



**Center for Geopolitics of Energy and Raw Materials
(CGEMP)**



In partnership with:



French Association of Energy Economists

Power in Germany: The turning point of 2011

One year later, lessons for neighbouring countries

Description of the new framework

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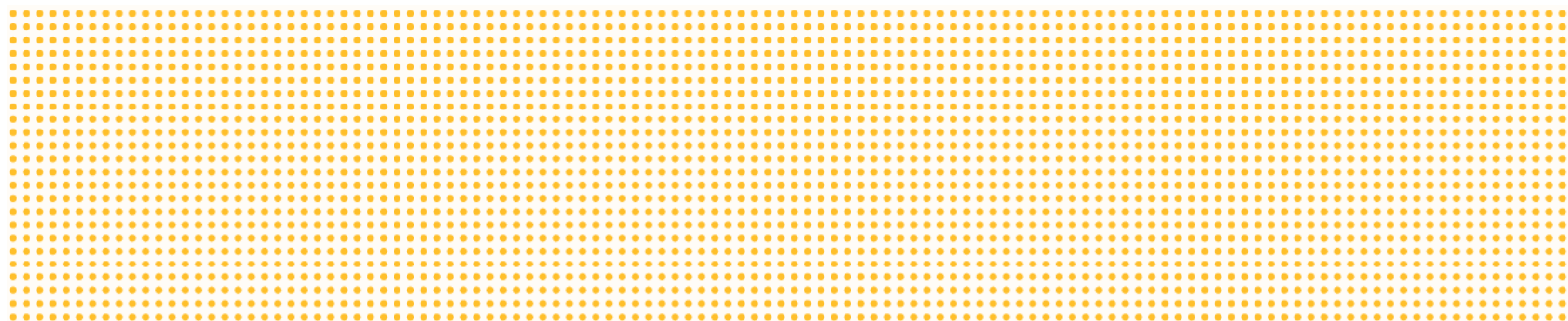
Description of the new framework

Scenarios for the Energy Concept of the German Government

PD Dr D. Lindenberger

Paris, June 22nd 2012

ewi



Political cornerstones for the Study

„Scenarios for the Energy Concept of the German Government” (2010)

- based on Coalition Agreement -

GHG-Emissions

by 2020	-40%
by 2050	-80% (or more)

Energy Efficiency

2,3 – 2,5 % p.a.

Renewable Energies

by 2020	36 % (Electricity Sector)
by 2050	>50% (Primary Energy)



Scenario Assumptions

Decreasing electricity demand

- in Germany minus 20%-24% until 2050
- slightly decreasing demand in Europe

Deployment of renewable energies

- substantial RES-E deployment in DE and EU
- after 2020 European-wide cost-efficient deployment

Complete European Internal Power Market

- substantial interconnector extensions in EU: until 2050 “x3”
- grid extensions within DE

In addition:

- Availability of CCS (Commercial availability by 2025, public acceptance)
- Sufficient investment incentives for conventional capacities

