Nuclear Energy as an Engine for Energy Abundance

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WORLD NUCLEAR ASSOCIATION
Celebrating 25 Years

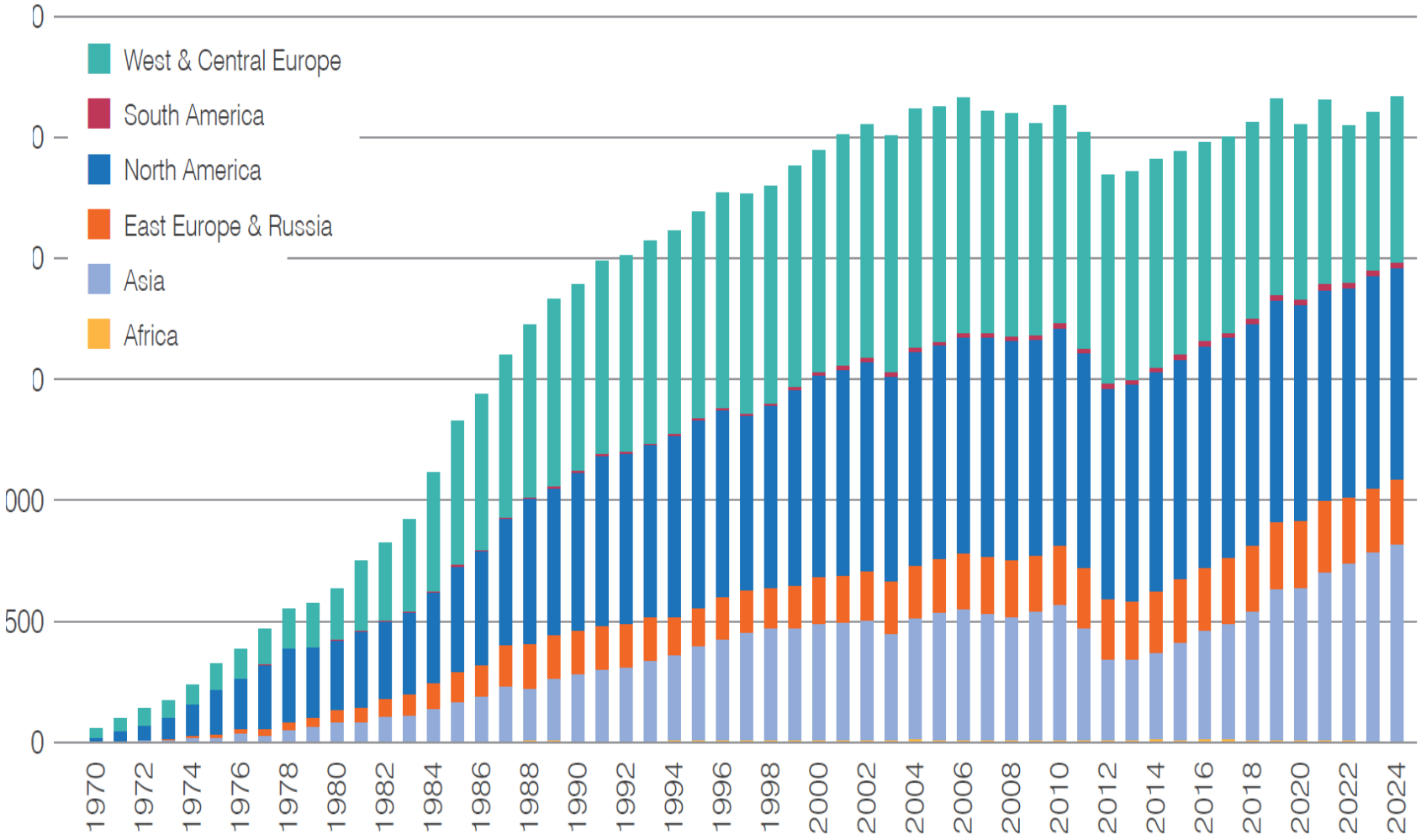
Nuclear is the 2nd largest source of low carbon electricity
The 1st in OECD countries

438

OPERABLE
REACTORS
400,680 MWe

79

REACTORS UNDER
CONSTRUCTION
80,106 MWe



World Nuclear Association and IAEA Power Reactor Information Service (PRIS)

