

Prospects of Advanced Nuclear Technology Deployment

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APERC 2026 Annual Conference

**WORLD NUCLEAR
ASSOCIATION**

Celebrating **25** Years

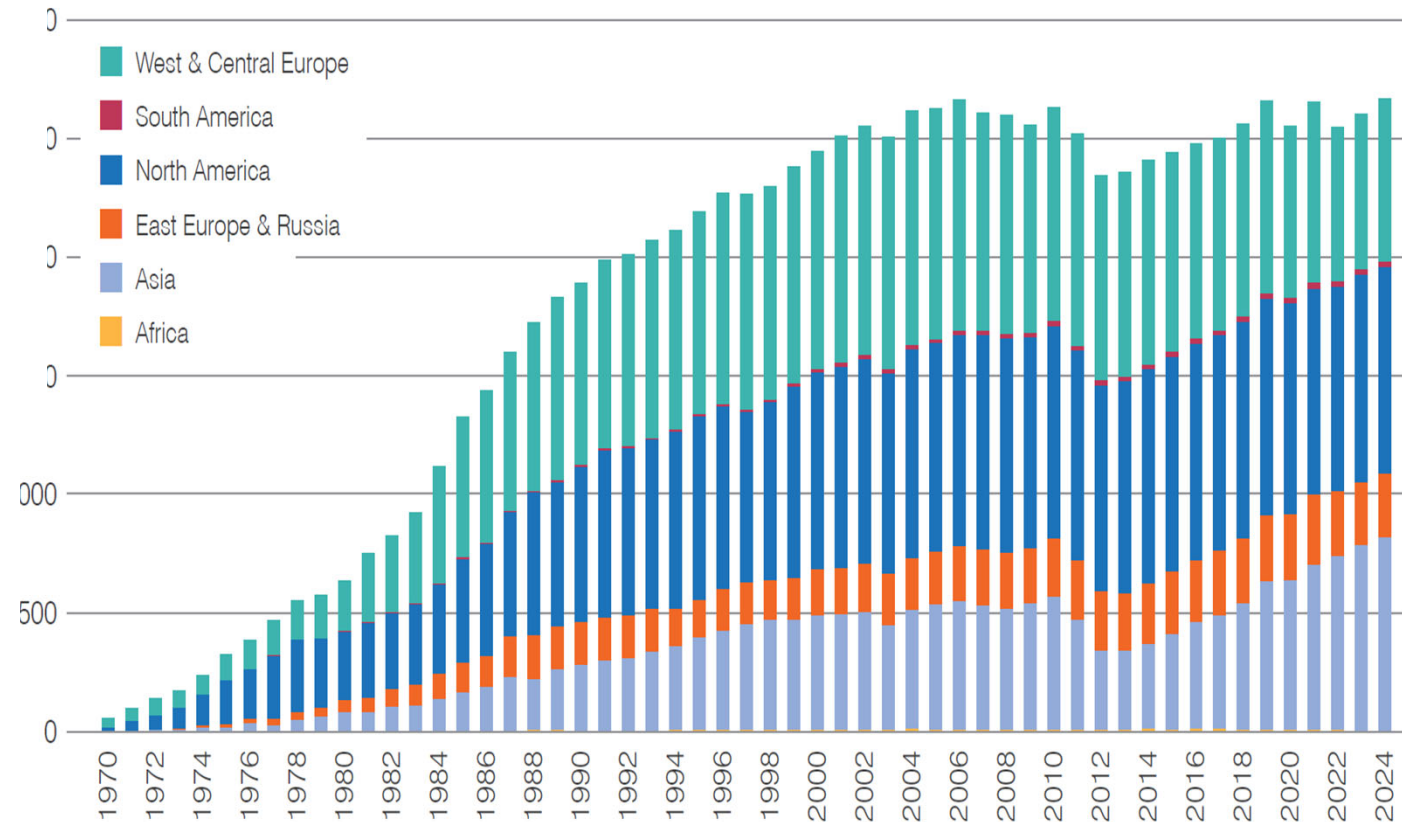
Nuclear is the 2nd largest source of low carbon electricity The 1st in OECD countries

