

Agora
Energiewende



Progress of the German Energiewende

Millennial e-talks

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Agora Energiewende – Who are we?



Think Tank with more than 40 Experts
Independent and non-partisan

Founded in 2012

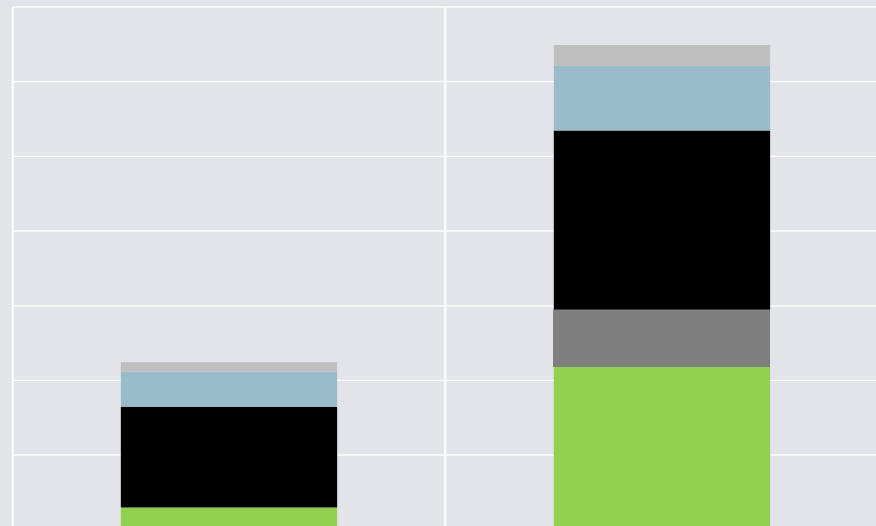
Shareholders: Mercator Foundation &
European Climate Foundation

Mission: How do we make the energy
transition in Germany a success story?

Methods: Analyzing, assessing,
understanding, discussing, putting
forward proposals, Council of Agora

A comparative glance between the German and Indonesian power mixes shows several differences

Power generation (TWh) in Germany and in Indonesia (2019)



Indonesia Germany
 ■ Renewables ■ Nuclear ■ Coal ■ Natural Gas ■ Other

AGEB, RUPTL

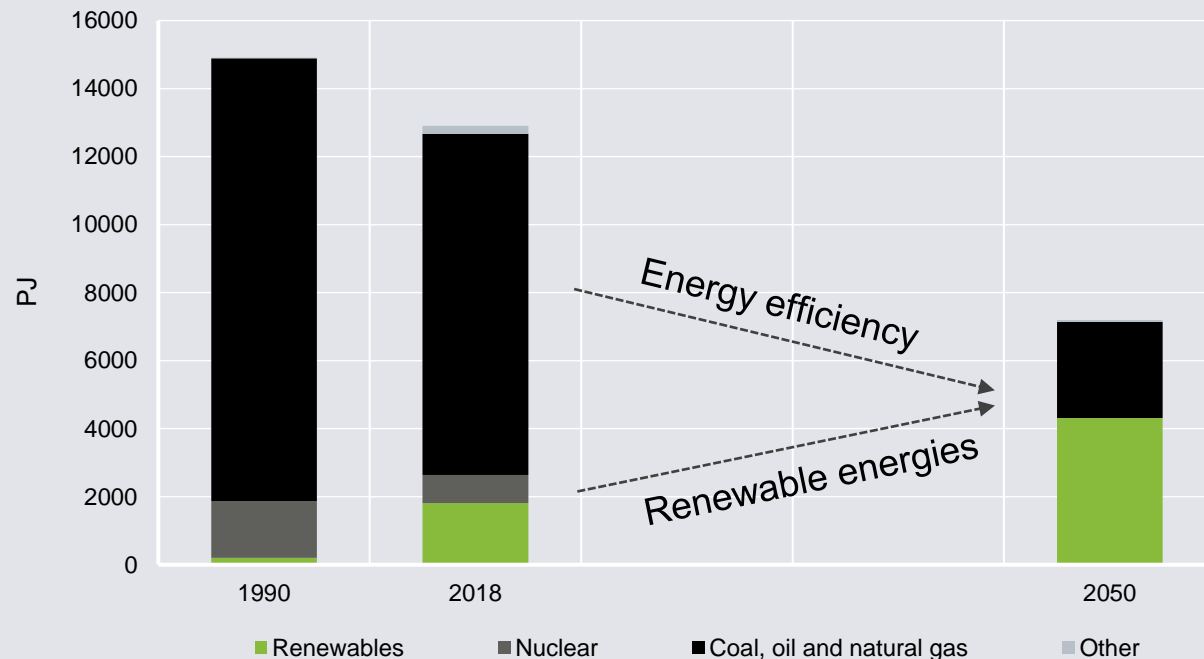
Comparative indicators between Indonesia and Germany (2019)

