A tentative REPowerEU scenario for Greece

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For discussion only, does not reflect official positions

The REPowerEU approach

Revised targets as at least in Fit for 55

- Ambitious GHG, RES and energy efficiency targets for 2030 (above previous NECP)
- Climate neutrality targets for 2050 (overall in the EU)

Natural gas policies

- Curb natural gas expansion trend in the short-term
- Diversify supply, mainly via LNG and away from Russian gas
- Increase lignite in the short-term and phase-out after 2028
- Accelerate RES, mainly PV and storage
- Exploit biomethane potential
- Develop green hydrogen earlier than planned

Policies for the REPowerEU implementation

Strategy towards Net-Zero

Pillars of the strategy

- Energy efficiency
  Renewable Energy Sources

First priority, clean electrons

- Low-carbon electricity
- Heat and transport electrification

Also molecules, not only electrons

- Transport sectors (heavy goods vehicles, aviation, shipping)
  Specific uses of gas in industry
  Applications of distributed gas

Short-medium term

Mitigate dependence on natural gas

- Reduce demand for gas
- Increase LNG supply

Enable large scale energy efficiency investment

- Facilitating policies
- Subsidies and standards

Accelerate renewables in power sector

- Grids
- Facilitate private investment financing
- Land use planning

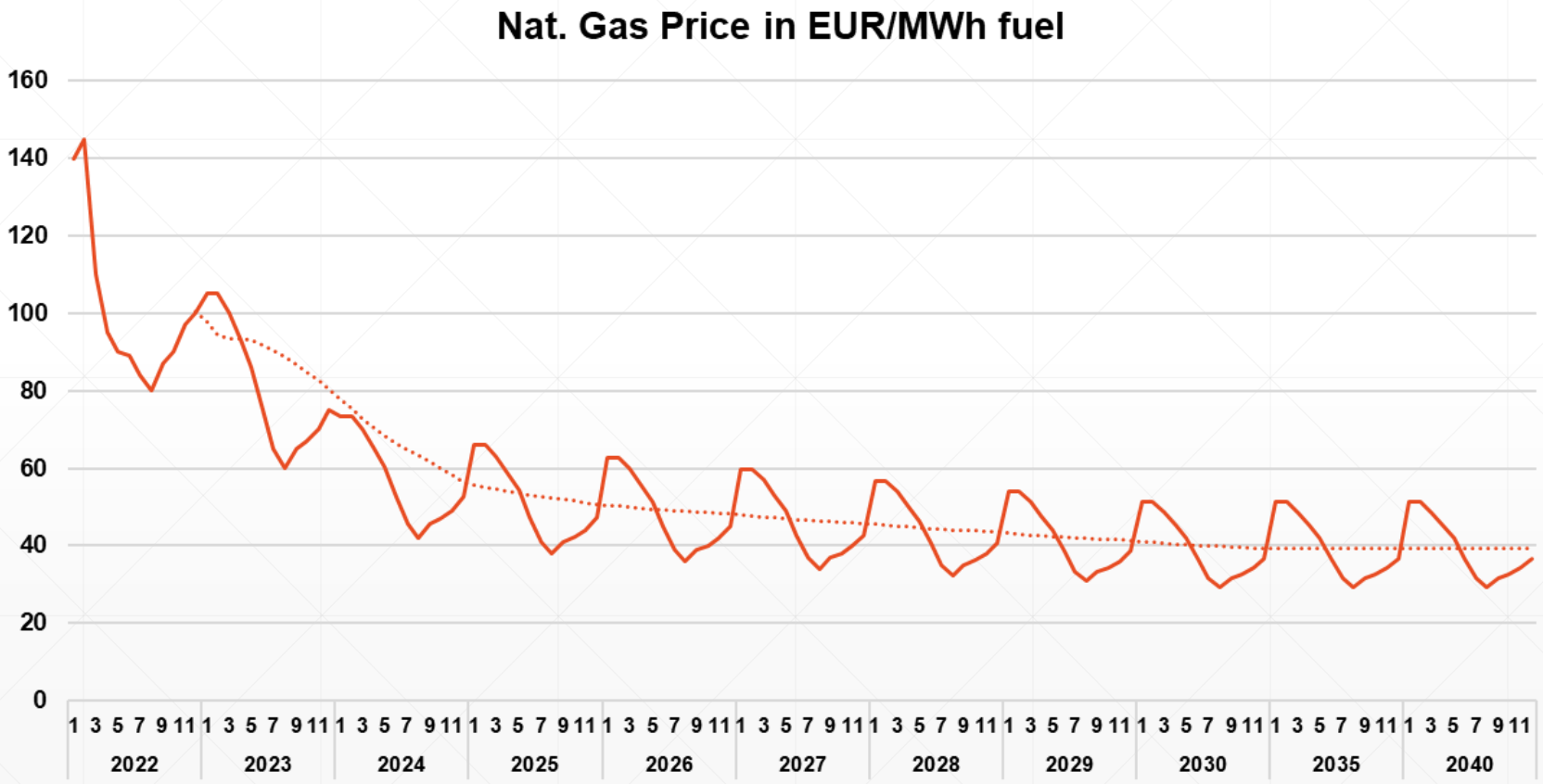
Kick-start emerging alternative fuels

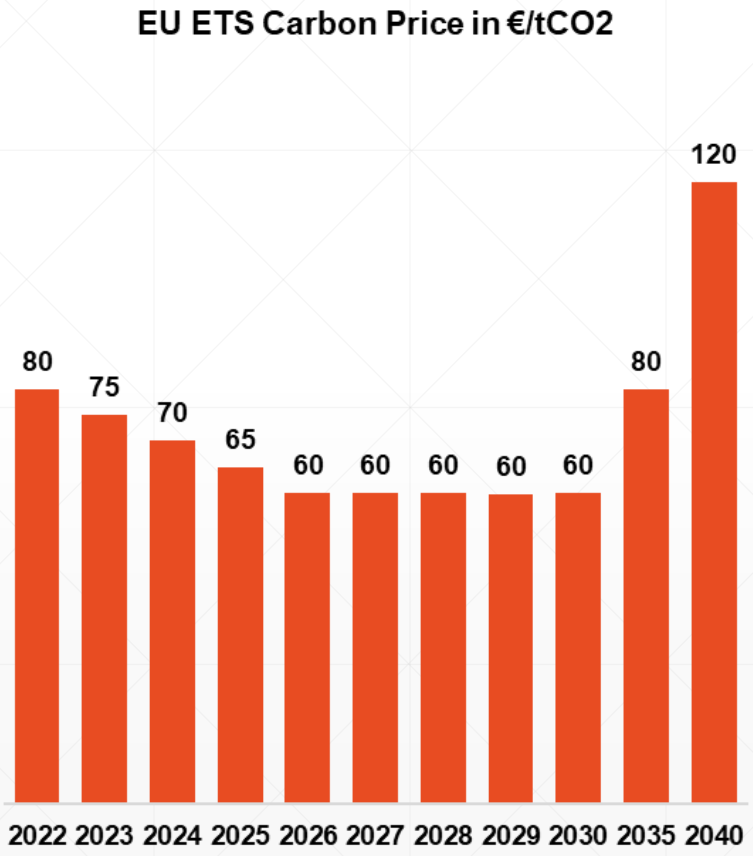
- Biomass and biomethane program
- Mandatory blending in gas distribution and transport fueling
- Support first-of-kind investment and support market development

A tentative REPowerEU scenario for Greece 2020-2050

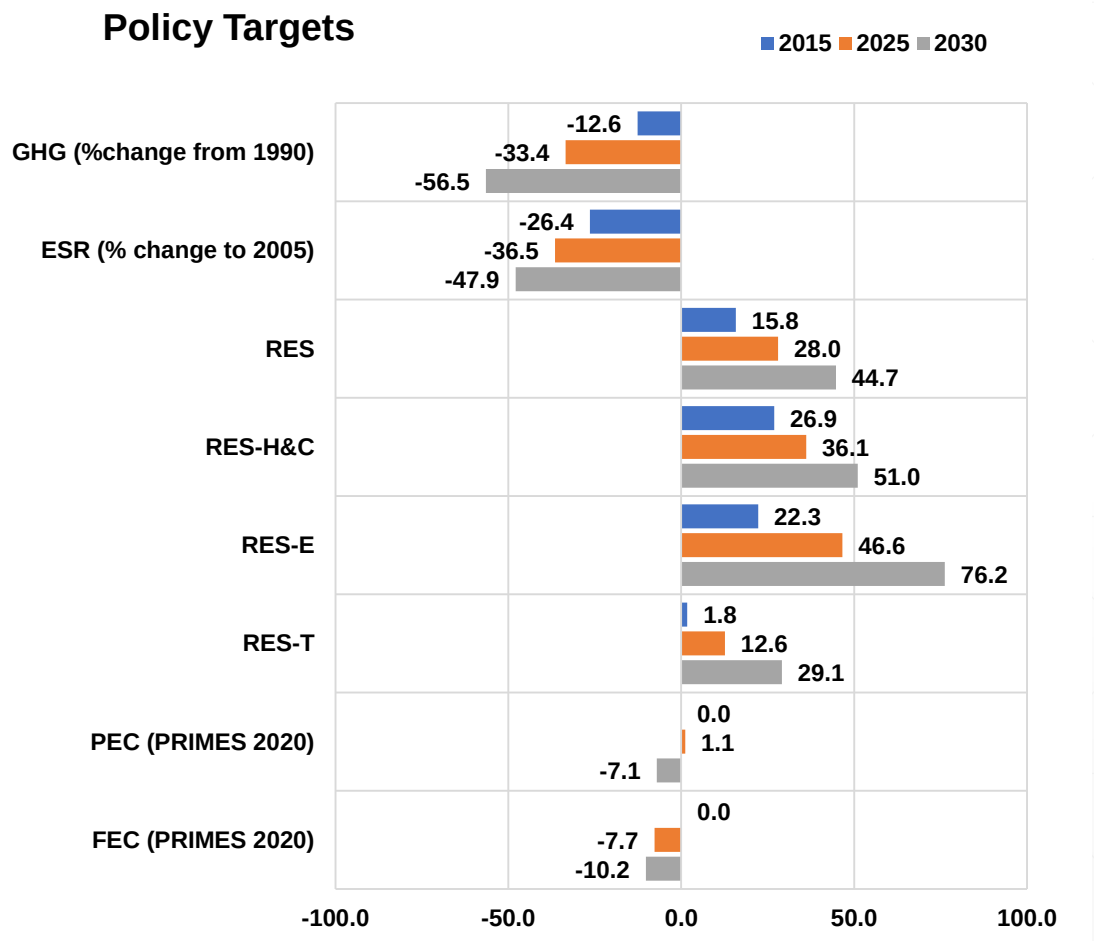
Assumptions	Gas prices slowly de-escalate until 2025 and remain between 40 and 50 €/MWh after 2024
	ETS prices stabilize at 60-80 €/tCO2 until 2030 but increase after 2030
	Full interconnection of islands completed before 2030
	Demand for electricity increases due to electrification and furthermore after 2030 driven by green hydrogen
	RES development revised to reflect current trends, such as high growth paces of solar PV compared to onshore wind
	Considerably increase battery and pumping storage

