EU's Energy Policy Developments addressing Rising Power Demand

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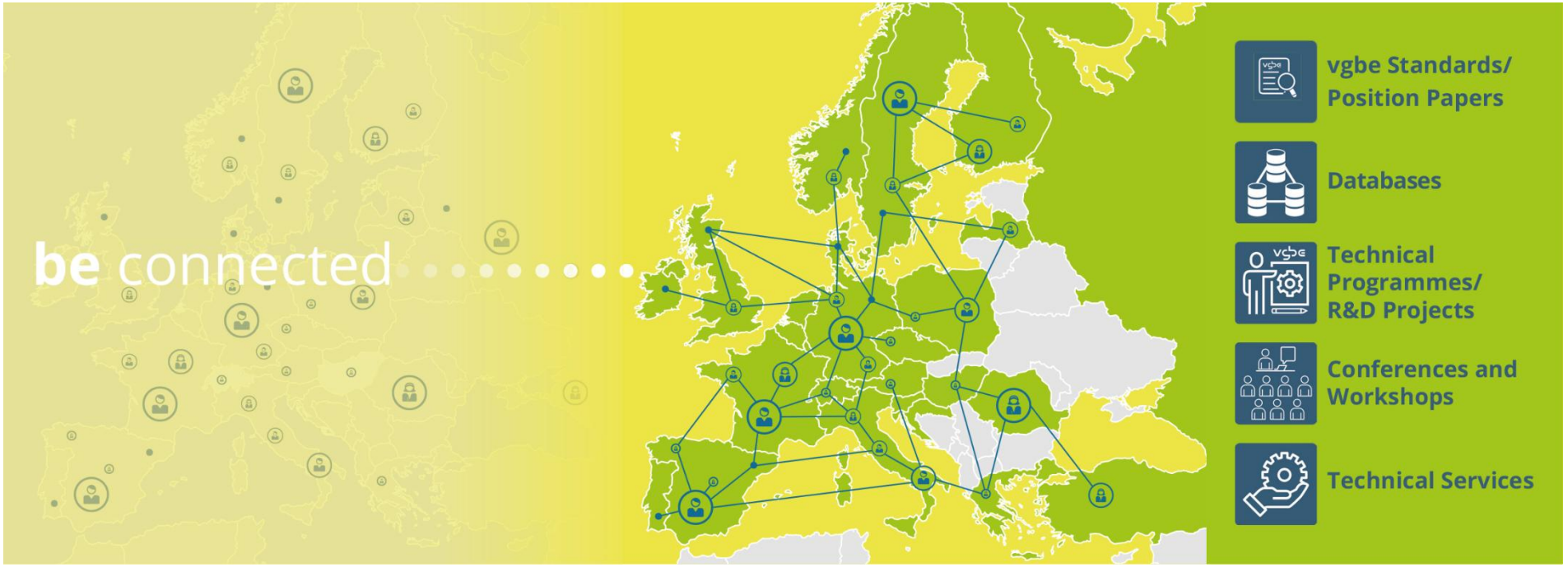
ENERGY IS US

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



- **> 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

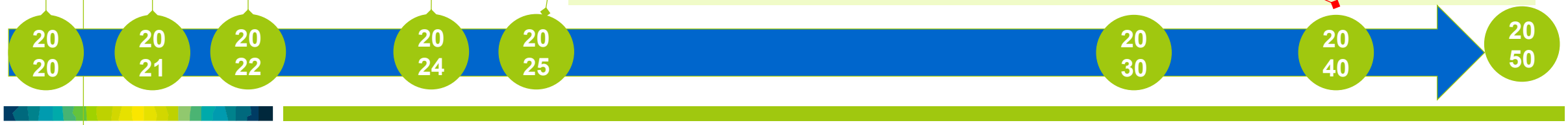
vgbe is the International Technical Association of power plant and energy plant operators. Founded in 1920, the association covers a wide range of technologies: from renewable and conventional power and heat generation to energy storage and P2X.

