

The German Energy Policy after COP 21

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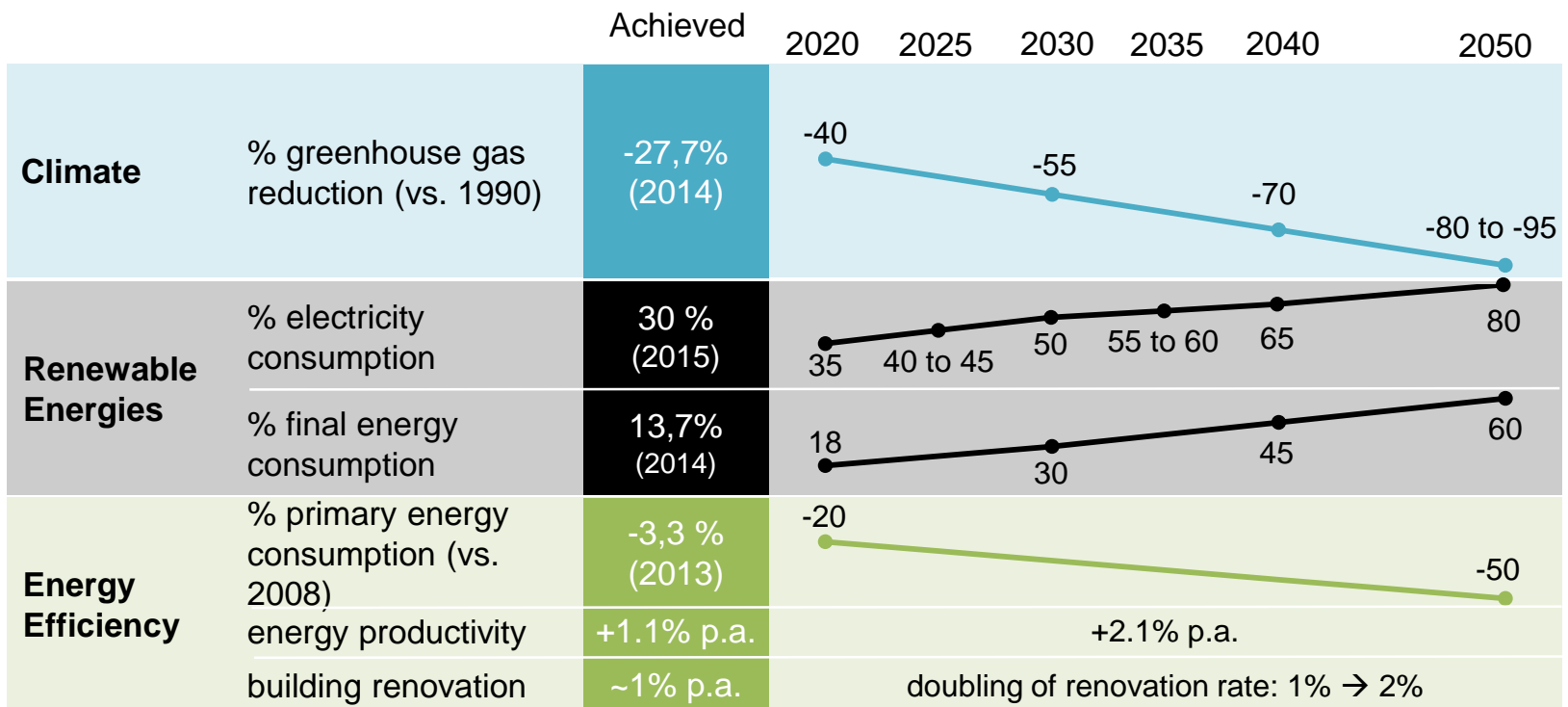
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Energiewende targets until 2050

