



What are the stakes of the EU towards COP21?

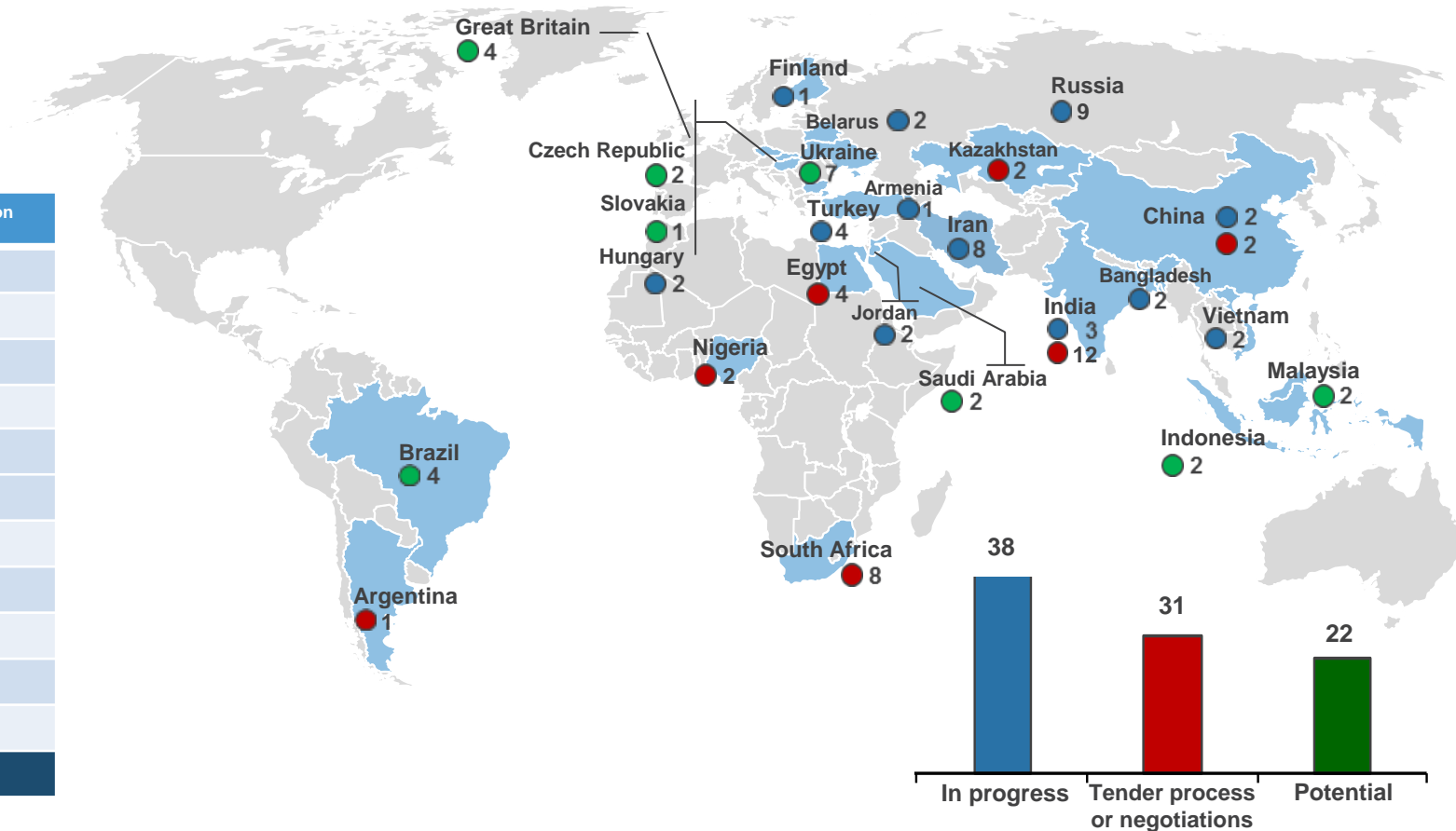
A view from the nuclear power industry

High Level Conference
Egmont Palace, Brussels
10 November 2015

Andrey Rozhdestvin
CEO, ROSATOM France

ROSATOM's safe and mature VVER technology: among the most referenced in the world

