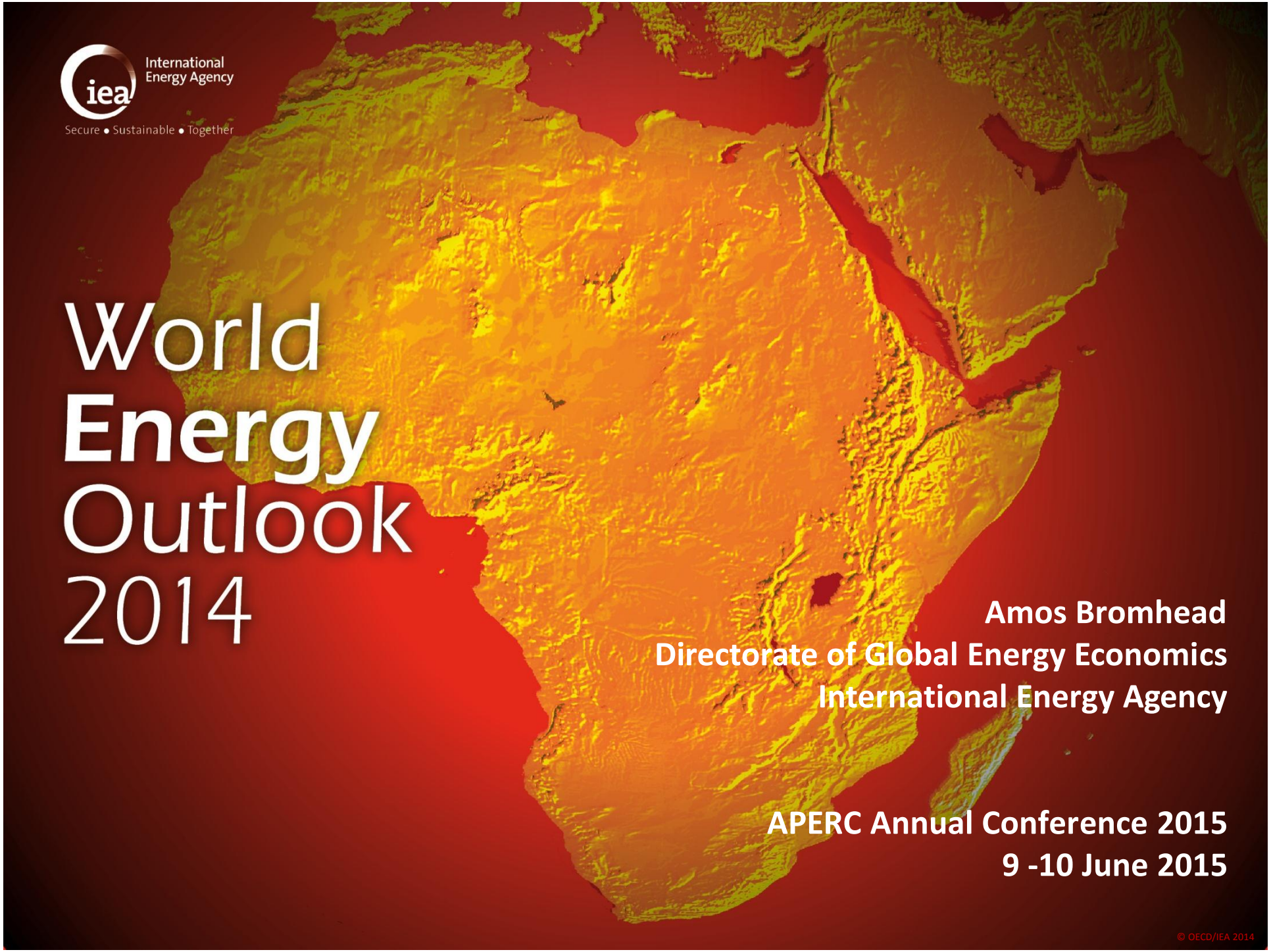
International Energy Agency
Secure • Sustainable • Together
World Energy Outlook 2014
Amos Bromhead
Directorate of Global Energy Economics
International Energy Agency
APERC Annual Conference 2015
9 -10 June 2015
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The world's nuclear power plants are ageing