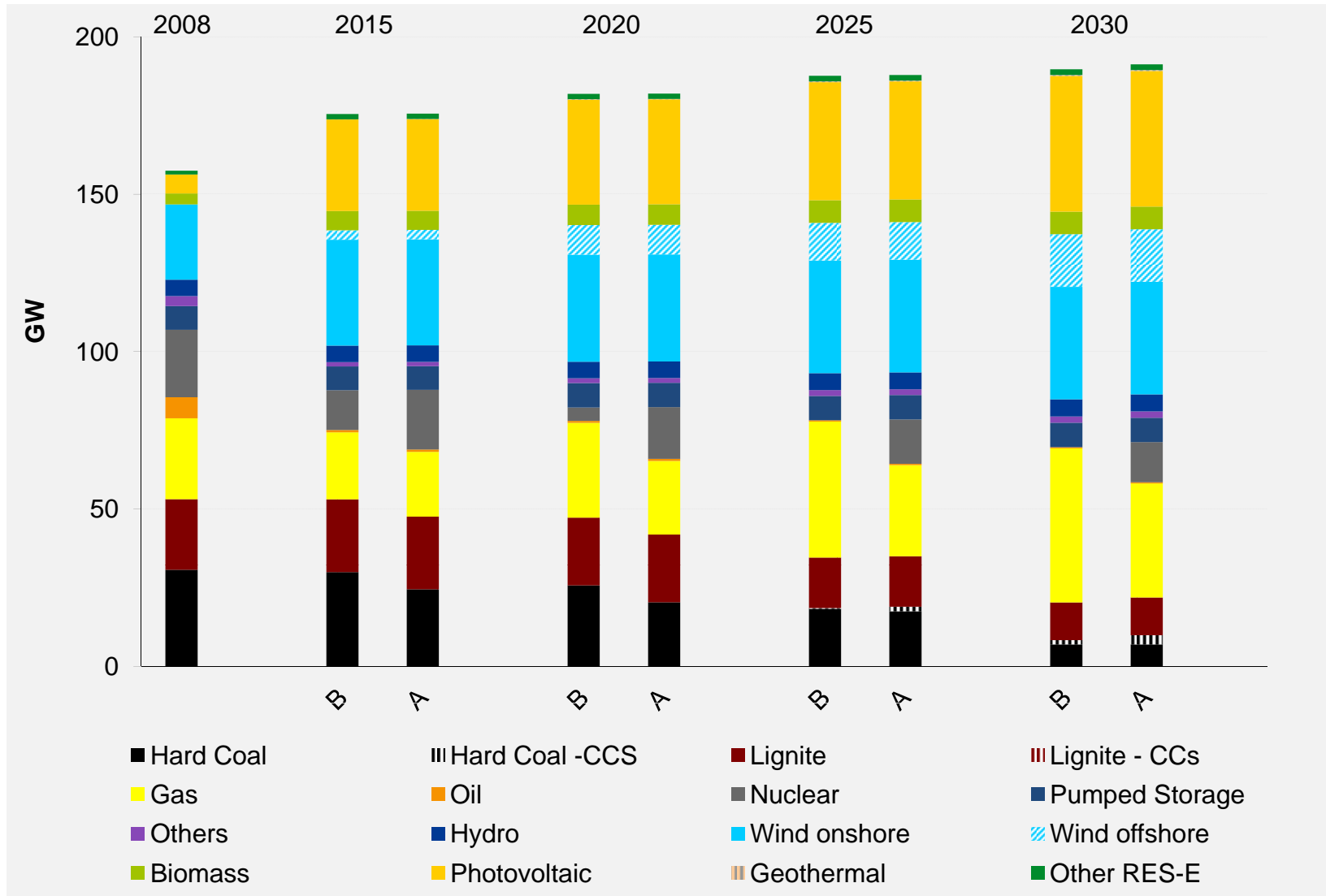
Update study after Fukushima („Energiewende“)