Country	In operation
Armenia	1
Bulgaria	2
China	2
Czech Rep	6
Finland	2
Hungary	4
Iran	1
India	1
Russia	18
Slovakia	4
Ukraine	15
TOTAL	56



Global N°1 for NPP construction overseas
2nd in the world in terms of installed capacity among nuclear power companies

Climate change – a superior global challenge

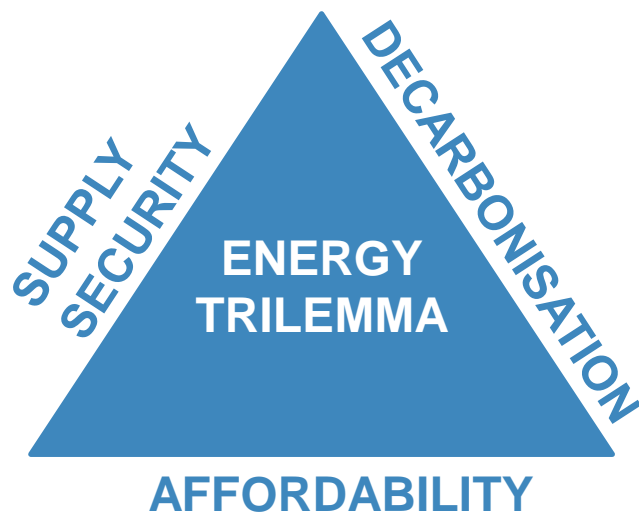
- **Global UN climate objective:** limit global warming at less than 2°C
- **EU emissions targets:** 40% emissions cut by 2030; EU Long Term Energy Roadmap: 80%-95% emissions cut by 2050
- **Energy production/consumption** at the forefront of this challenge
- **Governments enact laws and policies** to decarbonise energy production and power generation
- **Delivery of results** is largely up to energy industries
- **Energy industries must provide technical and commercial solutions** that perform successfully under market conditions
- **Not only in Europe**, but globally

Decarbonisation: a multi-layered challenge

- **Decarbonisation in Europe** → **cutting emissions** of installed generation capacity, **replacing** ageing capacity, **increasing efficiency** of energy consumption
- **But globally:** 18% of world population – 1.3 billion people still have no regular access to electricity (IEA)
- Some of the largest **populations without electricity** are in India, Nigeria, Bangladesh, Indonesia
- How to create **new generation capacities** for emerging markets and underdeveloped countries without increasing global emissions?
- **Example China:** rapid economic development + a share of 60% coal in energy supply → today world's largest CO₂-emitter
- It is in Europe's interest to support **climate-friendly global development and electrification**

