



Energy transition in Germany: State of play and the road ahead

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Zoom, 14 October 2021



Topics to cover today

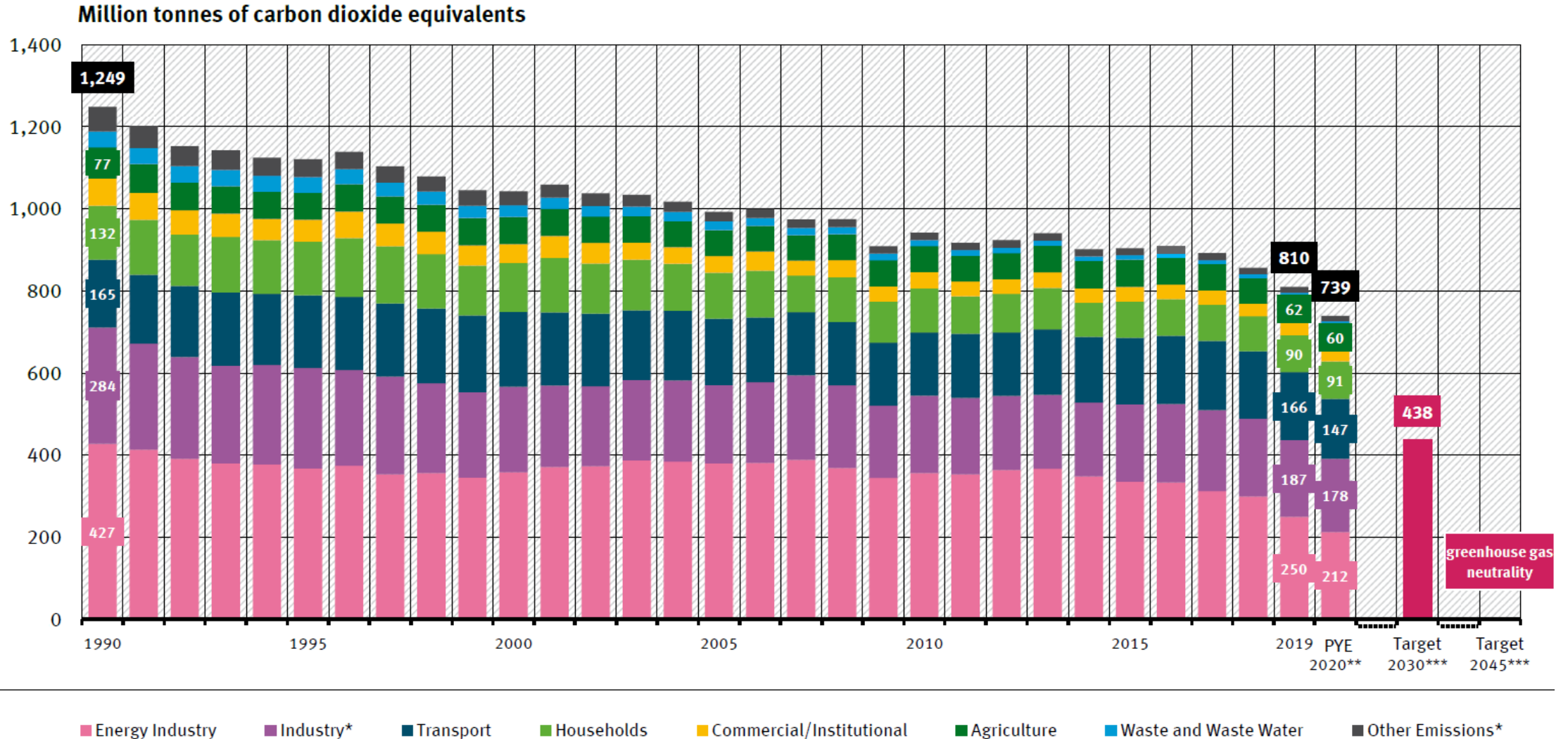
1. **Germany's energy transition goals**
2. **Progress to date**
 1. GHG emissions
 2. Renewable energy ramp-up
 3. Energy efficiency
 4. Nuclear energy phase-out
 5. Coal phase-out
3. **Challenges for the 2020s**