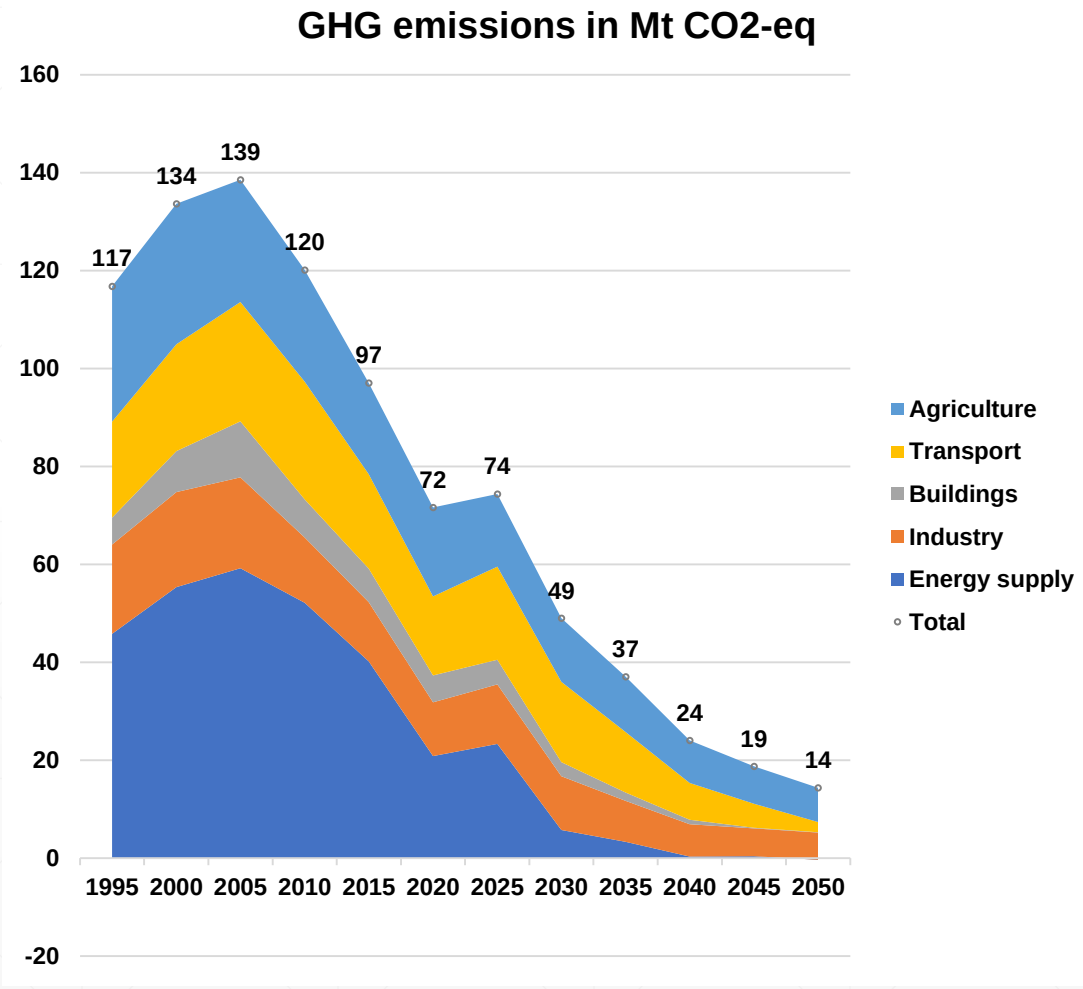
Price scenario



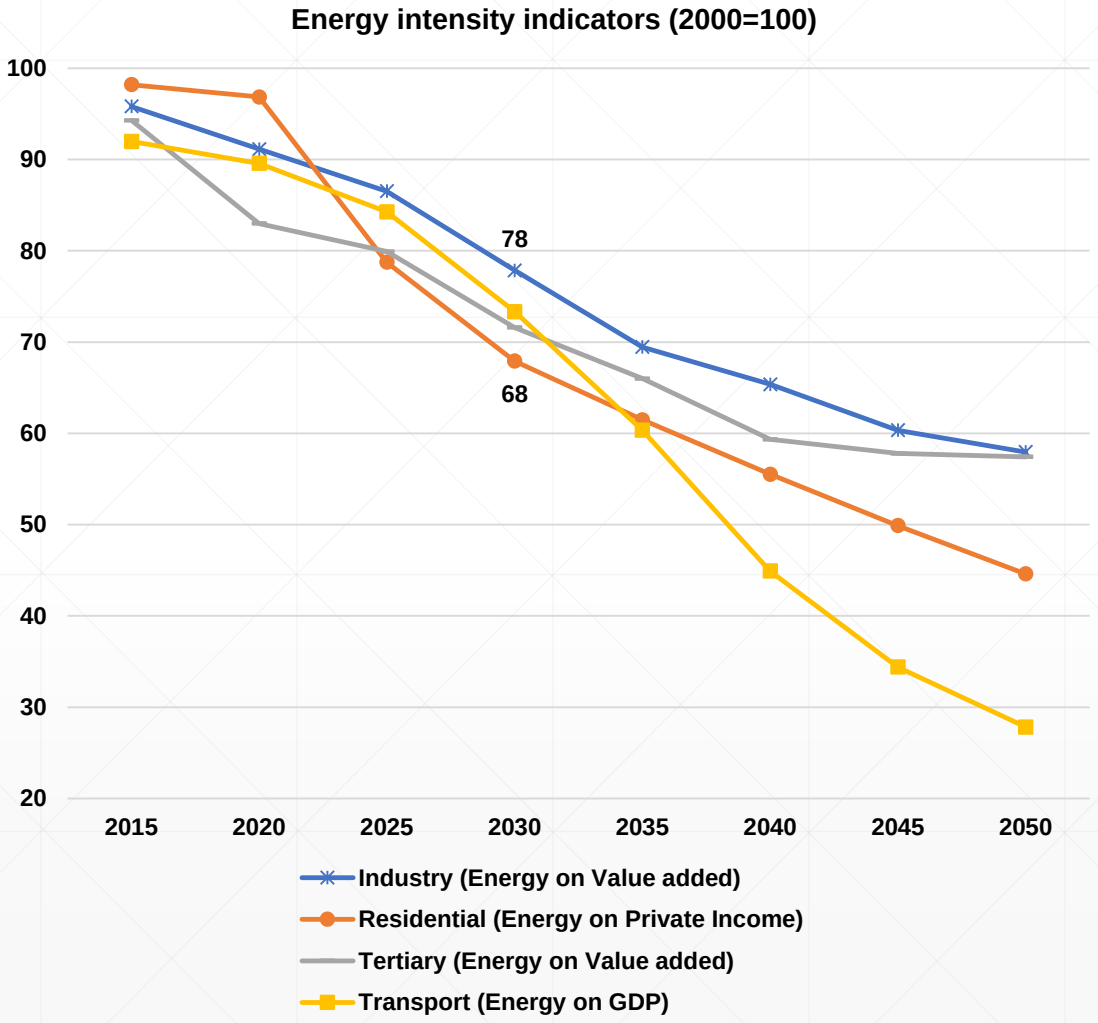


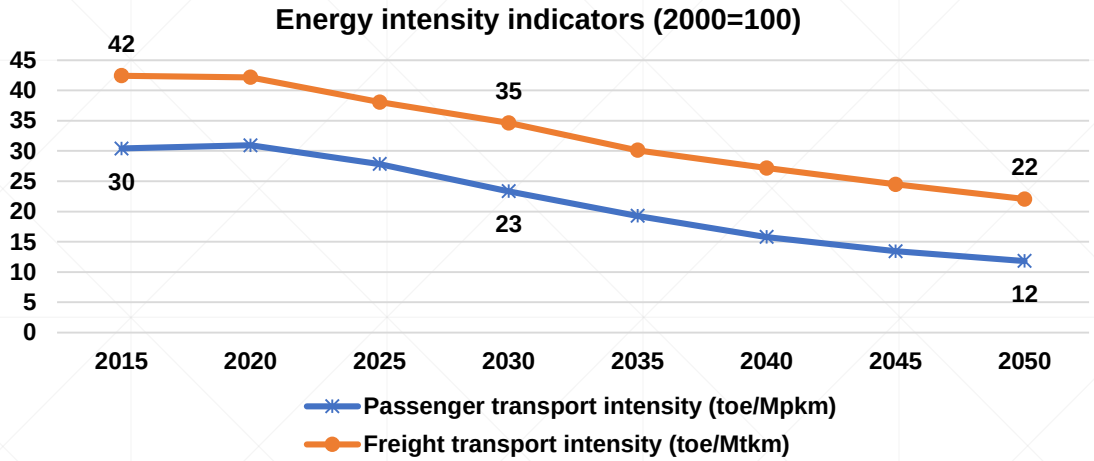
Overview of scenario performance

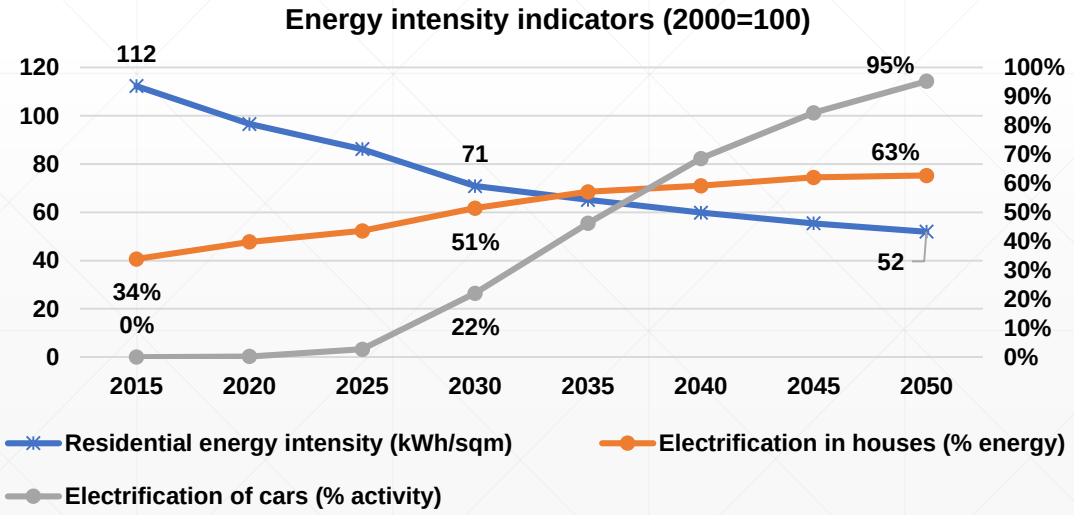




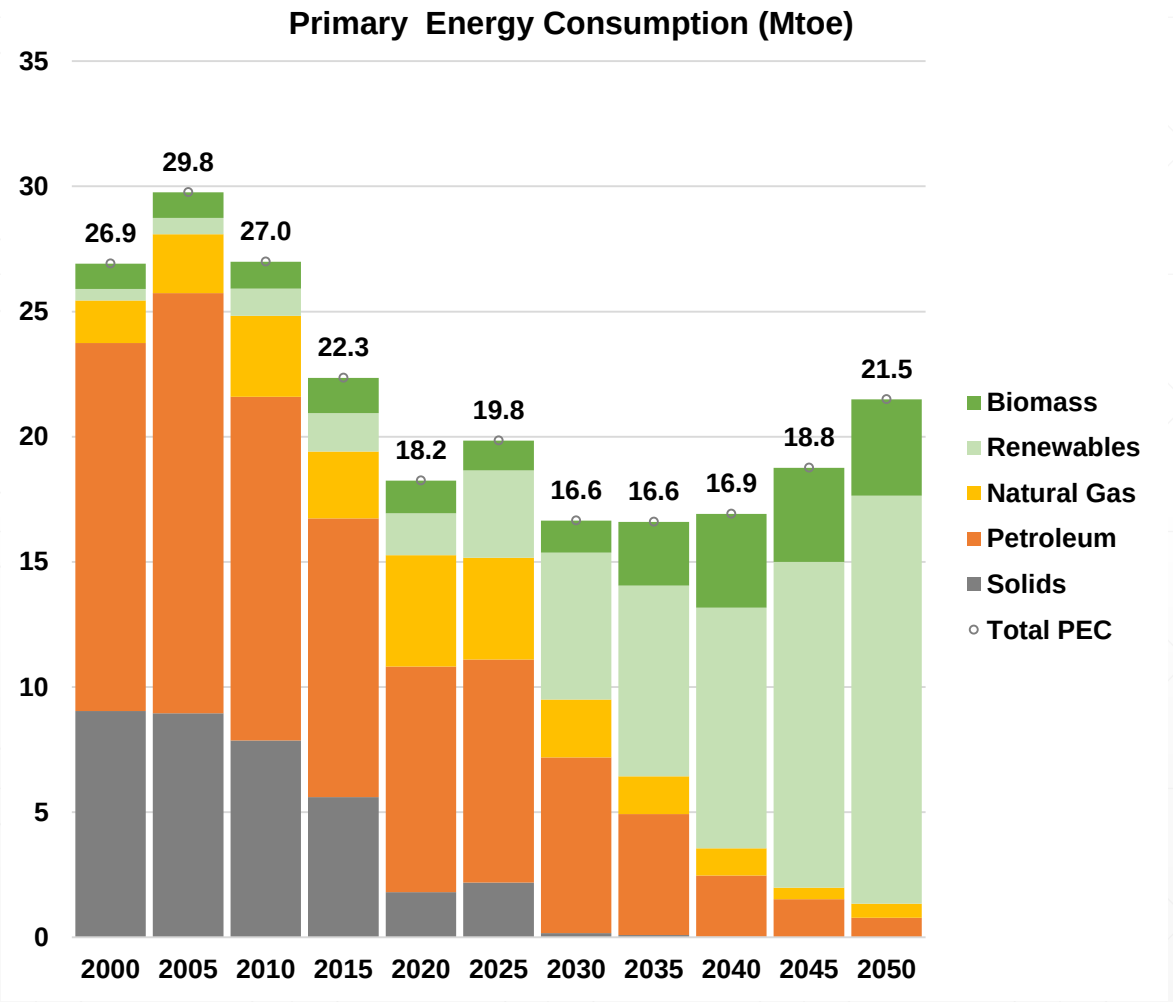
Energy efficiency indicators