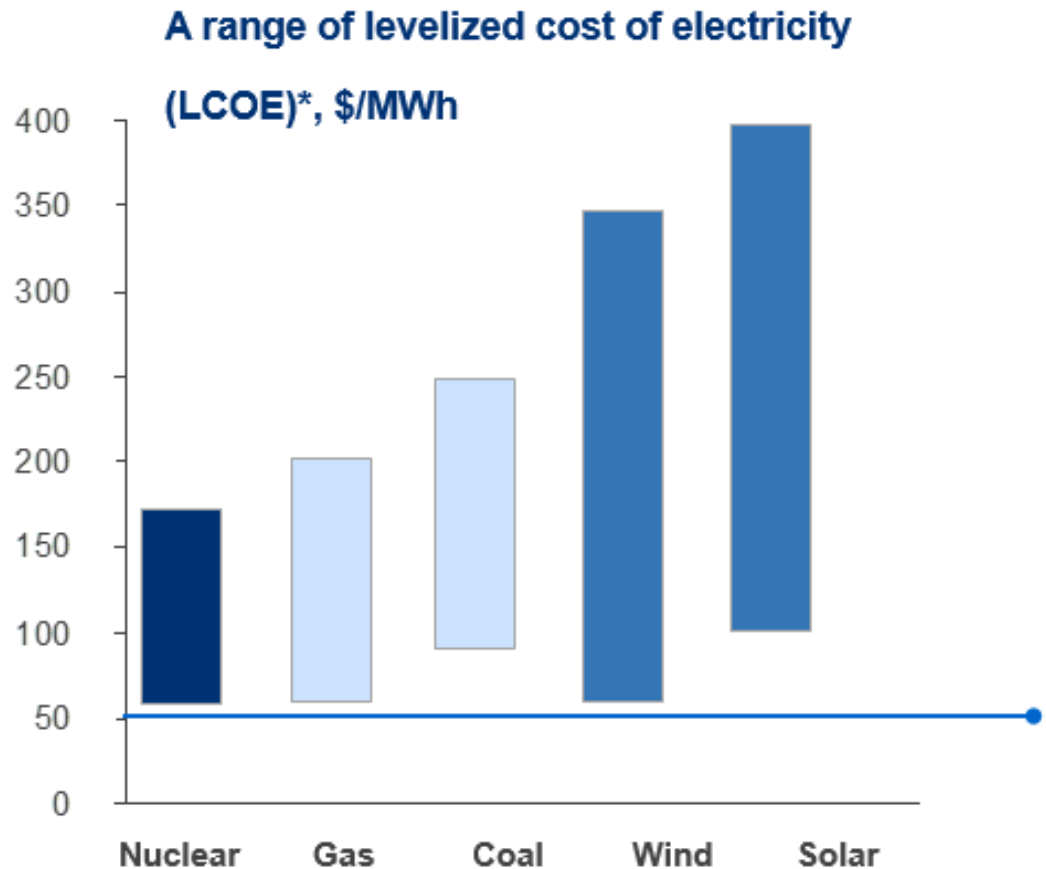
The Energy Trilemma – how to square the triangle

- **But: emissions targets** are not the only challenges for the energy industries
- **The EU's Energy Union** aims at reliable, climate-friendly and affordable energy supply
- **The Energy Trilemma:** how to pursue all three objectives **at the same time?**



