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Green Energy, Market Failure, and Multilevel Governance

Lessons from Germany

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Transformation of energy system

- **Transformation**

- ⇒ Process of a fundamental change in the long term

- **Energy**

- ⇒ non renewable versus renewable (green) energy

- **System**

- ⇒ Technology, market, politics, society

Approach to promote green energy – the Germany model

established in 1991; revised in 2000, amended in 2004, 2009, 2012, 2014....

- Regulation of **market access for renewable energy** :
Energy suppliers are compelled to feed-in green energy
- **Incentives to invest in green energy**: guaranteed feed-in tariffs, market premium
- **Disincentives for energy consumption**: surcharge on electricity prize (levy to finance subsidies)

copied by governments in many countries (Ontario: 2009 Green Energy and Green Economic Act).

Market-conforming approach: Market as driver of transformation

- Regulation: opening market for green energy
- Subsidies to make new technologies competitive
- financed by consumers (internalization of social costs)
- incremental adjustment of subsidies to technological and market development (administrative fine-tuning)
- since 2014: subsidies determined by auctions (except small-scale installations)



Federal Ministry
for Economic Affairs
and Energy

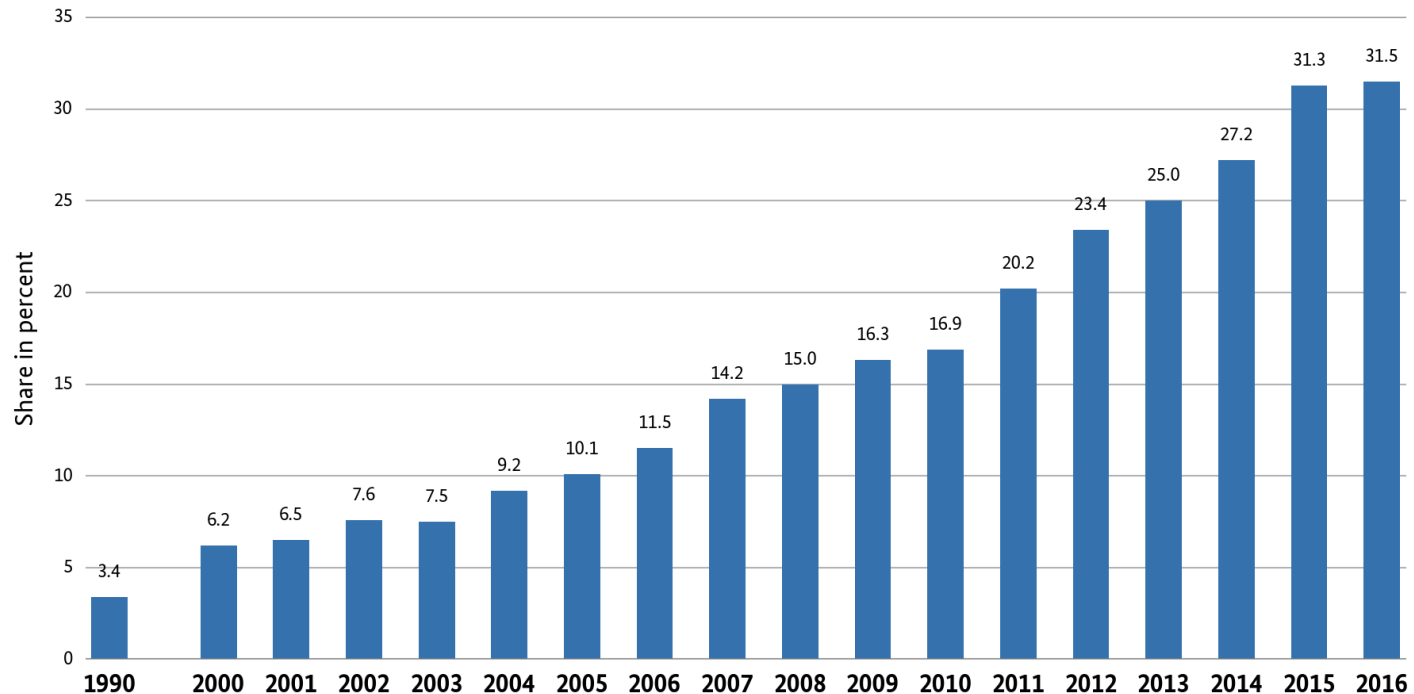


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Arbeitsgruppe Erneuerbare Energien - Statistik

Development of renewable energy share of gross electricity consumption in Germany



BMWi based on Working Group on Renewable Energy-Statistics (AGEE-Stat); as at December 2017; all figures provisional

Transformative and systemic effects

- Increasing share of green energy (mainly electricity)
- Decentralisation of energy supply
- Restructuring of energy industry
- Dissolution of old corporatist structures in energy policy
- New patterns of participation of stake holders, experts and civil society
- Dynamics of energy policy: paradigm change: focus on „Energiewende“
- „Policy Spill-over “ from electricity to heating, transport etc.

