



Status of European and German Energy Politics

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vgbe energy e.V. – Who We Are

- 439 members in 34 countries around the globe
- Members represent an installed renewable and conventional capacity of 296 GW



be connected

-  **vgbe Standards/
Position Papers**
-  **Databases**
-  **Technical
Programmes/
R&D Projects**
-  **Conferences and
Workshops**
-  **Technical Services**

- > 300 vgbe standards
> 20 new releases/updates per year
- > 900 unit data on availability/ reliability /damages
- > 20 Mil. EUR / year of R&D projects
- >20 events / year with > 1.500 participants
- > 100 consulting orders
> 1.000 lab analysis on materials/water/oil

vgbe is the International Technical Association of power plant and energy plant operators. Founded in 1920, the association covers a wide range of technologies: from renewable and conventional power and heat generation to energy storage and P2X.

The EU and Germany have set themselves ambitious mid- and long-term energy and climate targets

Targets	Germany				EU	
	2030	2040	2045	2050	2030	2050
Climate						
Greenhouse gas emissions (GHG) reduction <small>Reduction compared to 1990 levels, including all sectors.</small>	65%	88%	GHG neutral	GHG net sink	55%	GHG neutral
Renewable energy sources (RES)						
RES share in gross final energy consumption	30%	45%		60%	>42.5%	
Energy efficiency						
	30%			50%	32.5%	
Primary energy consumption reduction	Increase in energy efficiency compared to 2008.				Increase in energy efficiency compared to PRIMES business-as-usual scenario.	

Source: Guidehouse 2023 based on BMWK 2022, Federal Government 2022 & EC 2022



Power generation in Europe 2023: Low-carbon generation achieves a share of >62 %

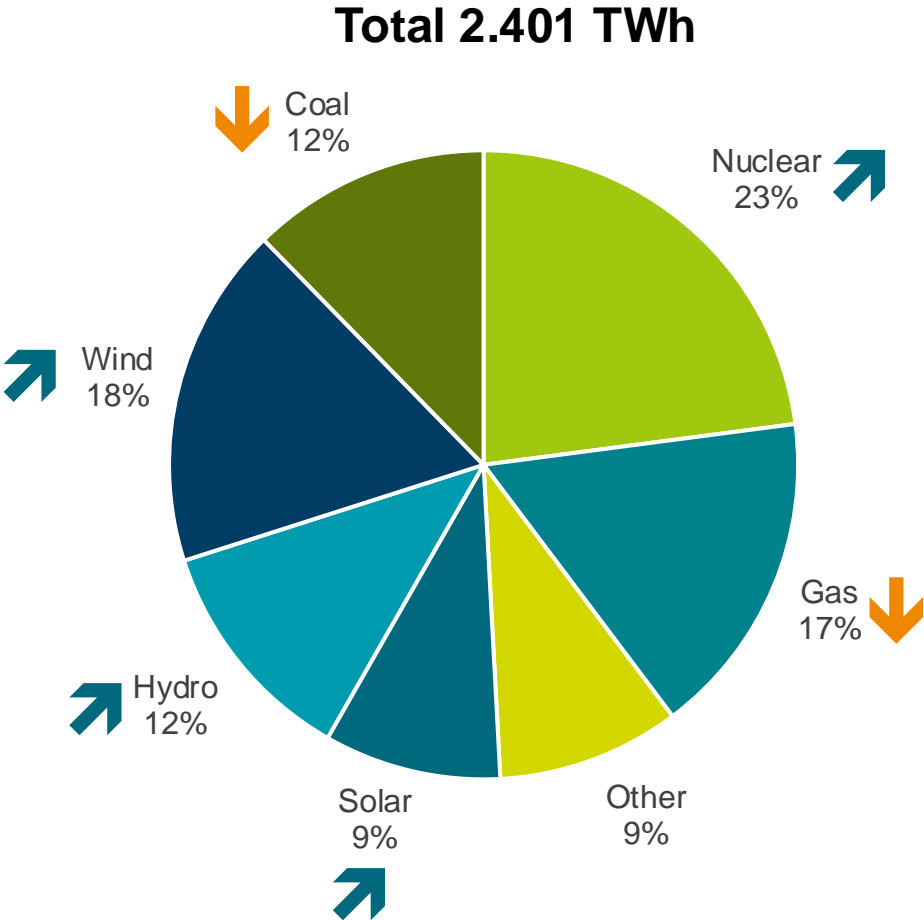
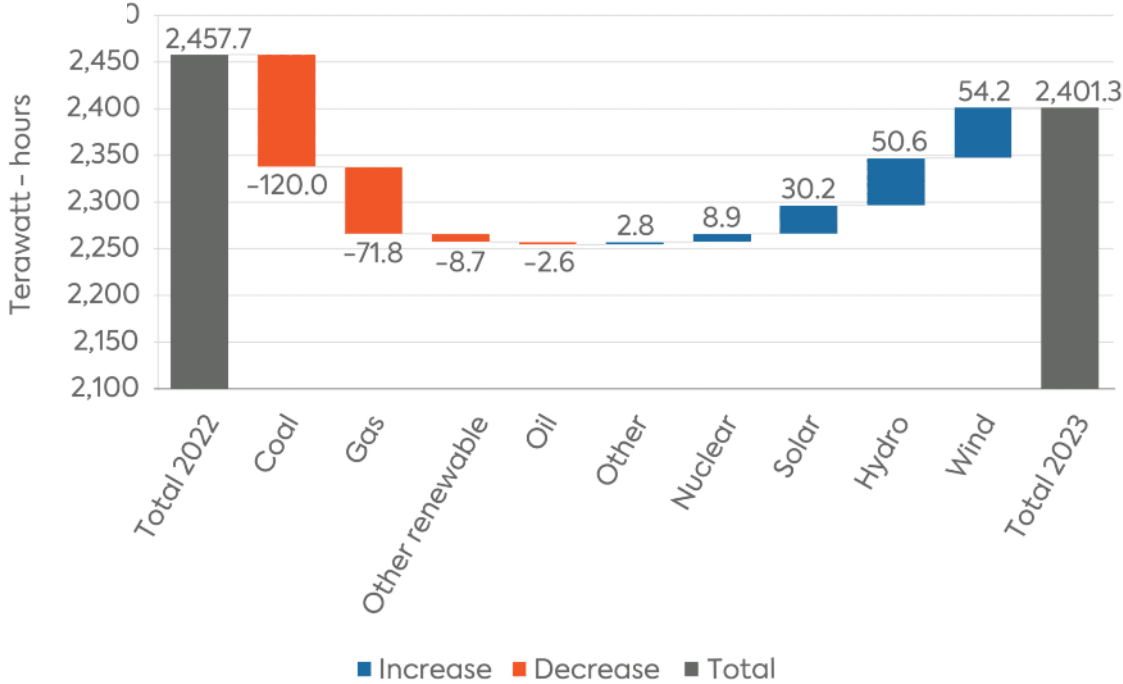