438 

OPERABLE
REACTORS
400,680 MWe

79 

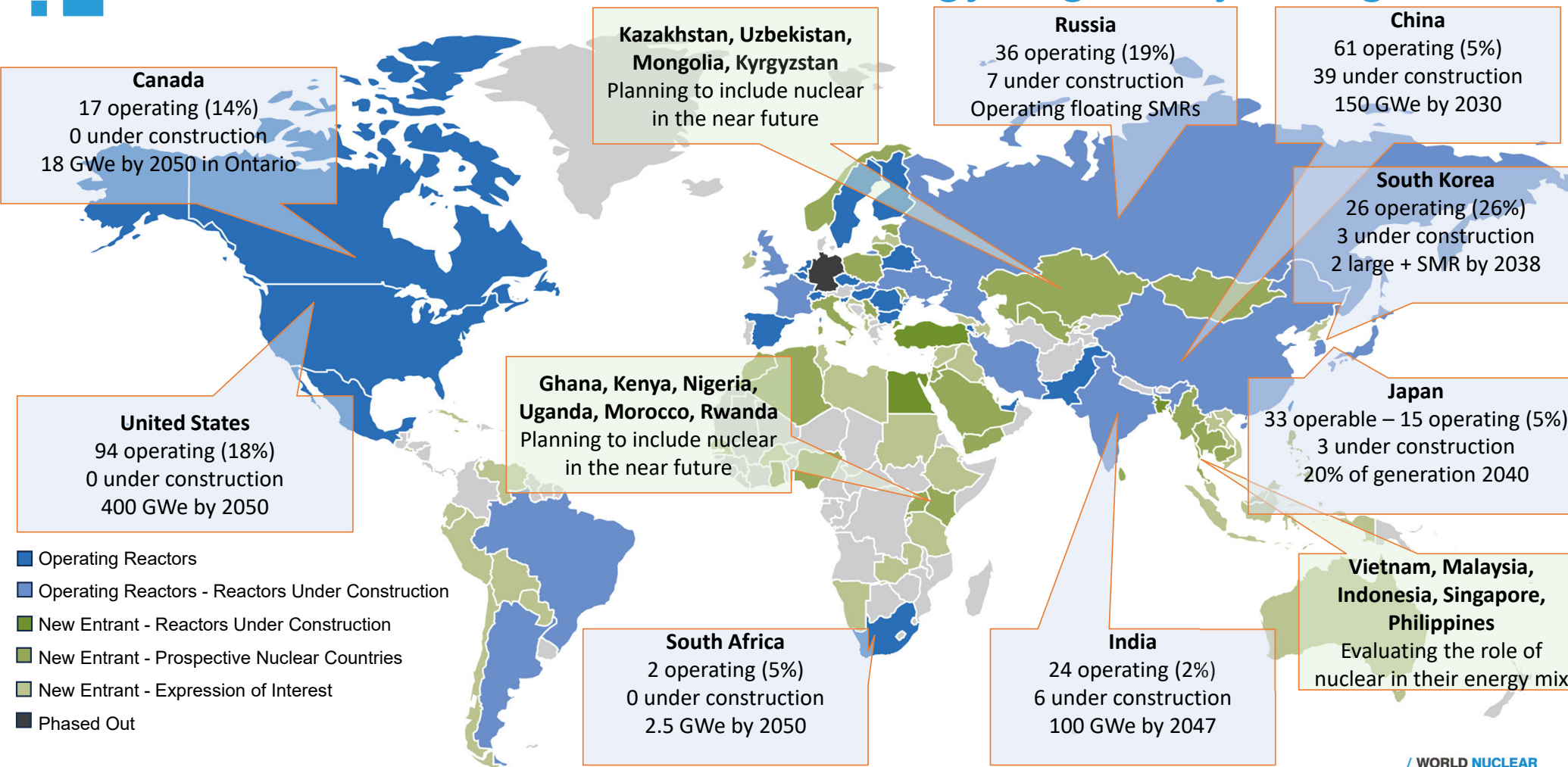
REACTORS UNDER
CONSTRUCTION
80,106 MWe

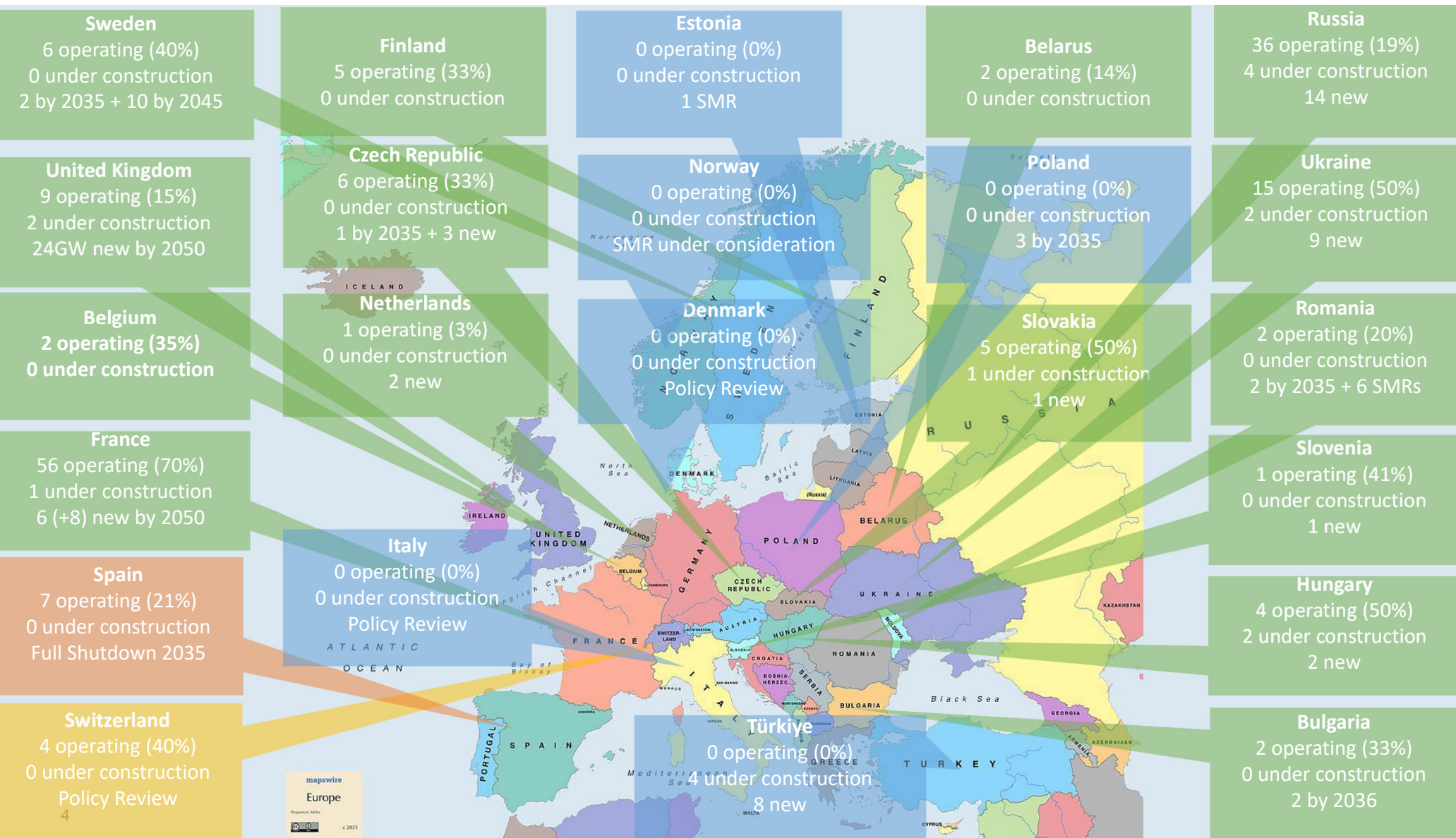


World Nuclear Association and IAEA Power Reactor Information Service (PRIS)



