



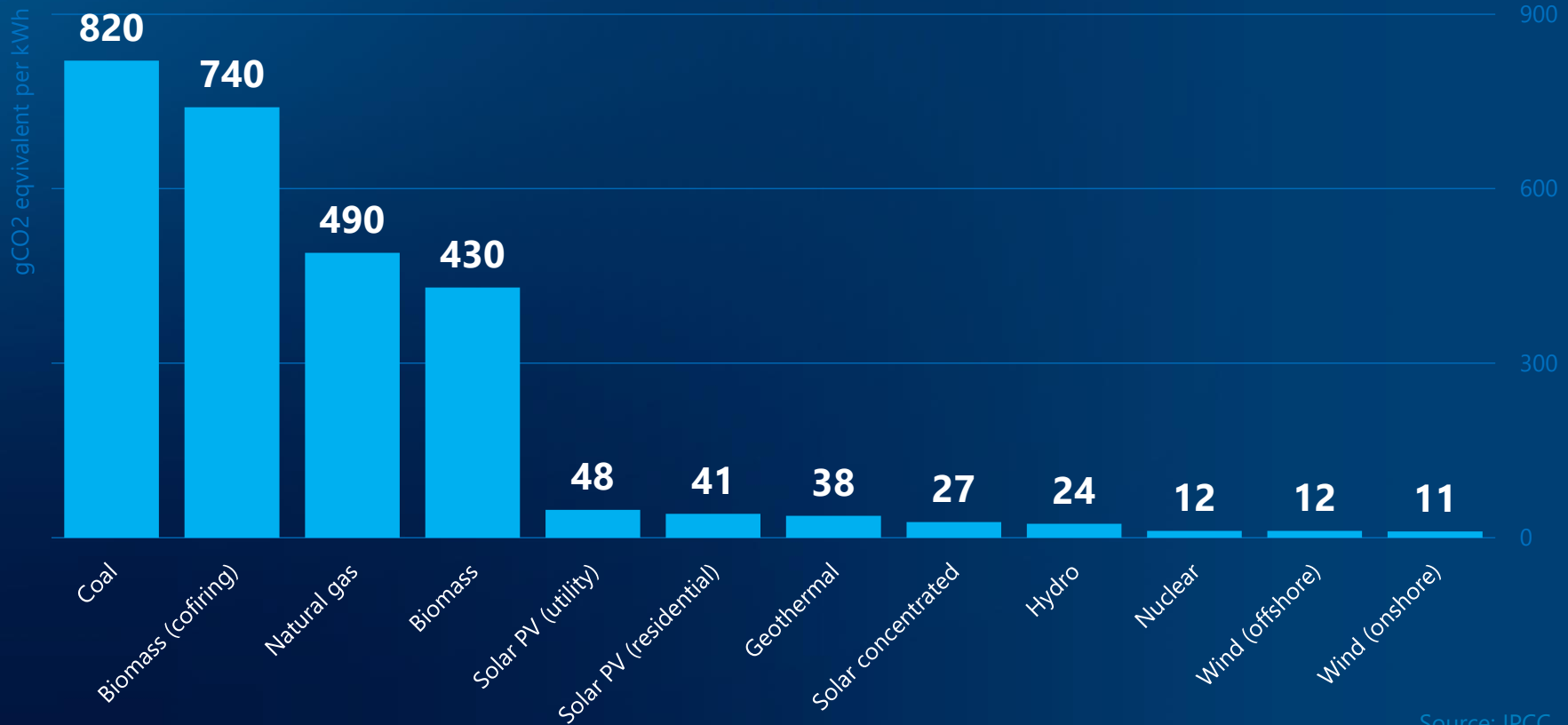
# POWER AWAKENING

Valeriy Vaysberg, Head of Research  
REGION Investment Company

RAS AL KHAIMAH | DECEMBER 2024



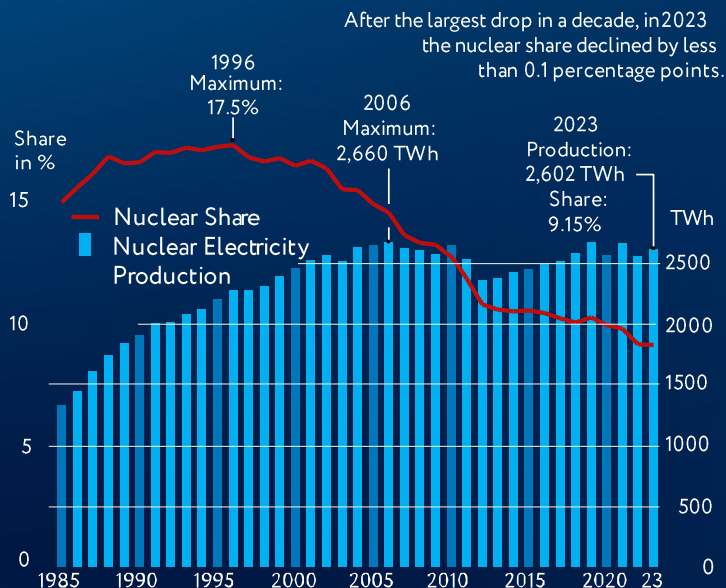
# AVERAGE LIFE-CYCLE CO2 EQUIVALENT EMISSION



# FUKUSHIMA PUZZLED ALL BUT CHINA

## Nuclear Electricity Production 1985–2023 in the World...

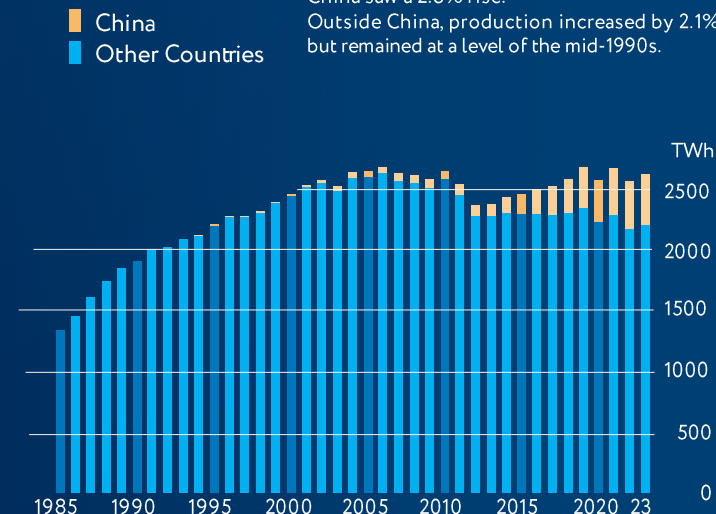
in TWh (net) and Share in Electricity Generation (gross)