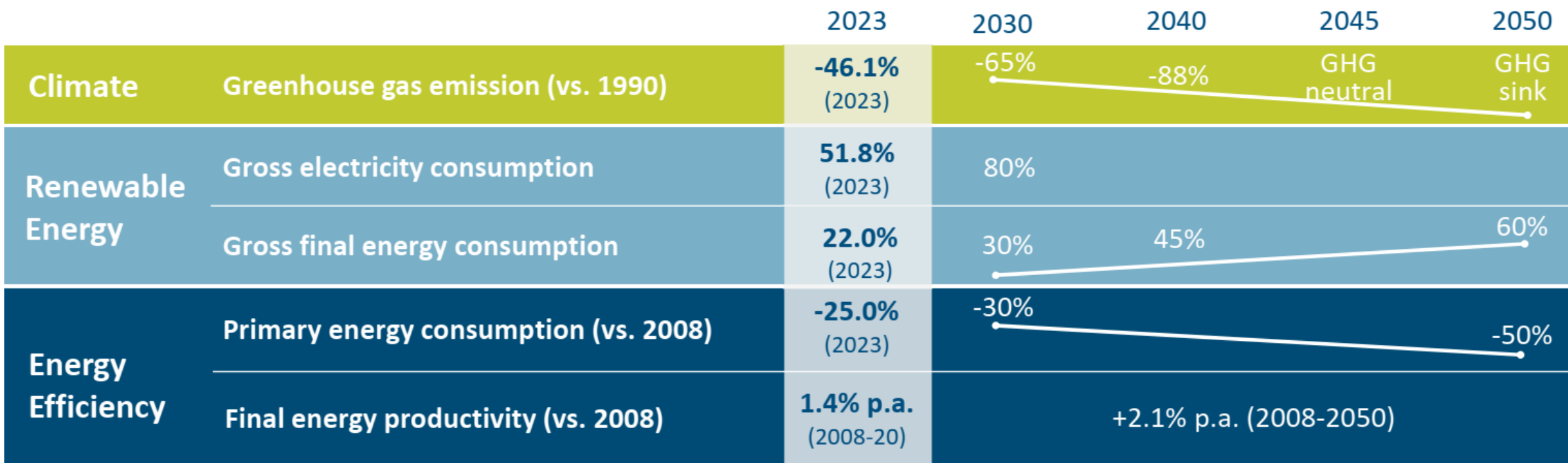
Figure 2: Power generation change in all EU countries, 2023 vs. 2022



