Federal Ministry
for Economic Affairs
and Energy

The German Energy Transition *(Energiewende)*

Zagreb Energy Week 2014 International Conference "Investing in the Future – World cities sharing smart, sustainable energy solutions"

Helge Tolksdorf
Federal Ministry for Economic Affairs and Energy
Head of Unit EU enlargement, Southeastern Europe, Turkey

15 May 2015

Content

1. The German energy transition – Overall aims and ambitious targets

2. Implementation process – Conceptional action plan

3. Example 1: Energy efficiency – Status quo and challenges

4. Example 2: Renewable energies – Reform of the Renewables Act

5. Conclusion

Federal Ministry
for Economic Affairs
and Energy

German Energy Transition – long term strategy up to 2050

Long-term strategy towards a higher share of renewables and higher energy efficiency

Overall aims:

- Reduction of **import dependency**
  - ⇨ Increasing global energy demand
- **Climate protection** as an international goal
  - ⇨ Reduction of greenhouse gas emissions
- Development of **new technologies and markets**
  - ⇨ Renewable and efficiency technologies

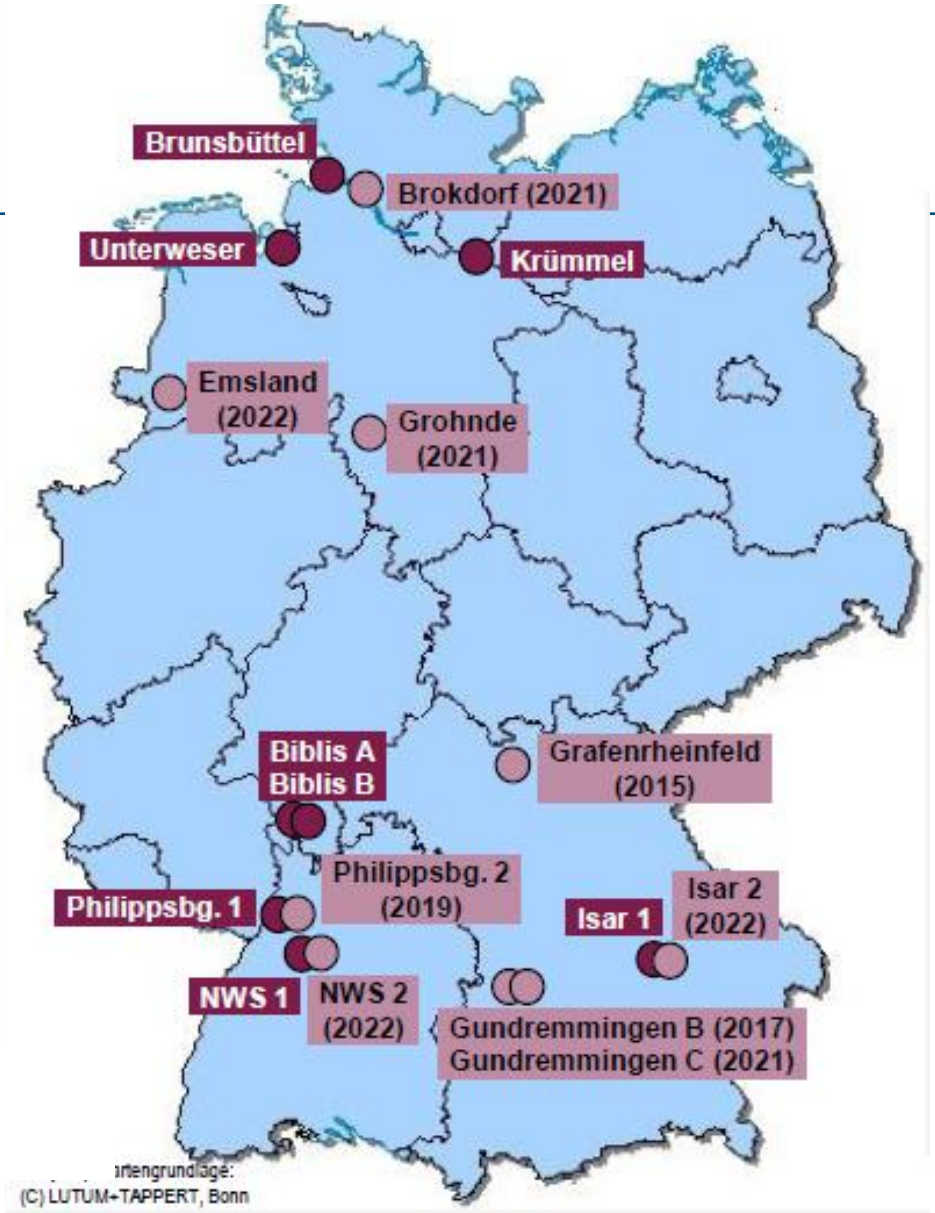
Federal Ministry
for Economic Affairs
and Energy

Energy concept (2010) – Ambitious targets (selection)

	2011	2020	2030	2040	2050
Reduction in greenhouse gas emissions (base year: 1990)	*- 23 %*	- 40 %	- 55 %	- 70 %	- 80 %
Share of renewable energies in final energy consumption	*11 %*	18 %	30 %	45 %	60 %
Share of renewable energies in electricity consumption	*22 %*	35 %	50 %	65 %	80 %
Reduction of primary energy consumption (base year: 2008)	*- 6 %*	- 20 %			- 50 %