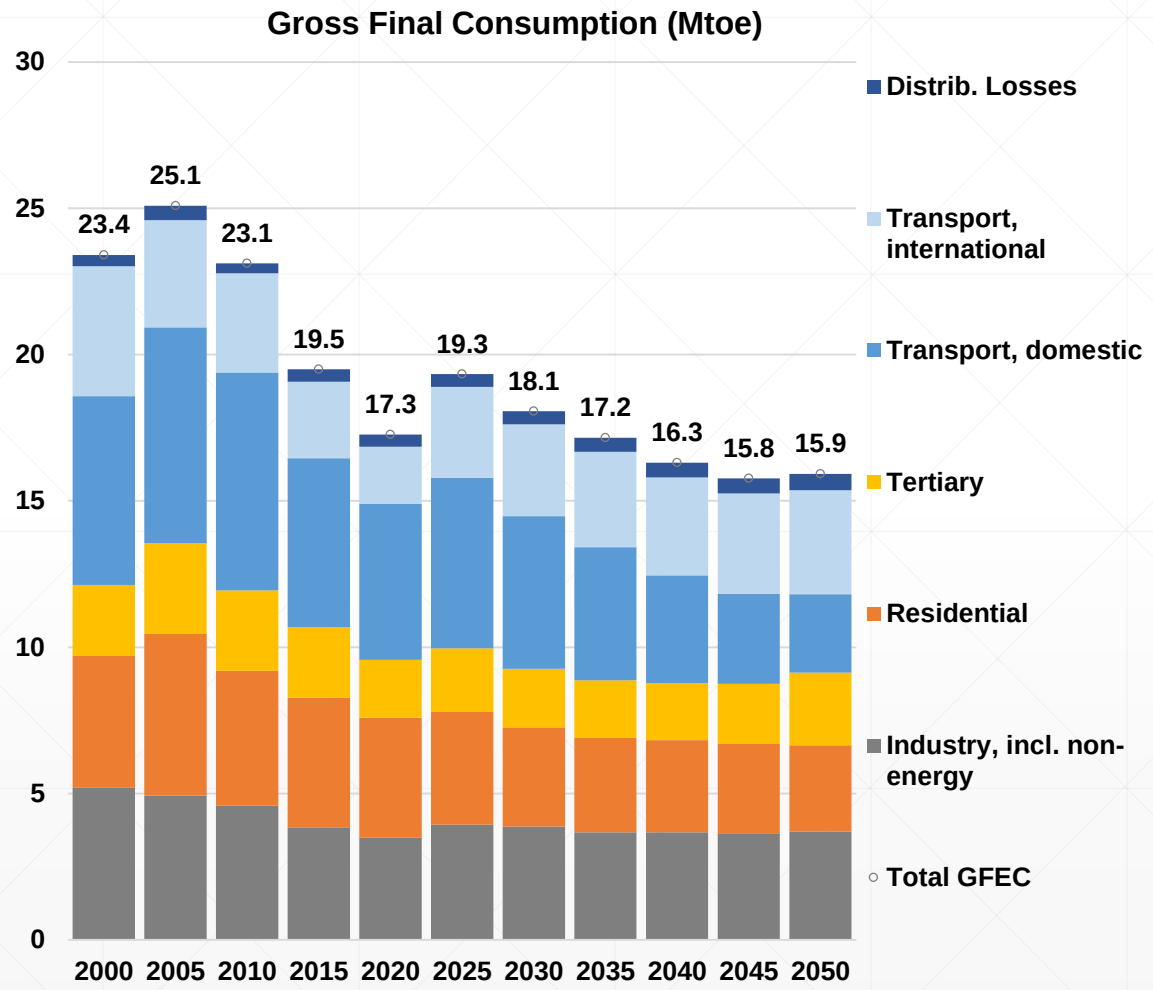




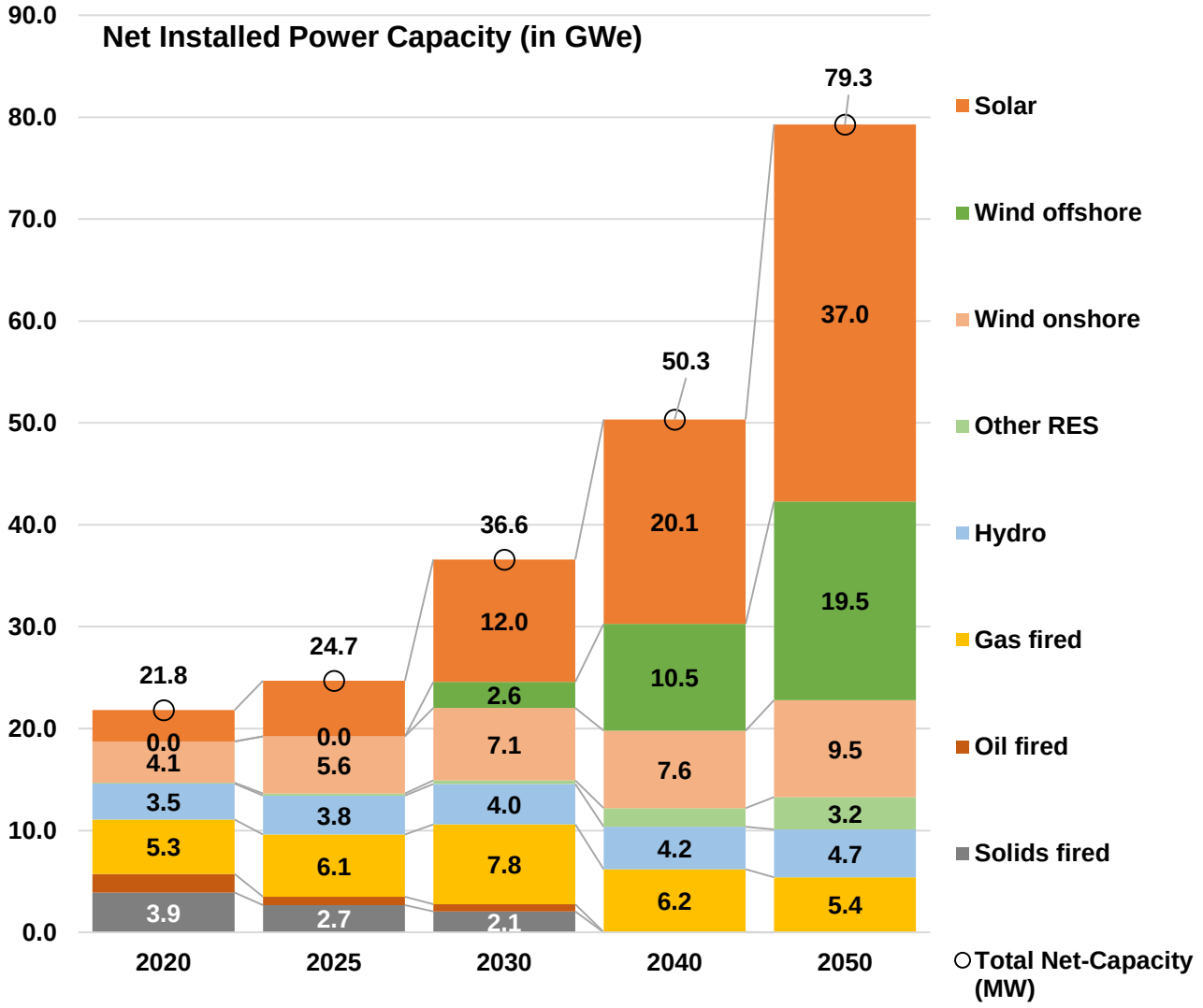


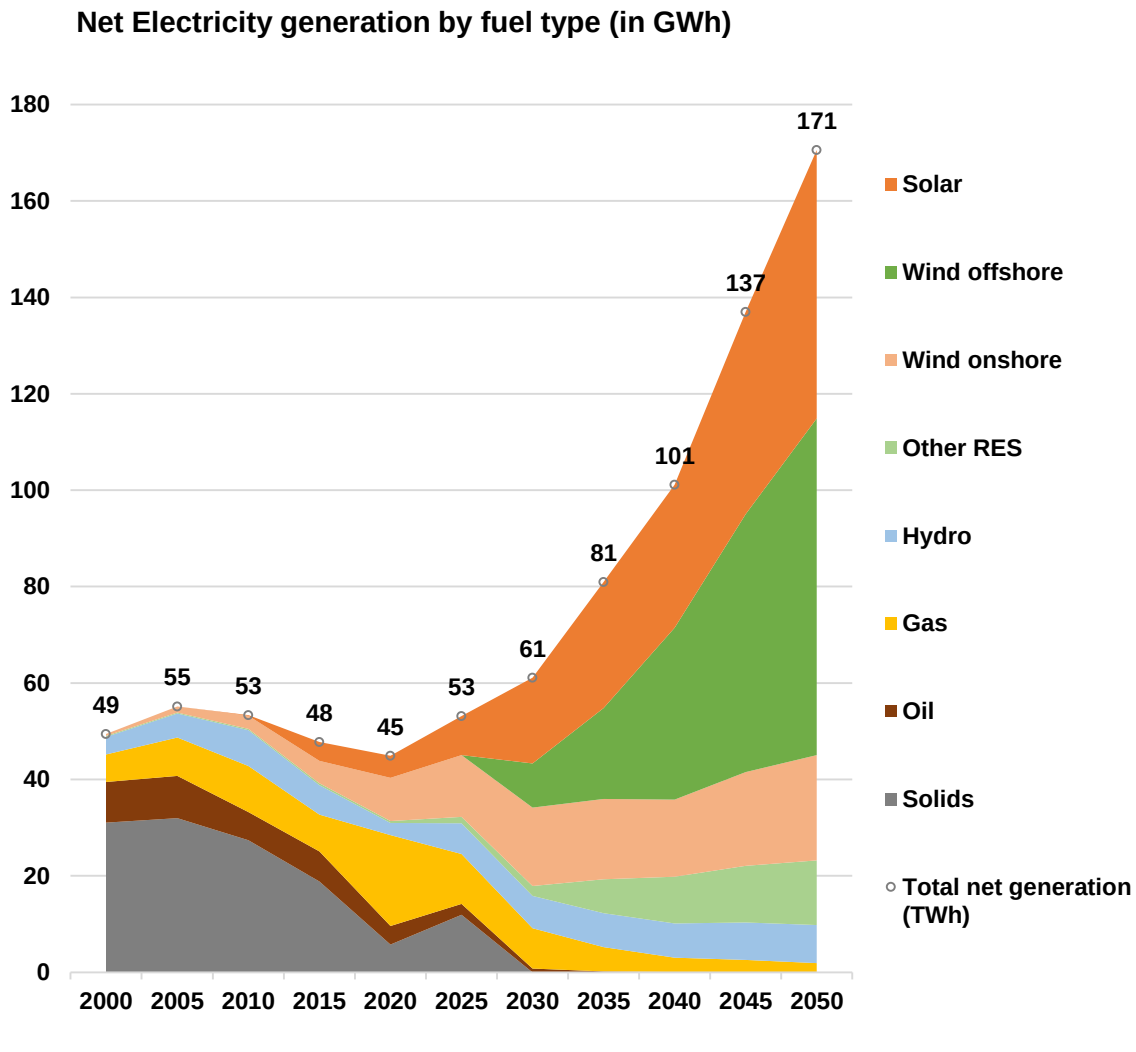
Primary and Final energy consumption

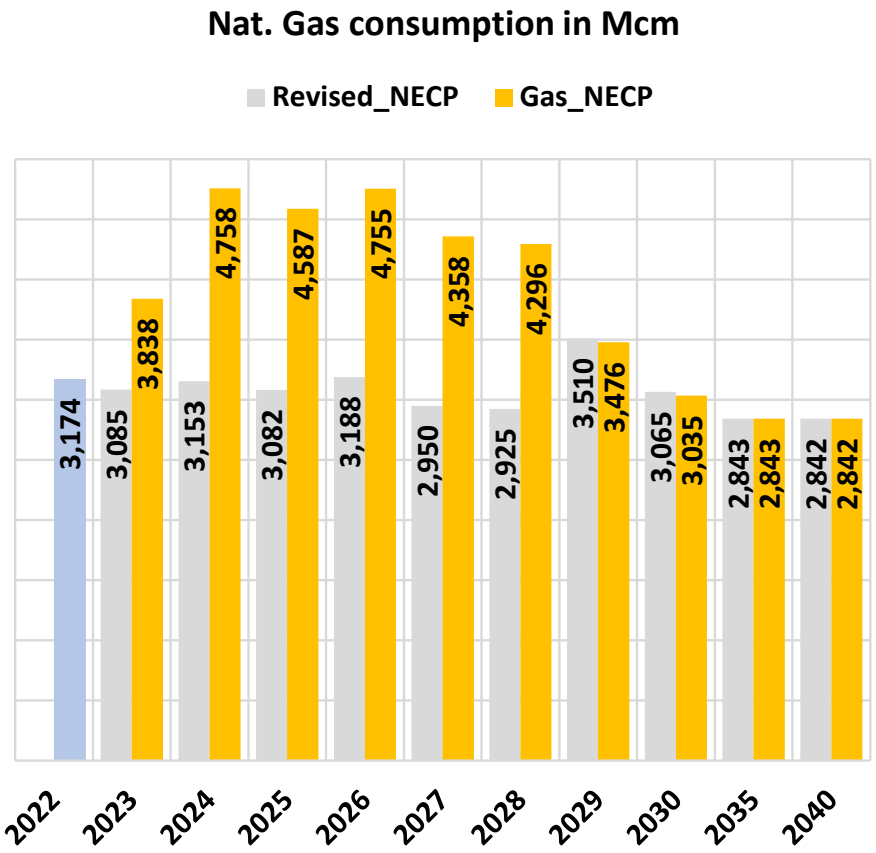


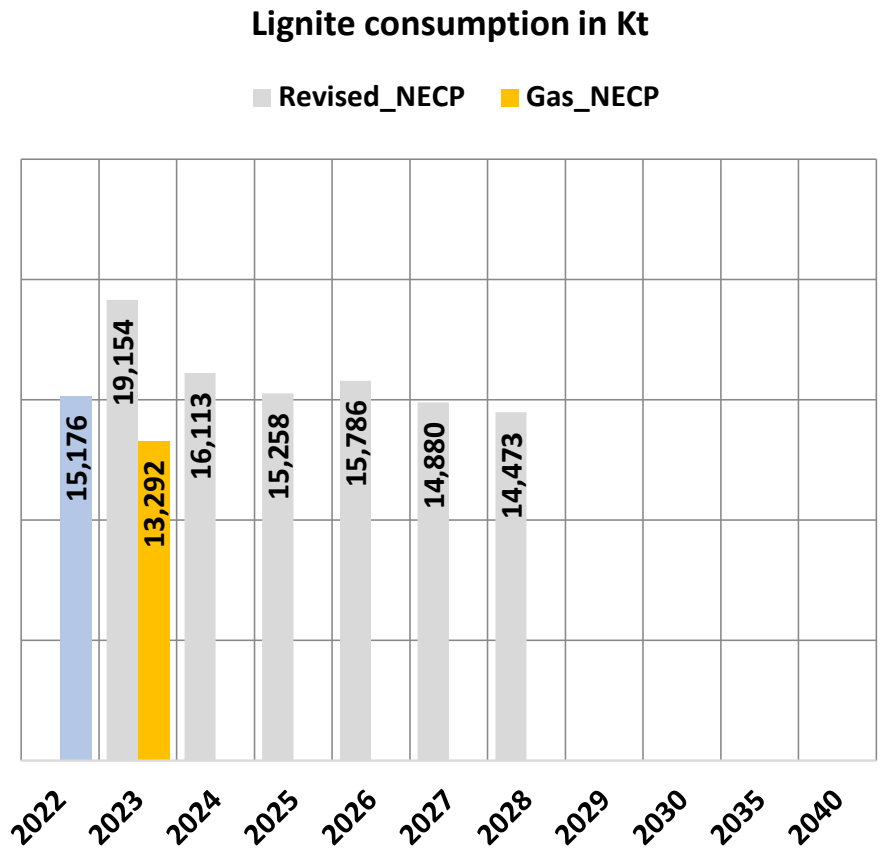


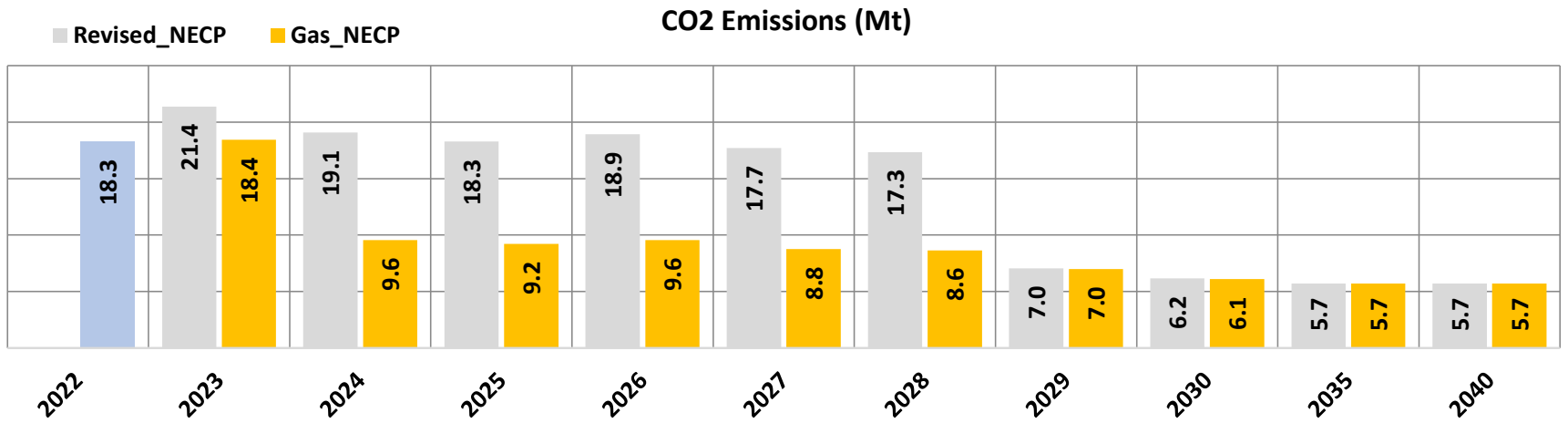