The essential role of nuclear energy is globally recognized





مضاعفة إنتاج الطاقة النووية ثلاث مرات بحلول عام 2050 الإمارات العربية المتحدة، ديسمبر 2023

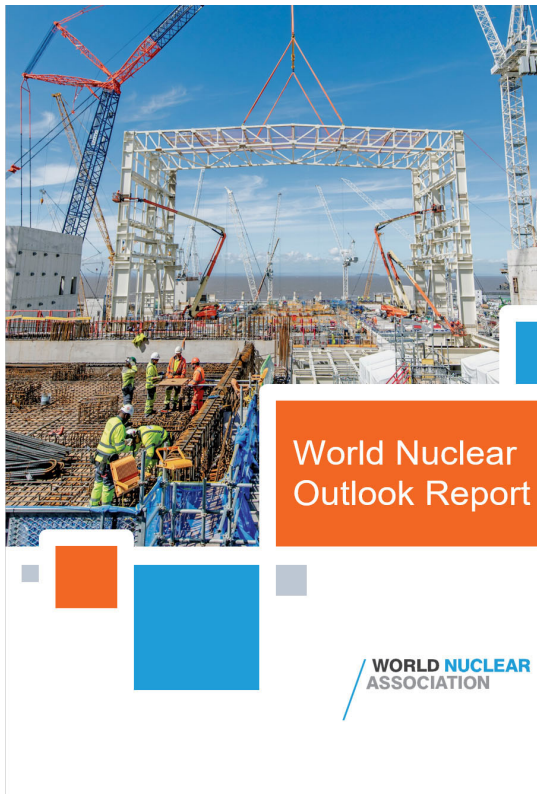
TRIPLING NUCLEAR ENERGY BY 2050

United Arab Emirates, December 2023



38 Governments have committed to tripling global nuclear capacity by 2050
50 Countries have included nuclear in their energy plans

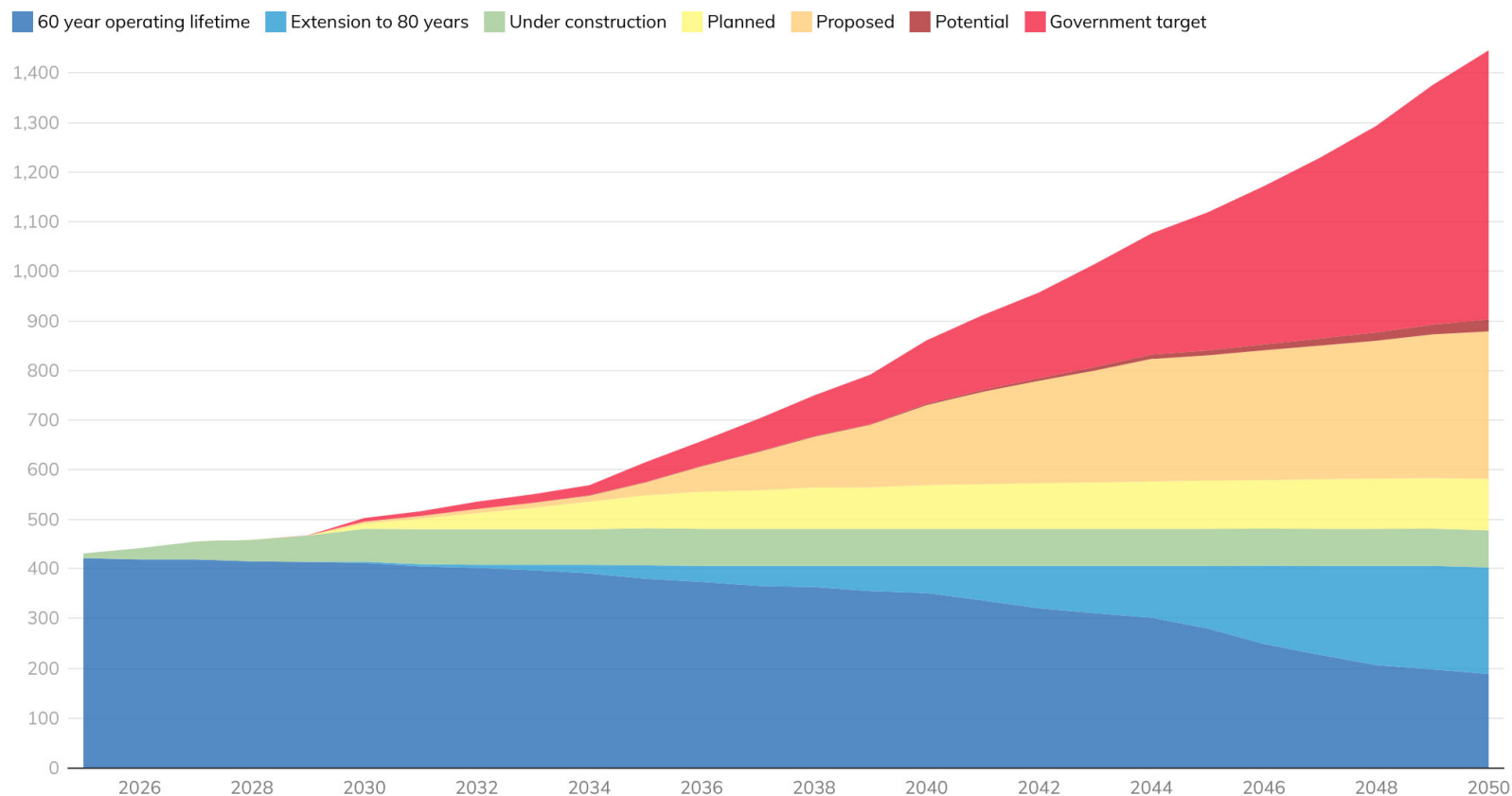
■ ■ World Nuclear Outlook Report released at Davos 2026



- Provides a summary of the current status of nuclear energy worldwide, the technology options available and current and future applications
- Reviews national policies and statements from governments, ministers and associated institutions to assess political ambitions and objectives for nuclear energy until 2050.
- Provides an assessment of the national policies collectively, similar in definition to the IEA's Stated Policies Scenario, to act as a base case to track future progress.
- Examines the collective policy goals in the context of the Declaration to Triple Nuclear Energy



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.