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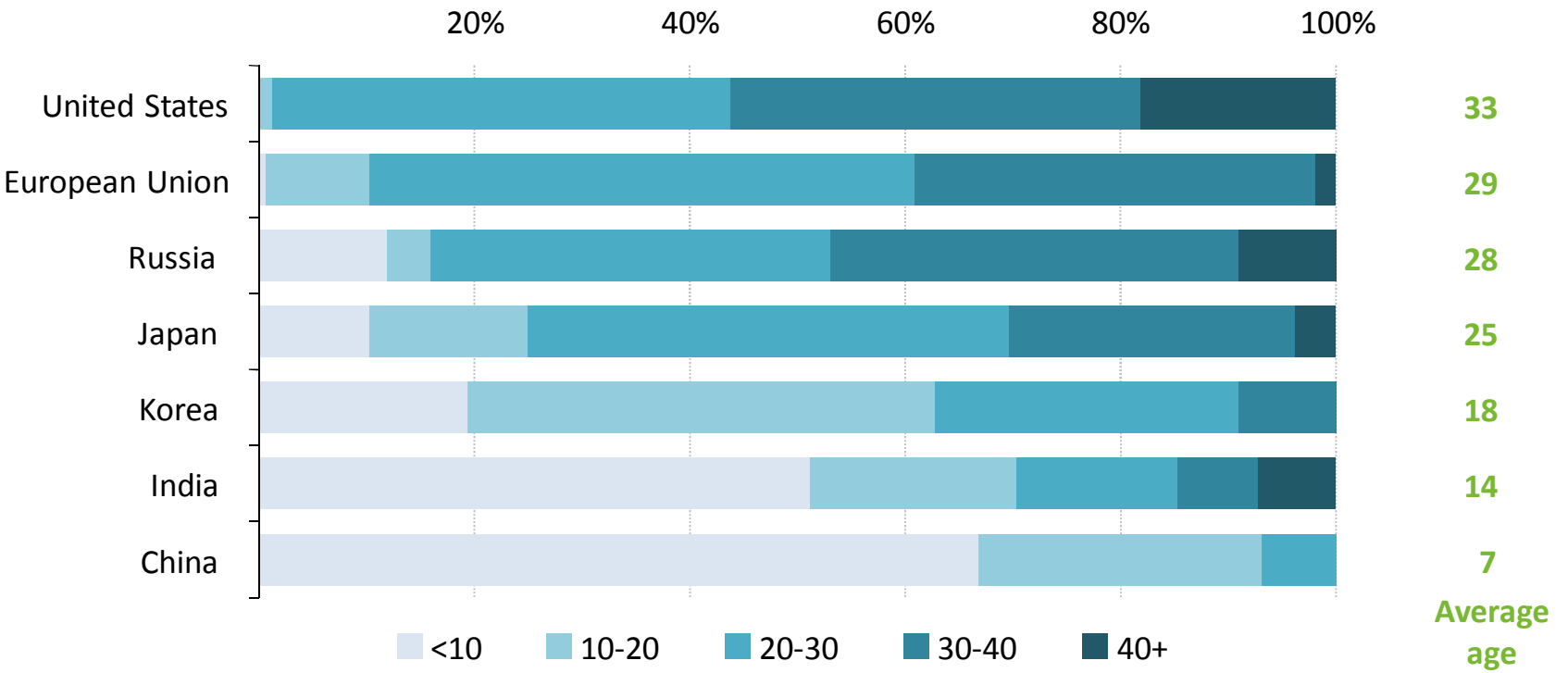
Age profile of nuclear capacity in selected regions (years)



More than three-quarters of the fleet in OECD countries is over 25 years old, while 60% of capacity in non-OECD countries is less than 15 years old