„Market failure“: Consequences of transformative dynamics in electricity market

➤ Externalities and collective good problems

- **Limited capacities of grid** (natural monopoly)
- **Externalities of energy installations:** Impacts on environment, local conflicts
- **Cross-boarder externalities in the EU energy market**
 - Oversupply of power in Germany causes grid congestion in neighboring countries (Austria, Poland, Czech Republic)
 - Oversupply of power sold at a low prize threatens pumped-storage power plant in Switzerland and Austria

„Market failure“: Consequences of transformative dynamics

➤ **Distributive effects**

■ **Social effects**

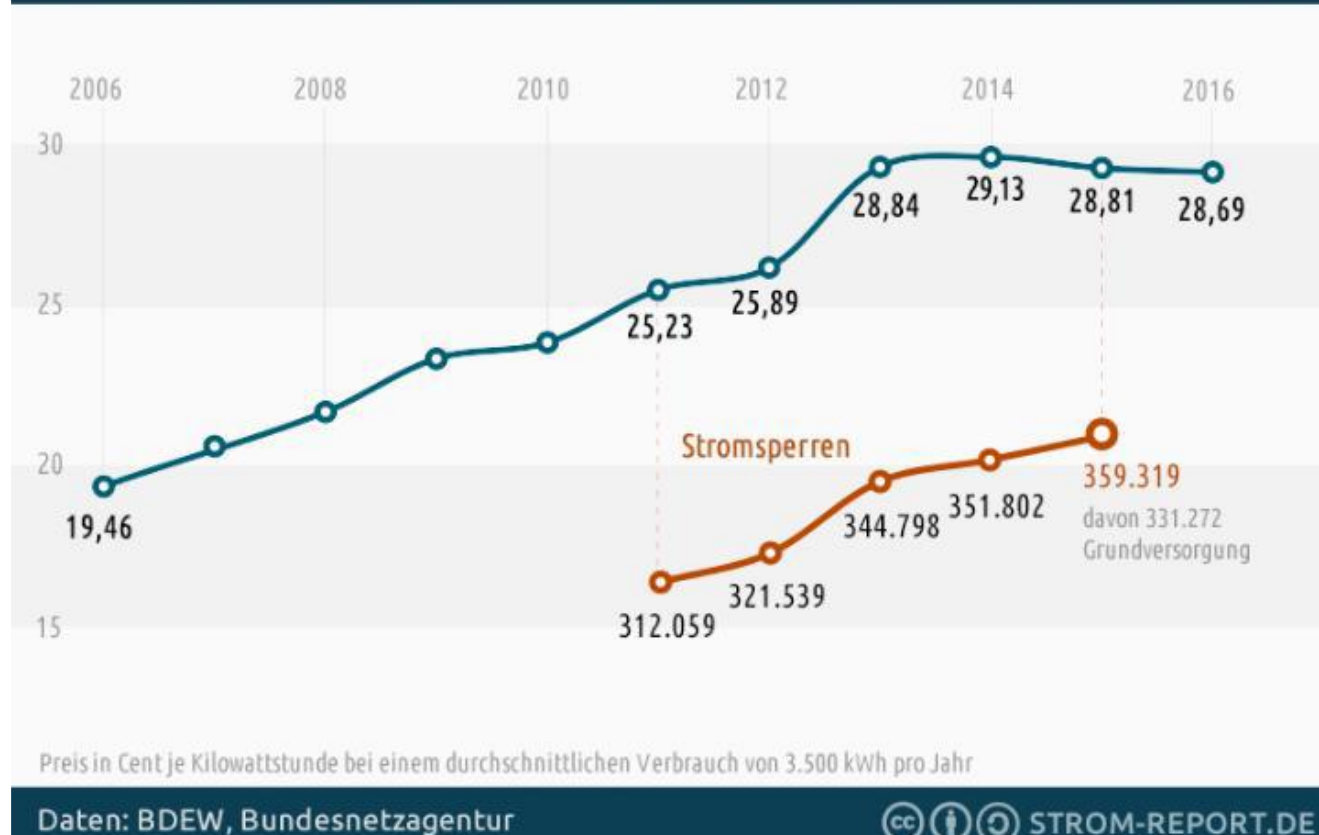
- Discharge of electricity-intensive companies
- increasing electricity costs and costs of energy efficient devices burden people with low income