The EU and Germany have set themselves ambitious mid- and long-term climate goals – EU policy framework updated

	Germany				EU	
Targets	2030	2040	2045	2050	2030	2050
Climate						
Greenhouse gas emissions (GHG) reduction Reduction compared to 1990 levels, including all sectors.	65%	88%	GHG neutral	GHG net sink	55%	GHG neutral

- **European Green Deal** (2050 climate neutrality, 2030 GHG -55%)
  - Just Transition Mechanism (€55B support)
    - **Fit for 55 Package** (2030 climate measures)
      - **REPowerEU** (energy independence, hydrogen targets)
        - Energy Performance of Buildings Directive (update)

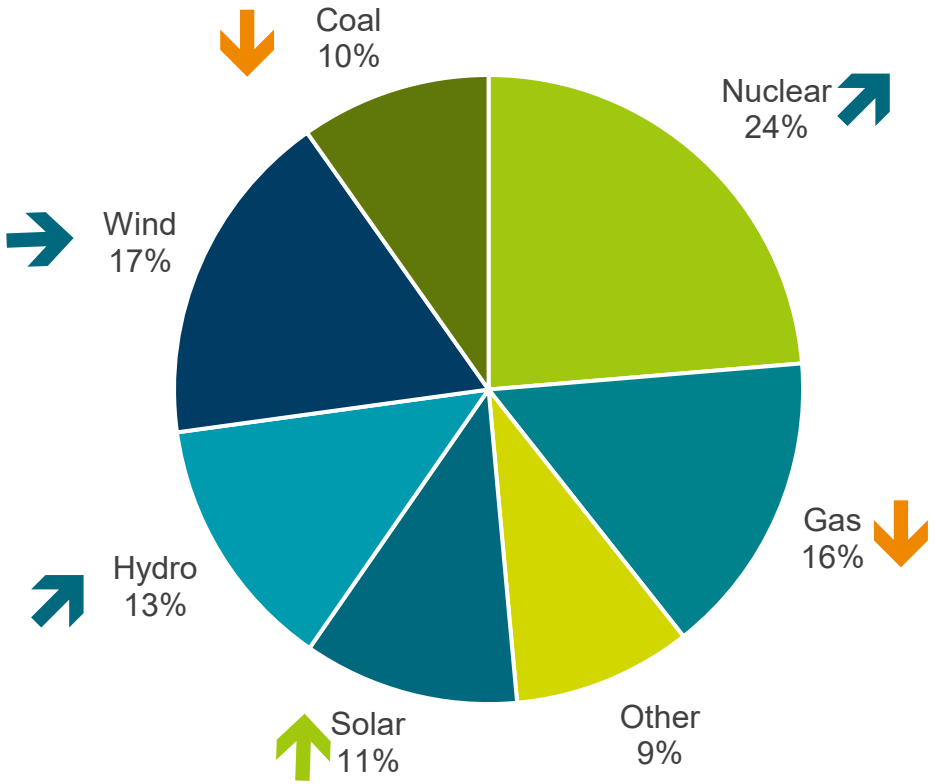
- **Clean Industrial Deal (2025)**: Industrial decarbonisation, 100 GW renewables p.a.
- **Affordable Energy Action Plan** (2040 €260B savings/year)
- 2040 Climate Target Proposal: **-90% net GHG vs. 1990**
- Carbon Border Adjustment Mechanism (CBAM) adjustments



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

Electricity Mix in Europe 2024 – 71 % generation from clean sources

Status 2024: 2.742 TWh (gross production)