Government policy is central to prospects for nuclear power

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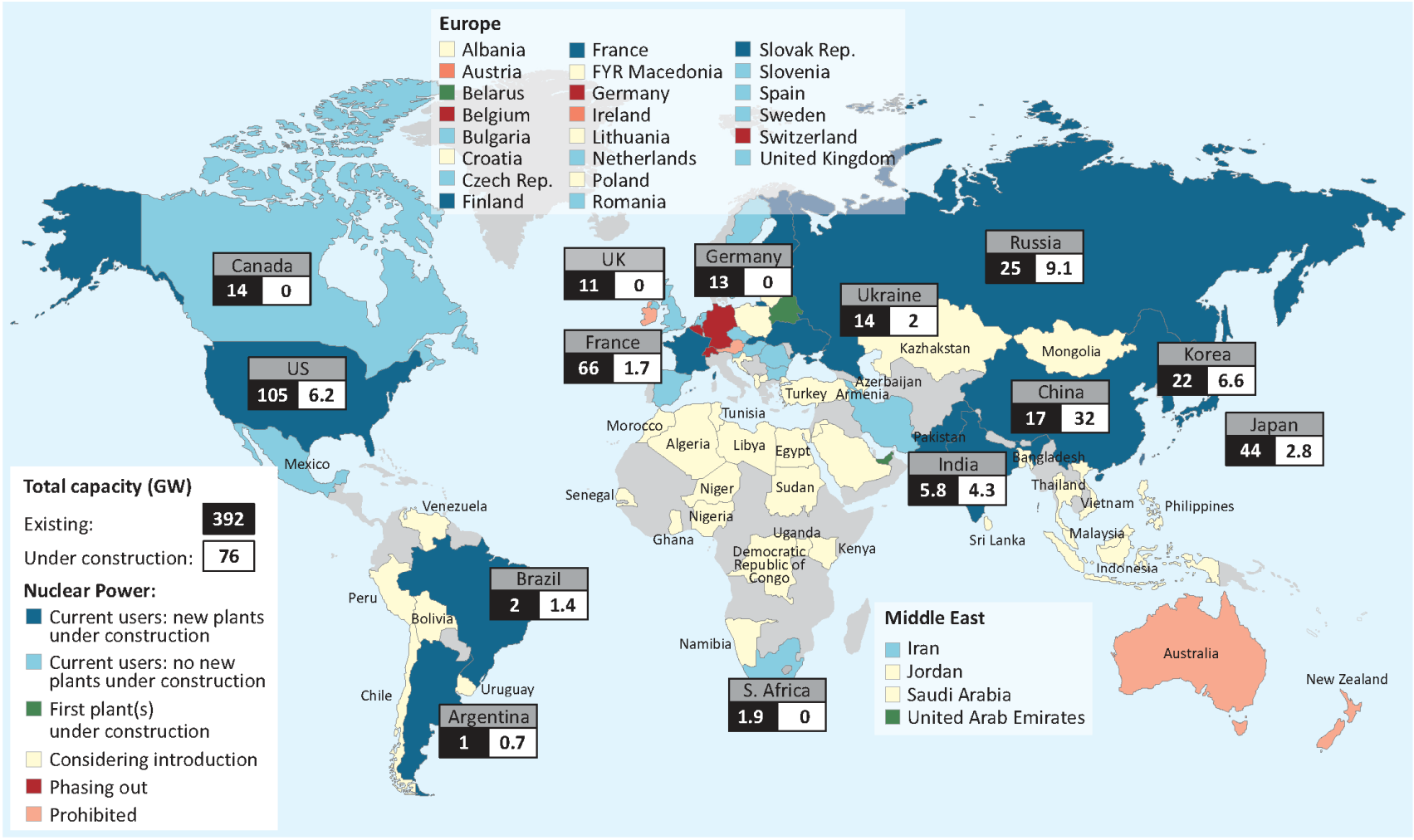
Status of nuclear power programmes, end-2013



This map is without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries, and to the name of any territory, city or area.