„Energy Scenarios 2011“

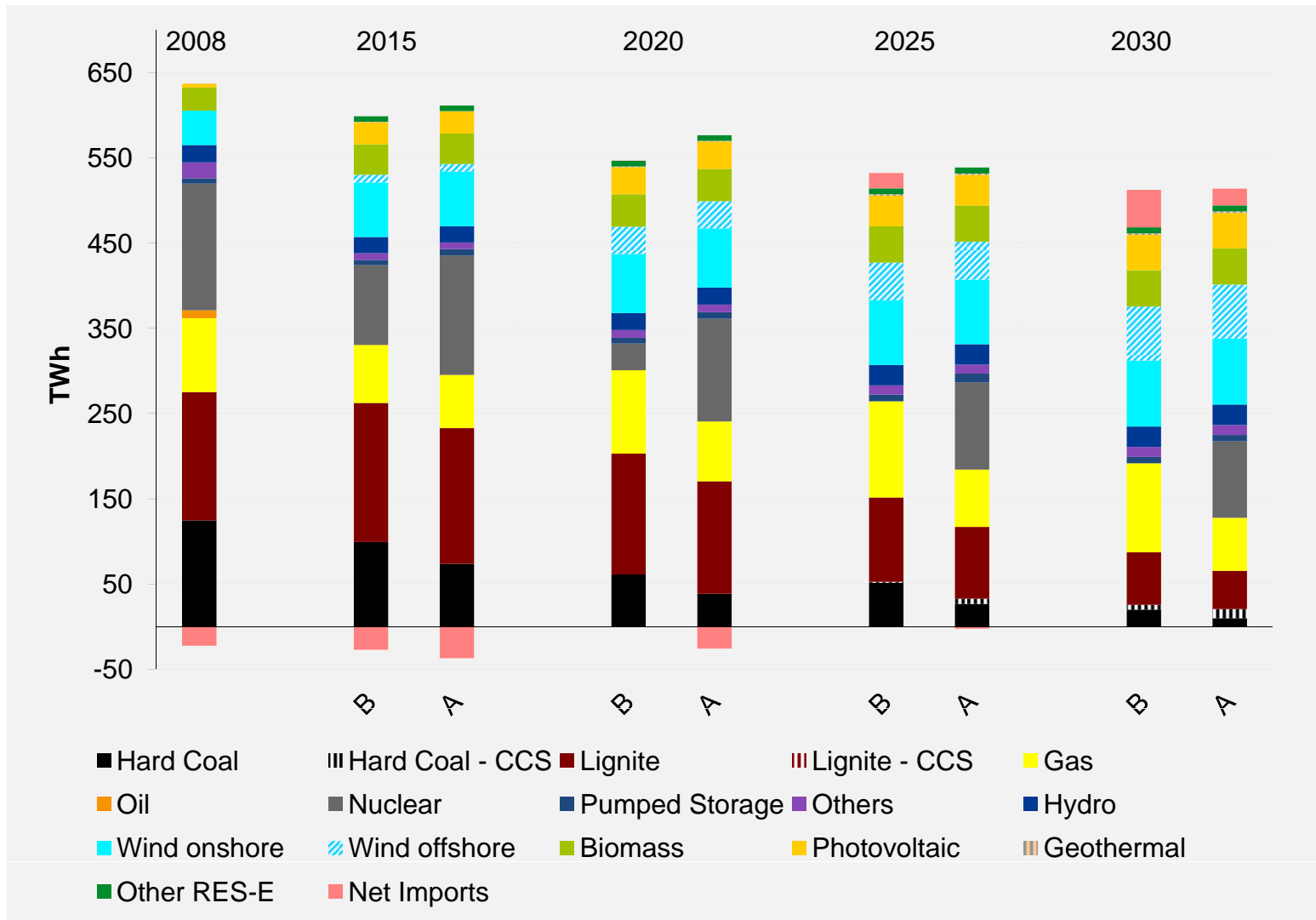
- Scenario A „**Nuclear Prolongation**“ (AtG 2010) (Reference)
older („7+1“) nuclear plants prolonged for 8 years
newer nuclear plants prolonged for 14 years
- Scenario B „**Nuclear Phase-Out**“ (AtG 2011)
Shut-down of the older plants
accelerated phase-out of all other plants until 2022