©WNISR - Mycle Schneider Consulting

## ...and in China and the Rest of the World in TWh (net)

In 2023, global generation increased by 2.2% but remained below 2021. China saw a 2.8% rise. Outside China, production increased by 2.1% but remained at a level of the mid-1990s.



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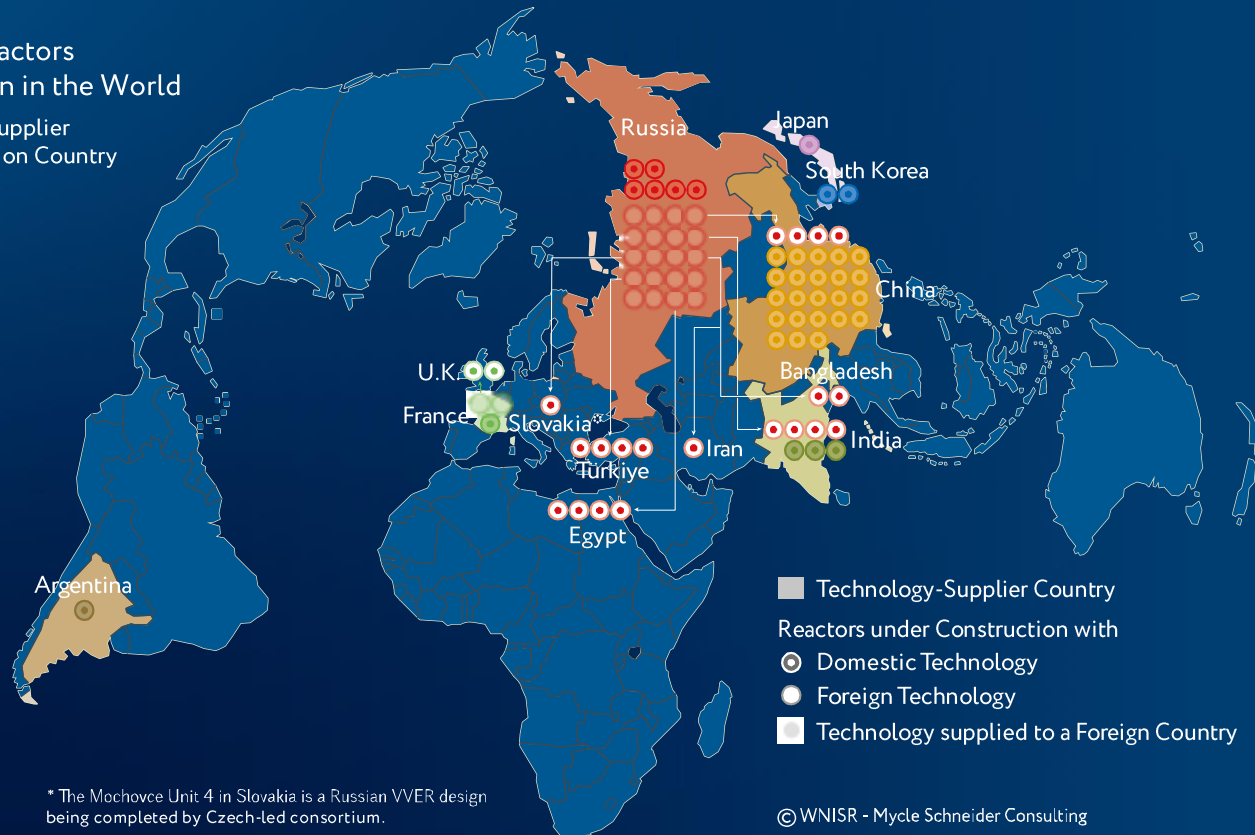
# A NEW DAWN (1/2)