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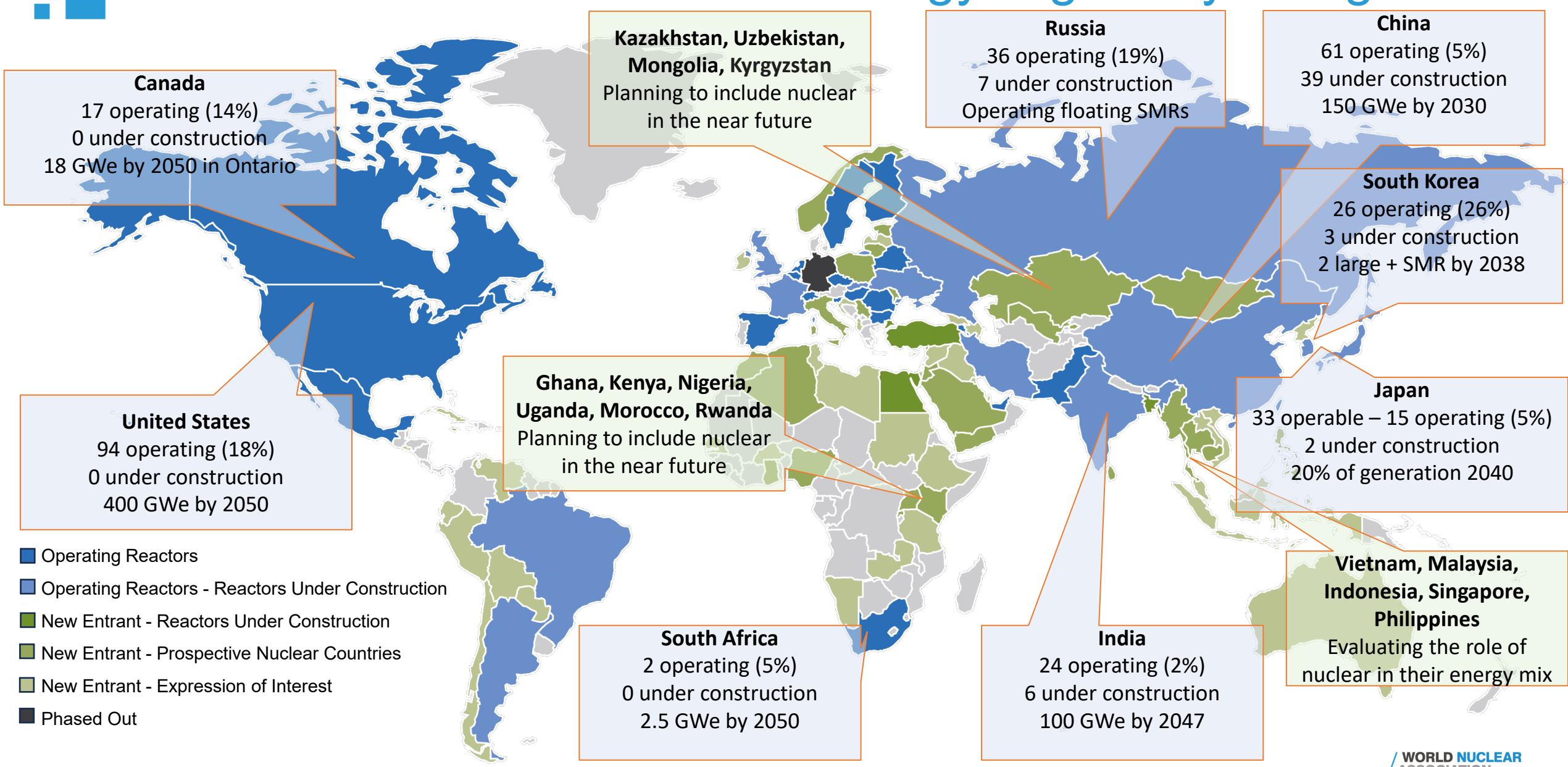
The essential role of nuclear energy is globally recognized



China
61 operating (5%)
39 under construction
150 GWe by 2030

Bangladesh
0 operating (0%)
2 under construction
7.5 GWe by 2050

India
24 operating (2%)
6 under construction
100 GWe by 2047

Japan
33 operable – 15 operating (5%)
2 under construction
20% of generation 2040