Nuclear power becomes more competitive with higher fossil-fuel prices

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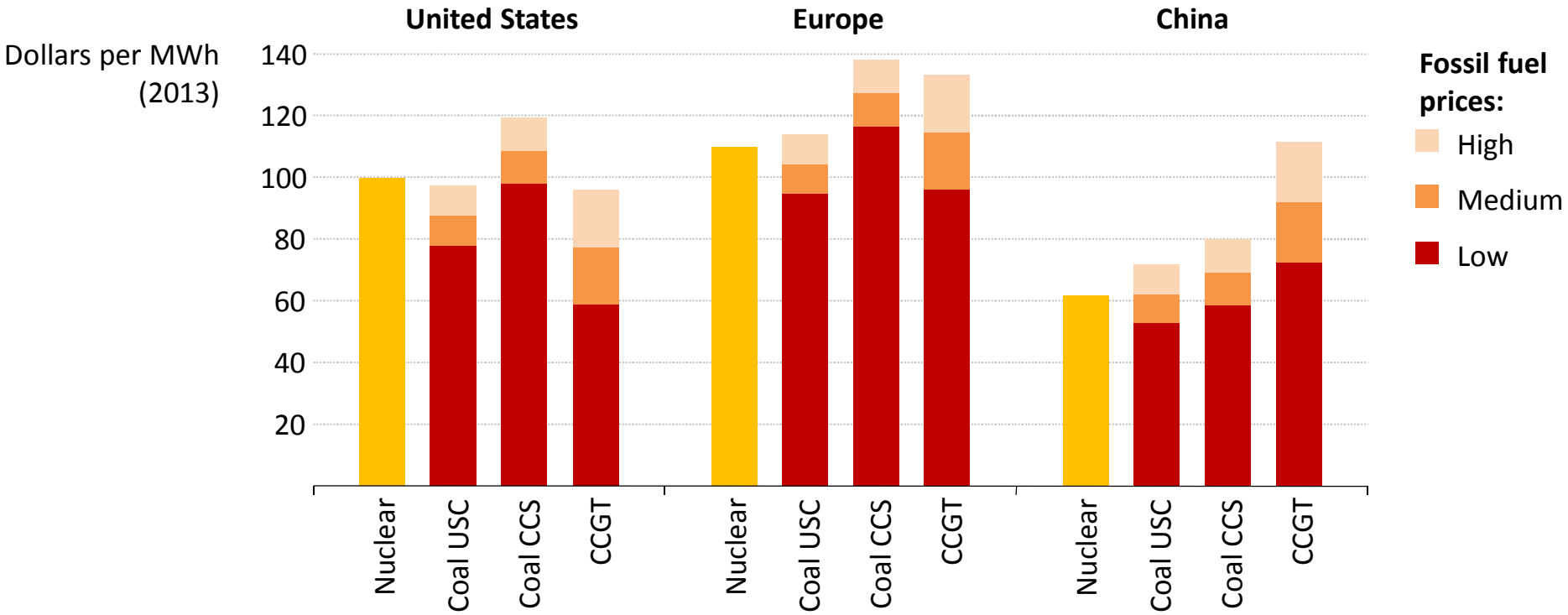
Generating costs for new power plants under different fuel price assumptions



In countries with abundant fossil fuels at relatively low prices, new nuclear plants struggle to compete with new coal- or gas-fired plants