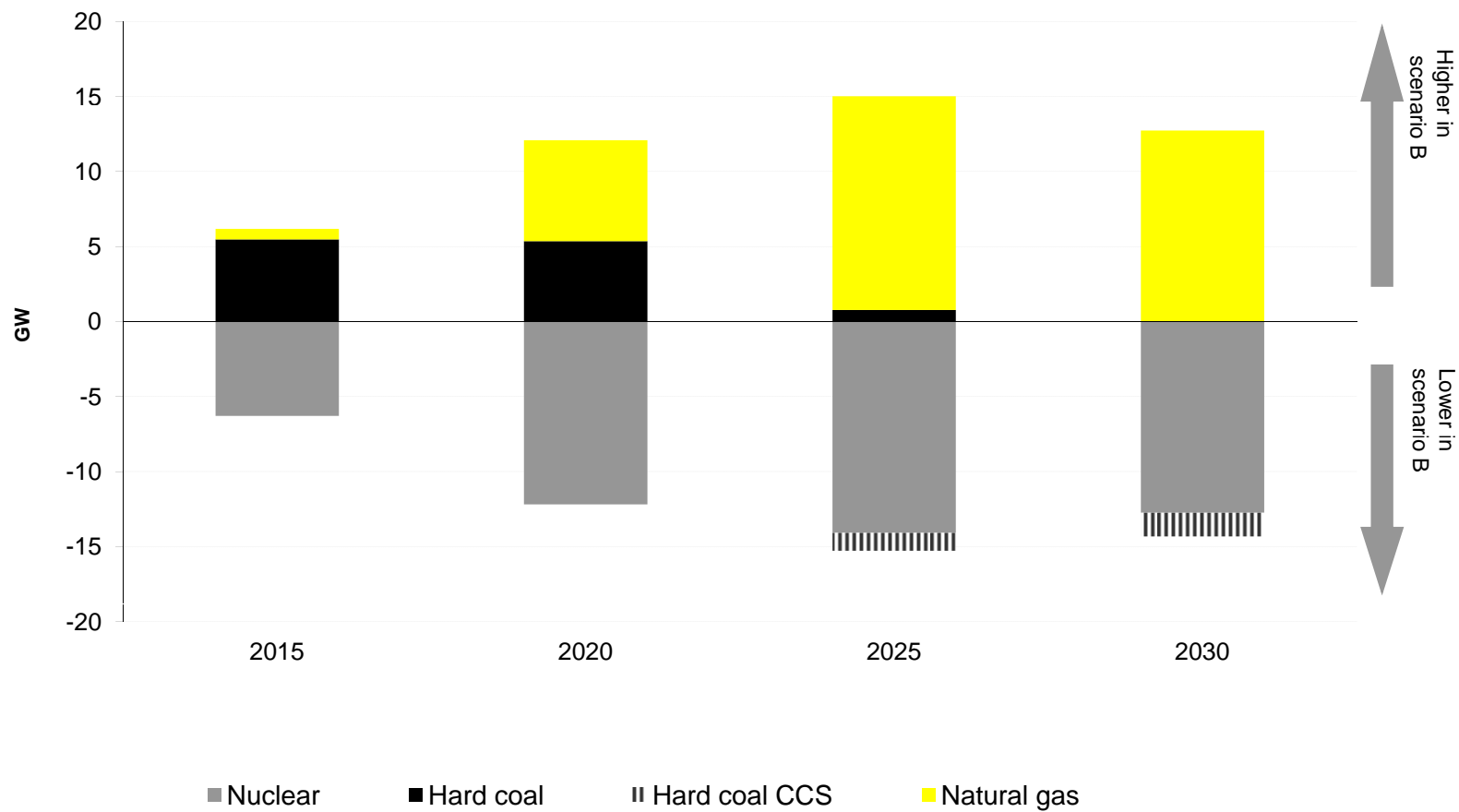
Power plant capacity (gross, installed), GW