South Korea
26 operating (30%)
3 under construction
2 large + SMR by 2038

Philippines
1.2 GW by 2032
2.4 GW by 2035
4.8 GW by 2050

Vietnam
4 GW by 2034
14 GW by 2050

Thailand
600 MW by 2037

Indonesia
8 GW by 2035
21 GW by 2050
50-60 GW by 2060

Sweden
6 operating (40%)
0 under construction
2 by 2035 + 10 by 2045

United Kingdom
9 operating (15%)
2 under construction
24GW new by 2050

Belgium
2 operating (35%)
0 under construction

France
56 operating (70%)
1 under construction
6 (+8) new by 2050

Spain
7 operating (21%)
0 under construction
Full Shutdown 2035

Switzerland
4 operating (40%)
0 under construction
Policy Review

Finland
5 operating (33%)
0 under construction

Czech Republic
6 operating (33%)
0 under construction
1 by 2035 + 3 new

Netherlands
1 operating (3%)
0 under construction
2 new

Italy
0 operating (0%)
0 under construction
Policy Review

Estonia
0 operating (0%)
0 under construction
1 SMR

Norway
0 operating (0%)
0 under construction
SMR under consideration

Denmark
0 operating (0%)
0 under construction
Policy Review

Belarus
2 operating (14%)
0 under construction

Poland
0 operating (0%)
0 under construction
3 by 2035

Slovakia
5 operating (50%)
1 under construction
1 new

Türkiye
0 operating (0%)
4 under construction
8 new

Russia
36 operating (19%)
4 under construction
14 new

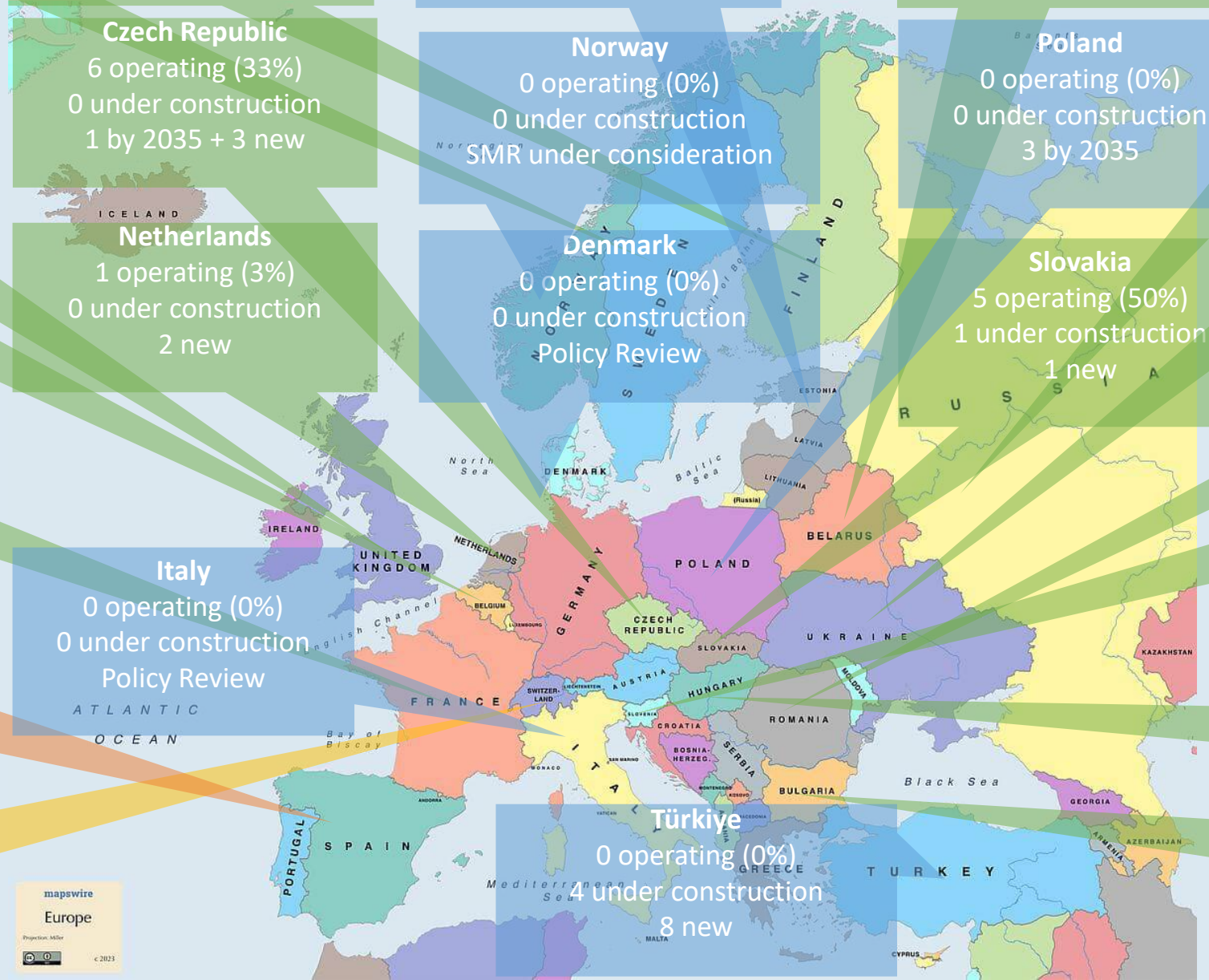
Ukraine
15 operating (50%)
2 under construction
9 new