Note: Geothermal, biomass, waste, and marine are included in "other renewable" category.

Source: European Network of Transmission System Operators for Electricity Transparency Platform.

The “Energy Transition” is Germany’s long-term energy and climate strategy



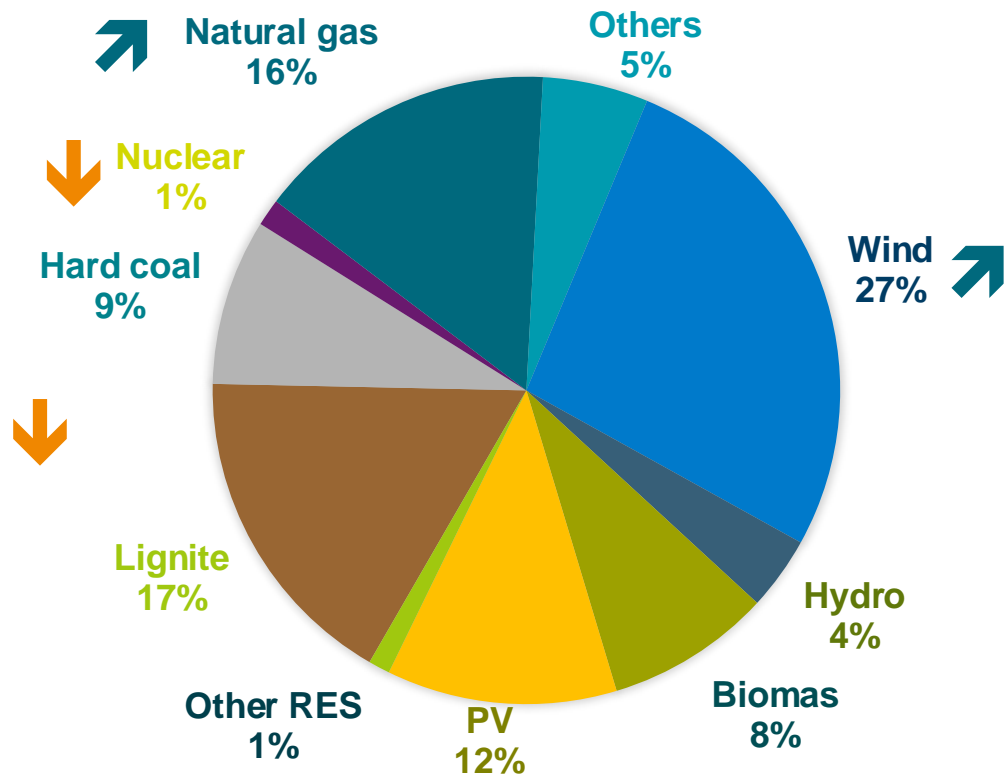
30 GW
wind offshore
until 2030

10 GW
electrolysis
capacity
until 2030

Source: Guidehouse April 2024, based on UBA 2024 & BMWK 2021

Germany's Electricity Mix in 2023: Renewables account for >53 % of the total power generation