- COP28: 25 countries, including US, Canada, Japan, France, the UK and the UAE, launch Declaration to triple nuclear energy capacity by 2050;
- COP29: Six new signatories, including Kazakhstan, Kenya, Nigeria, and Turkey;
- More than dozen major global banks and financial institutions expressed their support for the Declaration at Climate Week NYC;
- S&P Global Commodity Insights' analysts forecast global nuclear capacity will grow by 58% to 2050. Total installed nuclear capacity of around 375 GW in 2020 is forecast to rise to 458 GW in 2030, 549 GW in 2040 and 631 GW in 2050. By then, China and the US are expected to make up over half of the global total;
- Installed nuclear capacity in Russia in 2024–2042 to grow by 24,5 GW (~8% of total electricity-generation capacity increase). Total 15 NPP of 27 reactors are to build;
- Overseas order-book of Rosatom as of the end 2023 was \$200 млрд.

# A NEW DAWN (2/2)

## Nuclear Power Reactors under Construction in the World

Units by Technology-Supplier  
Country and Construction Country  
as of 1 July 2024



\* The Mochovce Unit 4 in Slovakia is a Russian VVER design being completed by Czech-led consortium.

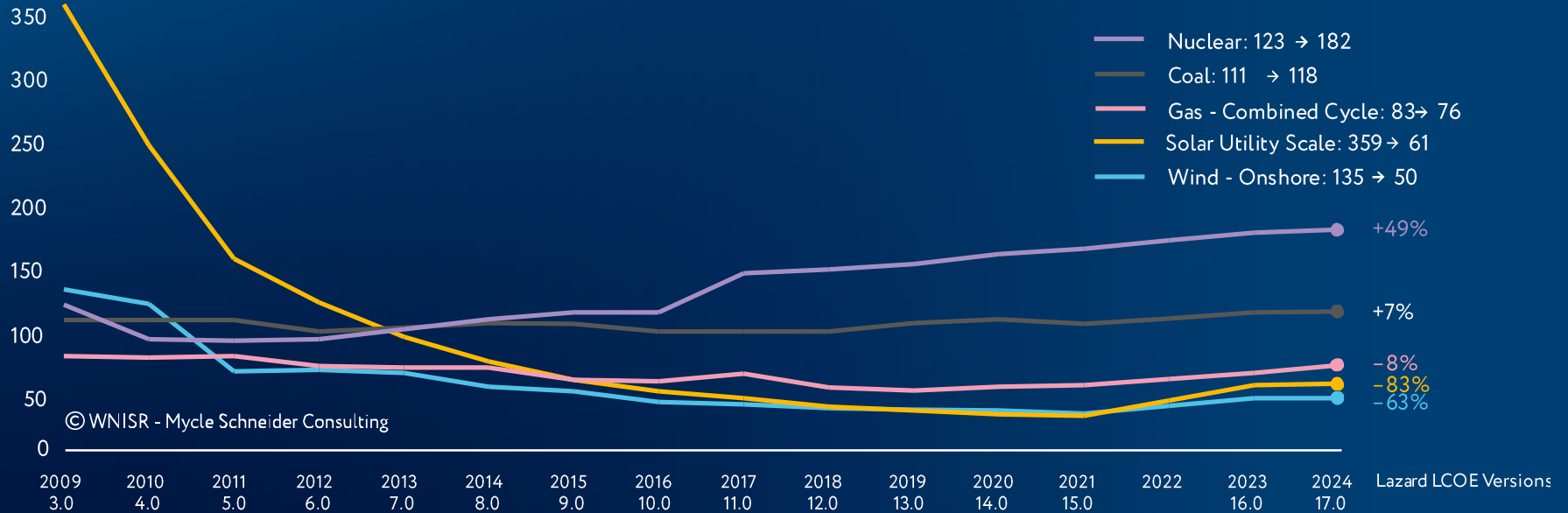
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Source: The World Nuclear Industry Status Report 2024