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.

Figure 3.CH1 Projection of future nuclear capacity in China

Nuclear capacity (GWe gross)

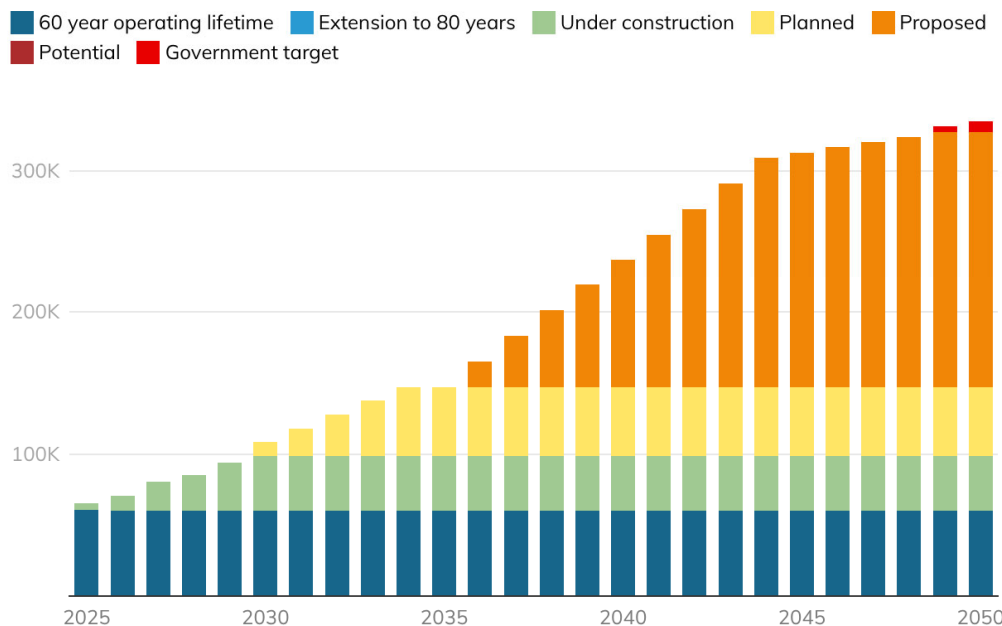
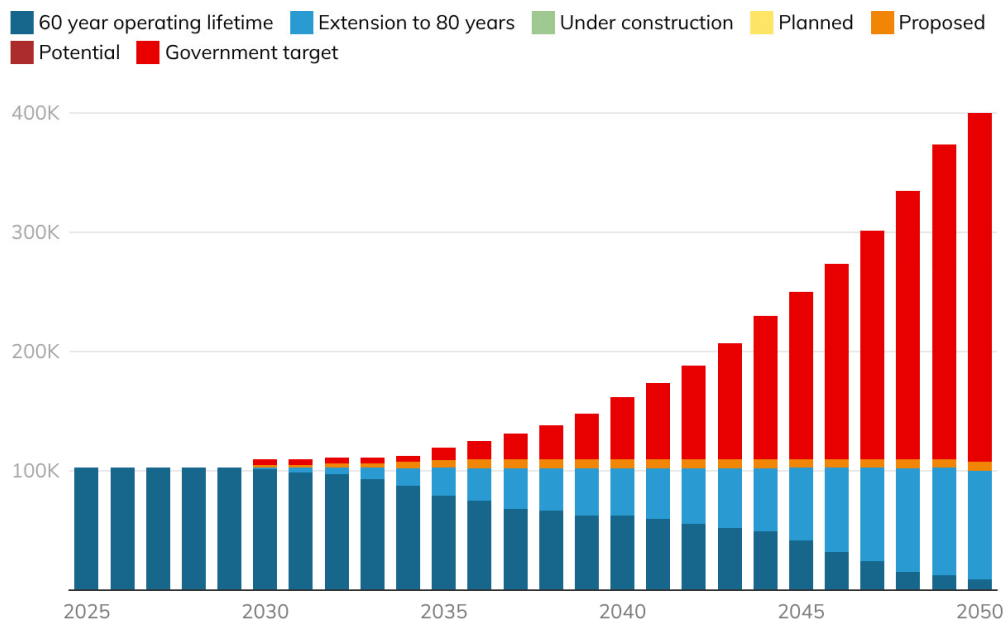