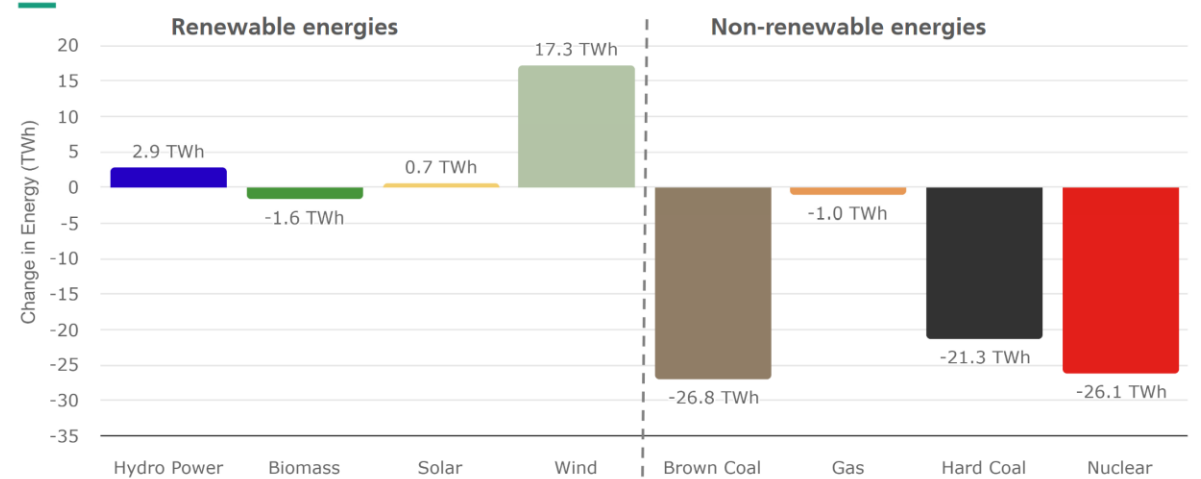
Gross generation: 513,7 TWh – **53,6 %** share of RES
 Import/Export: 70,3 TWh/58,5 TWh