Federal Ministry
for Economic Affairs
and Energy

The phase out of nuclear electricity production (June 2011)

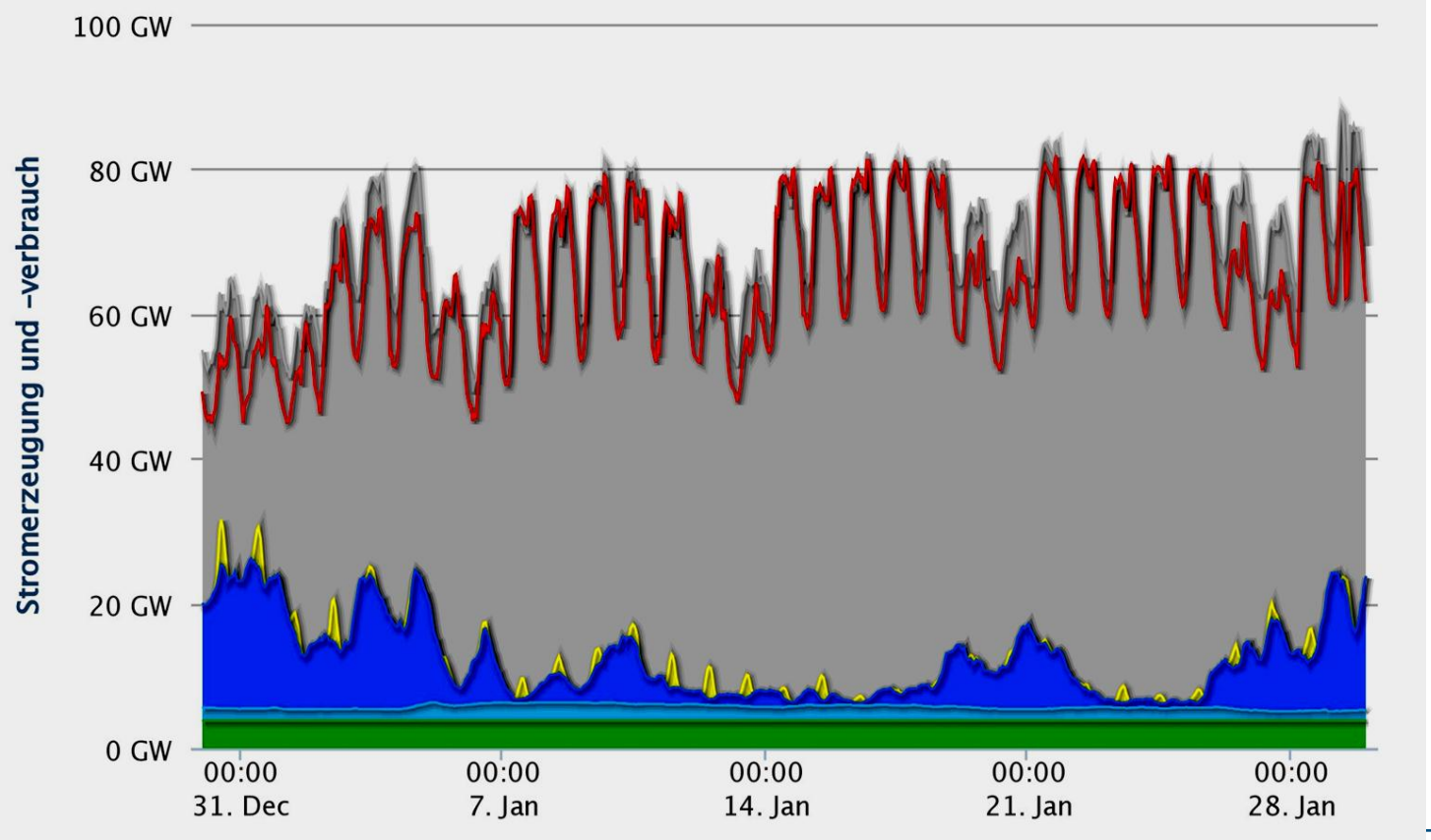


Shut down 2011

Shut down 2015-2022

Source: German Association of Energy and Water Industries

Challenge:
Volatile electricity generation from renewables (e.g. Jan. 2013)