Electricity sector outlook











Fuel consumption

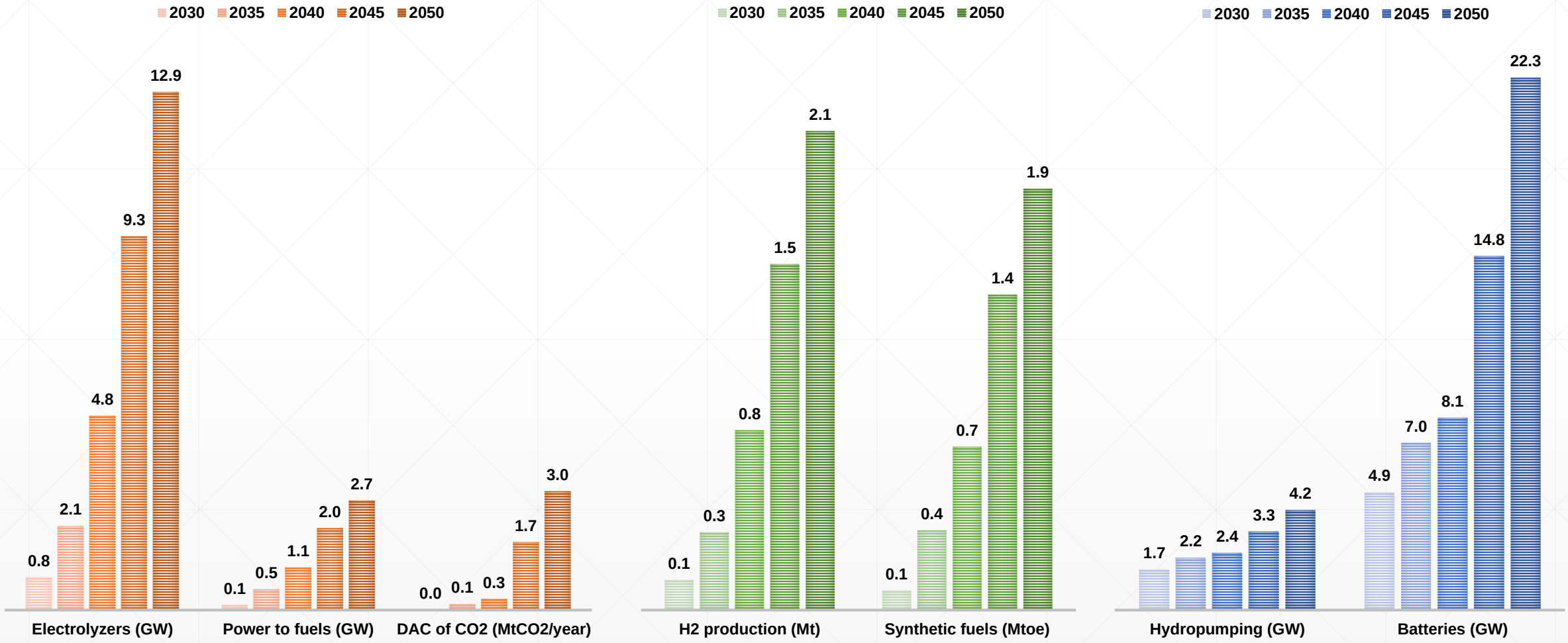
The Revised NECP scenario succeeds to limit total natural gas requirements below 3 bcm throughout the projection; an exception is year 2029 when gas needs are 3.5 bcm

In contrast, the Gas-based (old) NECP required above 4.5 bcm in the years from 2024 up to 2028

Lignite production remains roughly at 15Mt after 2023 and until 2028

CO2 emissions from power generation double in the Revised NECP compared to the older NECP, in the years 2024 until 2028.

Hydrogen, Power-to-X and electricity storage



Targets for domestic production of green hydrogen and climate-neutral fuels

		2030	2040	2050
Domestic production units	Electrolysis (in MW)	752	8923	20611
	Synthetic fuels (ktoe per year)	138	1344	3472
	Electricity input, TWh	4.5	53.7	123.2
	RES investments for H2, in GW	3.0	28.0	56.5
Total domestic green hydrogen production (Ktoe)		300	3249	7464
Total domestic production of synthetic fuels (Ktoe)		66	982	2410
Total domestic biomethane production (Ktoe)		63	854	1184

1 Ktoe is one thousand tons of oil equivalent, i.e. 41868 giant Joules, or 349.4 tons of H2 (low calorific value), 1 kg of H2 is 33.33 kWh

Summary of costs