

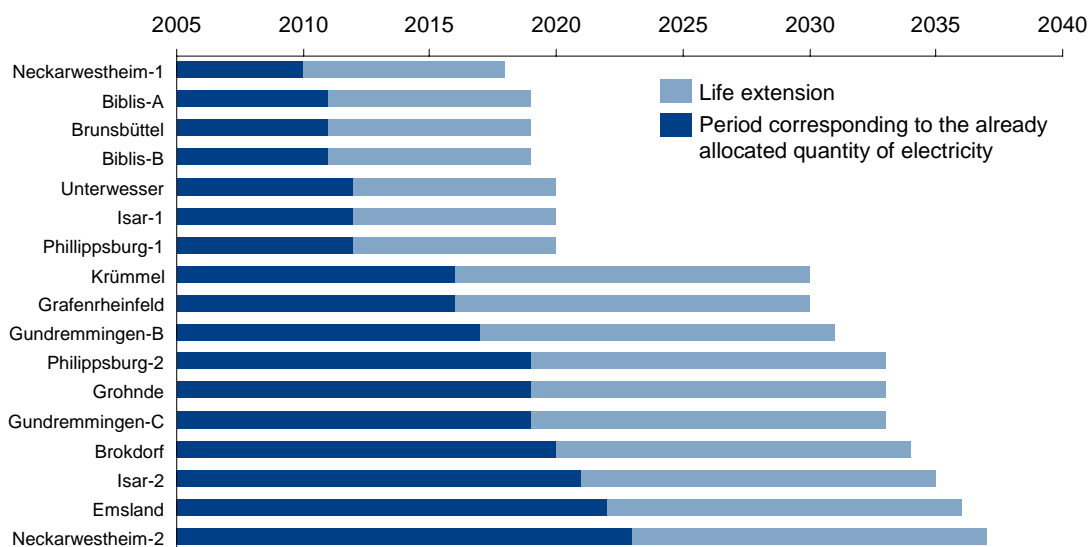


New German Energy Policy - Achievements and Challenges

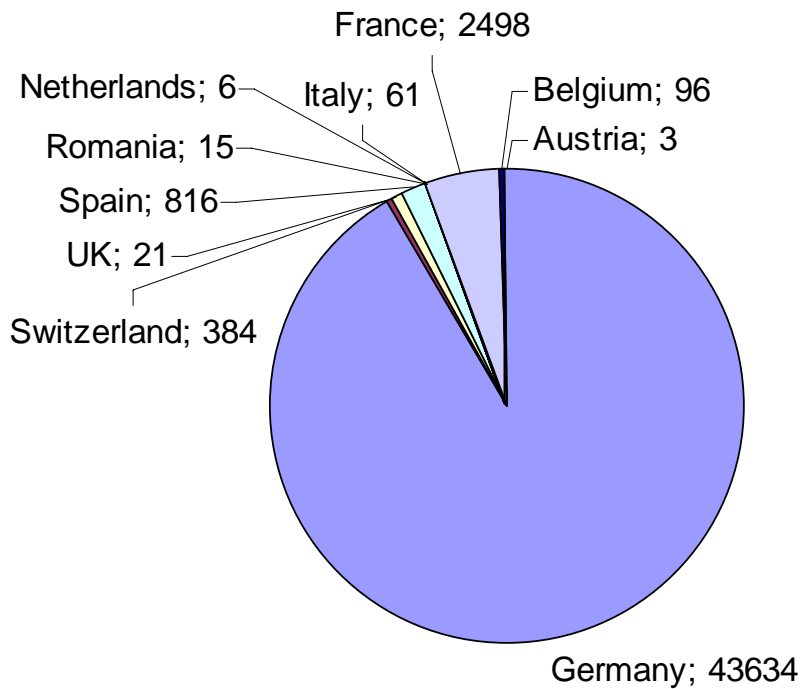
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Comparison of German NPP lifetime before and post March 2011 (1/2)