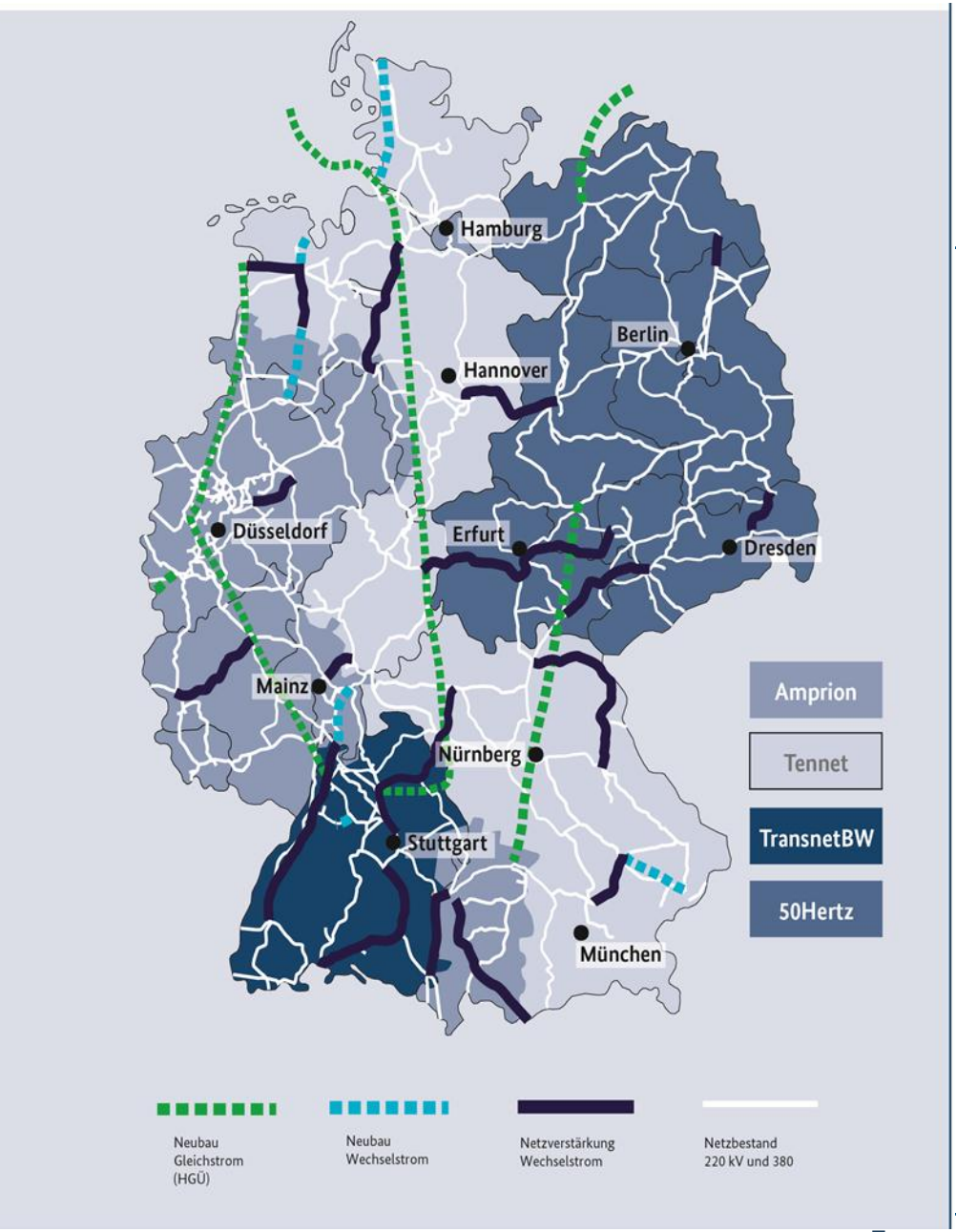


Conventional power plants | Solar | hydro electr | wind | biomass | Electricity consumption

Federal Ministry
for Economic Affairs
and Energy

Challenge: Power Grids and Infrastructure

- Instrument → Federal Requirement Plan Act (transmission grid)
- Basis for the expansion of the transmission grids and the planning of power lines
- Need for 2800 km of new power lines and the upgrading of 2900 km existing power lines