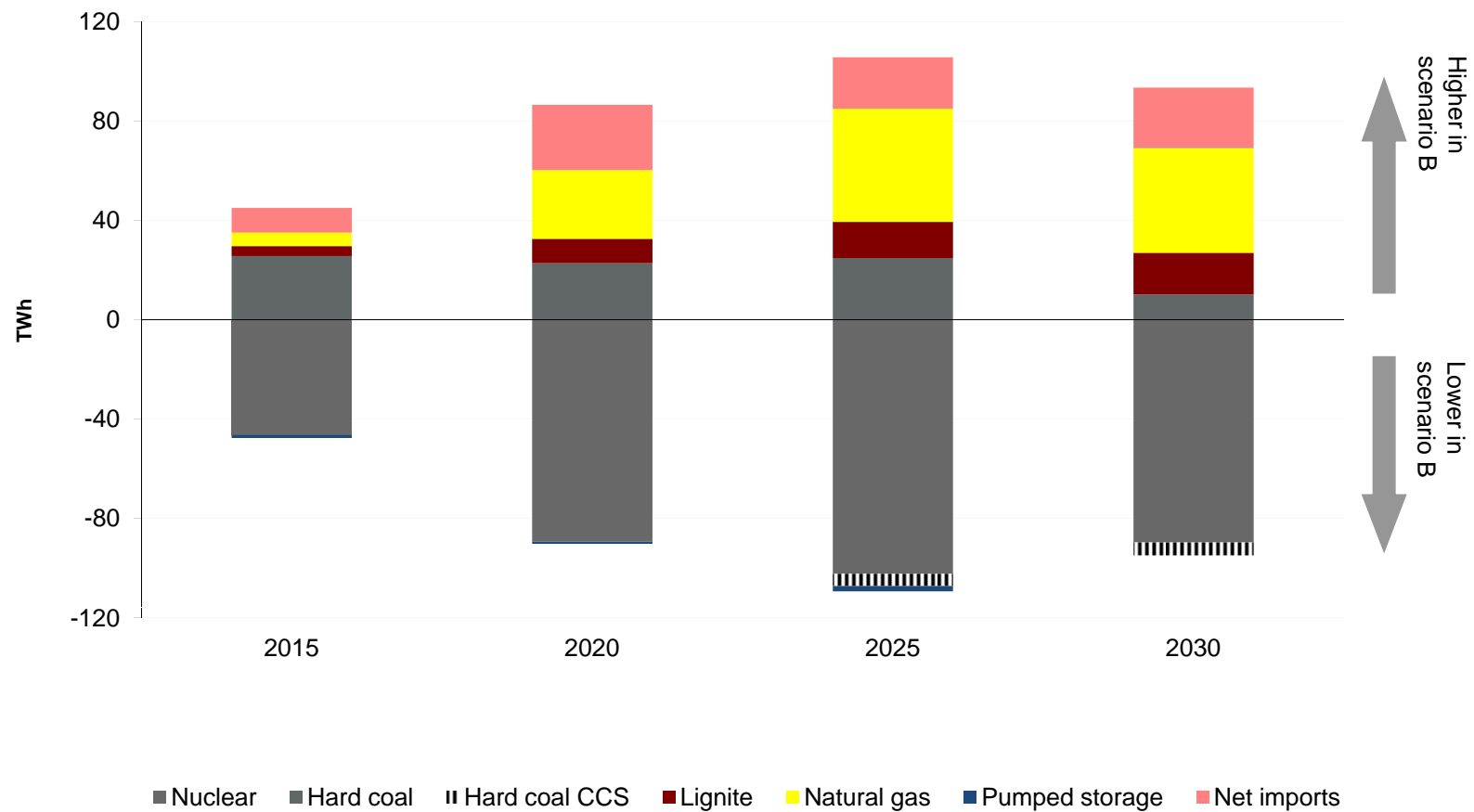
Gross electricity generation [TWh]