Nuclear capacity grows by 60%, but no nuclear renaissance in sight

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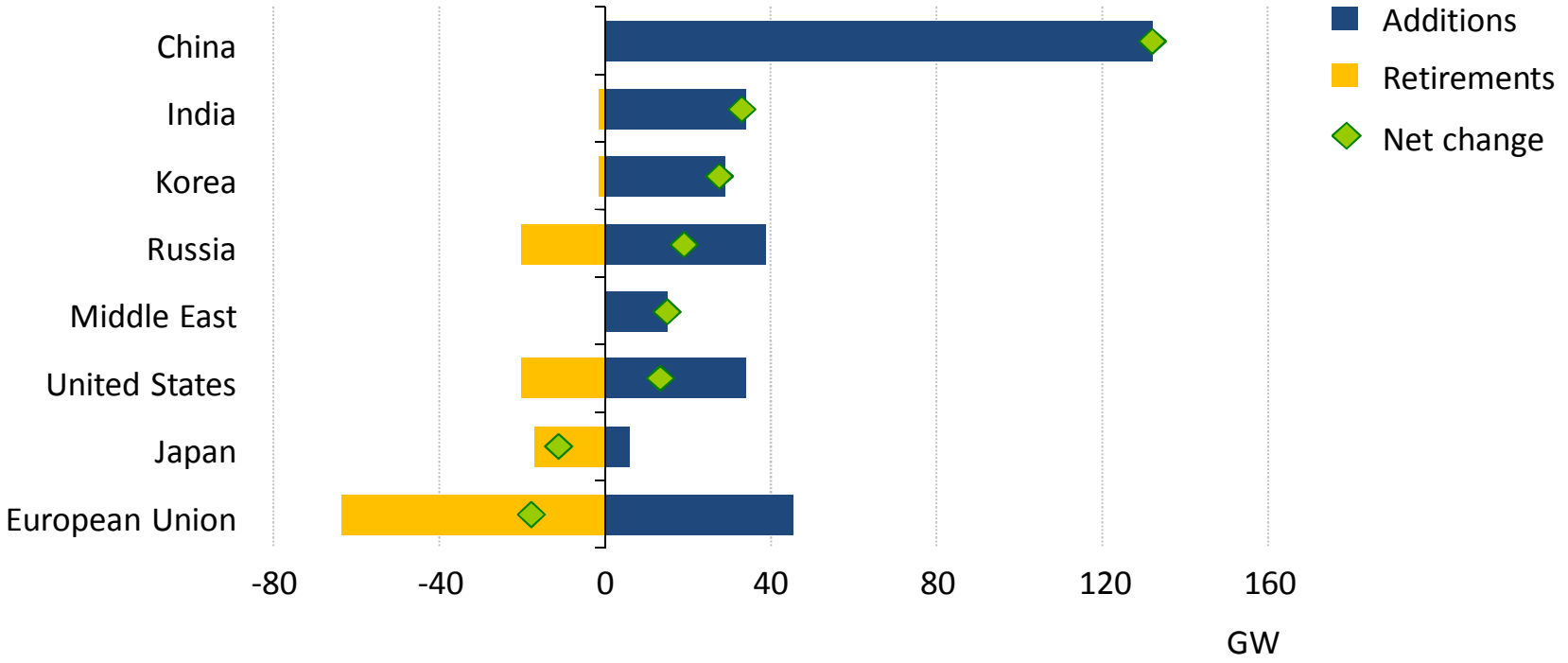
Nuclear power capacity additions and retirements by key region in the New Policies Scenario, 2014-2040



Capacity grows by 60% to 624 GW in 2040, led by China, India, Korea & Russia; yet the share of nuclear in the global power mix remains well-below its historic peak