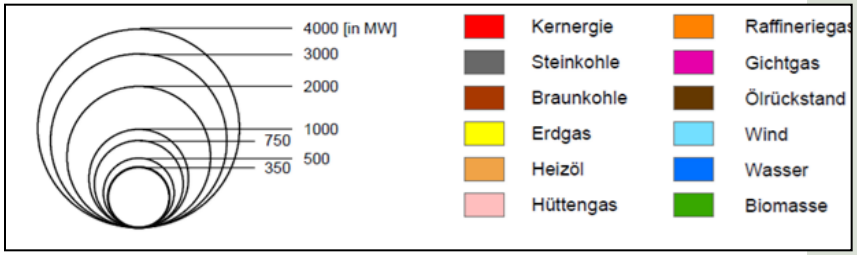


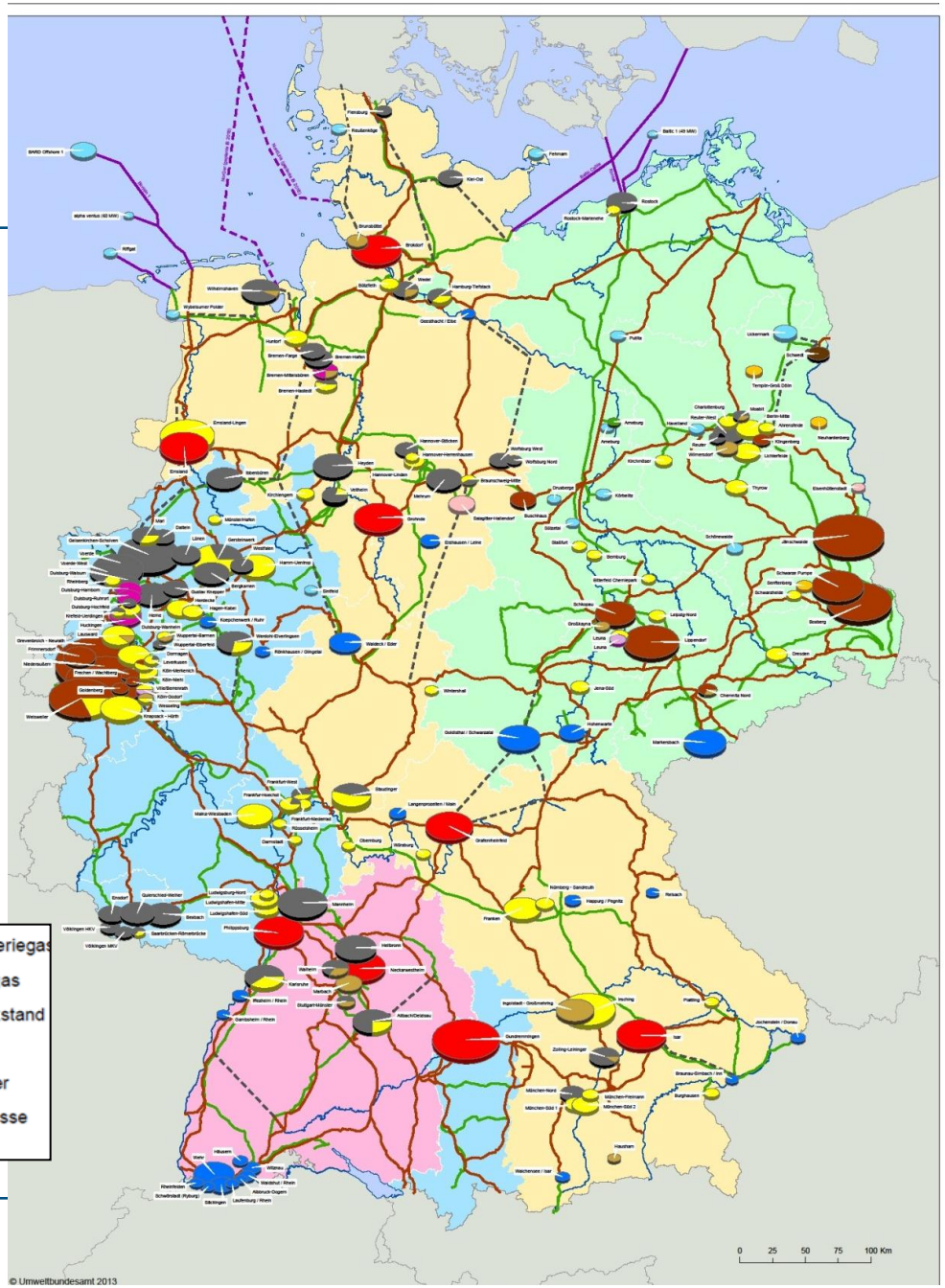
Federal Ministry
for Economic Affairs
and Energy