Number of articles written on the nuclear aspects of the Fukushima disaster*



*During the first 4 weeks after the event

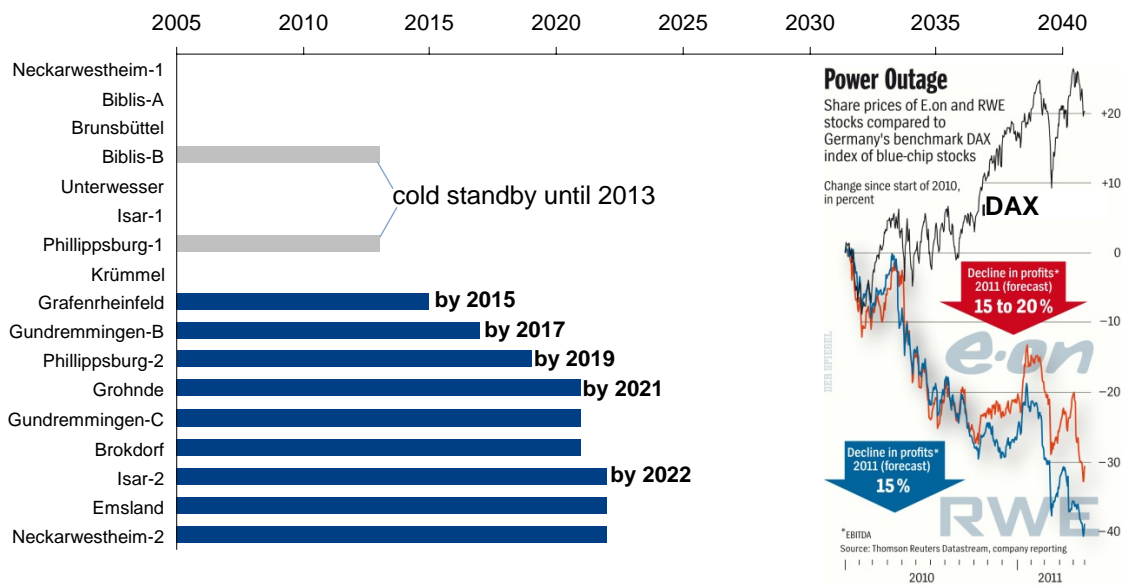
source: meltwaternews

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Comparison of German NPP lifetime before and post March 2011 (2/2)



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The German Context



Since 1998 the German electricity market is liberalized

⇒ The plant with the highest marginal costs sets the price

Since 1991 wind and solar power is subsidized

⇒ The renewable power is injected at zero costs into the wholesale market

In 2011 the German economy was very solid

⇒ over 100 Billion € of future subsidy obligations for renewables are seen as small compared to our contribution to saving the €

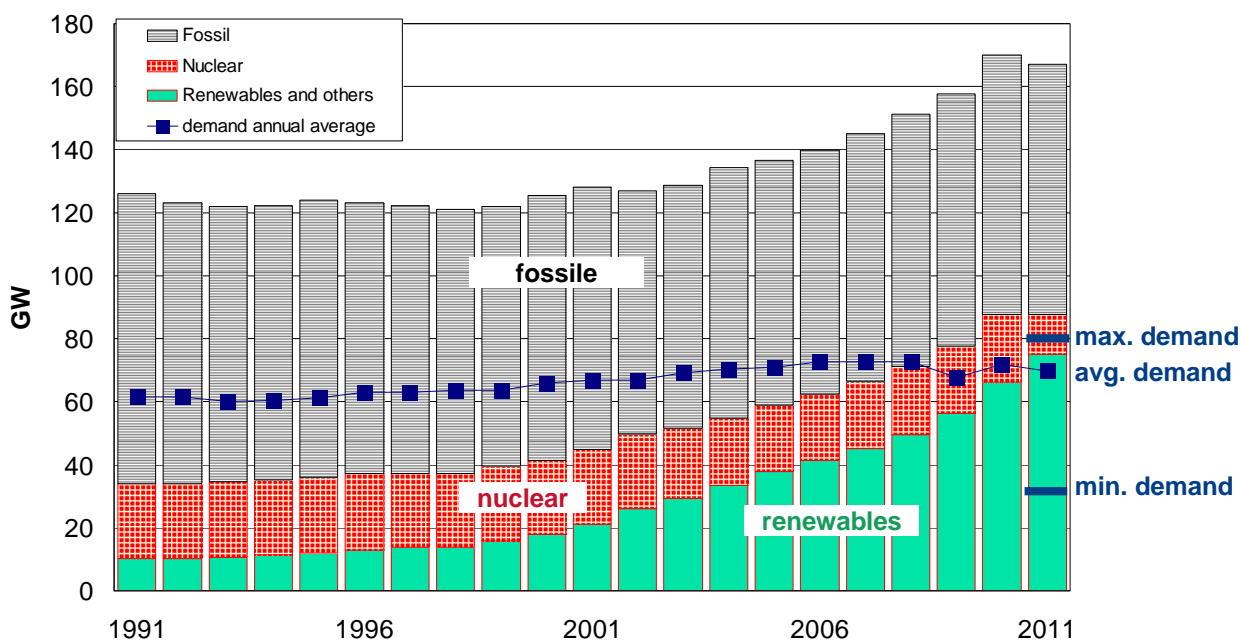
Germany is integrated in the European power grid