Romania
2 operating (20%)
0 under construction
2 by 2035 + 6 SMRs

Slovenia
1 operating (41%)
0 under construction
1 new

Hungary
4 operating (50%)
2 under construction
2 new

Bulgaria
2 operating (33%)
0 under construction
2 by 2036

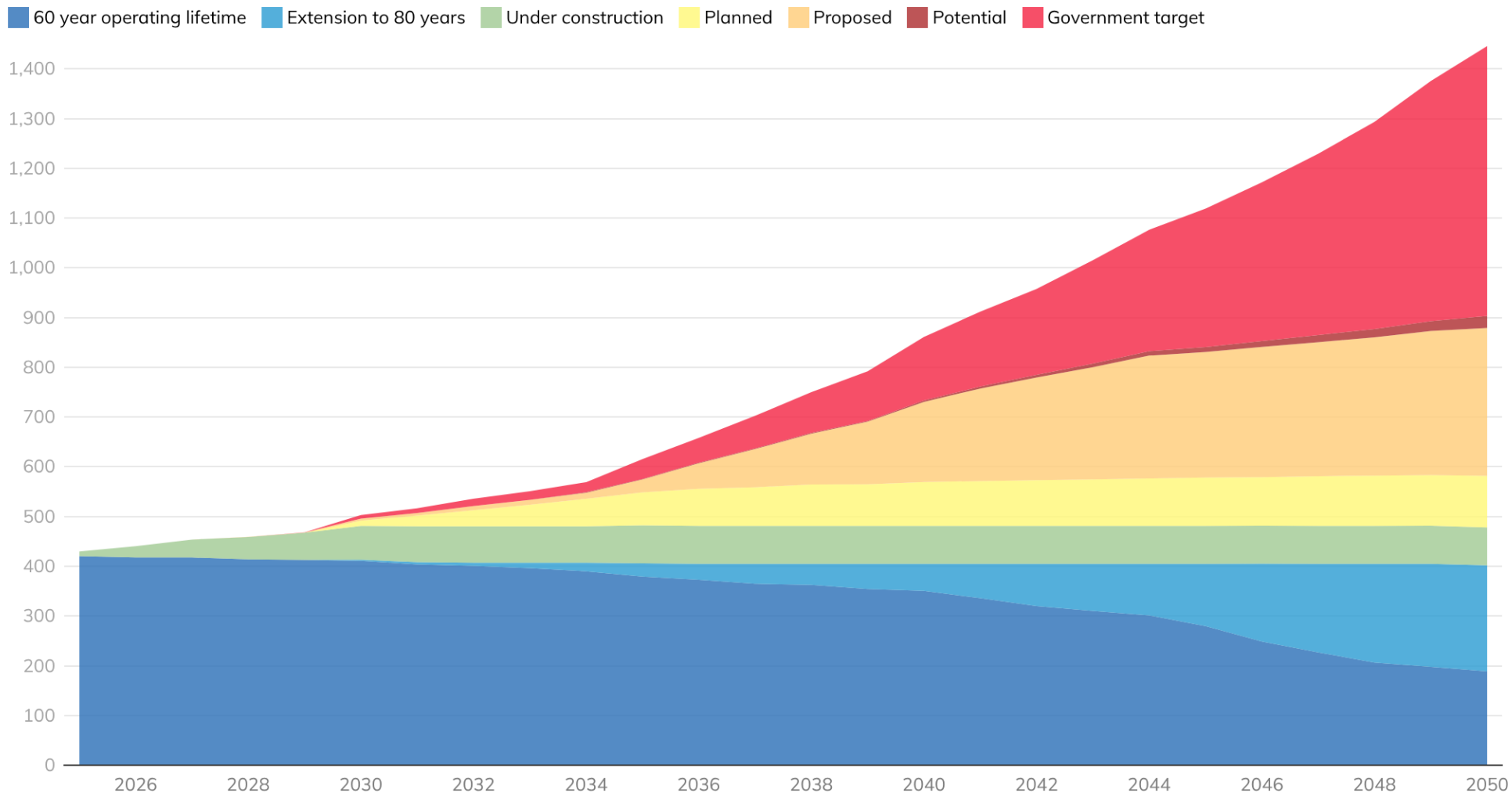


38 Governments have committed to tripling global nuclear capacity by 2050

50 Countries have included nuclear in their energy plans

Total capacity in 2050 would reach 1446 GWe by 2050, surpassing the approximately 1200 GWe target established under the *Declaration to Triple Nuclear Energy,* if national goals and targets are met.

World Nuclear Outlook Report, Jan 2026



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The 542 GWe of additional capacity associated with government targets beyond projects planned, proposed or potential is not yet supported by identified projects, and the level of commitment through policy or other governmental measures varies significantly from country to country.