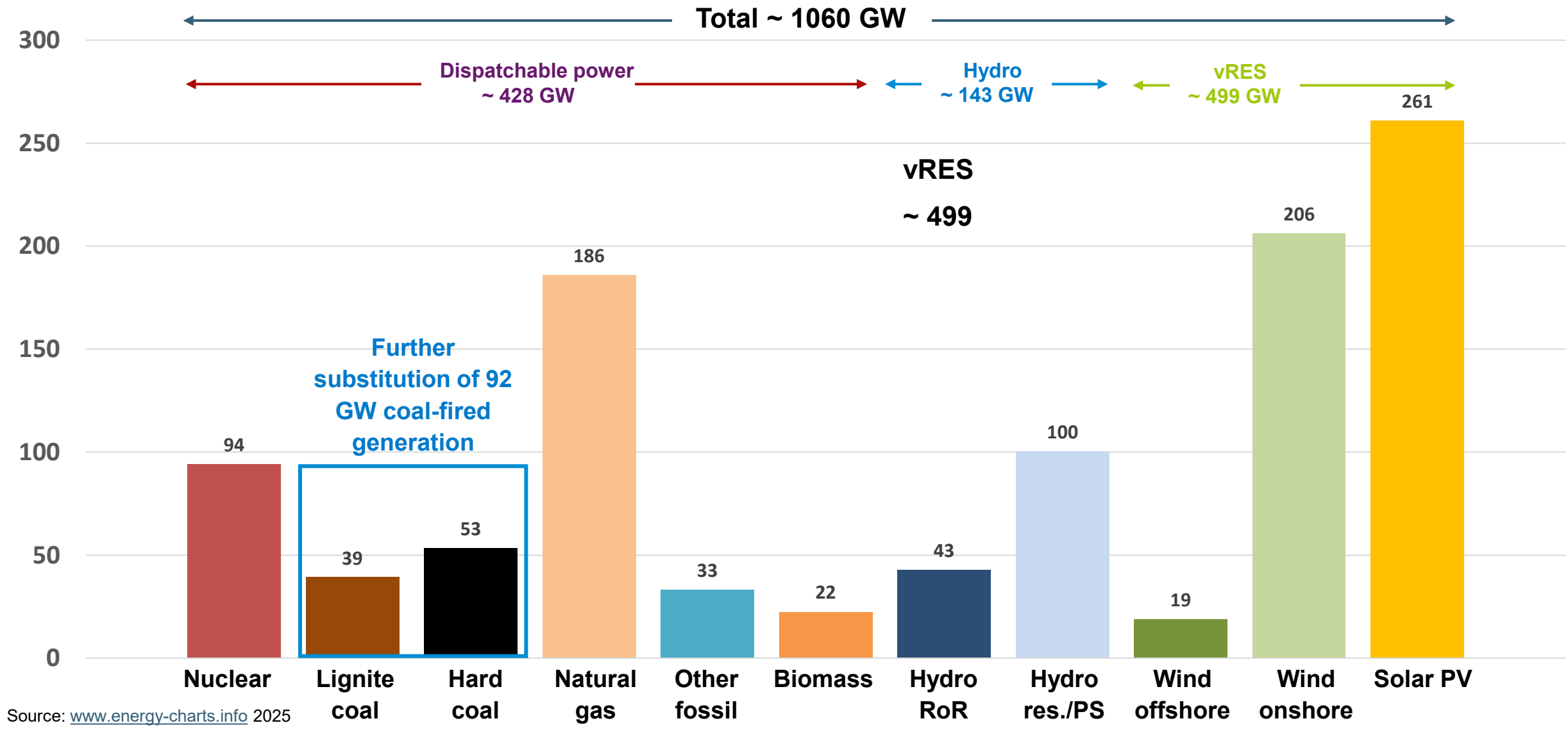


Source: Ember EER2025

Key take-aways:

- Small increase of +1 % in demand after two years of sharp decline (Germany as notable exception with still 11 % behind 2019 levels)
- RES with increased share of 47,4 %
- Solar (+11 %, +54 TWh) overtakes coal for the first time with addition of 66 GW
- Hydro and Nuclear bounce back
- Gas declined five years in a row
- Coal fall below 10 % for the first time in decades (major use GER and POL)

Power generation base in Europe 2024 net [GW]