Conventional Power Plants

- **Conventional Power Plants are still needed:**

  Security of supply requires non-fluctuating capacity





Federal Ministry
for Economic Affairs
and Energy

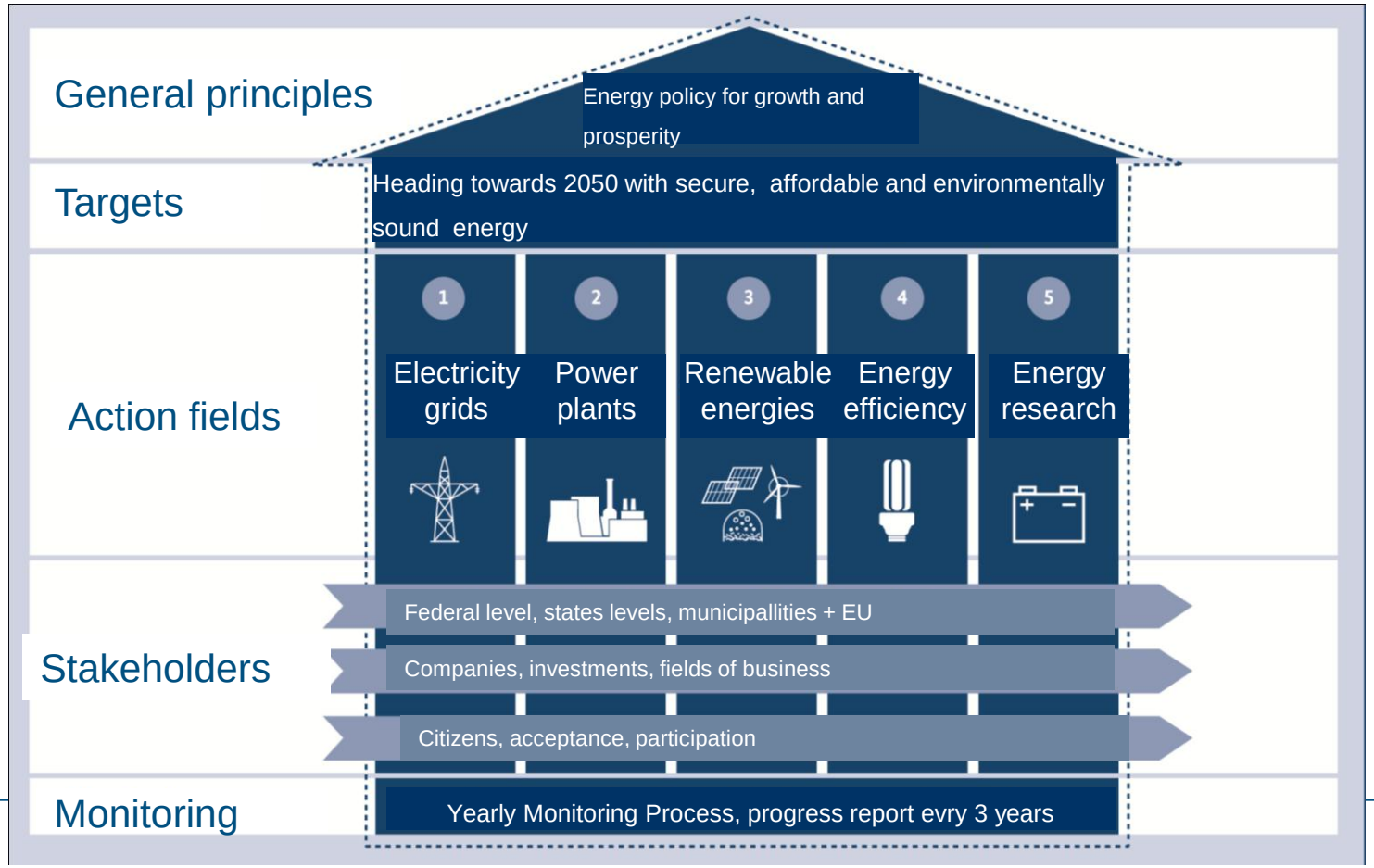
“Energiewende“ and the EU context

“Energiewende“ and its targets are embedded in the EU context, but a stronger “Europeanisation” of our processes is needed:

- **2007: EU‘s 20-20-20-targets:** 20% renewables by 2020, 20% reduction of GHG emissions, 20% increase in energy efficiency
- **2011: Energy Roadmap 2050:** long-term strategy for reduction of GHG emission by 80-95% by 2050
- **2014:** Current debate on new **EU energy and climate policy up to 2030**

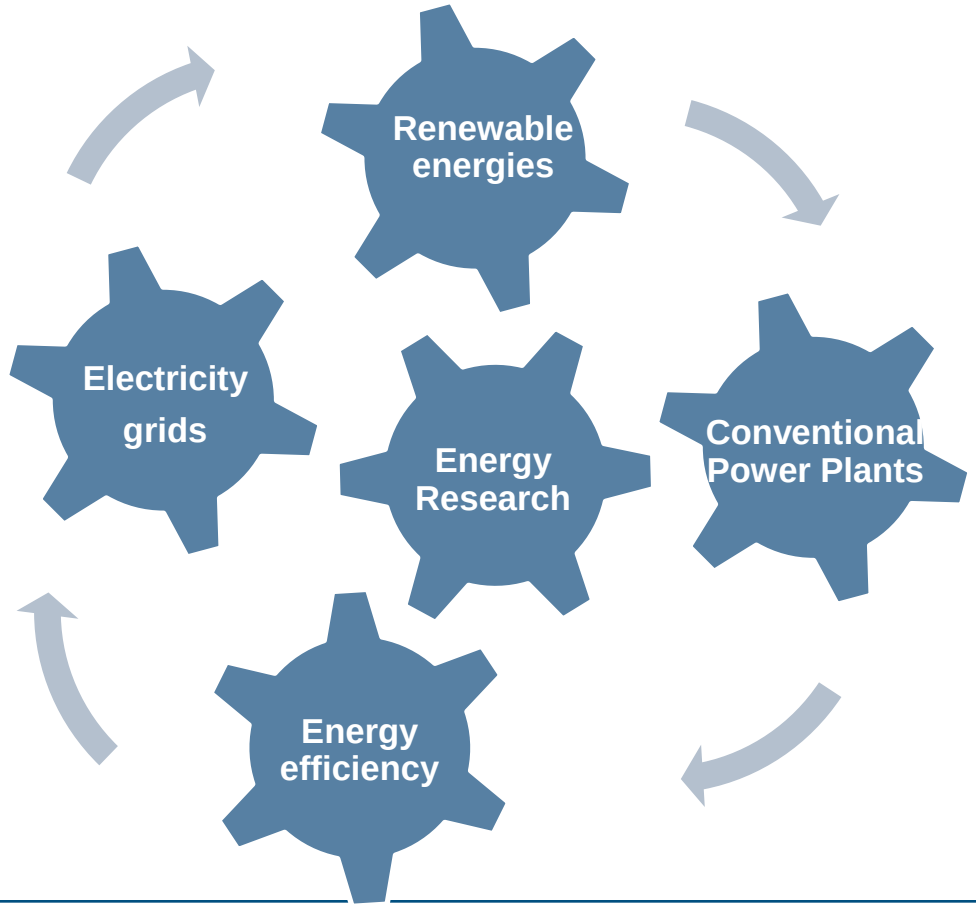
Federal Ministry
for Economic Affairs
and Energy