World Nuclear Outlook Report, Jan 2026

Figure 3.CH1 Projection of future nuclear capacity in China

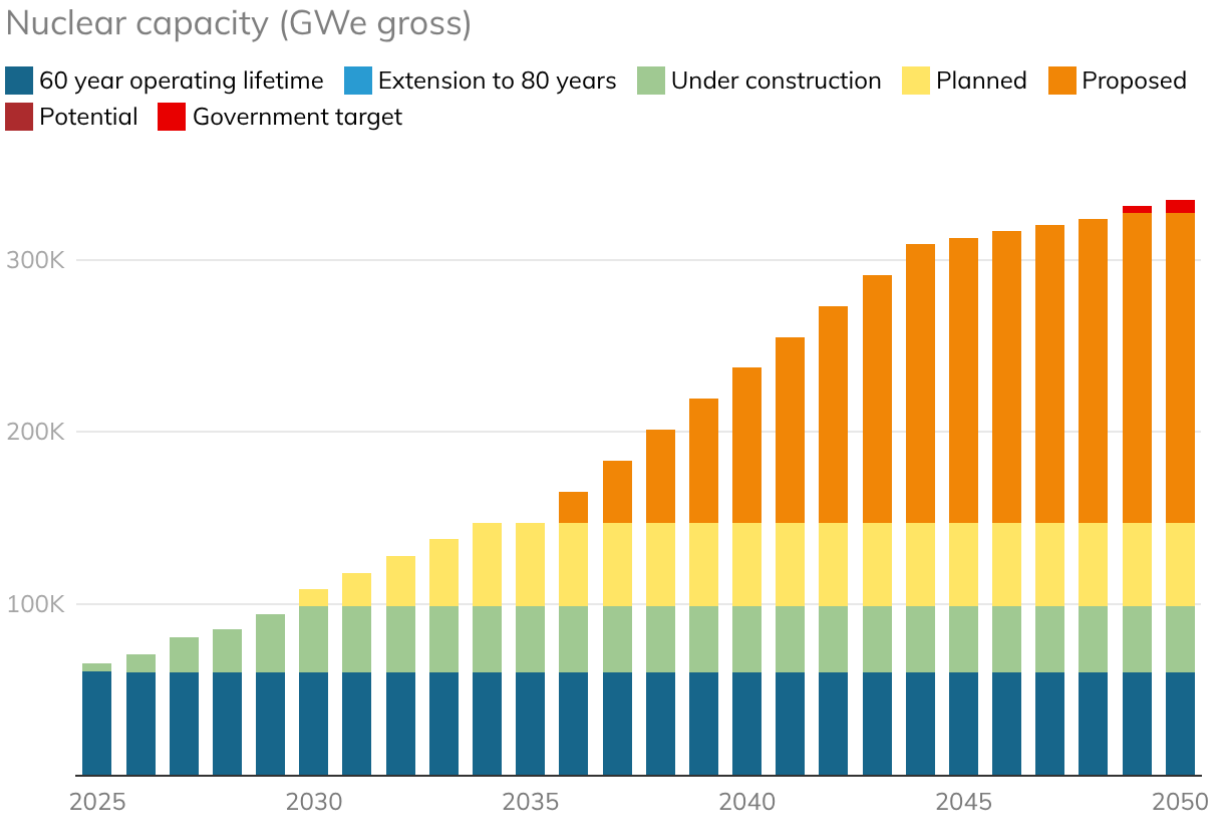
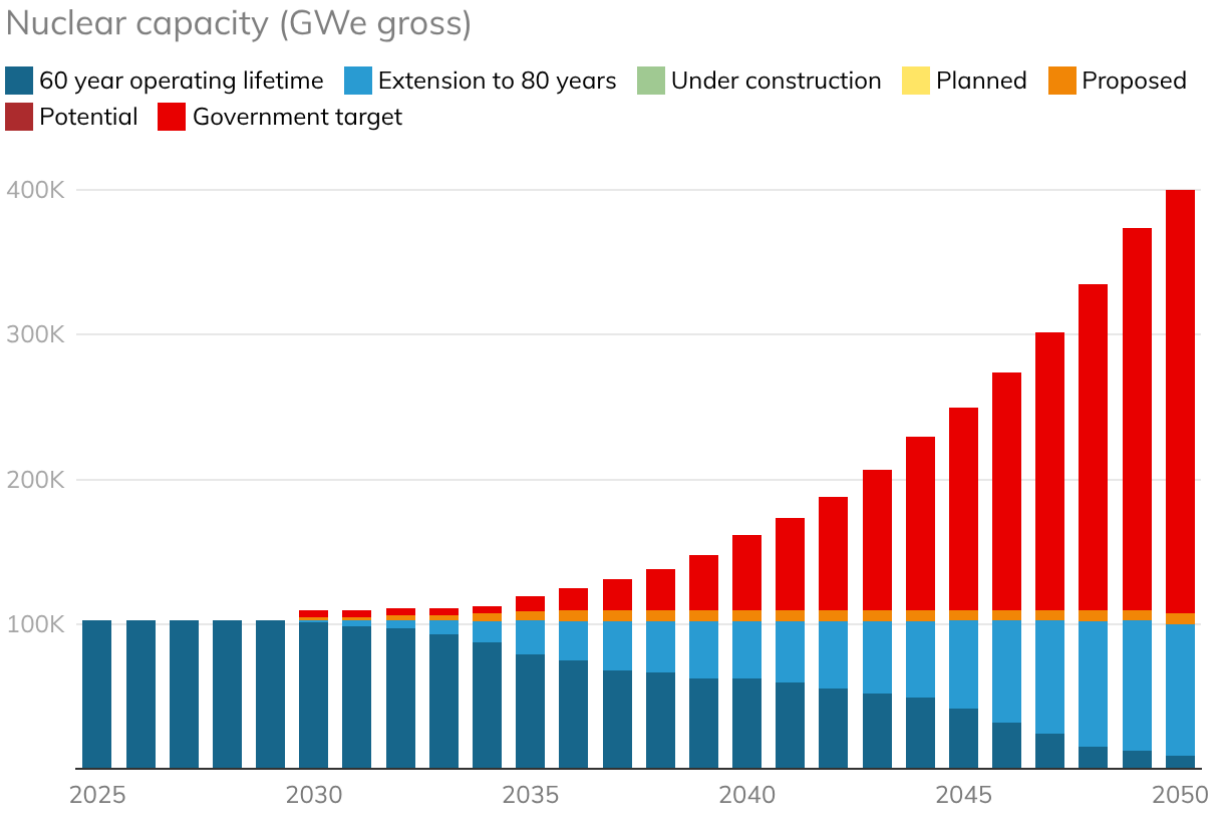
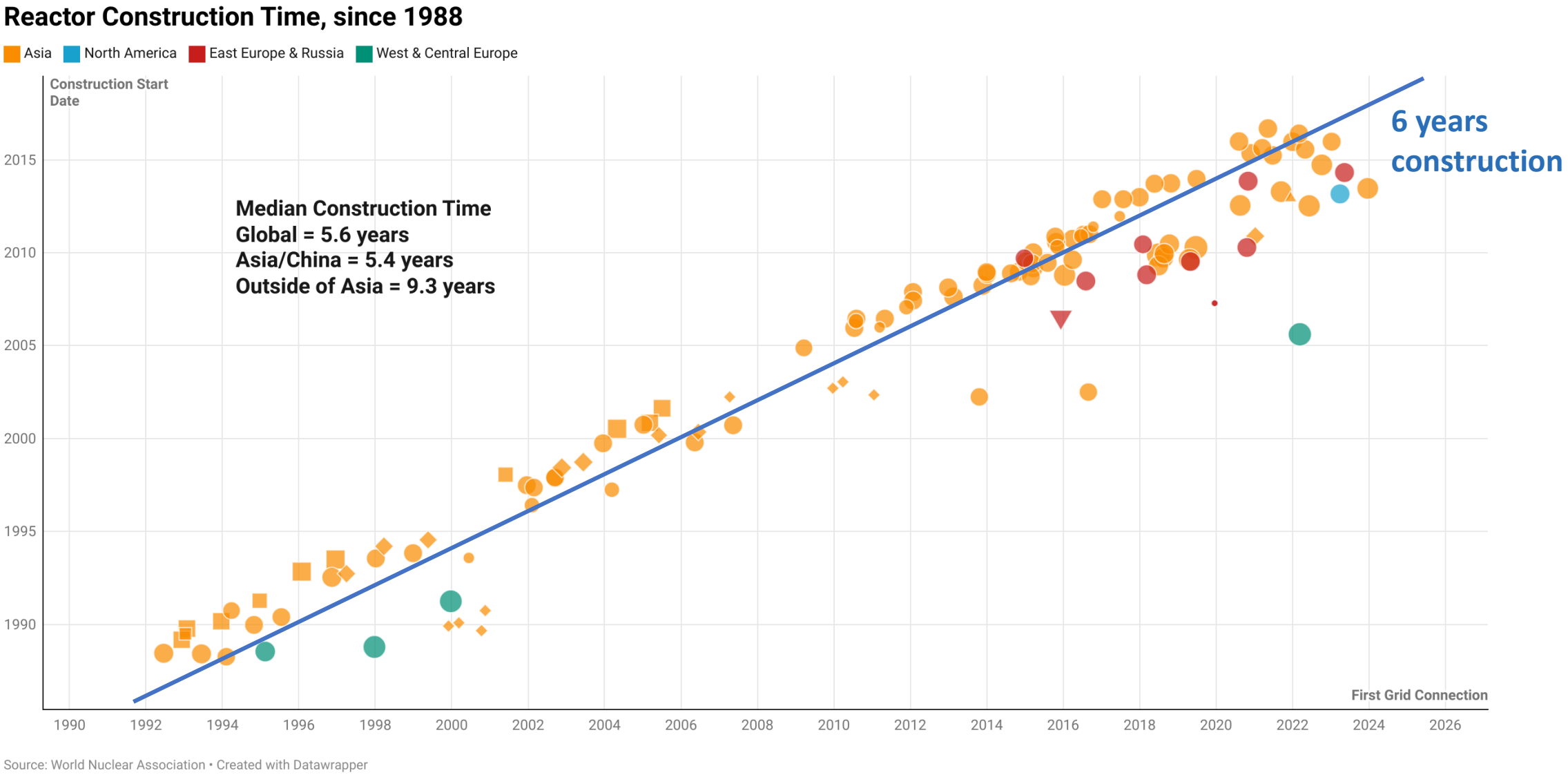