Germany's energy transition goals

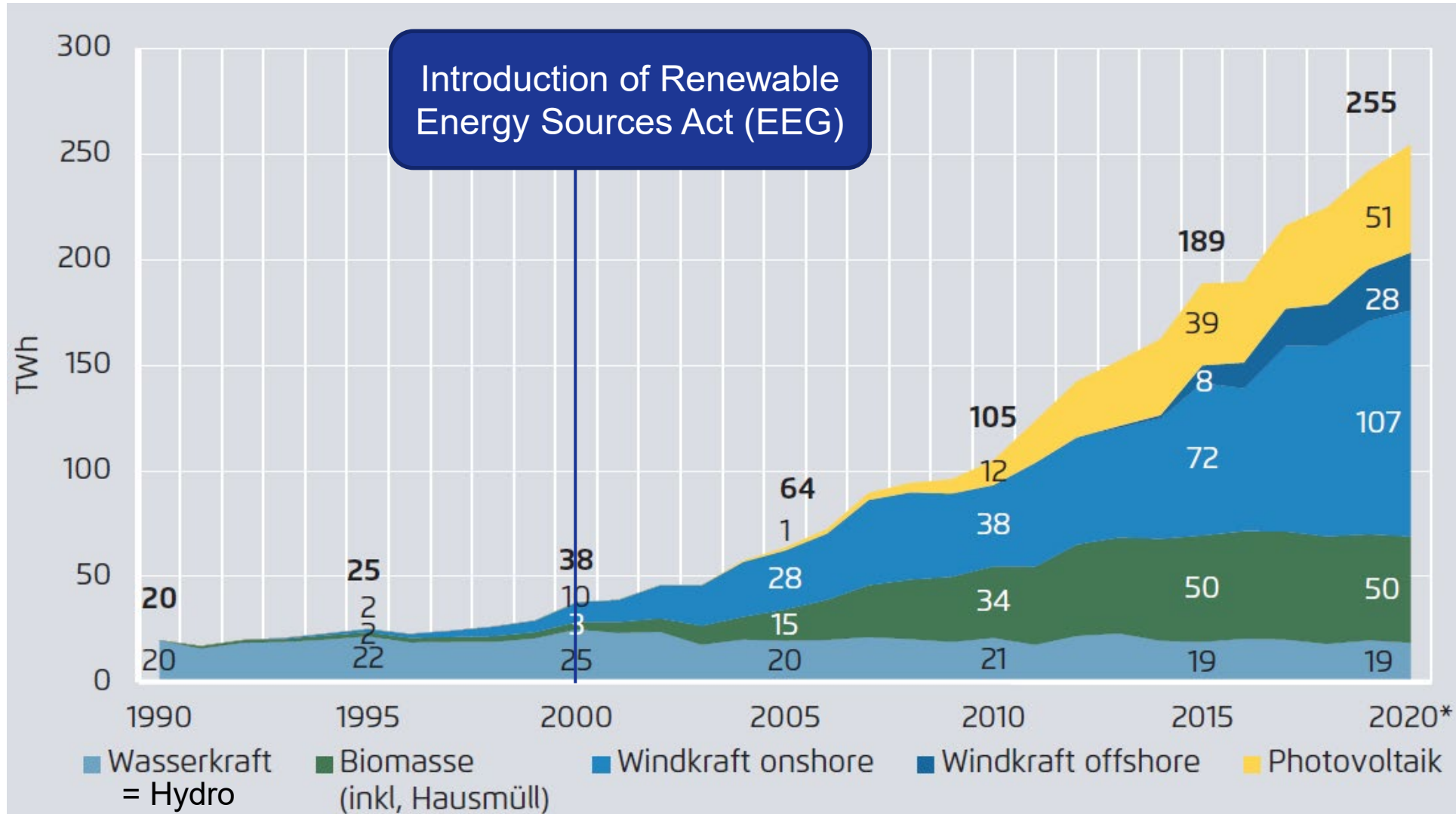
	2018	2019	2020	2030	2040	2050
GREENHOUSE GAS EMISSIONS						
Greenhouse gas emissions (compared with 1990)*	-31.5%	-35.1%	at least -40%	-65%	-88%	2045: GHG neutrality
RENEWABLE ENERGY						
Share of gross final energy consumption	16.8%	17.4%	18%	30%	45%	60%
Share of gross electricity consumption	37.8%	42.0%	at least 35%	65%**		100%
Share of heat consumption	14.8%	14.7%	14%			
EFFICIENCY AND CONSUMPTION						
Primary energy consumption (compared with 2008)	-8.7%	-11.1%	-20%	-30% -50%		
Final energy productivity (2008 – 2050)	1.6% per year	1.4% per year		2.1% per year		
Gross electricity consumption (compared with 2008)	-4.2%	-6.9%	-10%	-25%		
Non-renewable primary energy consumption in buildings (i.e. primary energy demand) (compared with 2008)	-26.0%	-23.6%		-55%		
Heat consumption in buildings (compared with 2008)	-14.4%	-10.9%	-20%			
Final energy consumption in transport (compared with 2005)	6.1%	7.2%	-10%	-40%		