Figure 3.US1 Projection of future nuclear capacity in the USA

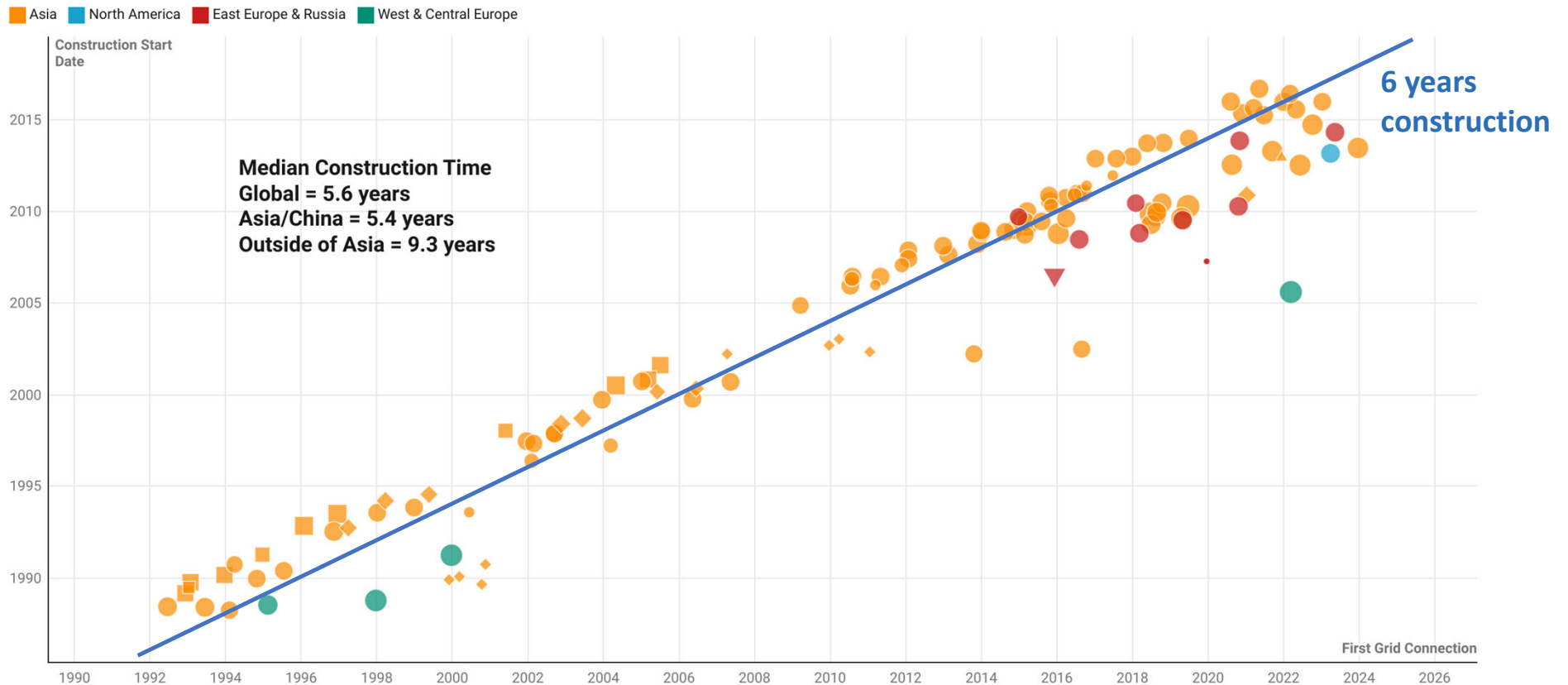
Nuclear capacity (GWe gross)





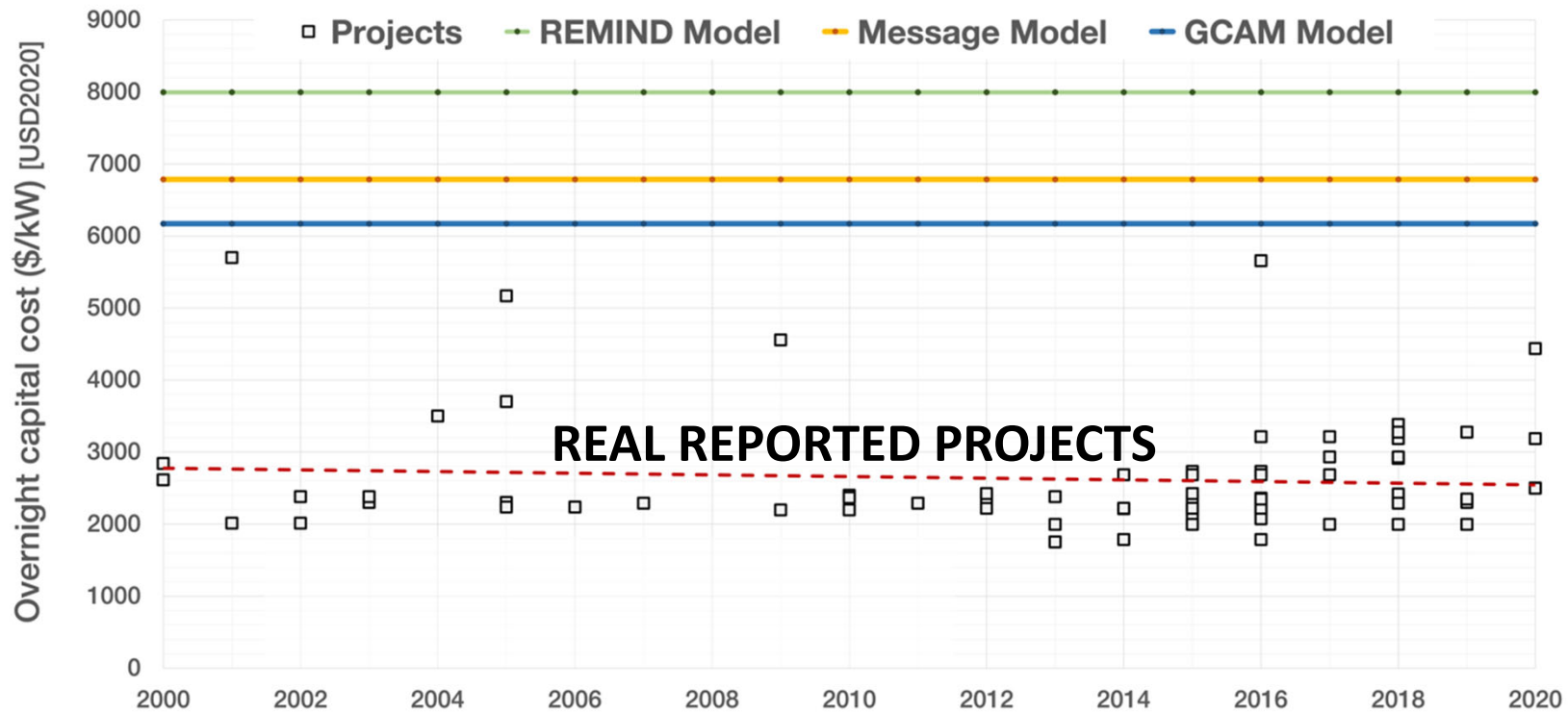
Construction times of reactors are often overestimated