Figure 3.US1 Projection of future nuclear capacity in the USA



Construction times of reactors are often overestimated



The NOAK overnight capital cost of nuclear energy is often overestimated

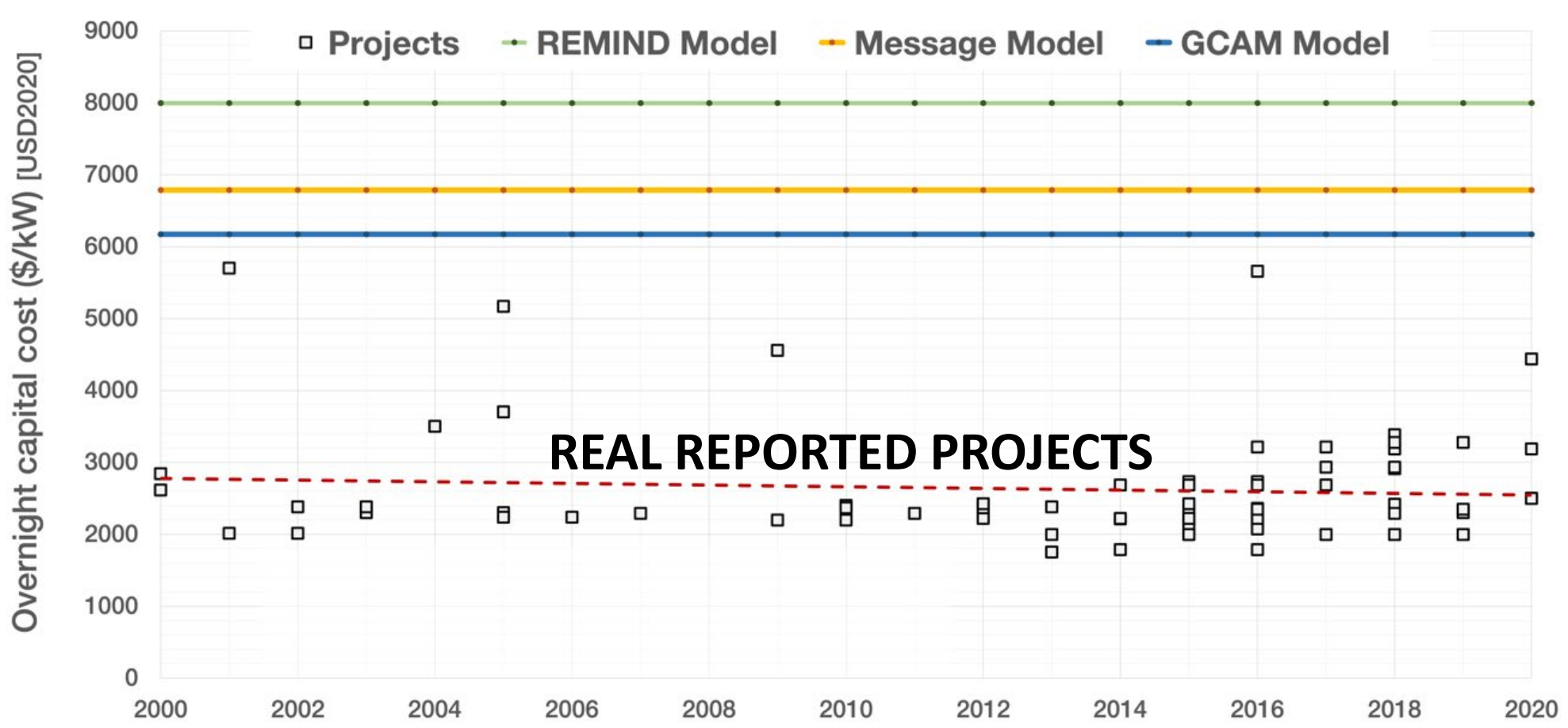


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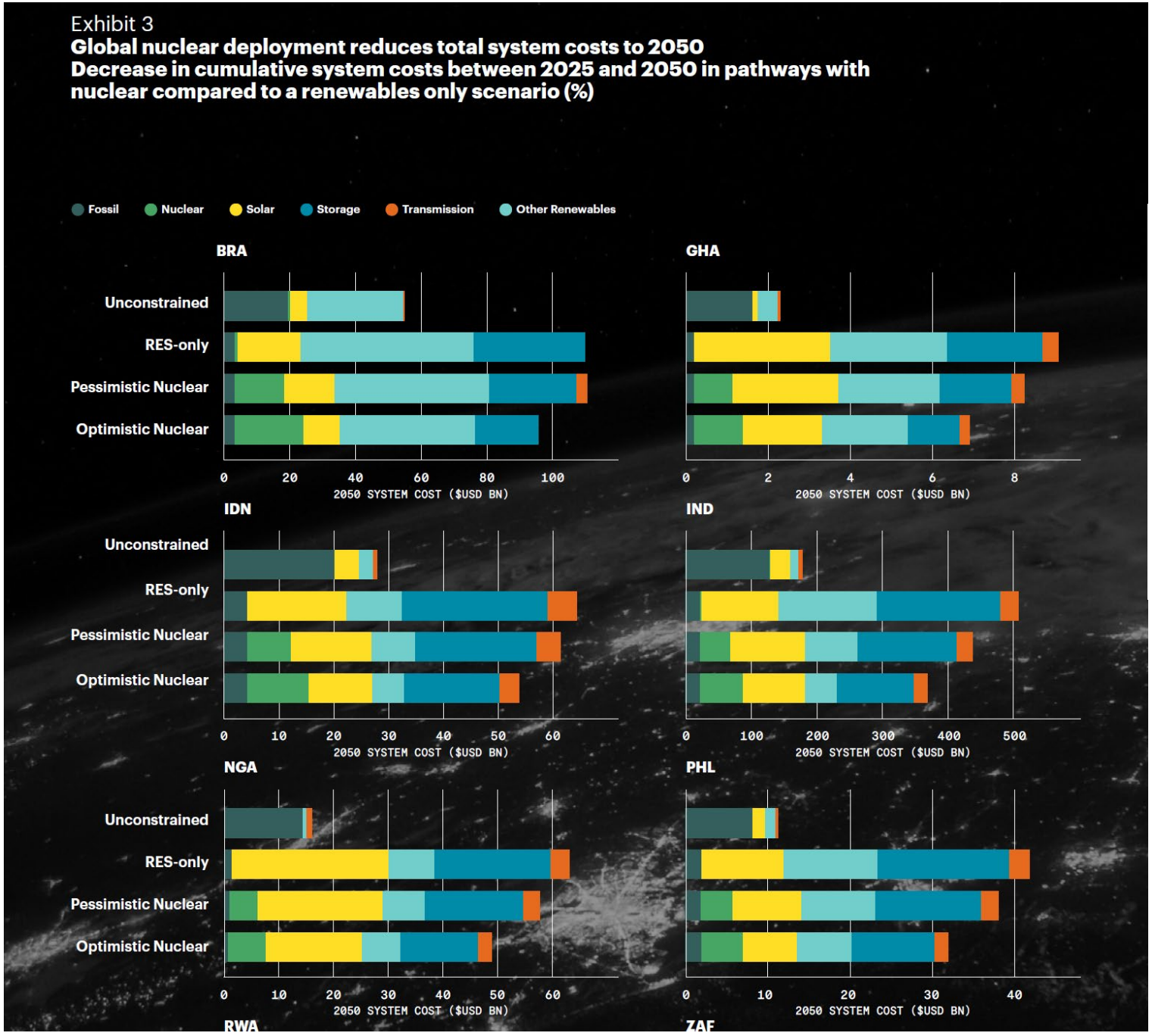
Exhibit 3

Global nuclear deployment reduces total system costs to 2050

Decrease in cumulative system costs between 2025 and 2050 in pathways with nuclear compared to a renewables only scenario (%)



Scenario	Description
Unconstrained	A control case with no emissions limits. This scenario does not account for future carbon pricing, fossil fuel volatility, or the environmental and social externalities associated with the different generation technologies.
RES-only	Rapid decarbonisation using only renewables and storage.
Pessimistic Nuclear	Allows for nuclear expansion assuming "worst case" cost curves.
Optimistic Nuclear	Allows for nuclear expansion assuming "expected" cost curves.

Source: The Role of Nuclear Energy in Powering Universal Energy Abundance in Emerging Economies, Rockefeller Foundation, December 2025

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SMRs are an attractive complement to GW-size reactors