BMWi, 2021

Hitting the 2020 target thanks to Corona: GHG emissions

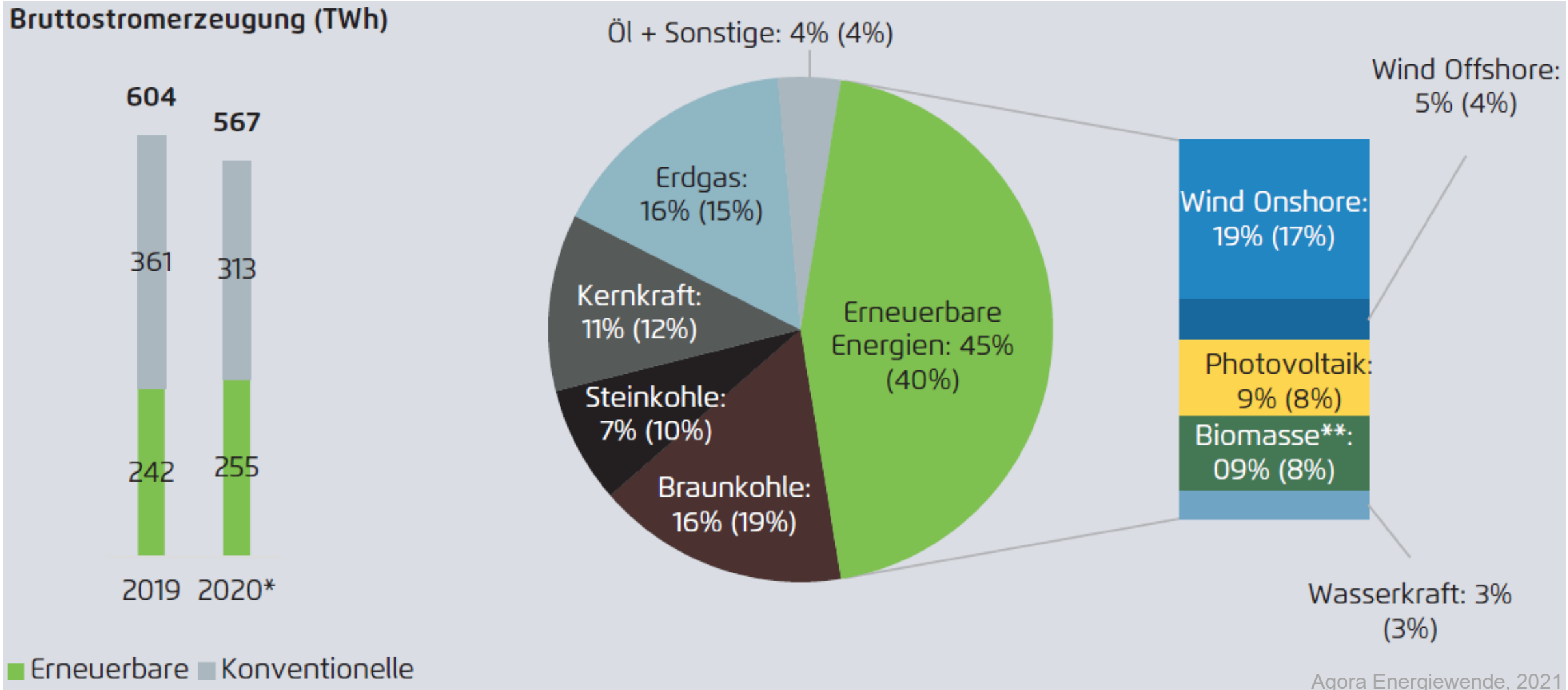


THE success story: Renewable electricity expansion

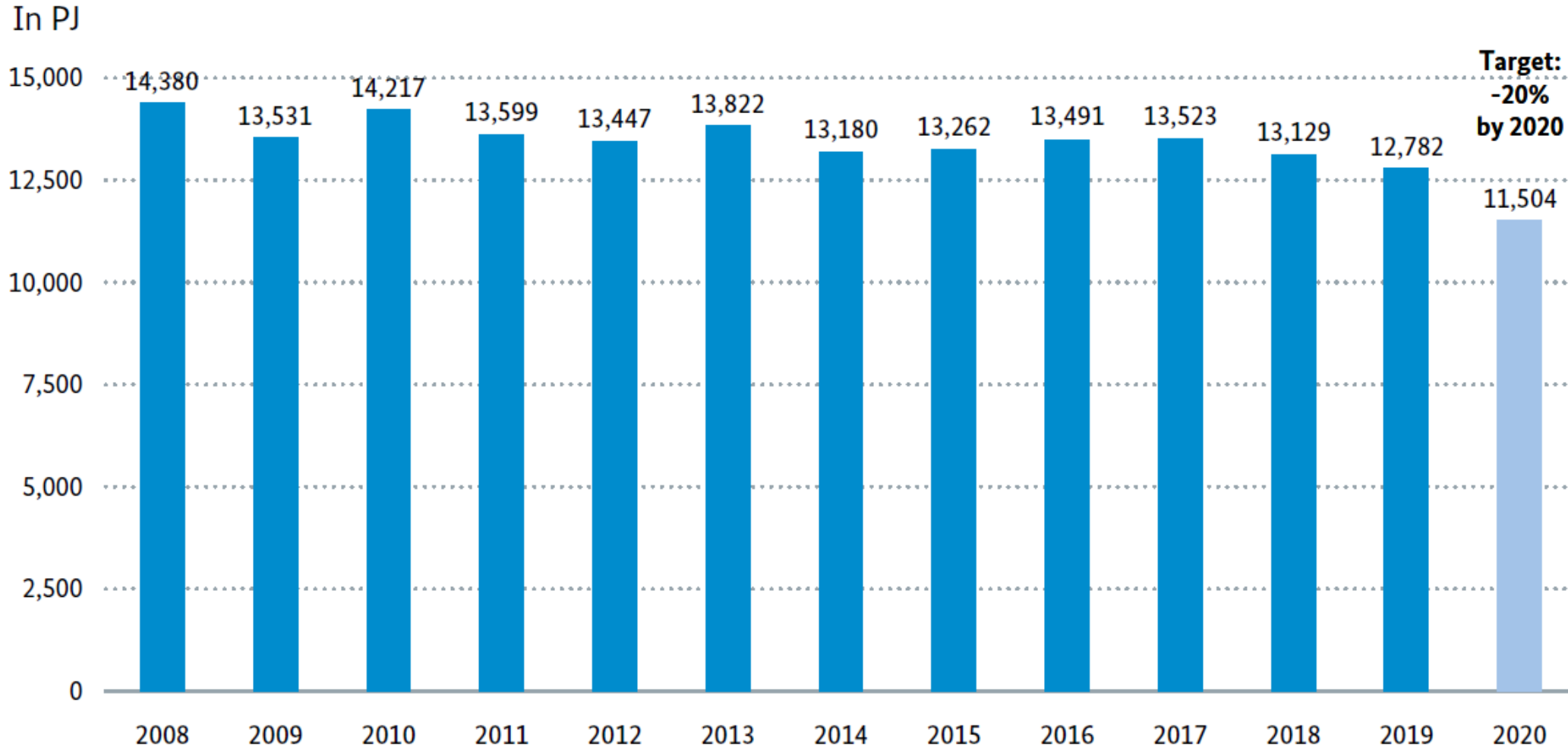


Agora Energiewende, 2021

Renewables made up 45% of electricity mix in 2020

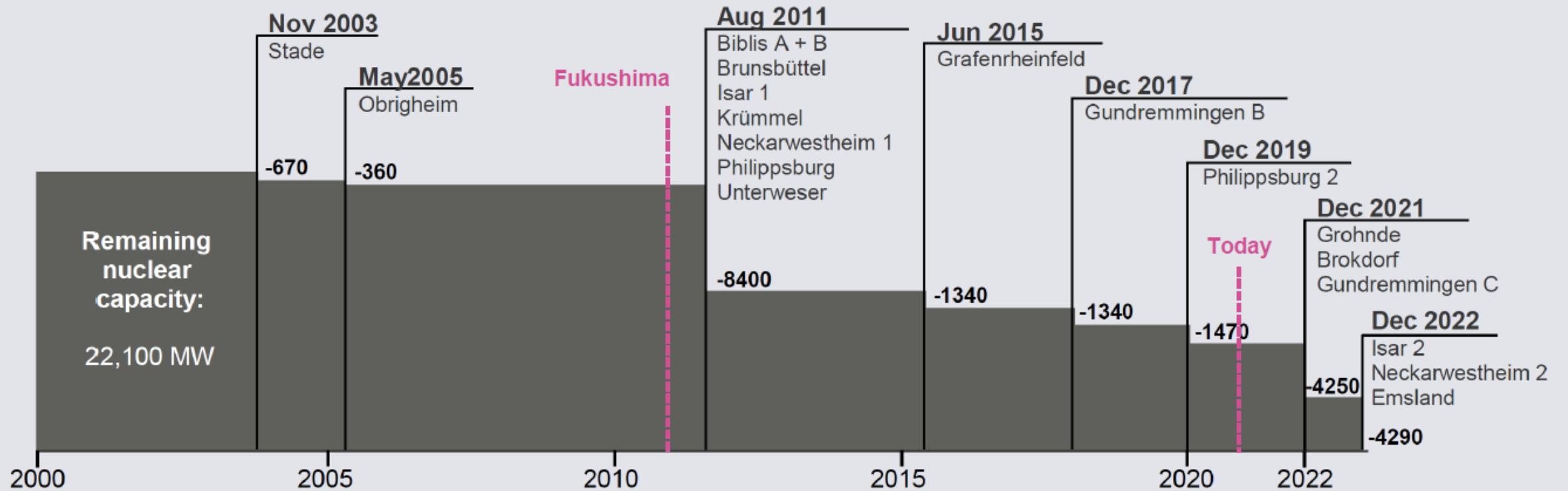


Much less progress: Cutting primary energy consumption



BMW i, 2021