	ID	DE
Yearly power consumption [TWh]	260	569
Maximum peak load [GW]	38	84
Share of coal (hard coal and lignite) [% power production]	53%	28%
Share of vRES [% power production]	1%	29%
Total population [Million]	260	81

AGEB, RUPTL, IESR

The German energy transition is a long-term energy strategy driven by societal, economic and environmental goals

Primary energy consumption and minimum target 2050



AG Energiebilanzen, own calculations

Primary targets

- **Climate mitigation:** Reducing greenhouse gas emissions until 2050 by 80 to 95% towards 1990 levels.
- **Nuclear phase out:** Shut down of all nuclear units until the end of 2022.
- **Coal Phase-out:** Shut down of all coal-fired power plants till the end of 2038

Secondary targets

- **Energy efficiency:** Reducing primary energy consumption until 2050 by 50% towards 2008 levels.
- **Renewable energy:** Increasing the share of renewable energy in gross final energy consumption until 2050 to 60%.



**Where do we stand
with the German
Energy Transition?**

Concerns over Climate Protection and the Energy Transition became the “most important topic” in 2019 for the first time.

The Top 5 political problems in Germany in 2018-2019

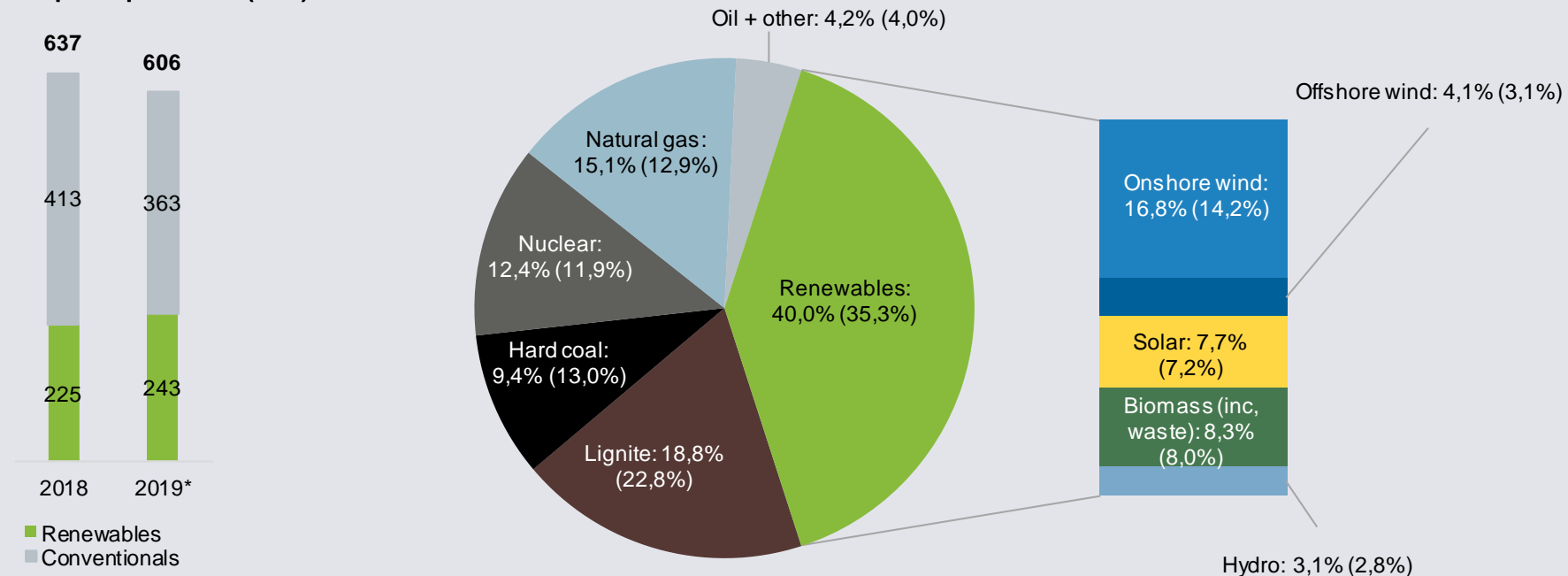


Forschungsgruppe Wahlen (2019): Politbarometer (survey period 1/2018 – 12/2019, selected were the five most-mentioned answers out of twelve possible answers).

Renewables provide as much electricity as coal and nuclear combined – each around 40% of the total generation

Electricity mix in 2019 (values for 2018 in brackets)

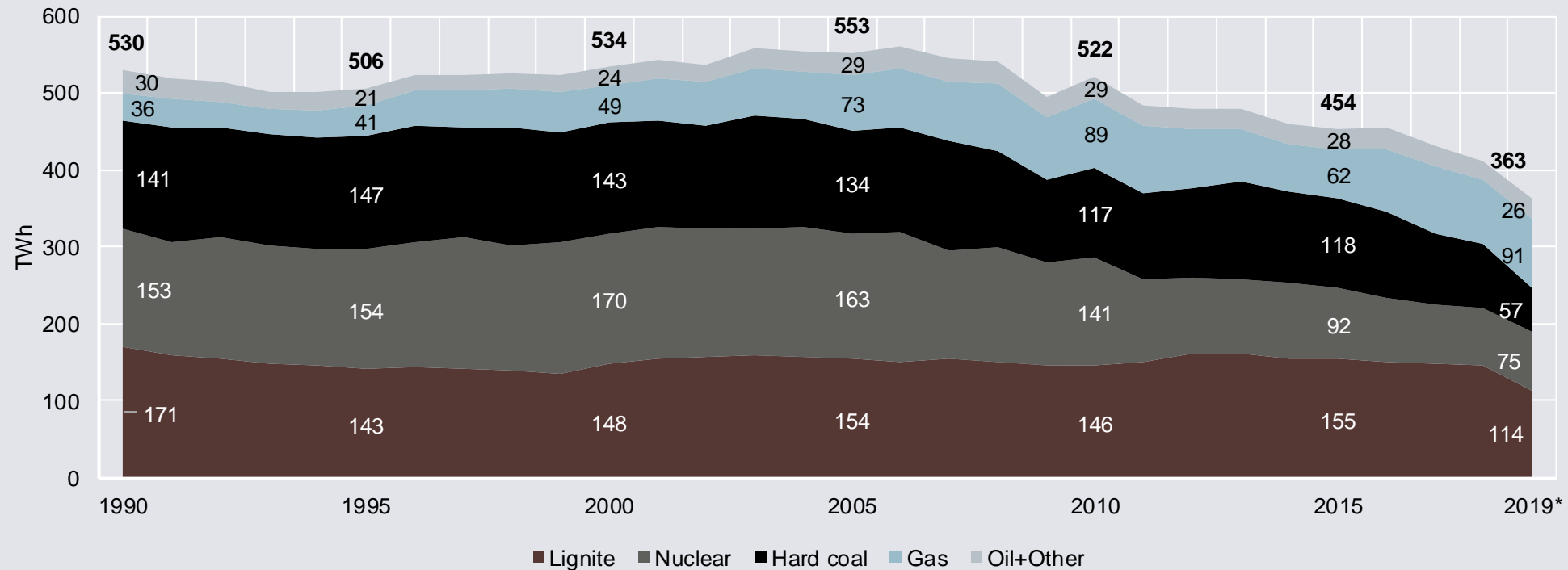
Gross power production (TWh)



AG Energiebilanzen (2019), *preliminary results

Drastic decline of hard coal (-31%), and for the first time ever we also see a substantial fall in lignite (-22%) and a record high for gas