and progress made so far

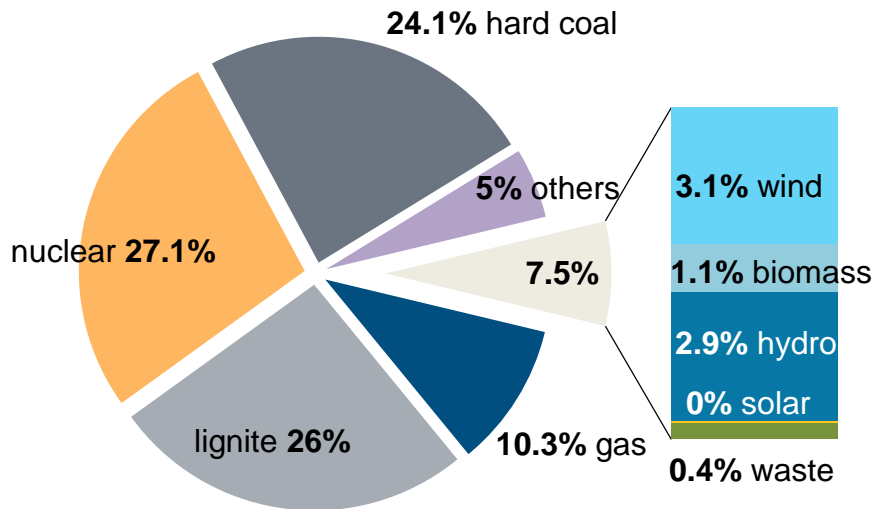


Germany has set ambitious targets in all sectors

Where do we stand:

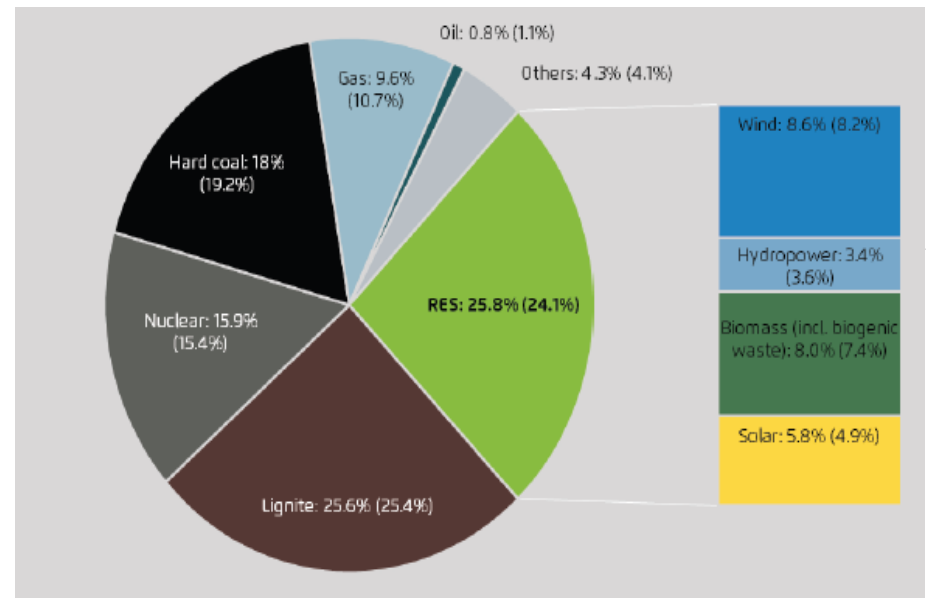
Share of renewables is growing in all sectors, but fastest in electricity.