An economically feasible option

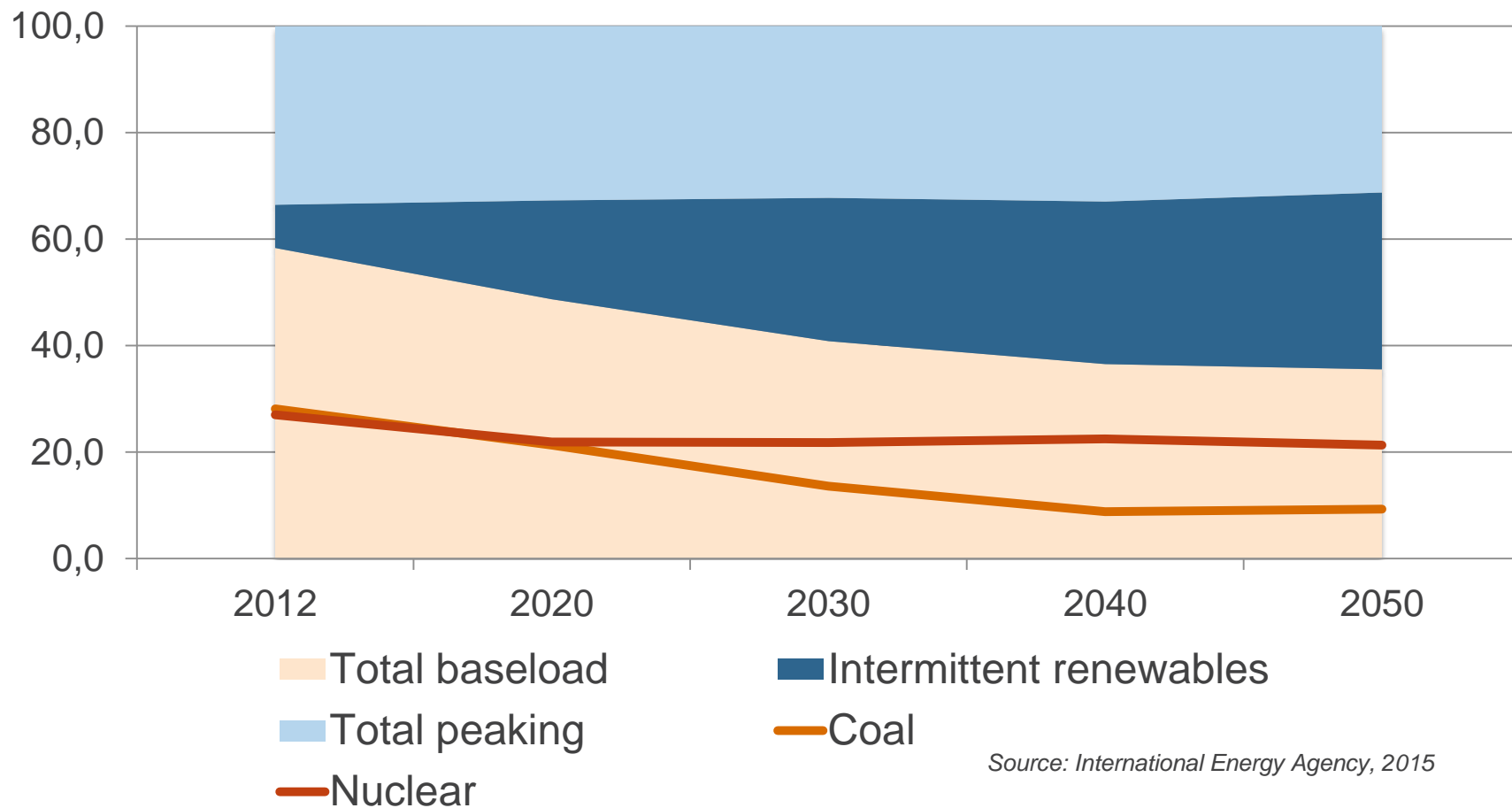
- **Affordability** is the EU's third **key energy objective** – in addition to decarbonisation and supply security
- Only nuclear fulfills all three criteria **at the same time**



Source: EIA, IEA, Nuclear Energy Institute (NEI)

Nuclear is indispensable for decarbonisation

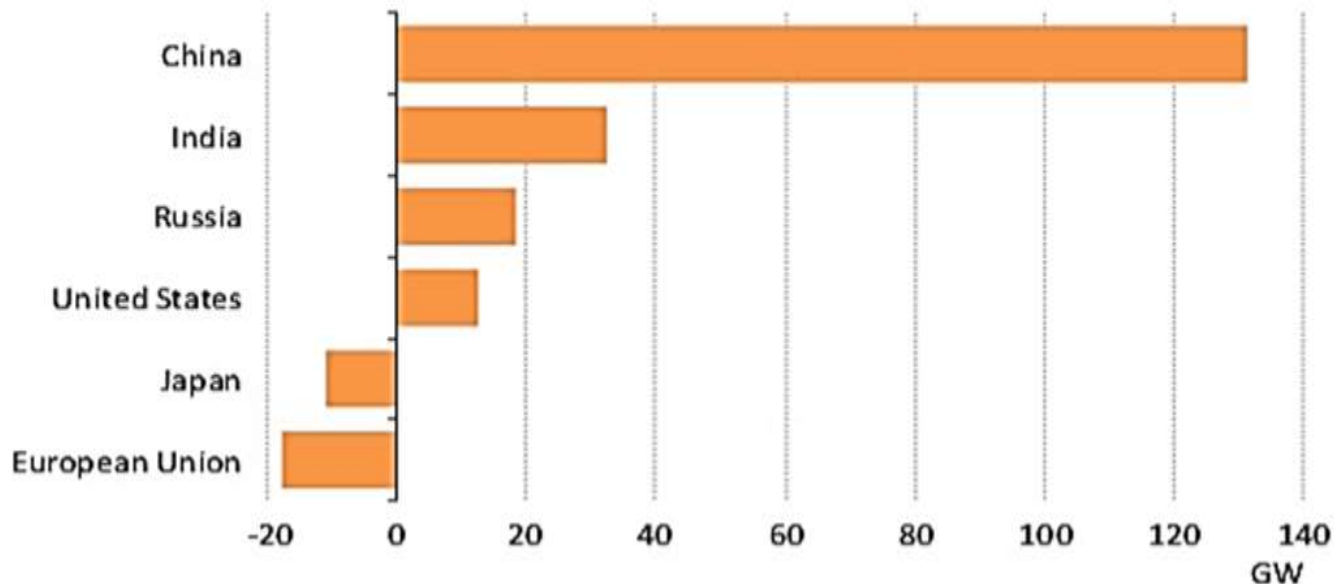
EU Electricity Output Shares Projections (%)