Source: AG Energiebilanzen

Absolute change in total net electricity generation

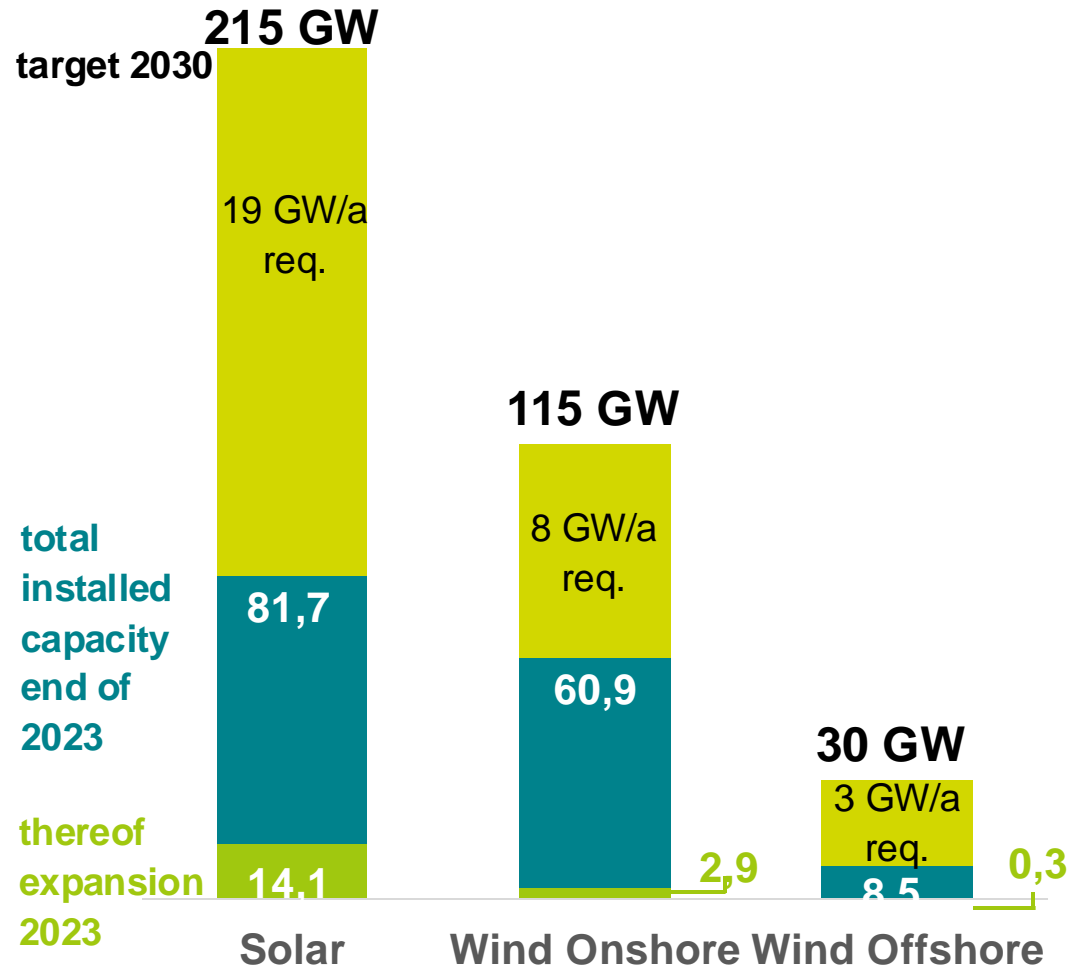
Year 2023 compared to year 2022



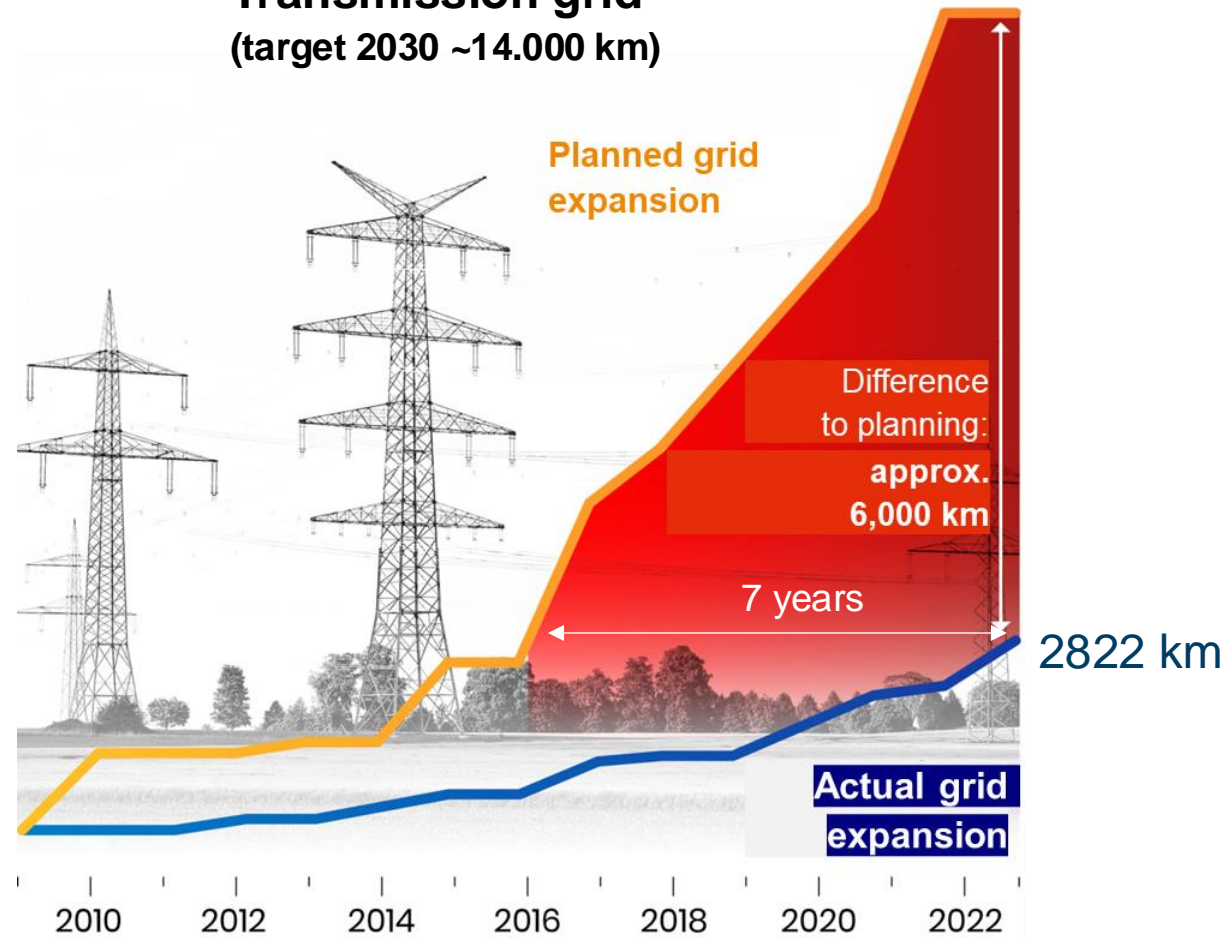
Graphic: B. Burger, Fraunhofer ISE; Data: DESTATIS and Leipzig Electricity Exchange EEX, energy-corrected values

Germany has set ambitious capacity targets for renewable energies and expansion of the transmission grid