2003 total: 608.8 TWh
renewables share: 45.6 TWh



2014

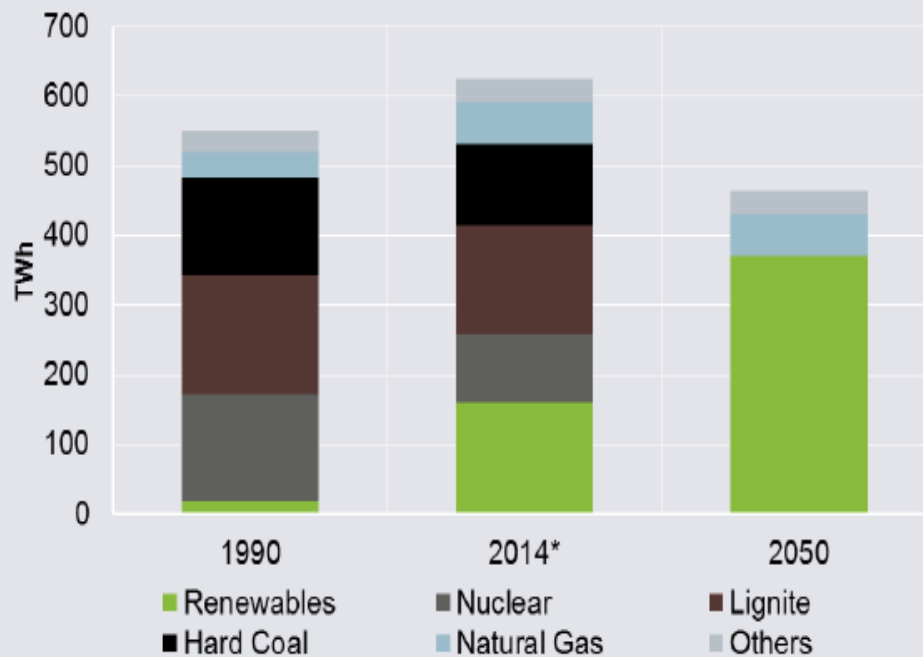
total: 610,4 TWh
renewables share: 157,4 TWh



*The renewables share in electricity production tripled within ten years.
RE are now biggest source of electricity*

The Energiewende means fundamentally changing the power system

Gross electricity generation 1990, 2014 and 2050



AGEB (2015a), BReg (2010), EEG (2014), own calculations * preliminary

Phase out of Nuclear Power

Gradual shut down of all nuclear power plants until 2022

Reduction of Greenhouse Gas Emissions

Reduction targets below 1990 levels:

- 40% by 2020; - 55% by 2030; - 70% by 2040;
- 80% to - 95% by 2050

Development of renewable energies

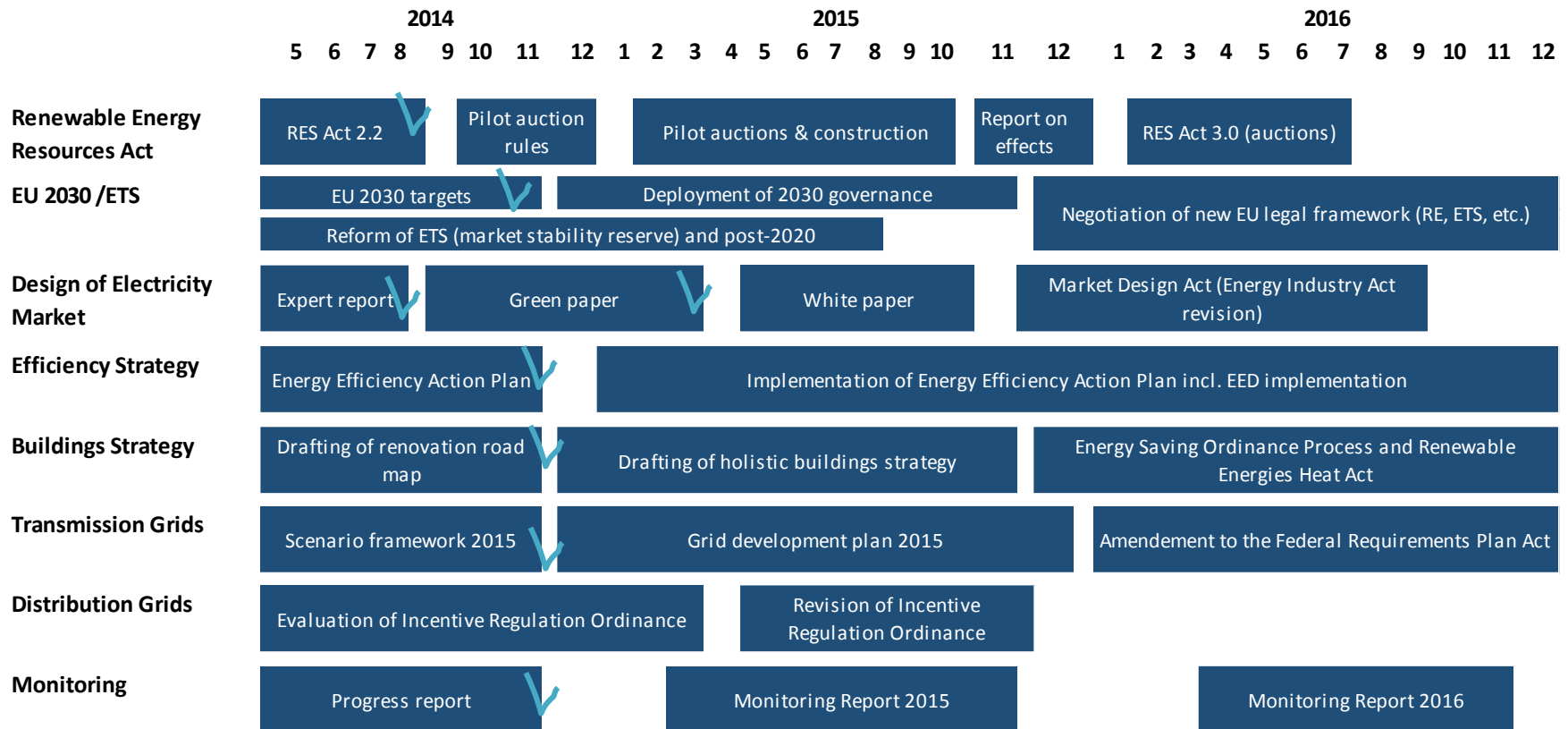
Share in power consumption to increase to:

- 40 - 45% in 2025; 55 - 60% in 2035; \geq 80% in 2050

Increase in efficiency

Reduction of power consumption compared to 2008 levels: - 10% in 2020; - 25% in 2050

Implementation of the most important projects



Source: BMWi 2014

Energiewende is planned and implementation is (widely) on track.

The Challenge No. 1:

German greenhouse gas emissions

Reduced emissions by the energy industry and the mild winter lead to a major decline in greenhouse gas emissions 2014. However, there is still a lot to do in order to reach the 2020 climate target.



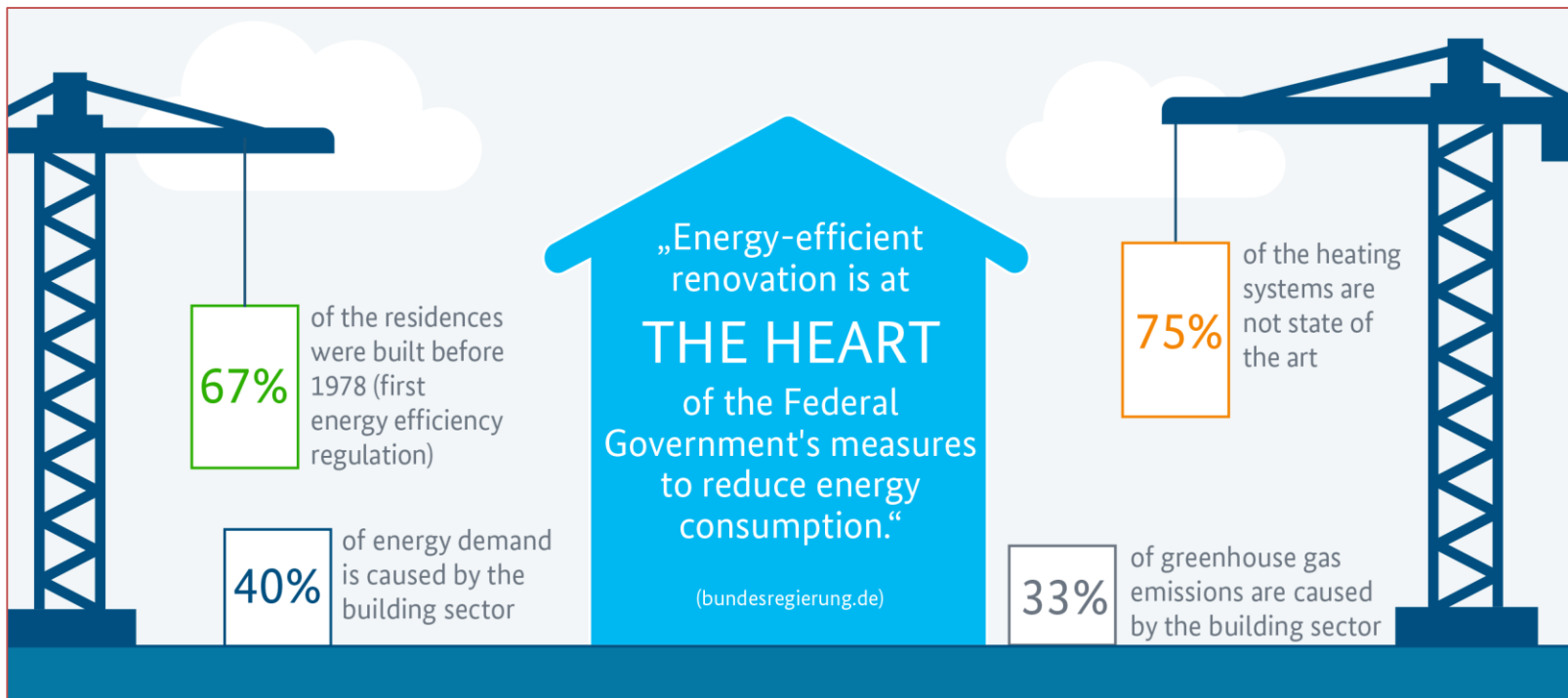
Greenhouse gas emissions by sector in mio. t CO₂-equivalents, as well as German government targets for 2020 und 2030