Nuclear energy in the EU and globally

- **EU: 1/3 of electricity consumption, over 50% of CO2-free electricity**
- **Global: 1st in low-carbon electricity in OECD, 2nd at global level**
- Global share of **nuclear will increase**, esp. China, India, Korea, Russia
- Countries using nuclear: from 31 in 2013 to 36 in 2040

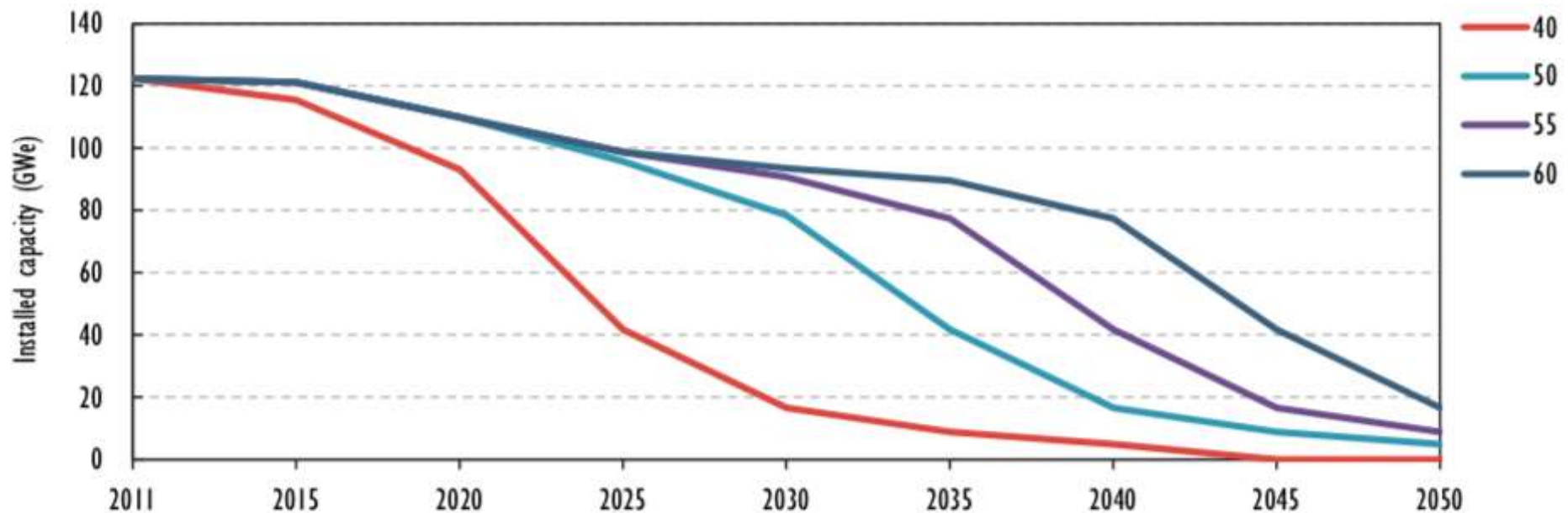
Net capacity change in key regions, 2013-2040