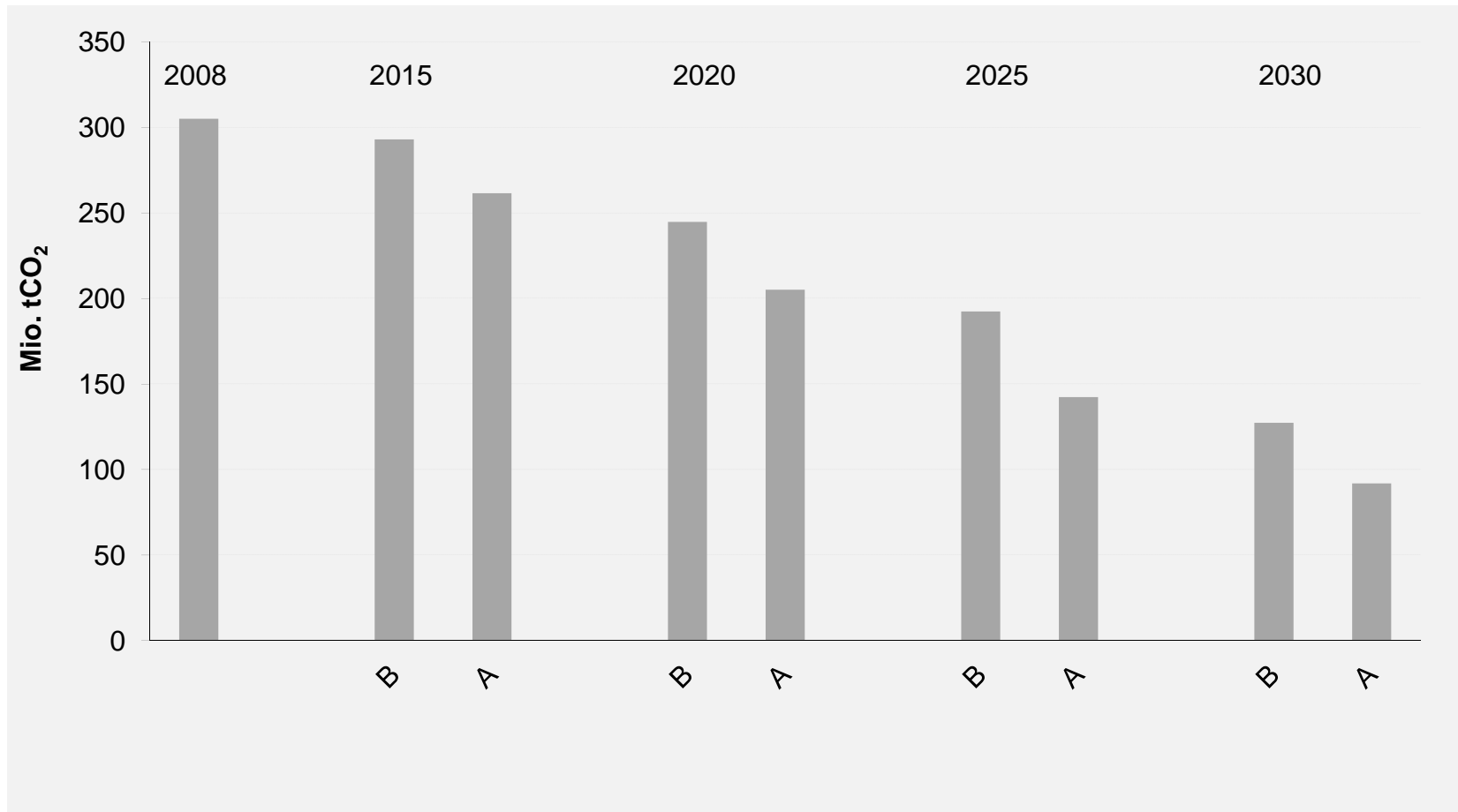
Differences in installed capacities betw. scenarios, GW