# CHALLENGES: COSTS

## Selected Historical Mean Costs by Technology

LCOE values in US\$/MWh \*

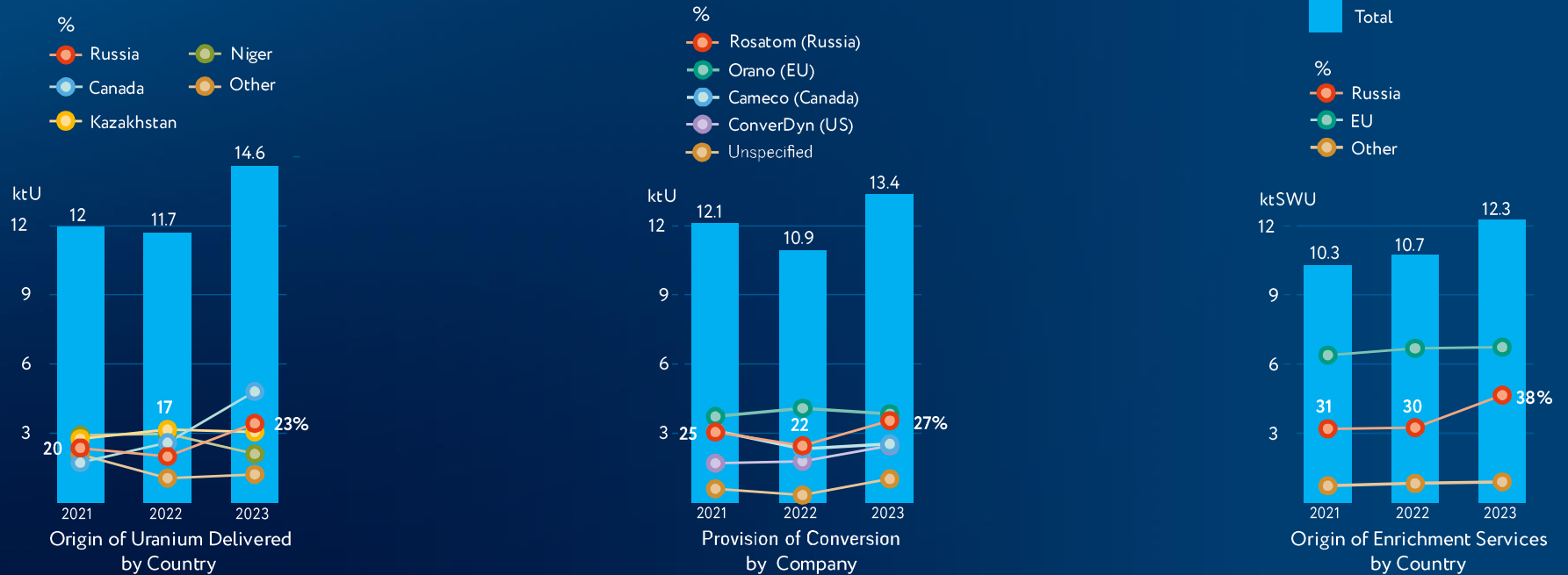


\* Reflects total decrease in mean LCOE since Lazard's LCOE VERSION 3.0 in 2009.