Reactor Construction Time, since 1988

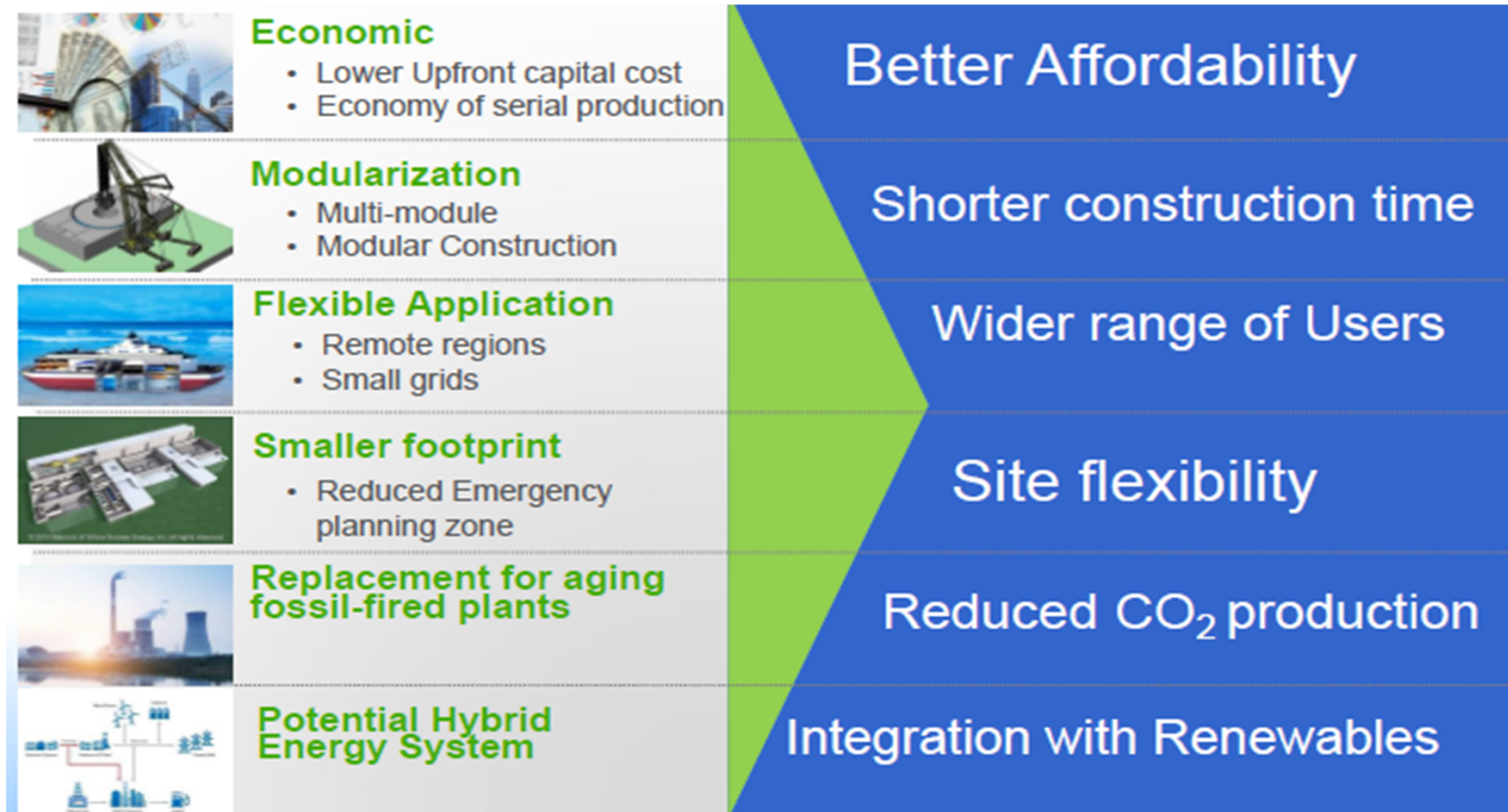


Source: World Nuclear Association • Created with Datawrapper

■ ■ The NOAK overnight capital cost of nuclear energy is often overestimated



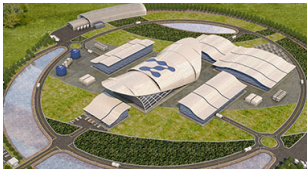
■ ■ SMRs are an attractive complement to GW-size reactors