Sources: IEA
& WEC

Nuclear capacities in Europe are ageing

- Half of the EU's 131 nuclear power plants have operated **more than 29 years**
- If all plant lifetimes were **40 years**, 25% of the EU nuclear units are to be closed by **2020**, 50% by **2024**, and 75% by **2026**



Source: OECD/NEA (2012), *The Economics of Long-term Operation of Nuclear Power Plants*, OECD Publishing, Paris.

Russian nuclear industry objectives

Russia is to reduce greenhouse gas (GHG) emissions by 25-30% from 1990 levels by 2030*

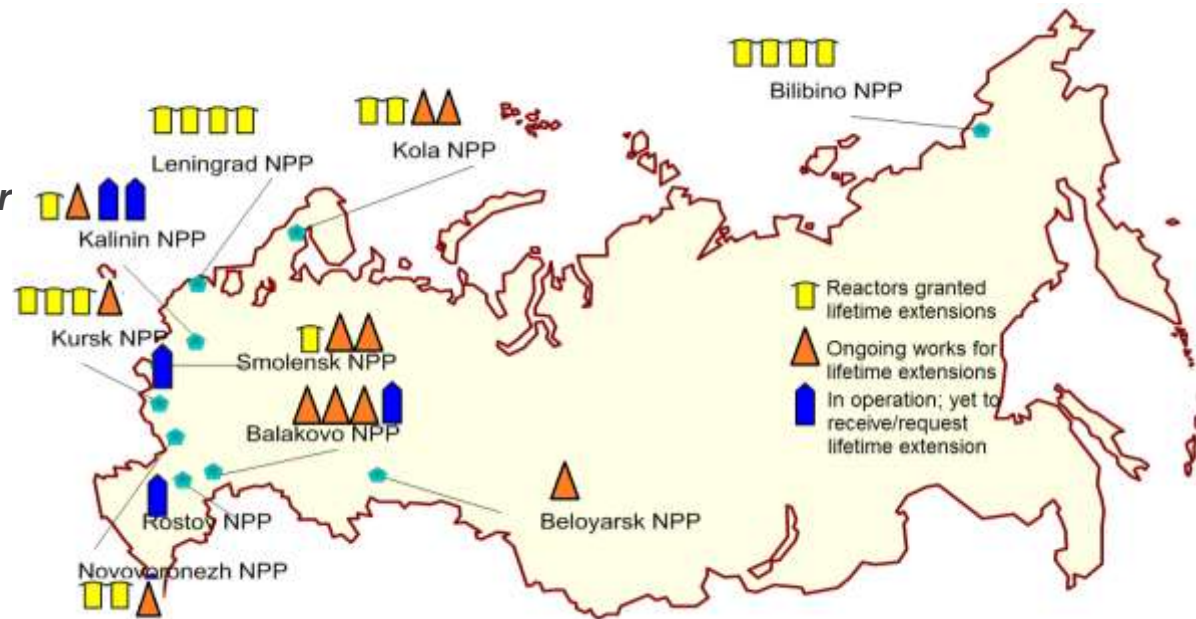
Low-carbon nuclear power is an important part of Russia's efforts to reduce GHG emissions.

Russia intends to meet 25% of its electricity consumption with nuclear power by 2030; up from 17% today.

Rosatom is currently building 9 nuclear power units.