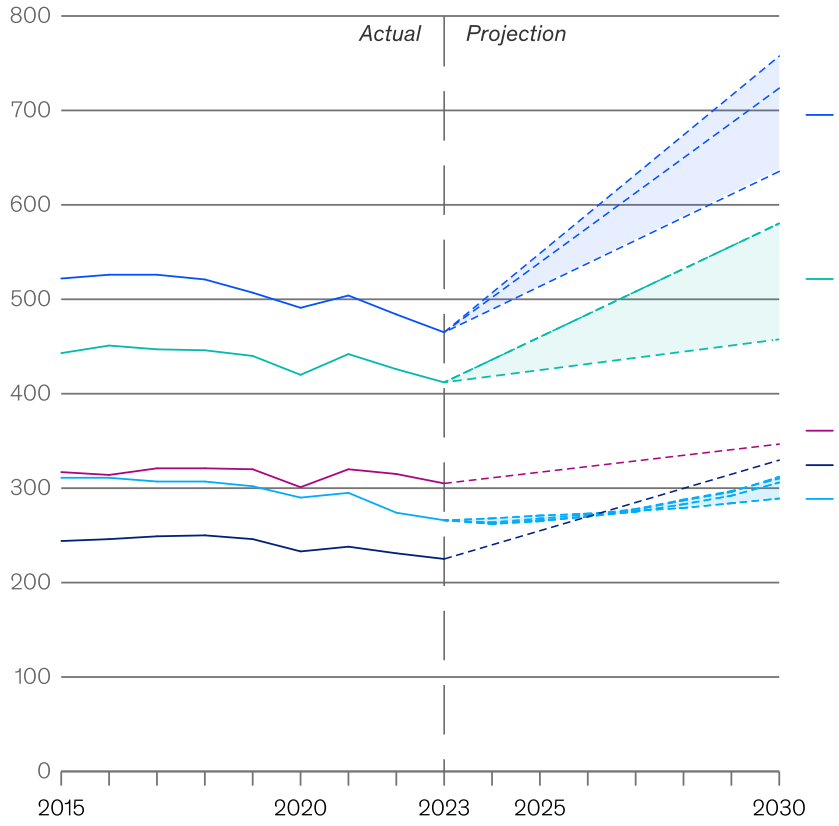


Source: www.energy-charts.info 2025

Electricity demand in Europe – demand and portfolio development

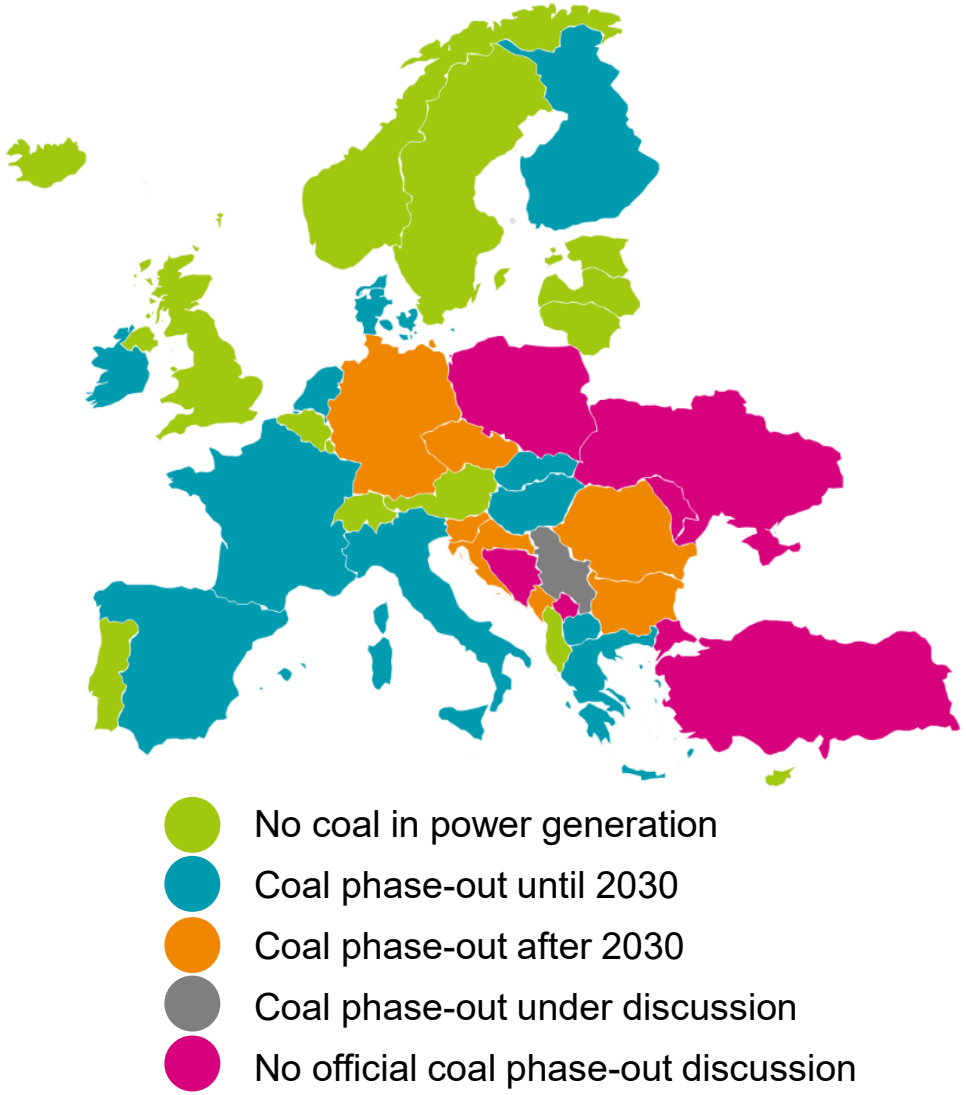
Governments and system operators remain optimistic about demand growth.