Implementation process: Conceptional action plan



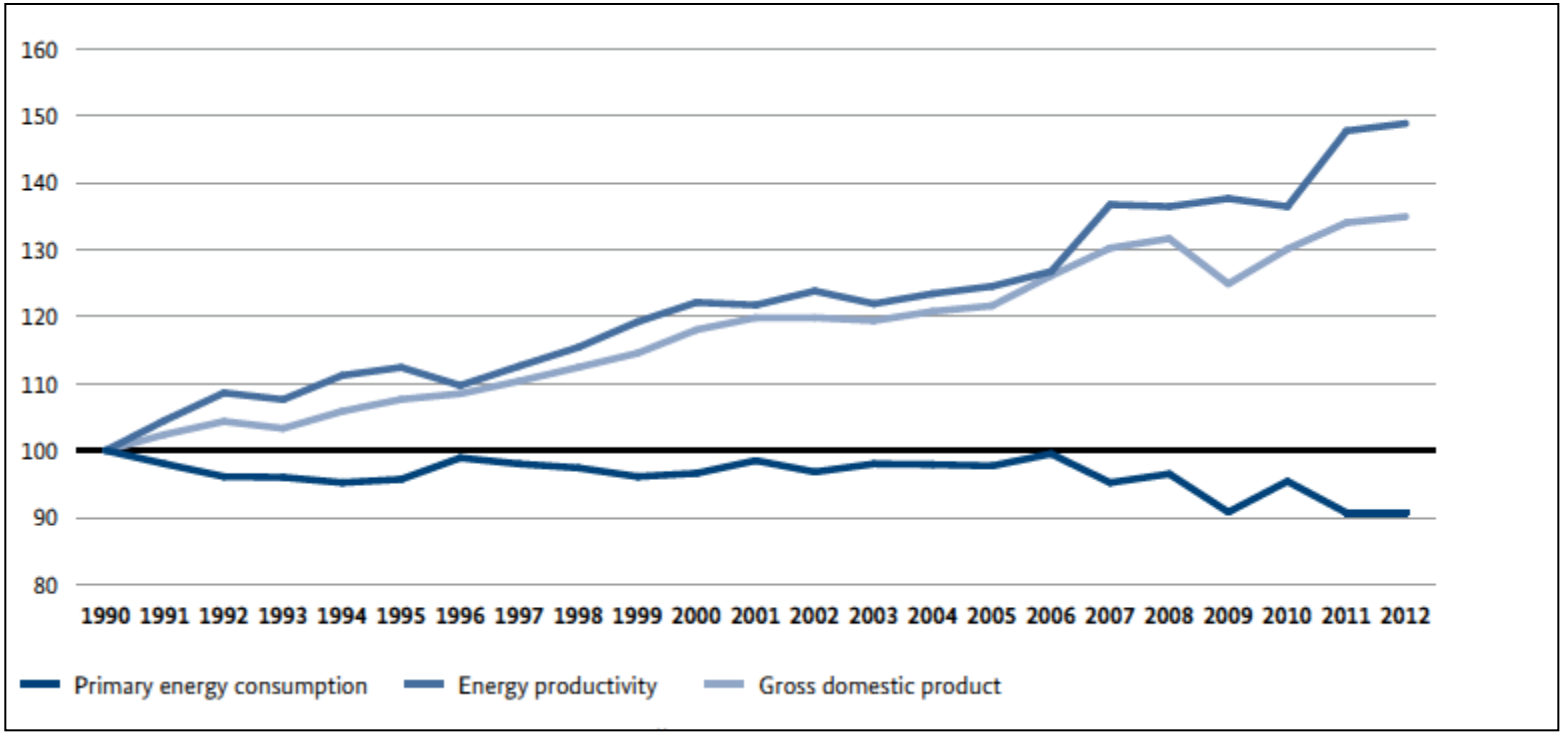
Federal Ministry
for Economic Affairs
and Energy