RES generation capacity (target 2030)



Transmission grid (target 2030 ~14.000 km)



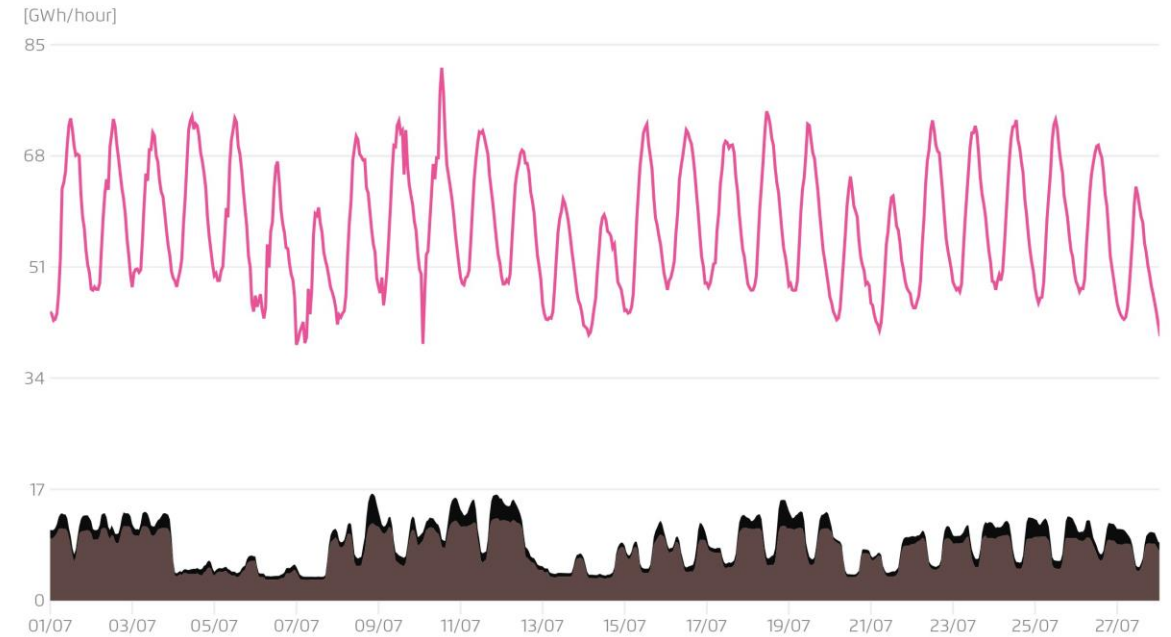
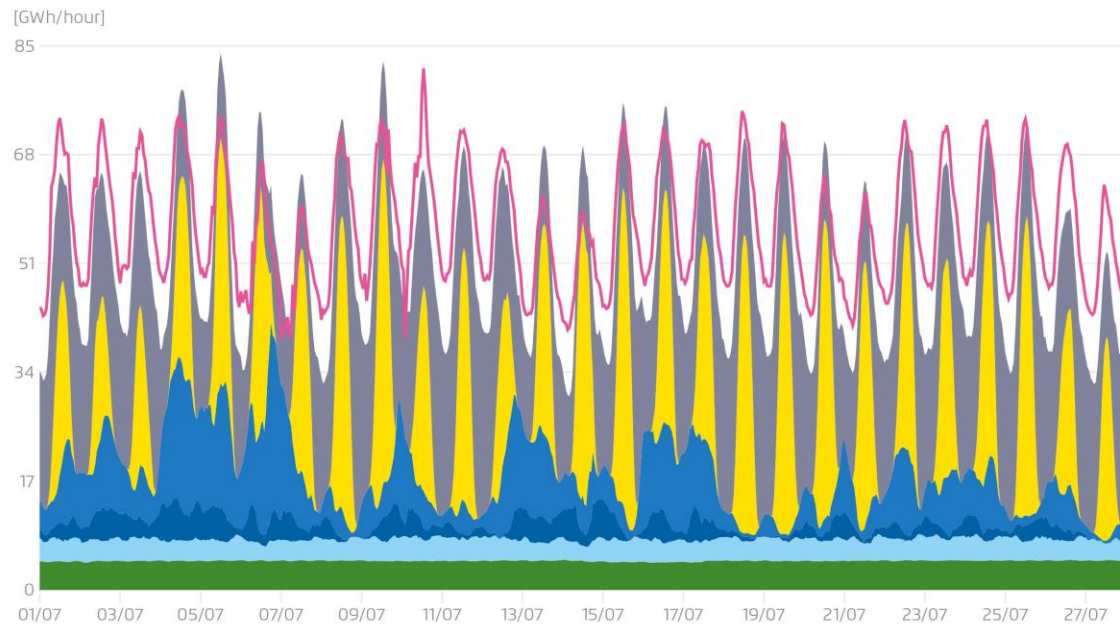
ThePioneer