Net electricity demand (official government projections), terawatt-hours (TWh)



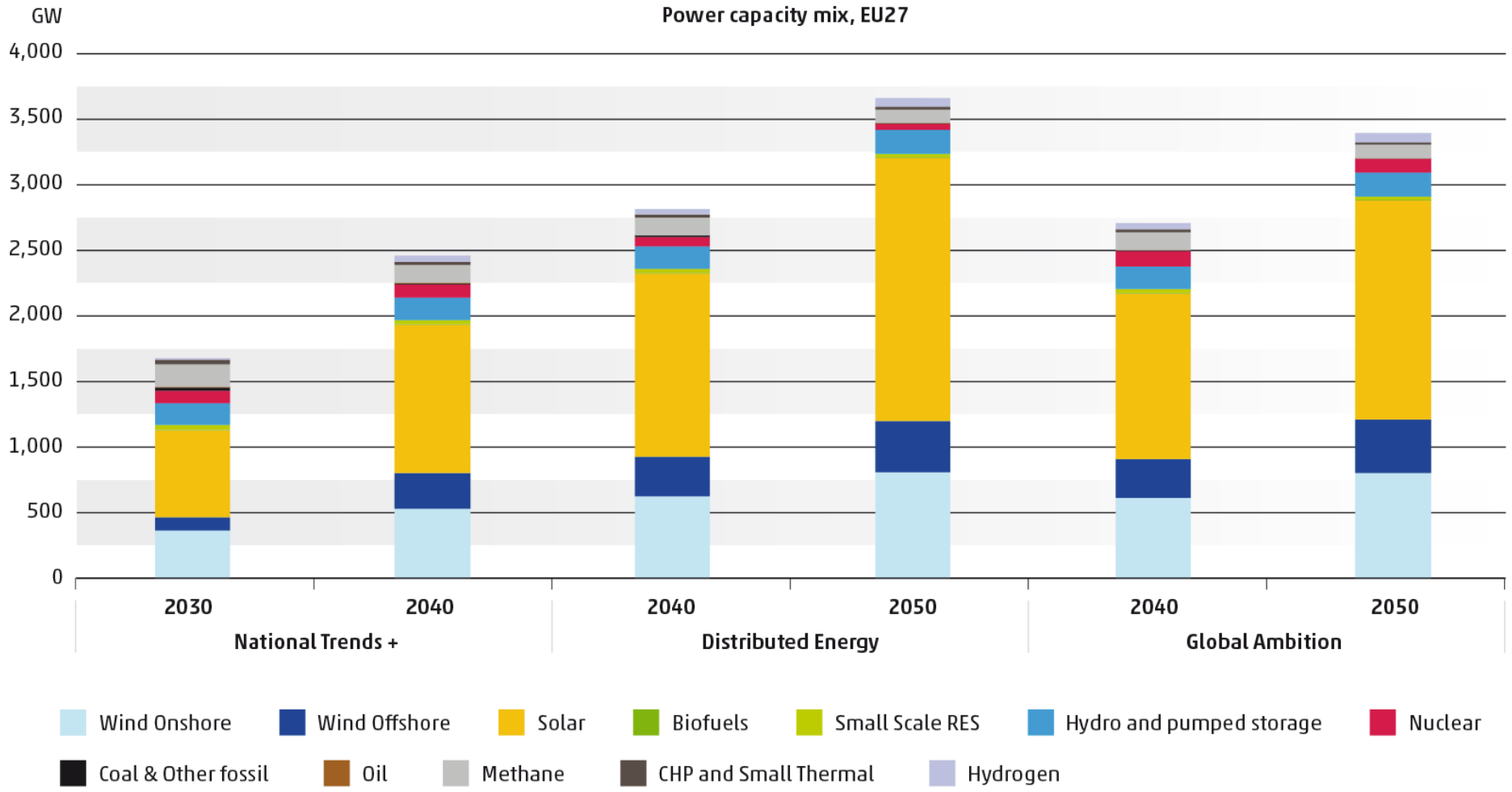
	CAGR, % 2015–23	2023–30
Germany	–1	5–7
France	–1	2–5
Italy	0	2
Spain	–1	6
United Kingdom	–2	1–2