⇒ Demand and supply imbalances are compensated from abroad

The public media report extensively on the Fukushima incident

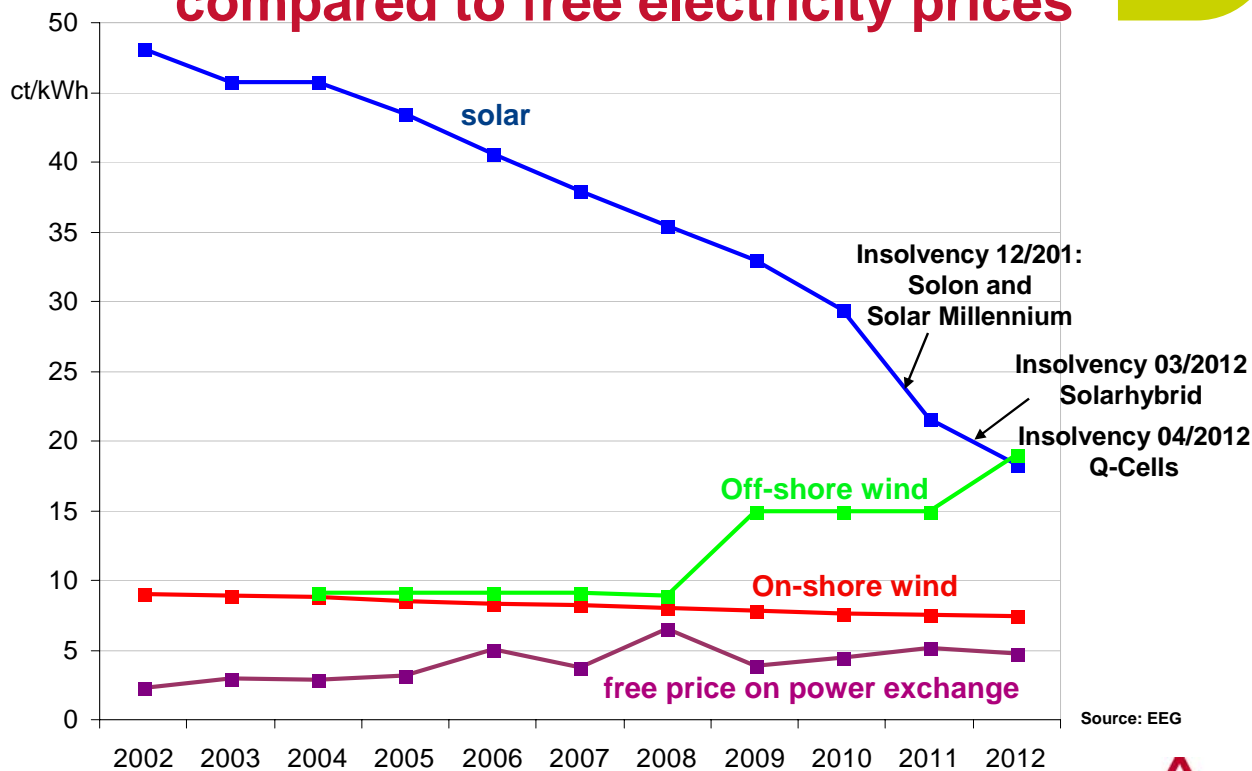
⇒ highly emotional reports and no chance for nuclear experts to get heard