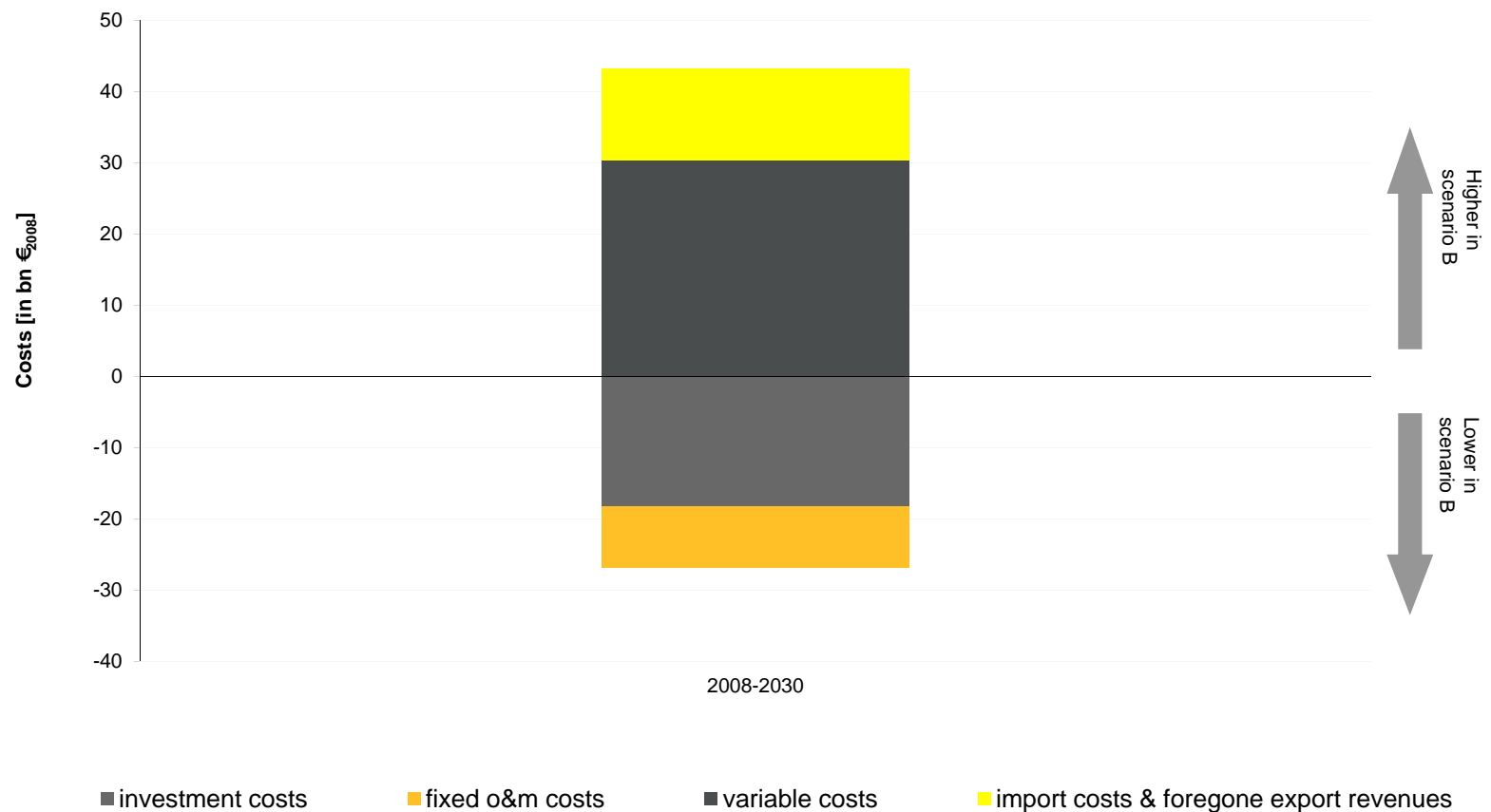
Differences in electricity generation betw. scenarios, TWh



CO₂-emissions in electricity generation [Mio. t CO₂]



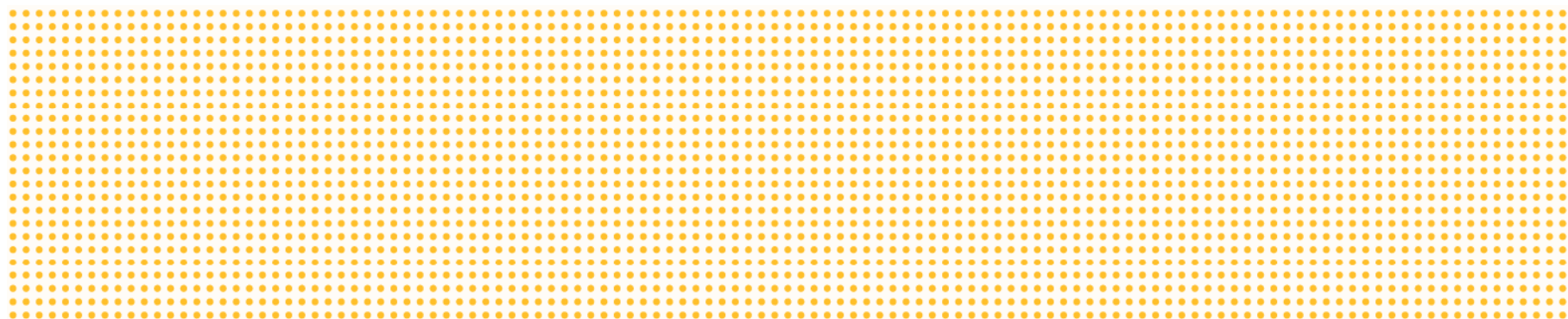
Accumulated (undiscounted) system cost increase through NUCLEAR phase-out: 16 bn €₂₀₀₈