Gross power production from conventional energy sources, 1990–2019



AG Energiebilanzen (2019), *preliminary results

Its all about solar and wind: Good wind conditions lead to a record in electricity generation from renewables

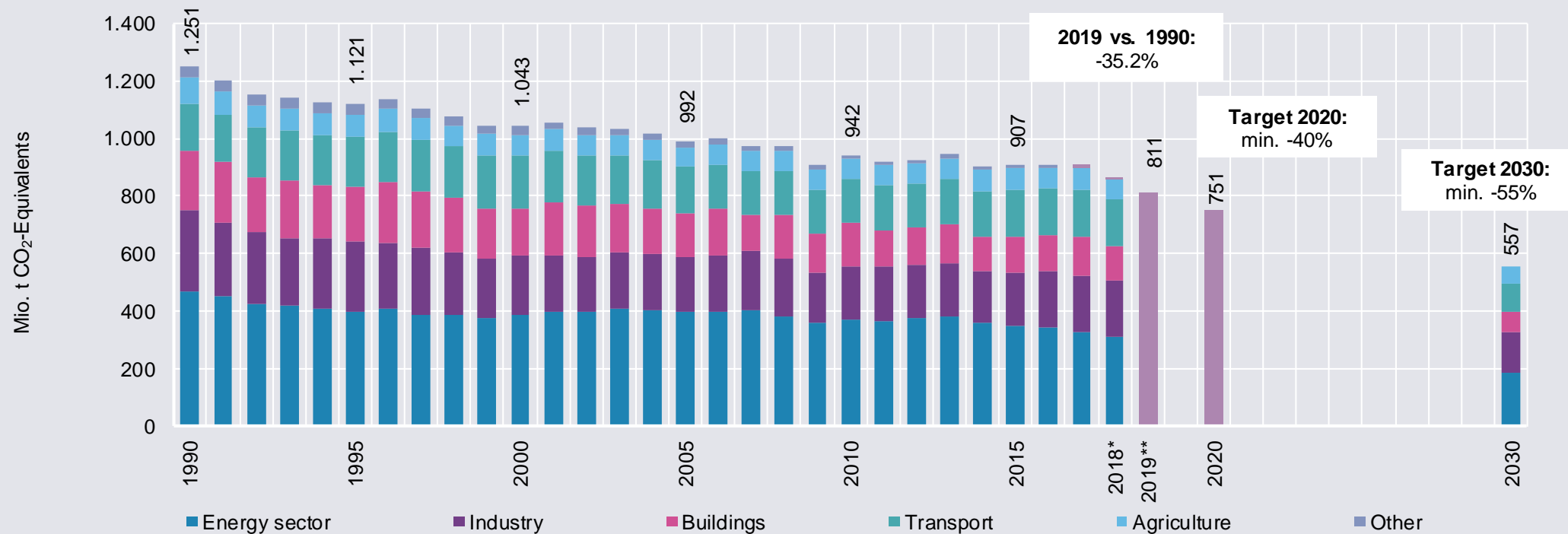
Electricity generation from renewable energies, 1990–2019



AG Energiebilanzen (2019), *preliminary results

Greenhouse gas emissions have fallen over 50 million tonnes this year, a decline of 35 percent compared to 1990

Greenhouse gas emissions by sector 1990 – 2019 as well as 2020 and 2030 climate targets



Umweltbundesamt (2019), own calculations, *preliminary results, **own estimates

Will Germany reach its climate target (-40% GHG emissions by 2020)?

Probably not. Here's why.

1

To reach the target we need to decrease emissions by another 60 million tonnes in 2020. The substantial decrease in the electricity sector might turn around, other sectors showed increasing emissions. The decline in emissions is based mainly on the decrease of emissions in the electricity sector. And the decline in that sector might not be sustainable. The transport sector even increased its emissions. The buildings sector hasn't decreased emissions with mild conditions.

2

The electricity sector's emissions decline in 2019 will most likely not continue the same way in 2020. Coal-Gas-Switch is not necessarily sustainable. If the CO₂-price goes down or the gas price goes up, this could go the opposite way. Decrease in consumption is not necessarily sustainable. The situation for PV and wind was above-average, this may also not be the case during the following year.