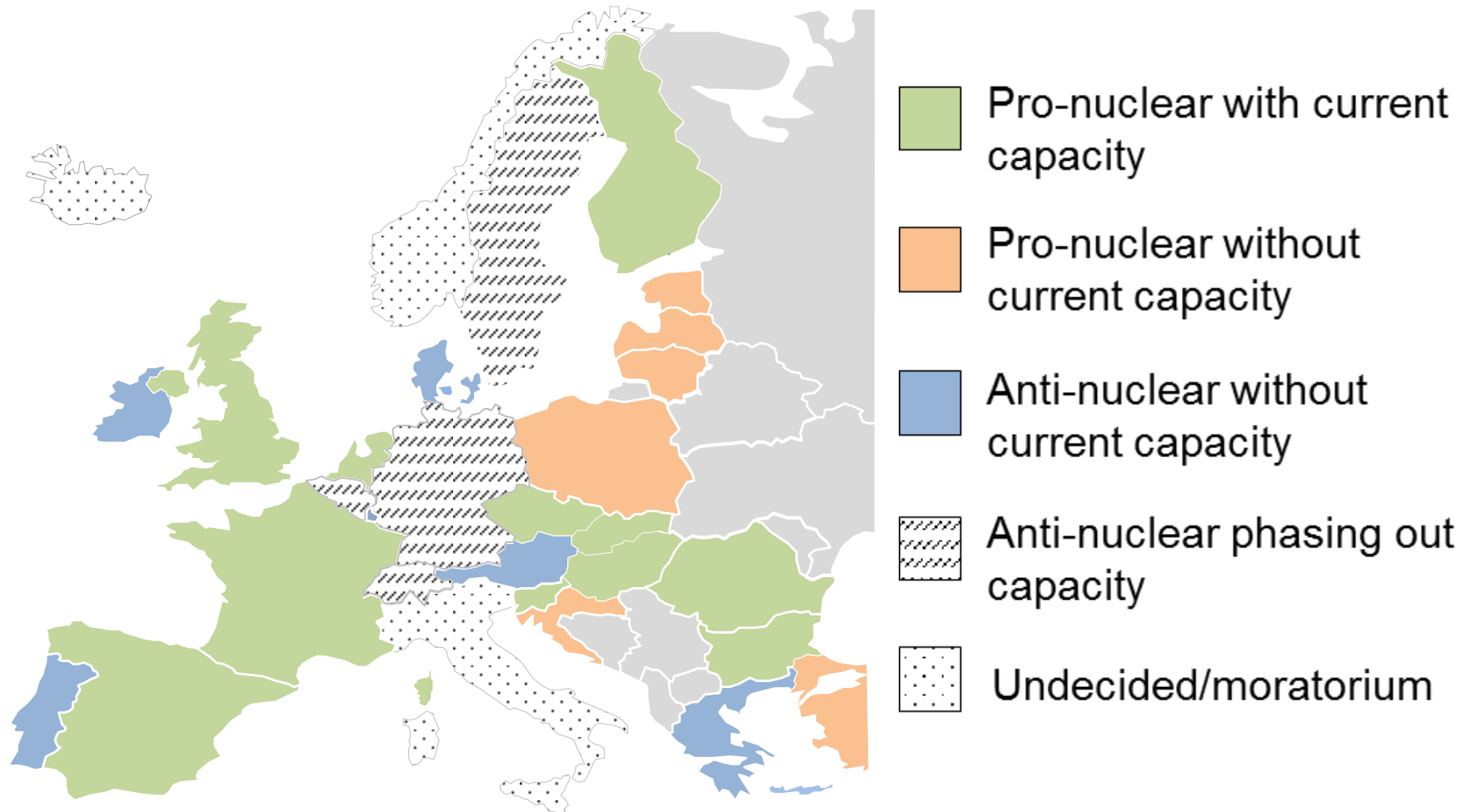
In Russia, 21 from 33 reactors have already been granted lifetime extensions.

Russia invests heavily in R&D.



*On 31 March 2015, well ahead of the COP21 climate negotiations in Paris, Russia's Intended Nationally Determined Contribution (INDC) was submitted to the United Nations Framework Convention on Climate Change (UNFCCC).

Nuclear power in the EU





ROSATOM

ГОСУДАРСТВЕННАЯ КОРПОРАЦИЯ ПО АТОМНОЙ ЭНЕРГИИ «РОСАТОМ»

Thank you for your attention