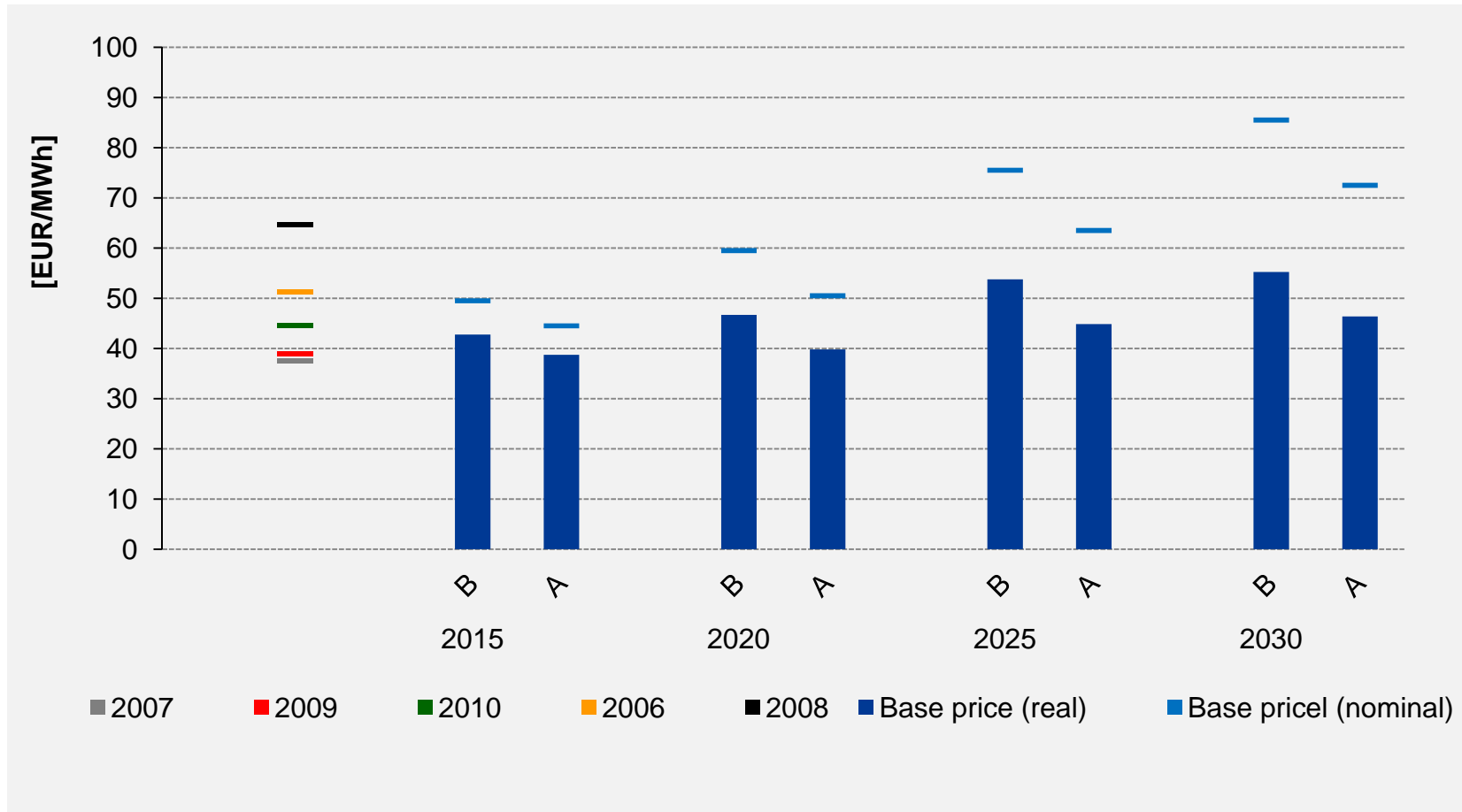


**Thank you for your audience.
Questions and comments welcome!**

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Electricity base prices, real and nominal, [$\text{€}_{2008}/\text{MWh}$, $\text{€}/\text{MWh}$]



(2006-2010 historical data from EEX)