Source: Federal Audit Office / Federal Network Agency

powered by statista

Flexibility is a key requirement in RES dominated energy systems

Typical Load Profiles: Germany July 2024



- Total electricity demand
- Biomass
- Hydro
- Wind offshore
- Wind onshore
- Solar
- Conventional
- Nuclear
- Lignite
- Hard Coal
- Natural Gas
- Pumped storage generation

- Total electricity demand
- Biomass
- Hydro
- Wind offshore
- Wind onshore
- Solar
- Conventional (remaining)
- Nuclear
- Lignite
- Hard Coal
- Natural Gas
- Pumped storage generation

Source: AG Agora Energiewende

Flexibility options in energy systems



Storage and sector coupling

Dispatchable Generation

- Hydro, gas, biomass, nuclear, coal



Dispatchable generation

Storage

- Pumped storage
- Sector coupling
- Batteries

Flexibility options

Demand-Side Management

- Demand-side response of consumers
- Demand-side response by industries



Grid

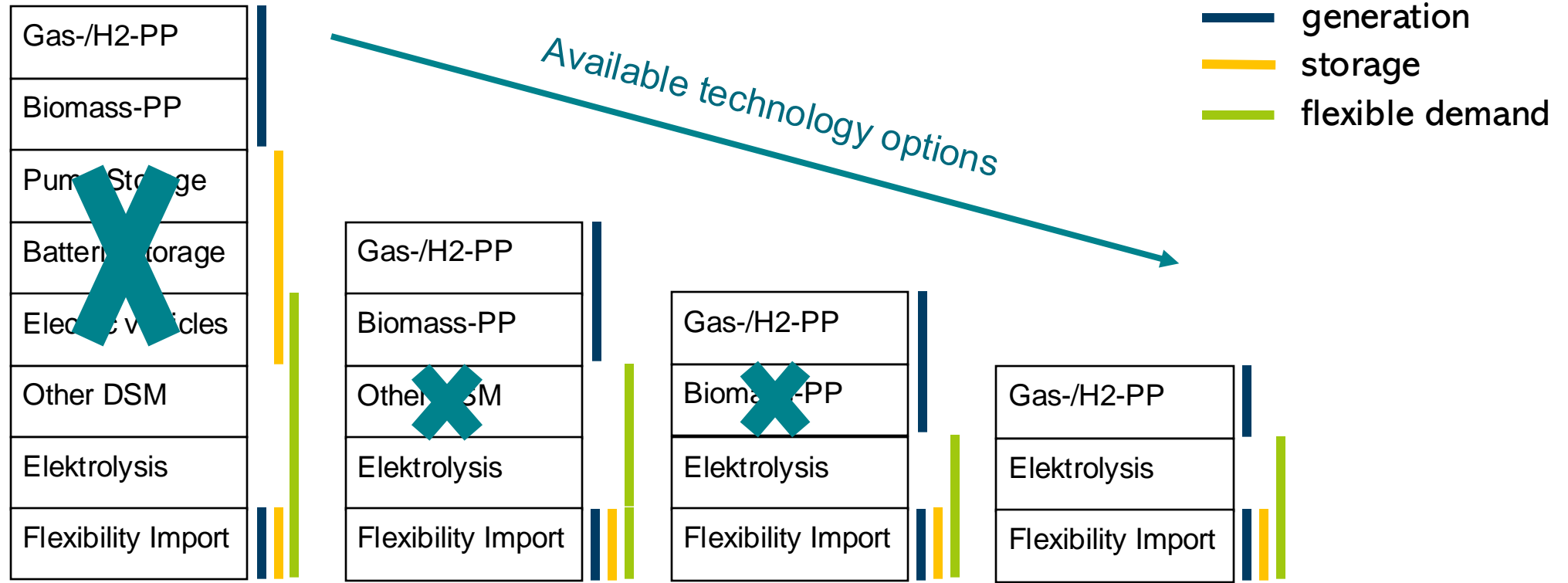
Grid

- Interconnections



Demand-side Management

Dispatchable generation is required for different time spans and tasks - but volume depending on various influences