Source: Elettricità Futura, 2023; Ministerio para la Transición Ecológica y el Reto Demográfico, 2024; National Grid ESO Future Energy Scenarios, 2024; Netzentwicklungsplan, 2024; RTE Future Energy Scenarios, 2021; *Global Energy Perspective 2024*, McKinsey



McKinsey & Company

Scenarios for EU27 power generation capacity: major growth in Wind and Solar, minor in nuclear



Source:ENTSO-E TYNDP2024

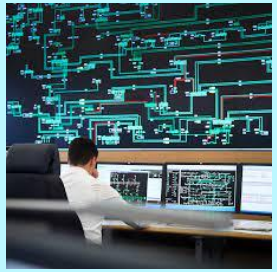
Energy transition in Europe relies on three pillars: Grow of Renewables+Storage, expand grid & interconnectors and provide dispatchable and low-carbon power generation

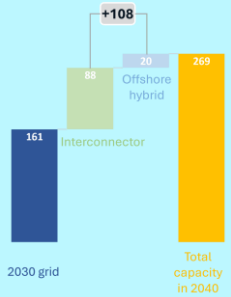
Renewables + Storage

Net-Zero Power supply is the target and possible:

- Push renewable power
  - Onshore/Offshore Wind
  - large scale Solar PV
- Store excess of green power in batteries, H2 and e-fuels

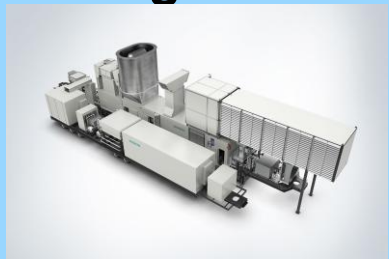
Grid & Interconnectors





- Integration of vRenewables in overall system
- Transportation of RES power from production to consumption
- Grid Stabilization measures:
  - Synchronous condenser
  - Grid-forming converters
  - Flywheel
  - Peaking Plants

Dispatchable low-carbon power generation



- Ensure lomg-term clean&secure power and heat supply with GT and engine technology
- Fast ramp-up of CCPP & CHP to compensate coal exit
- Bridge the future with natural gas; increase co-firing with H2/efuels in later years

Joint activities – Individual benefits

be energised
be inspired
be connected
be informed

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