UBA 2014, own calculations, *preliminary, **own estimates

Challenge No. 2:

Saving potential of buildings



Source: BDH

The Energiewende can only be successful if existing buildings are included.

Challenge No.3: New (and smart) Infrastructure

- 2013 Network Development Plan led by Federal Network Agency
 - Identified need for over 3800 km of new transmission (HVDC)
 - Financing mechanisms in development
- Grid Expansion Acceleration Act (NABEG)
- Additional efforts on energy storage:
 - Pumped hydro
 - Power to gas
 - EU electricity grid interconnection
 - Research funding
- Smart Grid and E-Energy pilot communities
- Demand-side management

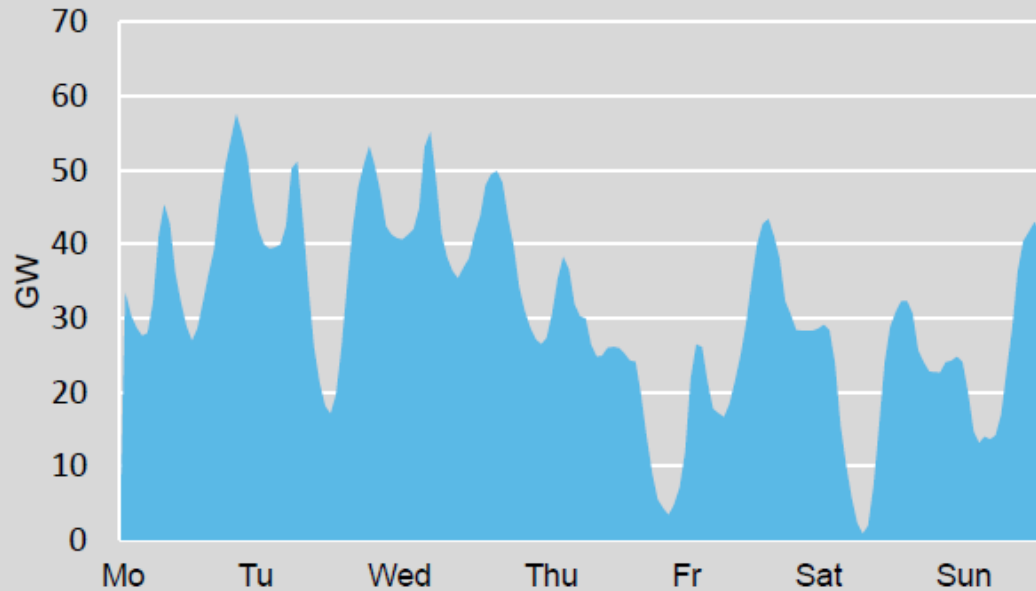


The Challenge No.4:

No baseload capacities are needed any more – the fossil power fleet rather needs to become highly flexible



Residual load in a sample week in February 2023 in GW



Agora Energiewende/RAP (2013)