Nuclear phase-out proceeds according to plan



Coal phase-out

Step 1: Coal commission 2018/19

Environmental NGOs: 3



Kommission „Wachstum, Strukturwandel und Beschäftigung“



Business, industry: 5



Deutscher Industrie- und Handelskammertag

Energy industry: 4



Science: 5



Mining regions and local stakeholders: 7



Admin: 1






Unions: 3



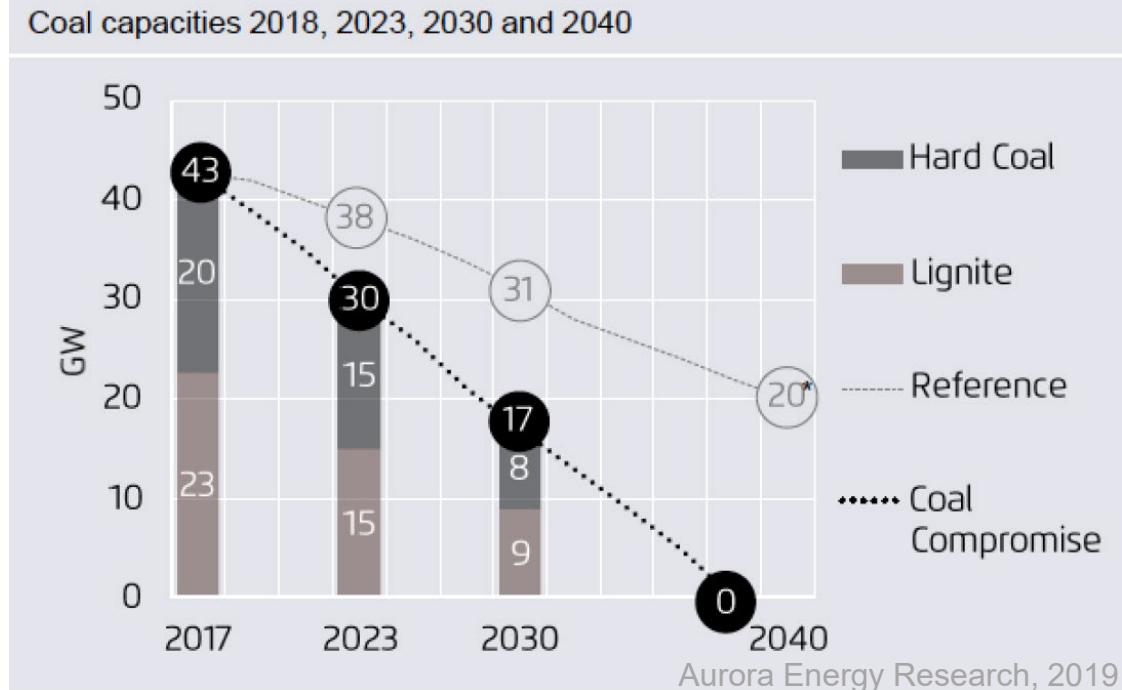
Members of Parliament: 3*




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 Bundesministerium für Wirtschaft und Technologie
- 
 Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit
- 
 Bundesministerium der Finanzen
- 
 Bundesministerium des Innern, für Bau und Heimat
- 
 Bundesministerium für Verkehr und digitale Infrastruktur
- 
 Bundesministerium für Arbeit und Soziales

'Coal Commission' Recommendations

- 1) **Time table** – Phase-out by 2038, possibly 2035
- 2) **Assist mining regions** – 40 bn Euro over 20 years
- 3) **Modernise the power sector** – more RES, incentives for CHP & gas, support for sector coupling & storage
- 4) **Minimise other adverse effects** – Compensation of coal plant operators, support option for industry in case of power price hikes