■ ■ SMR are well suited for cogeneration applications



Академик Ломоносов
KLT-40S – Russia In operation

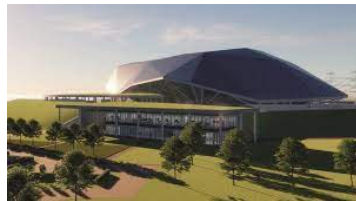


GEH BWRX300, US, 300
MWe BWR, Under
Construction

NuScale VOYGR, US, 77 MWe
PWR, Design Licensed



Nuward, France, 170 MWe
PWR in development



Rolls Royce SMR, UK, 470
MWe PWR,
Under Review



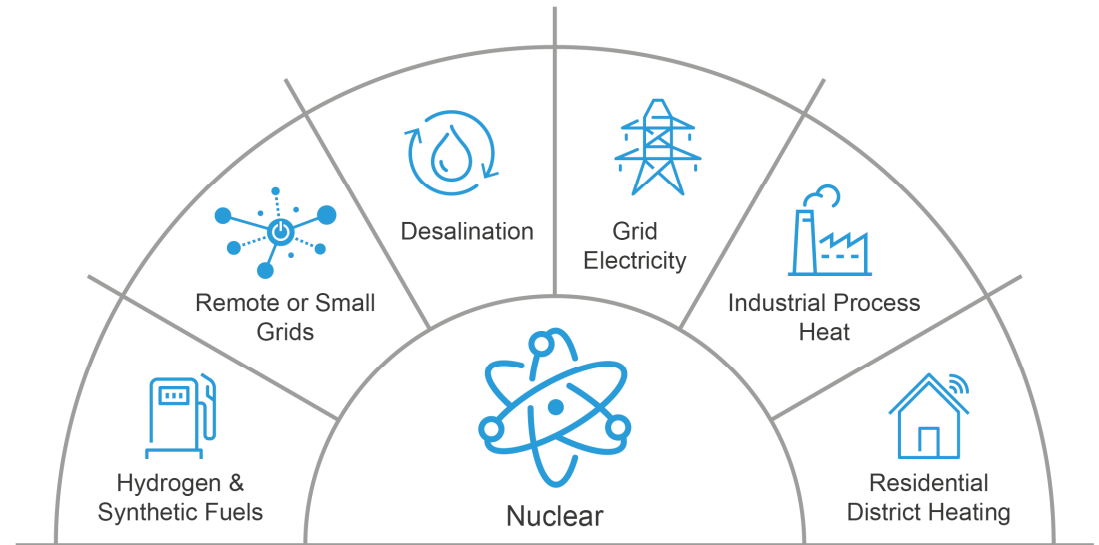
Aurora/Oklo, US
75 MWe Na-cooled Fast
Under Review



Xe-100, X-energy, USA, Canada, UK
80 MWe HTGR Under Development



HTR-PM, China, 2x110
MWe HTGR in operation

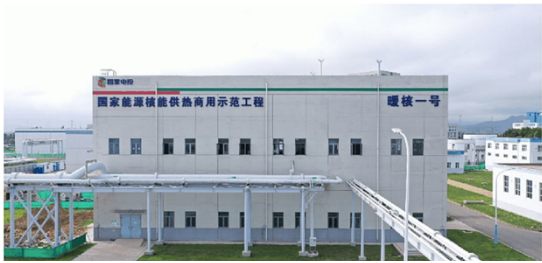


Nuclear offers endless opportunities to decarbonize

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 container ship (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

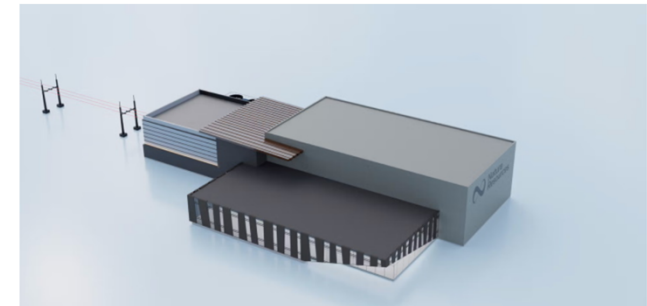
China's first industrial-use nuclear energy steam supply project, at the Tianwan nuclear power plant in China's Jiangsu province, has entered operation following commissioning tests. The project will supply steam to a nearby petrochemical plant.



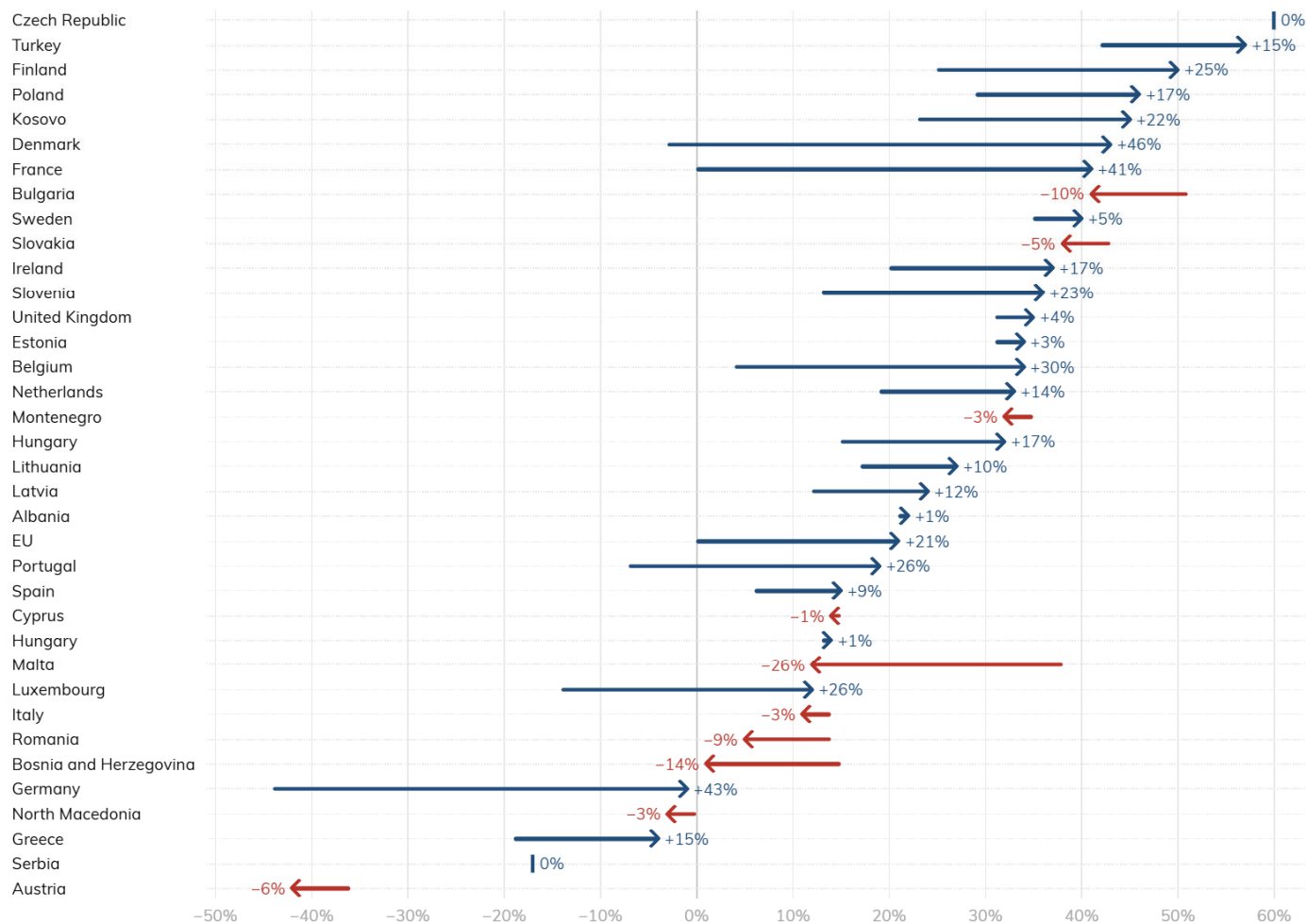
Texas partnership evaluates SMR use for water desalination

