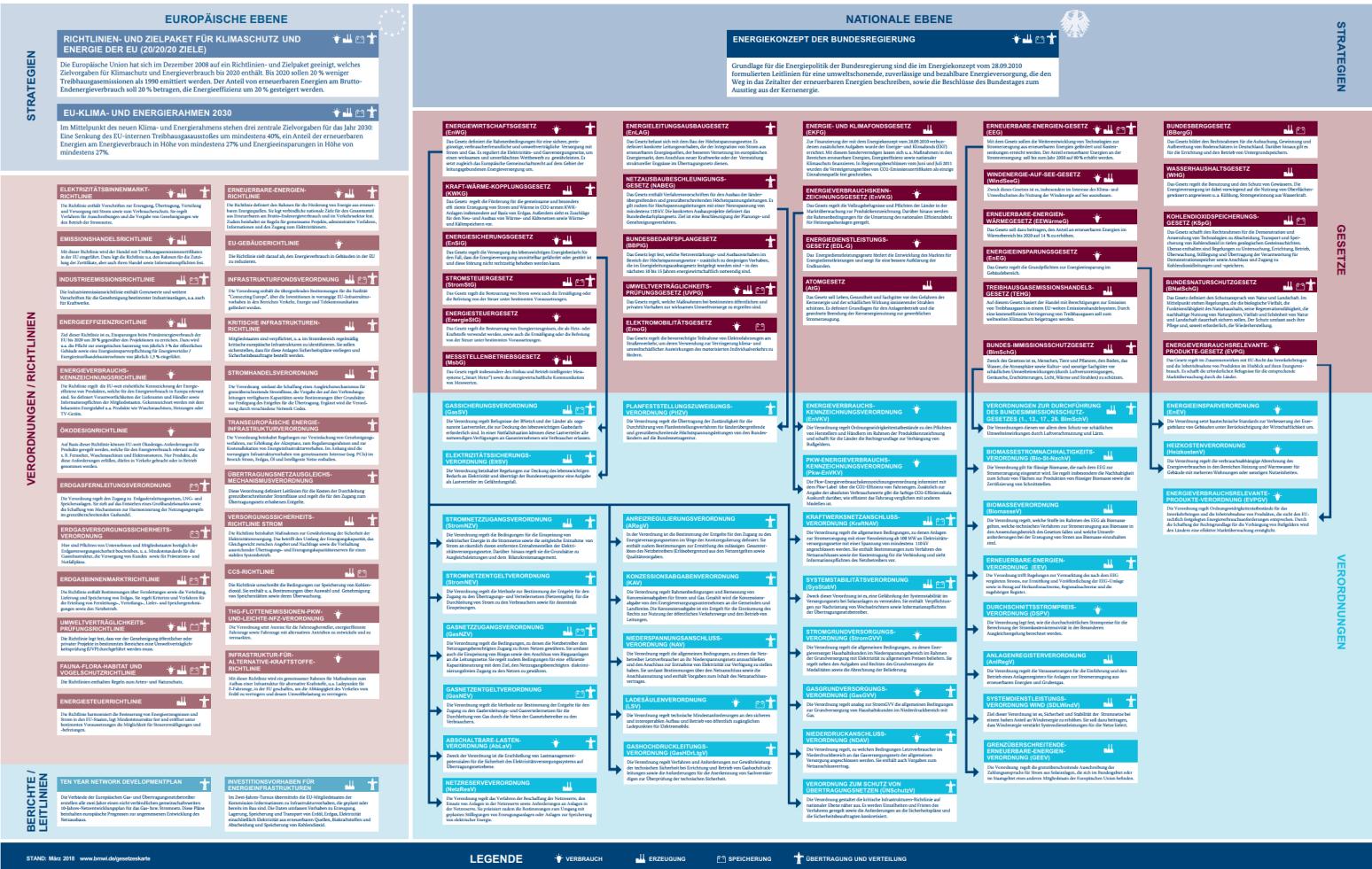
- Feed-in priority for renewables
- Electricity prices for flexible, cost-intensive power plants
- Assignment of regional power quantities and renewables among each other

Energy sector: regulated and depending on politics



Gesetzeskarte für das Energieversorgungssystem

Karte zentraler Strategien, Gesetze und Verordnungen



Bundesverband WindEnergie

Thanks for your kind attention.

Bundesverband WindEnergie e.V.
EUREF Campus 16
10829 Berlin

T +49 (0)30 / 21 23 41 - 210
F +49 (0)30 / 21 23 41 - 410
info@wind-energie.de
www.wind-energie.de