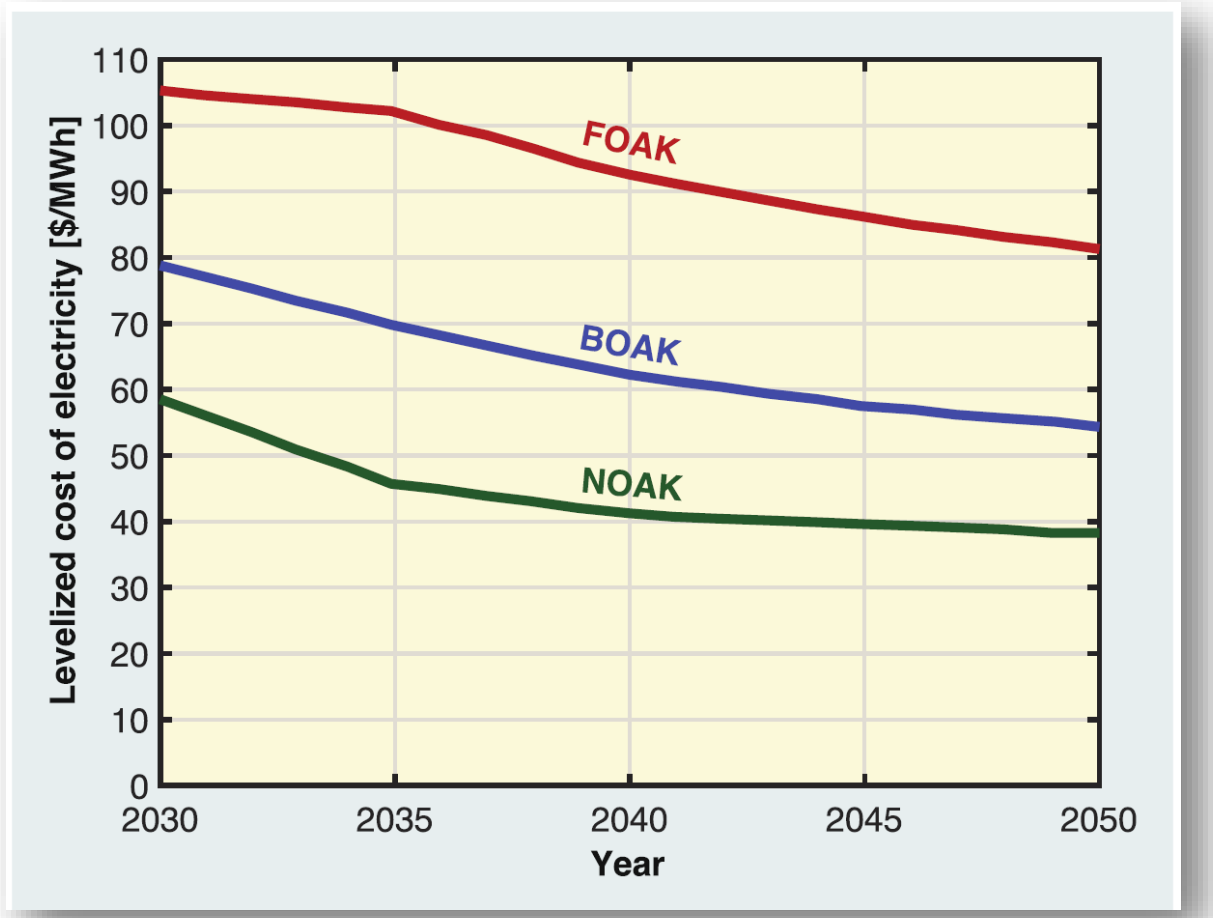


Figure 27. FOAK, NOAK, and BOAK cost projections with 60-year capital recovery for 300-MW small modular reactors based on the technology-neutral market-based scenario of the National Renewable Energy Laboratory's ATB (NREL, 2024c). FOAK: first of a kind; NOAK: Nth of a kind; BOAK: between FOAK and NOAK; ATB: Annual Technology Baseline.

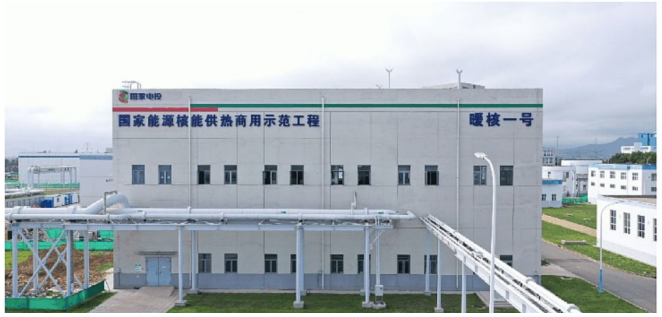
Source: Understanding the Full System Costs of the Electricity System, UNECE, 2025

Nuclear can help decarbonize the entire economy

China's first commercial nuclear district heating scheme expands

Thursday, 21 November 2024

China's Haiyang nuclear power plant in Shandong province has begun its sixth heating season, covering an area of nearly 13 million square metres - 500,000 square metres more than last year.



Korean SMR-powered container ship design revealed

Thursday, 13 February 2025

South Korea's HD Korea Shipbuilding & Offshore Engineering has unveiled a nuclear-powered container ship model utilising small modular reactor technology.

A rendering of a 15,000 TEU-class SMR-powered containership (Image: HD KSOE)

'Megatonne' CO2 capture plant plan for Sizewell C

Monday, 13 June 2022

A consortium hoping to use heat from the UK's proposed Sizewell C nuclear power station to capture carbon dioxide from the air on a giant scale say they have successfully completed a research and development project and are ready to construct a demonstration plant.

SMRs considered for Indonesian fertiliser plant

Friday, 19 May 2023

A collaboration between Danish and Indonesian companies will study the operational and regulatory conditions for constructing an ammonia production facility in Indonesia powered by Copenhagen Atomics' small and modular thorium molten salt reactors.

The signing of the MoU in Copenhagen (Image: Copenhagen Atomics)

Chinese industrial nuclear steam project commissioned

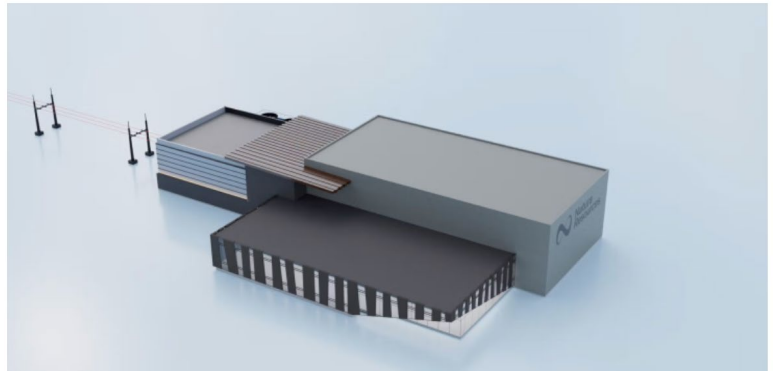
Thursday, 20 June 2024

China's first industrial-use nuclear energy steam supply project, at the Tianwan nuclear power plant in China's Jiangsu province, has entered operation following commissioning tests. The project will supply steam to a nearby petrochemical plant.

Texas partnership evaluates SMR use for water desalination

Wednesday, 19 February 2025

Natura Resources has entered into a memorandum of understanding with Texas Tech University and Abilene Christian University to evaluate integrating Natura's molten salt small modular reactor technology with water desalination systems.



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world nuclear news

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Established 2003

net zero nuclear