reason of demand

volatility Solar-PV daily load curve

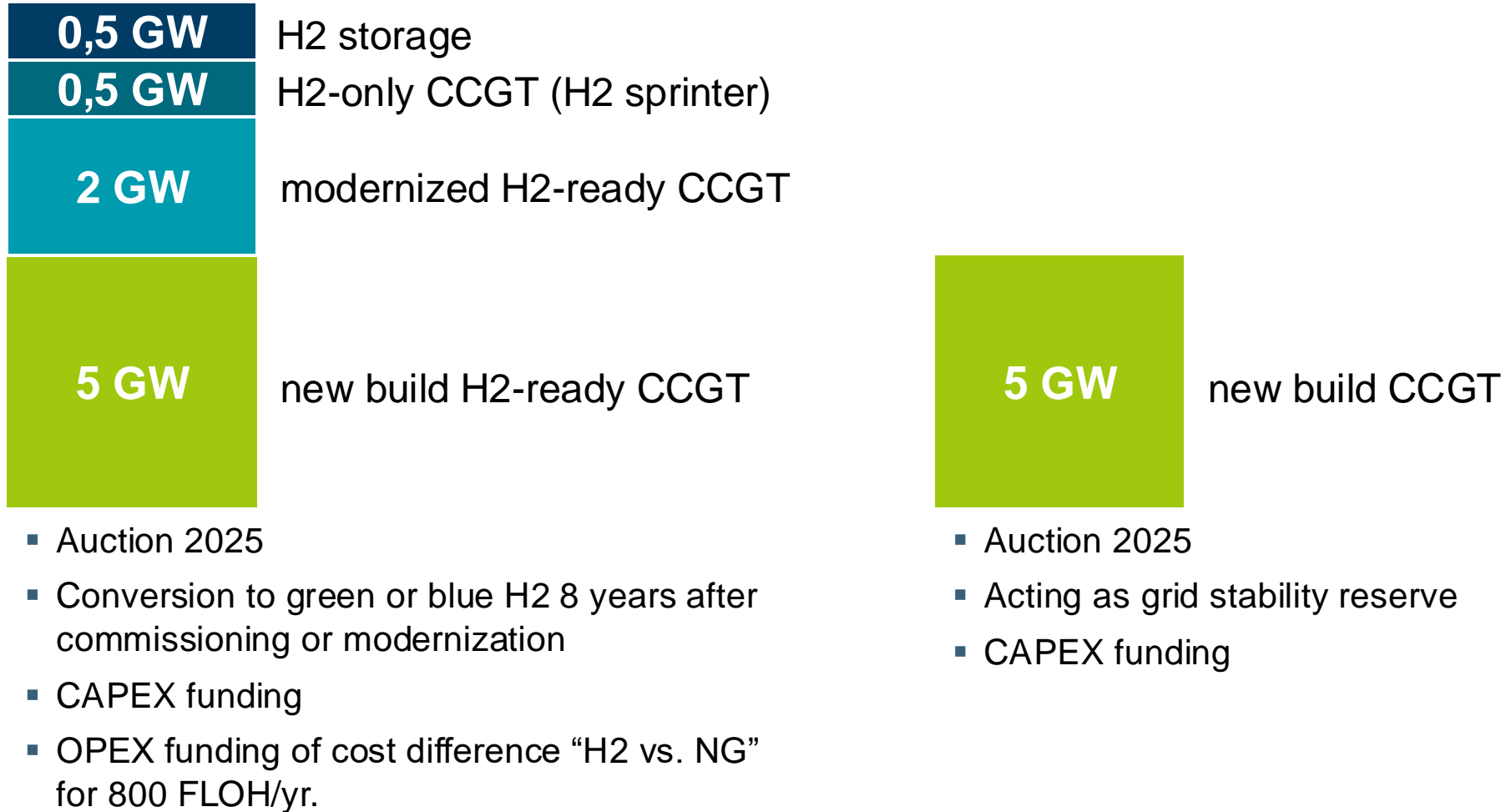
volatility Wind weekly load curve

non-availability Wind/Solar-PV

saisonal availability Wind/Solar-PV

source: BMWK

Main pillars of the German “Power Plant Strategy 2026”: new capacities in gas and new market design until 2028



Joint activities – Individual benefits

be energised

be inspired

be connected

be informed

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