■ **Territorial effects between regions**

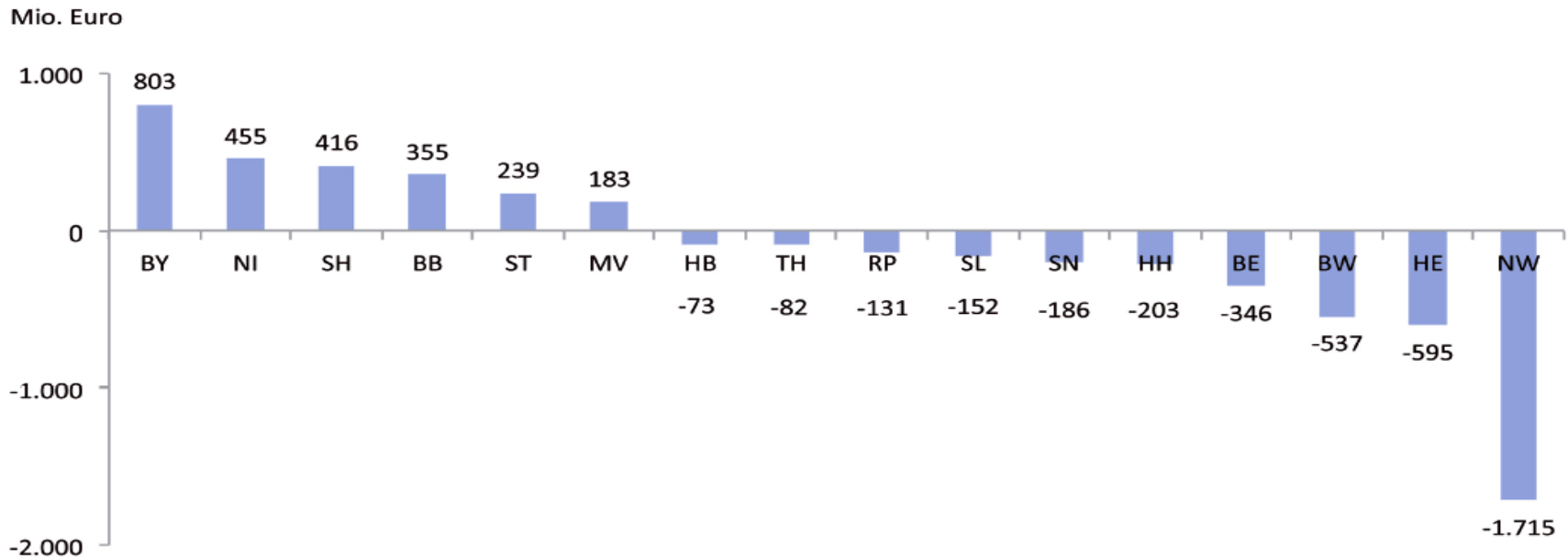
- different production structures
- different balances of subsidies and surcharge

Social distributive effects

Electricity prices and power cut-offs



Territorial distributive effects



Source: Growitsch, Meier, Schleich, Regionale Verteilungswirkungen des Erneuerbare-Energiene-Gesetzes; Perspektiven der
Wirtschaftspolitik 16 (1), 2015, p. 78

Political responses and politicization

- Grid development as indispensable prerequisite:
 - central planning, federal law, federal administration
 - A **powerful corporatist structure**, open to citizen participation
- Conflicts at regional and local level: **politicization from below**
- Bilateral cross-border coordination (executives, experts)
- Assistance to consumers in need: local governments providing advise and financial support, pilot projects by Land governments
- Territorial equalization mechanism, yet extremely complicated and not really working
- **Party politics**: Populist responses to rising electricity prizes
- ⇒ Risk of path-dependency, blockades and return to old energies

- Coping with market failure at **different levels**
- **Negotiated** policy-making, but **rarely joint decision-making**
- Multilevel: **loosely coupled arenas** of policy-making
 - e.g. platforms “Energiewende” of Federal Ministry of Economy
 - e.g. forum “Future of Energy” in Land Hesse
 - local public-private networks
 - European Energy Union as “soft power”
- **Multilevel governance:**
 - policy learning based on decentralized innovation, diffusion, and (central) monitoring
 - dynamic, process, flexible, incremental adjustment
 - responsible politics, evidence based, consultation with civil society