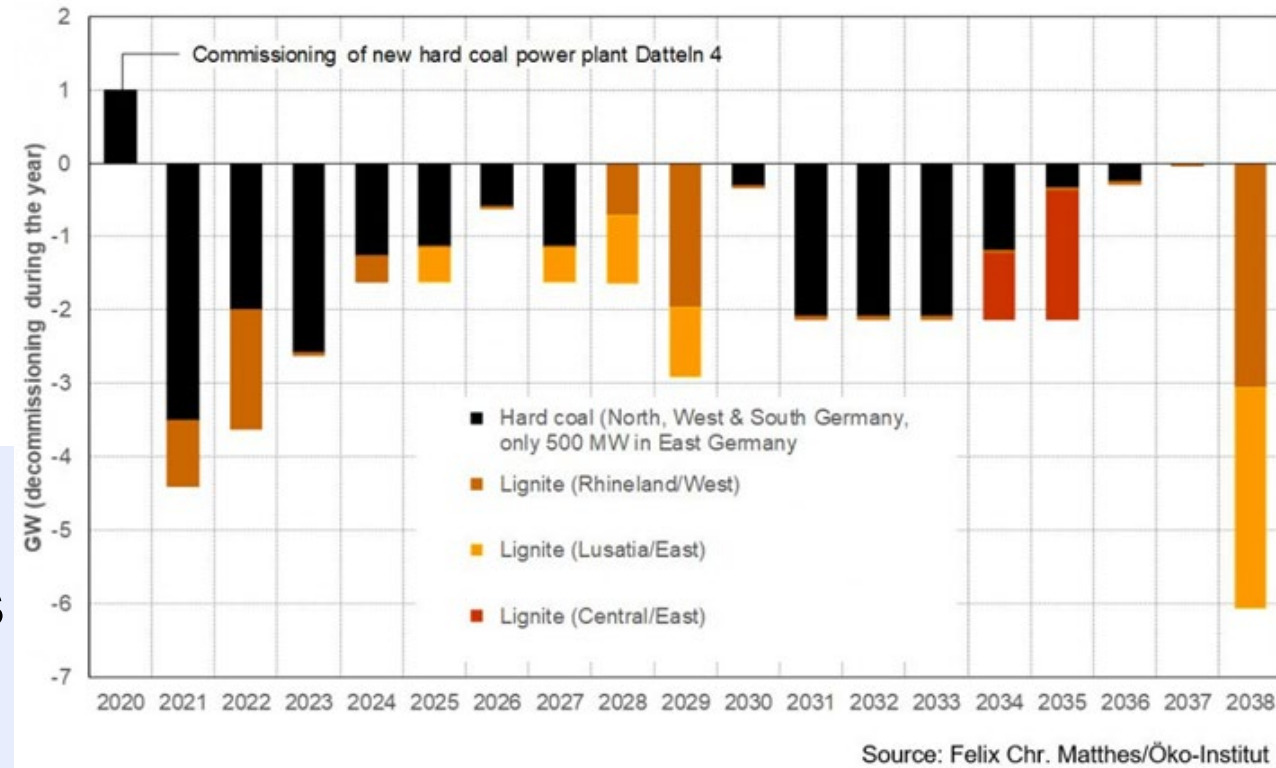
Coal exit implementation

Legal implementation

- ▶ Law on assistance to coal regions
- ▶ Coal phase-out law (Aug. 2020)
 - Lignite: Phase-out plan
 - Hard coal: Tenders asking plant operators to bid for phase-out compensation
- ▶ Contract with lignite plant operators on compensation of 4.3 bn € → still awaiting approval under EU state aid rule

Ongoing discussion about faster phase-out, by 2030 at the latest

- ▶ Background: EU target raised to -55% by 2030, ruling of DE Supreme Court



Future challenges?

- Coal phase-out by 2030
- Rapid decarbonisation in buildings and transport → higher carbon price under new Federal government? Internal combustion engine phase-out date?
- Accelerating RES built-up → speeding up planning processes, increasing expansion targets
- Strengthening Germany's transmission grid
- Low-carbon transformation of German industry
- Agreeing EU 'Fit for 55' package
- Maintaining public support



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Science and Policy
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Thank you!

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