# CHALLENGES: SUPPLY CHAIN (1/3)

Natural Uranium, Conversion and Enrichment Services to the E.U.,  
by Provider Country 2021–2023

in Thousand Tons of Uranium (ktU) and Thousand Tons of Separative Work Units (ktSWU)

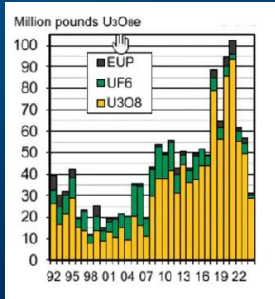


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Source: The World Nuclear Industry Status Report 2024

# CHALLENGES: SUPPLY CHAIN (2/3)

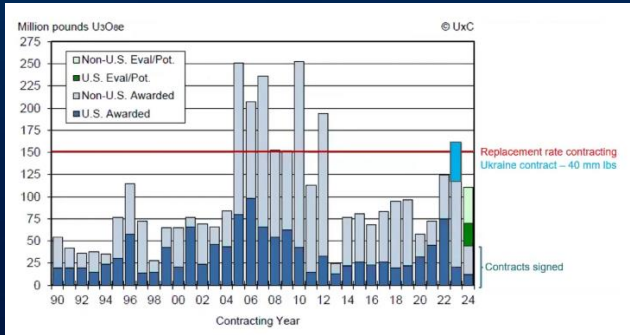
Spot Market Volumes



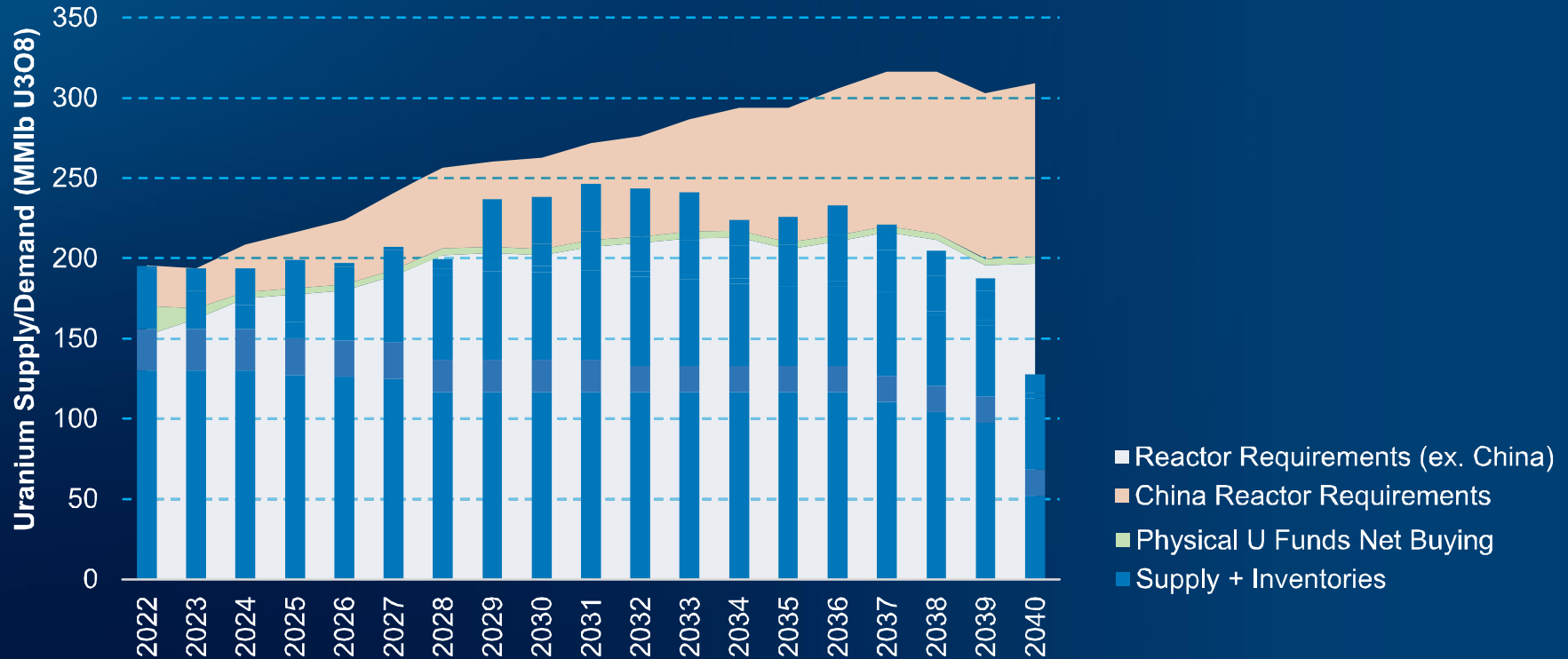
Sprott Physical Uranium Trust Fund (U-UN.TO), CAD



Utility Long-Term Uranium Contracting Volumes



# CHALLENGES: SUPPLY CHAIN (3/3)





**REGION**  
GROUP OF COMPANIES