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.



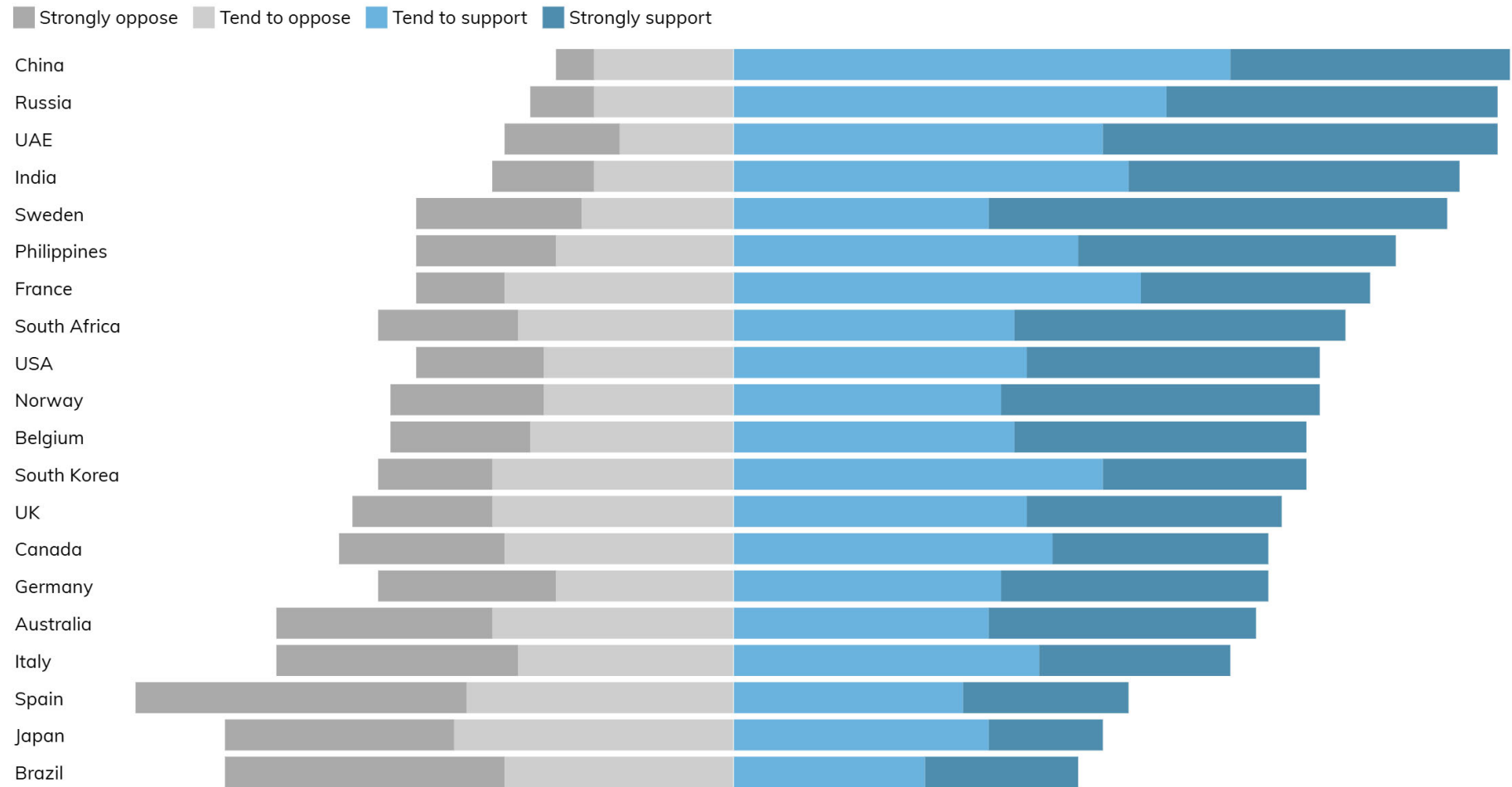
Change in net views among European citizens between 2021 and 2024 on the positive or negative effect of nuclear for energy production



Question asked: Do you think nuclear energy for energy production will have a positive, a negative or no effect on our way of life in the next 20 years?

Source: Special Eurobarometer 557

Support for / opposition towards the use of nuclear energy to generate electricity



Question asked: From what you know about nuclear energy, to what extent, if at all, do you support or oppose using it to generate electricity in your country?

Source: Radiant Energy Group, PACE Index 2023



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