Installed Generation Capacity (year end)



⇒ Renewable power is injected at zero or negative prices into the daily market

Feed-in tariffs by law compared to free electricity prices



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In 2011 German economy was solid

- ▶ Economic Growth in Germany **3%** (2012: 0.6%)
- ▶ Germany exported goods for more than **one trillion €** for the first time in 2011 (cars, machinery, environment technology etc.)
- ▶ Exports make for more than half of the German economy
- ▶ Second largest exporting nation after China
- ▶ Unemployment rate of **7.2%** (lowest in 20 years)

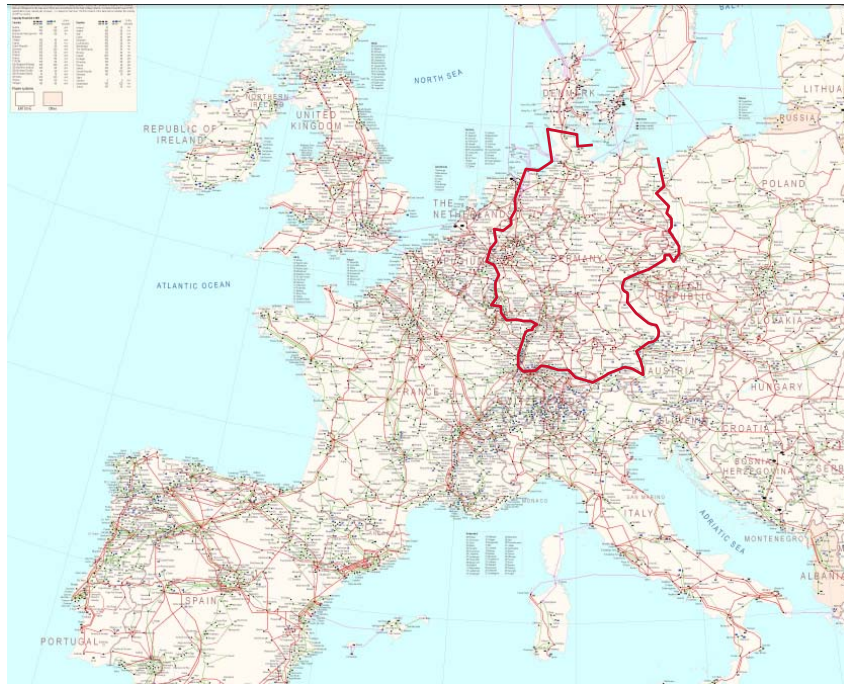
⇒ The economic consequences of the subsidies for renewables and the shutdown of nuclear plants are not (yet) felt

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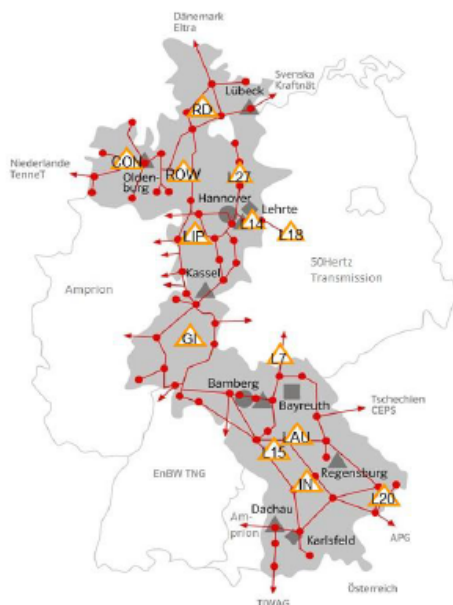
Germany is integrated in the Interconnected European power grid