Five central fields of action – Closer interlinkage needed



Federal Ministry
for Economic Affairs
and Energy

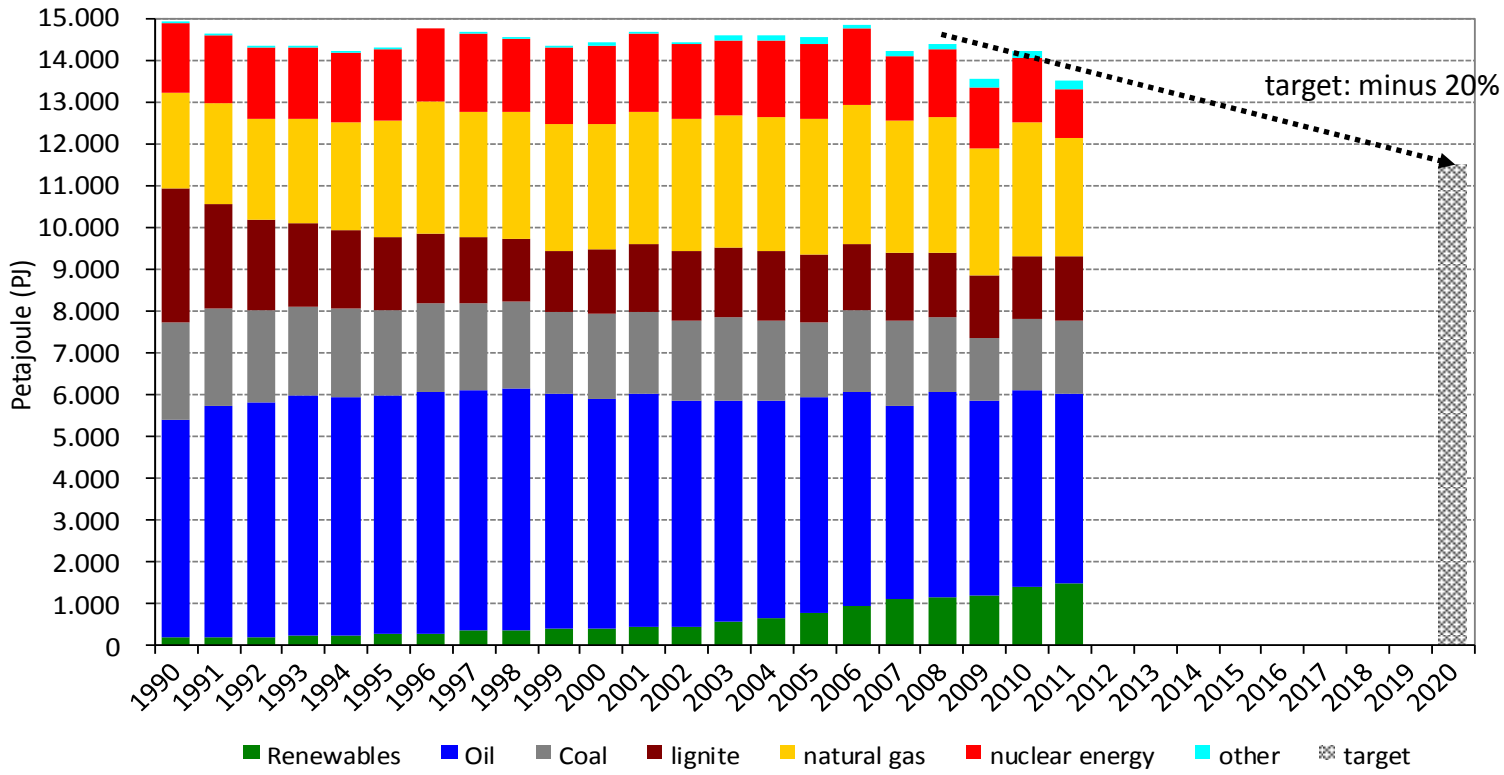
Decoupling of economic growth and energy consumption achieved



Source: Federal Ministry of Economics and Energy

Federal Ministry
for Economic Affairs
and Energy

Reduction of primary energy consumption illustrates the challenge



Source: Working Group on Energy Balances (AGEB)

Federal Ministry
for Economic Affairs
and Energy

Broad mix of instruments needed

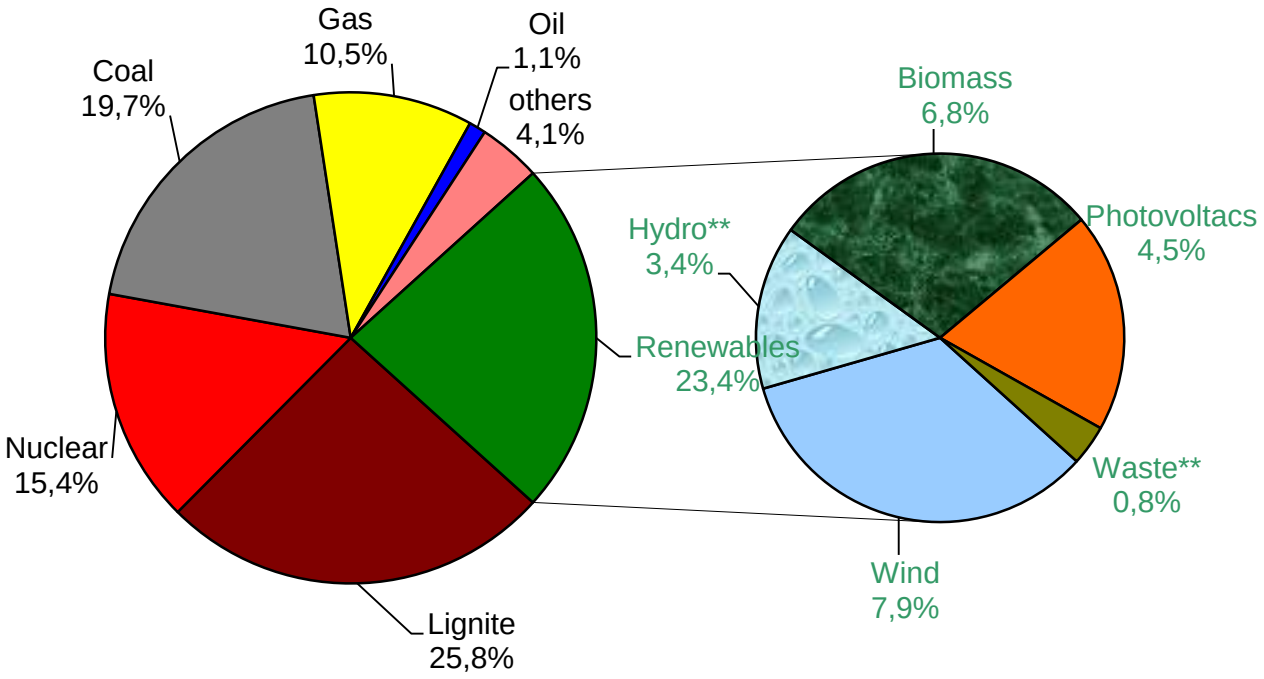
- **Buildings** account for almost **40 %** of German energy consumption:
  - Standards: National standards + EU Buildings Directive 2010/31/EU
  - Incentives: "CO_2 Building Modernisation Programme" increased to 1.5 bn € per year
  - Information: Energy advice for residential buildings