Nuclear power can play a role in CO_2 abatement & energy security

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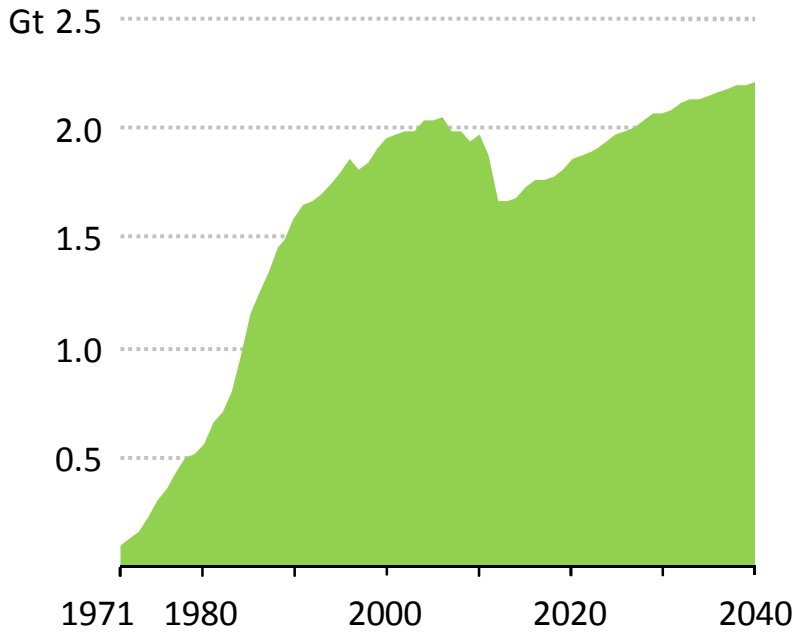
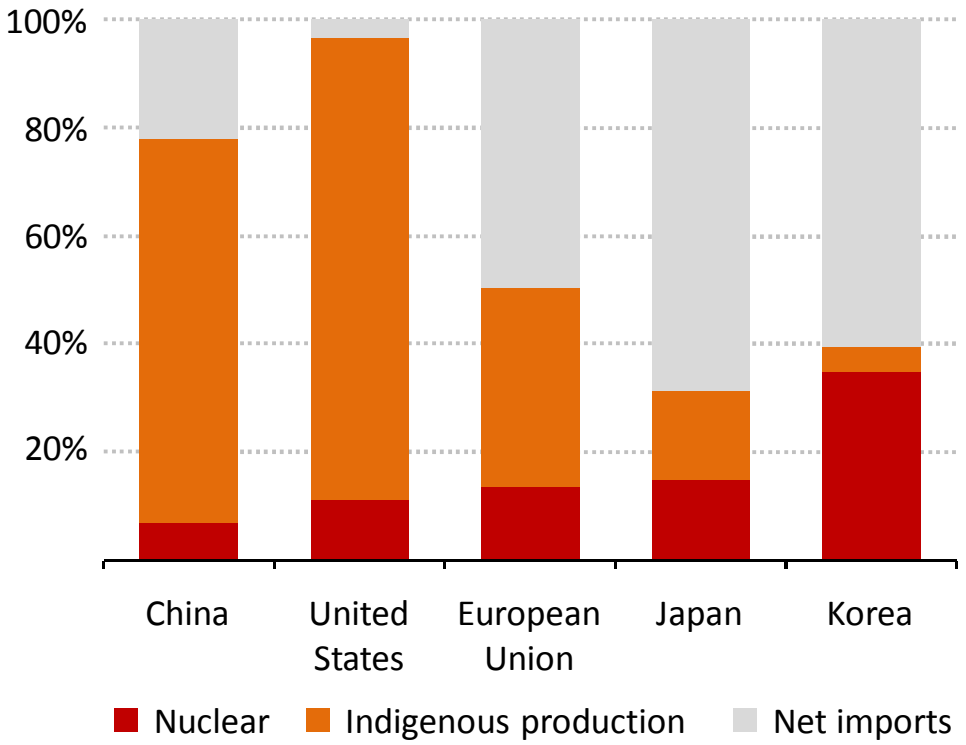
CO_2 emissions avoided annually by nuclear power 1971-2040



Share of energy demand met by domestic sources and nuclear power in 2040



By 2040, almost 4 years of current emissions have been avoided by nuclear power; it cuts dependence on foreign fuel supplies & lowers import bills for some countries