3

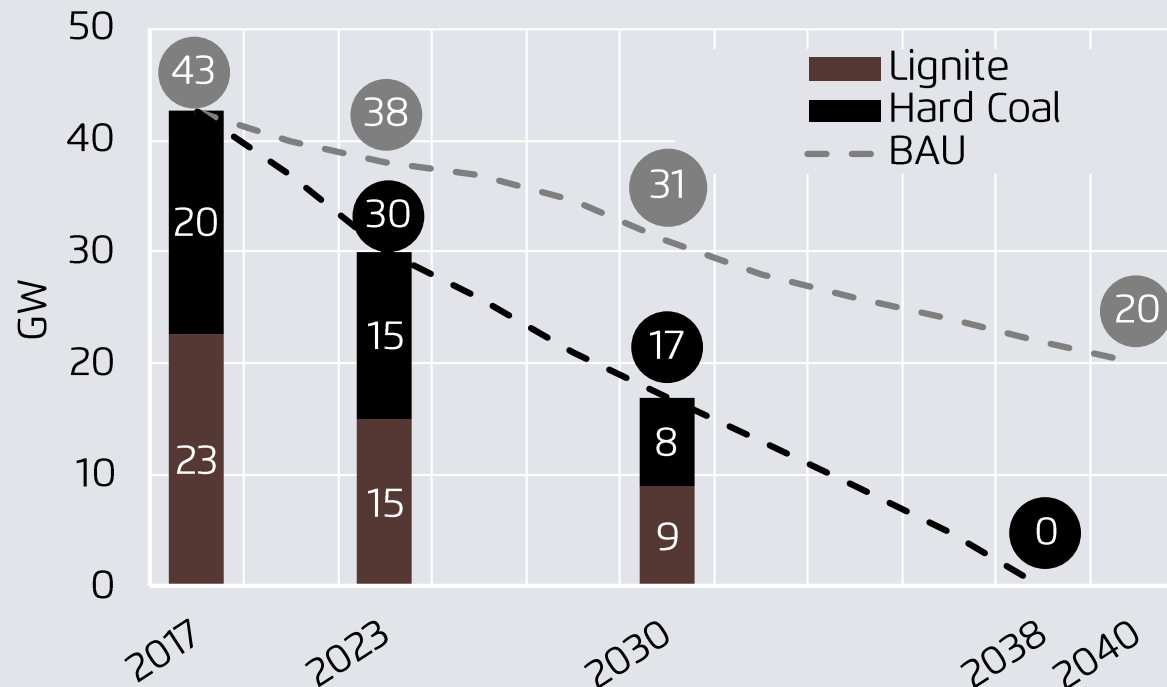
A lack of electricity is to be replaced. We need to replace 1.4 Gigawatt of nuclear power (Phillipsburg 2). The lack in additional onshore wind capacity now means a lack of additional generation in the future.

4

Thus, if the transport sector does not deliver, we have a cold winter, a below-average year for wind and PV, the gas price increases, the CO₂-price decreases, the lack of additional onshore wind capacity is not compensated for and/or the electricity consumption increases, we could even see rising emissions in the future. **It seems clearly unlikely that we will decrease emissions in 2020 on an even bigger scale than 2019.**

In January 2019, the Commission “Growth, Structure Change and Employment” agreed upon a coal phase-out plan, with comprehensive measures for the coal region

Capacity development along the phase out plan and in the business as usual



Aurora Energy Research, Kommission WSB

- The phase-out plan by 2038 (at the latest) allows for achieving Germany’s medium and long term climate targets. However, these targets are still not compliant to a fair contribution regarding the Paris Agreement
- The coal compromise represents a comprehensive package of measures, which offers modernisation and growth perspectives for the traditional coal regions, as well as compensation to the industry - and at the same time not putting security of supply at risk.
- The transformation away from coal goes along with substantial, but reasonable investment needs.
- If Germany would have phase-out coal quicker, the cost would have been lower.

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Thank you for your attention!

Questions or Comments? Feel free to contact me:
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Agora Energiewende is a joint initiative of the Mercator Foundation and the European Climate Foundation.