- **Product standards and labeling**: EU standards for minimum energy efficiency requirements and energy labelling
- Implementation of the **Energy Efficiency Directive (EED)** (ongoing)

Federal Ministry
for Economic Affairs
and Energy

Successful expansion of renewable energies

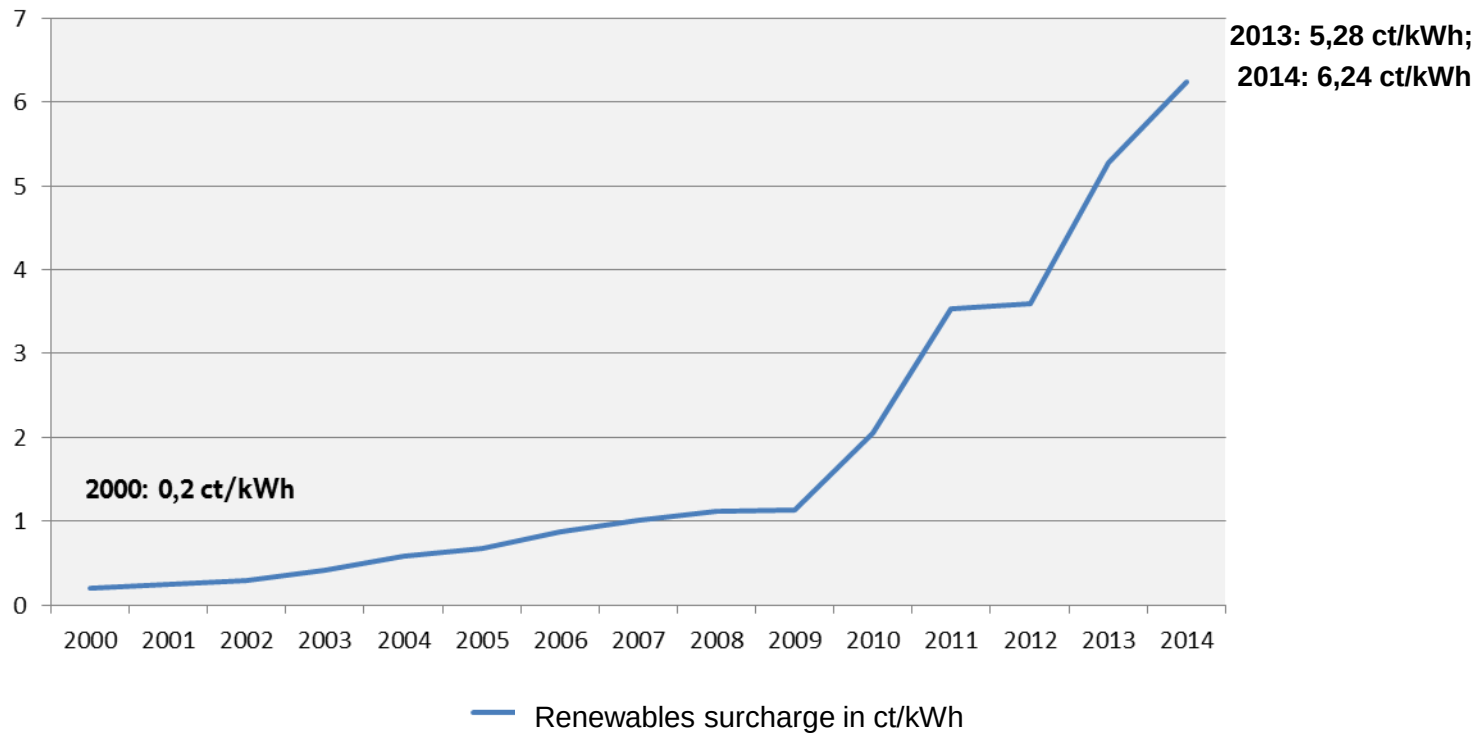
Gross electricity production 2013 (total 629 TWh)



Source: Working Group on Energy Balances (AGEB)

Federal Ministry
for Economic Affairs
and Energy

Renewable energy surcharge has increased sharply



Federal Ministry
for Economic Affairs
and Energy

Reform of the Renewables Act – Priority project in the coming months

- Time schedule:
  - Key points adopted on 22 January 2014 by the Cabinet
  - Legislative draft → adoption by the Cabinet on 8 April 2014
  - Planned entry into force August 2014
- Overall aims:
  - Bringing down current over-funding: reduction of feed-in tariffs
  - Reliable expansion path
  - Better market integration
  - Need to revise the so-called “special compensation arrangement”

Conclusion

- The energy transition is a big challenge.
- Environmental and economic aspects need to be considered together.
- Renewable energy reform as a first key step in the new legislative period.

Thank you for your attention!

helge.tolksdorf@bmwi.bund.de

Further information on German energy policy:

http://www.bmwi.de/EN/Topics/energy.html