Nuclear power: public concerns must be heard and addressed

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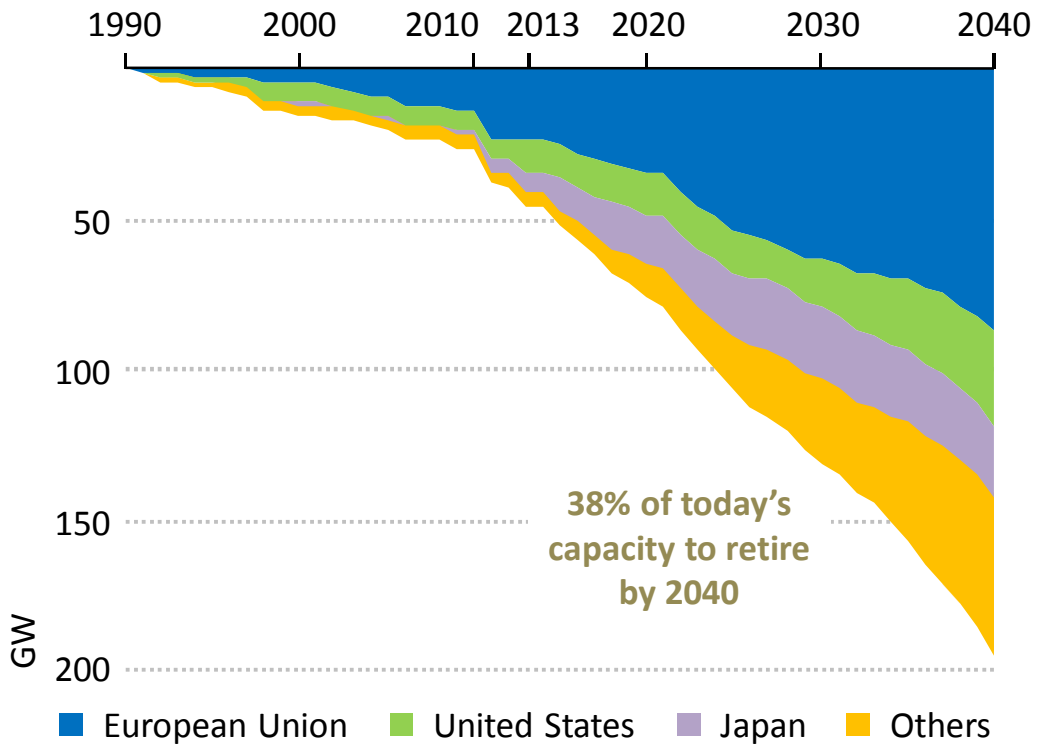
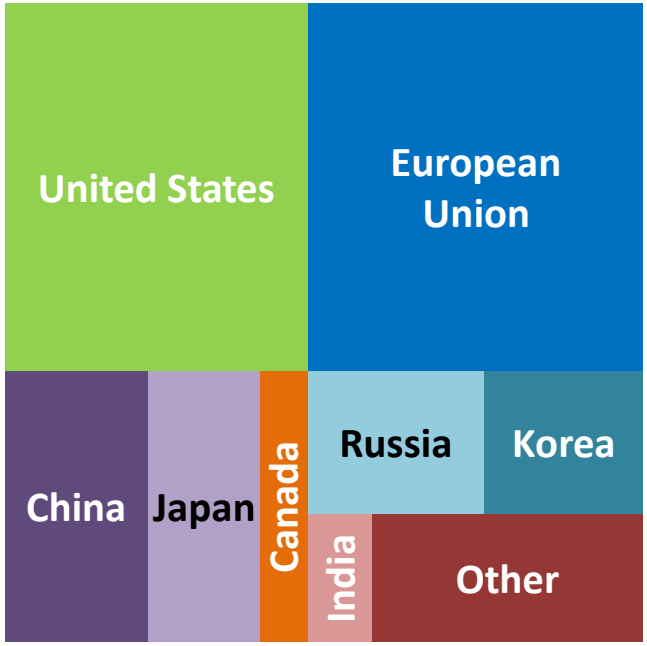
Retirements of nuclear power capacity 1990-2040



Spent nuclear fuel 1971-2040: 705 thousand tonnes



Key public concerns include plant operation, decommissioning & waste management; By 2040, almost 200 reactors are retired & the amount of spent fuel doubles