Source: ENT-SO-E

=> Demand and supply imbalances are compensated from abroad

Major wind generation in the North nuclear plants shut down in the South



Year	Days	Events
2003	2	2
2004	14	15
2005	51	51
2006	105	172
2007	185	387
2008	144	228
2009	156	312
2010	161	290
2011	306	990

Source: TenneT

of corrective measures in grid control center in order to ensure security of supply

=> Congestions in the power grid

Main new laws



Amendment of Atom Act

- ◆ Shutdown schedule for the nuclear plants

Amendment of law on promotion of renewable energies

- ◆ Targets: by 2020: 35% renewables, ... by 2050: 80%
- ◆ Subsidies for research on energy storage
- ◆ Flexibility premium for biogas plants

Law on new implementation of energy economic directives

- ◆ Ownership unbundling of transmission grid from power generation and sales
- ◆ Introduction of smart meter systems as a basis for flexible electricity tariffs

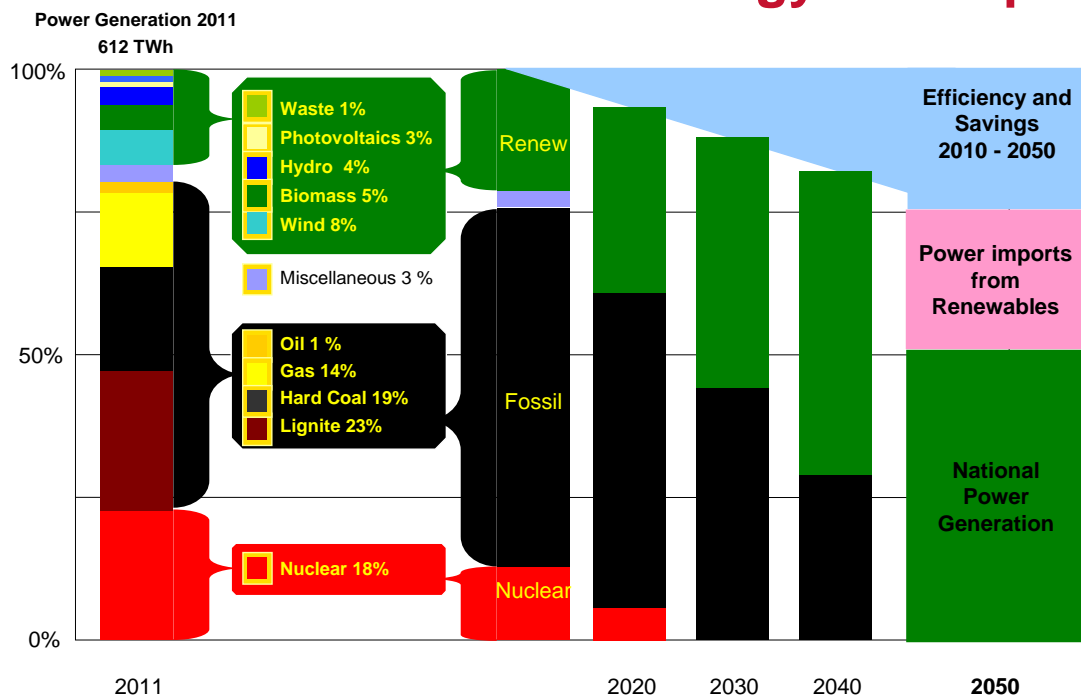
Law on acceleration of power grid expansion

- ◆ Nationally homogeneous approval procedure
- ◆ National plan for grid expansion
- ◆ Financial compensations

Amendment of law on special fund for „Energy and Climate“

- ◆ Lost payments from nuclear plants are compensated by auctioning CO₂ emission certificates.

German Government Energy Concept



"We intend to reduce the power consumption by 10 % until 2020 compared to 2008 and by 25 % until 2050." (Energy Concept of the Federal Government)



Thank you for your attention



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