Unexpected yet plausible events could alter the course for nuclear power

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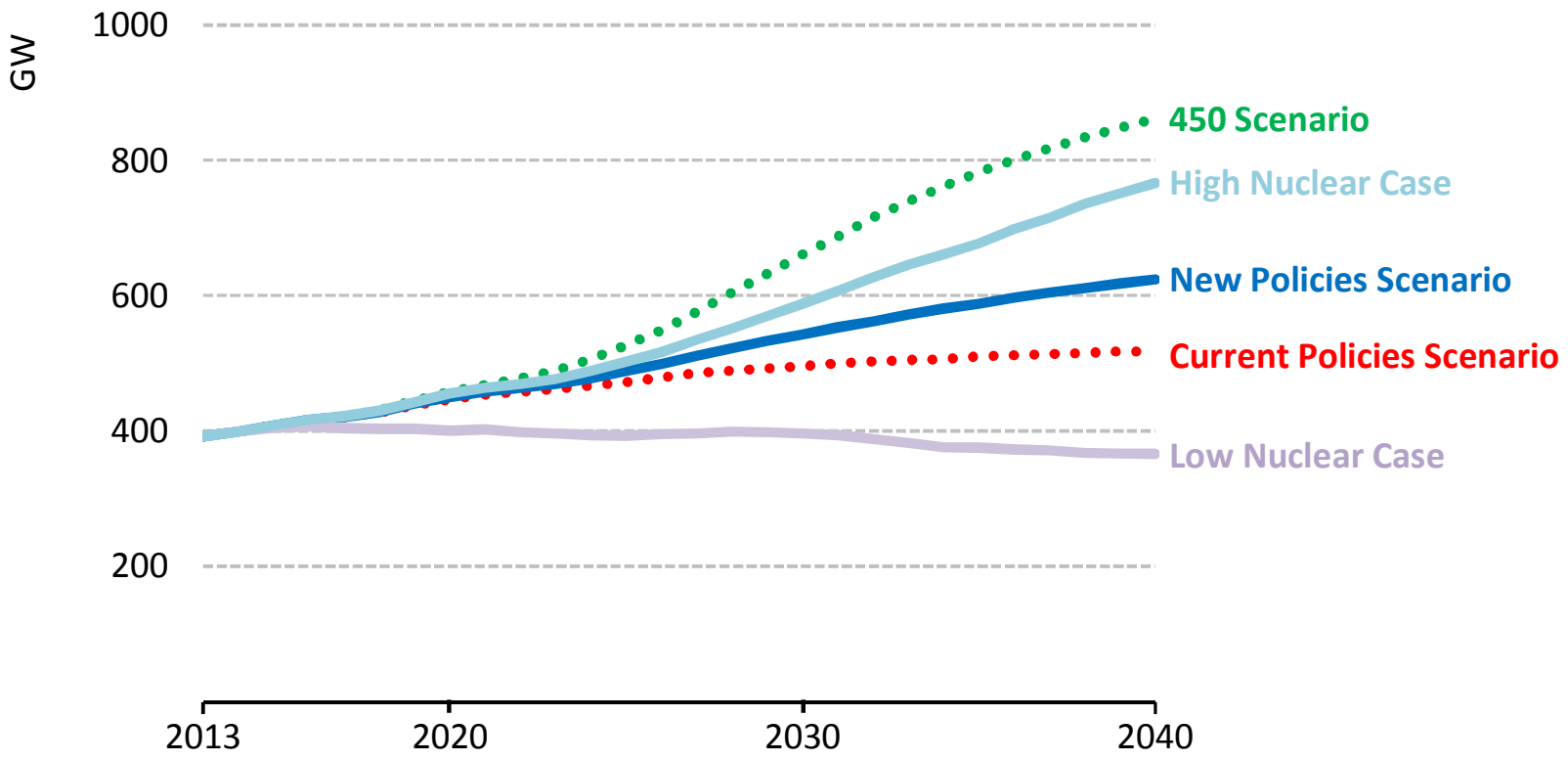
Nuclear power capacity by region, by scenario and case



By 2040, nuclear capacity contracts to 366 GW in the Low Nuclear Case, while it reaches 767 GW in the High Nuclear Case; capacity is even higher in the 450 Scenario, at 862 GW in 2040, highlighting the potential of nuclear power to play a role in meeting ambitious climate targets