



ROSATOM



Possibilities for Cooperation in NPP Modernization

Roundtable Session - Atomex Europe 2015

Zalán Bács

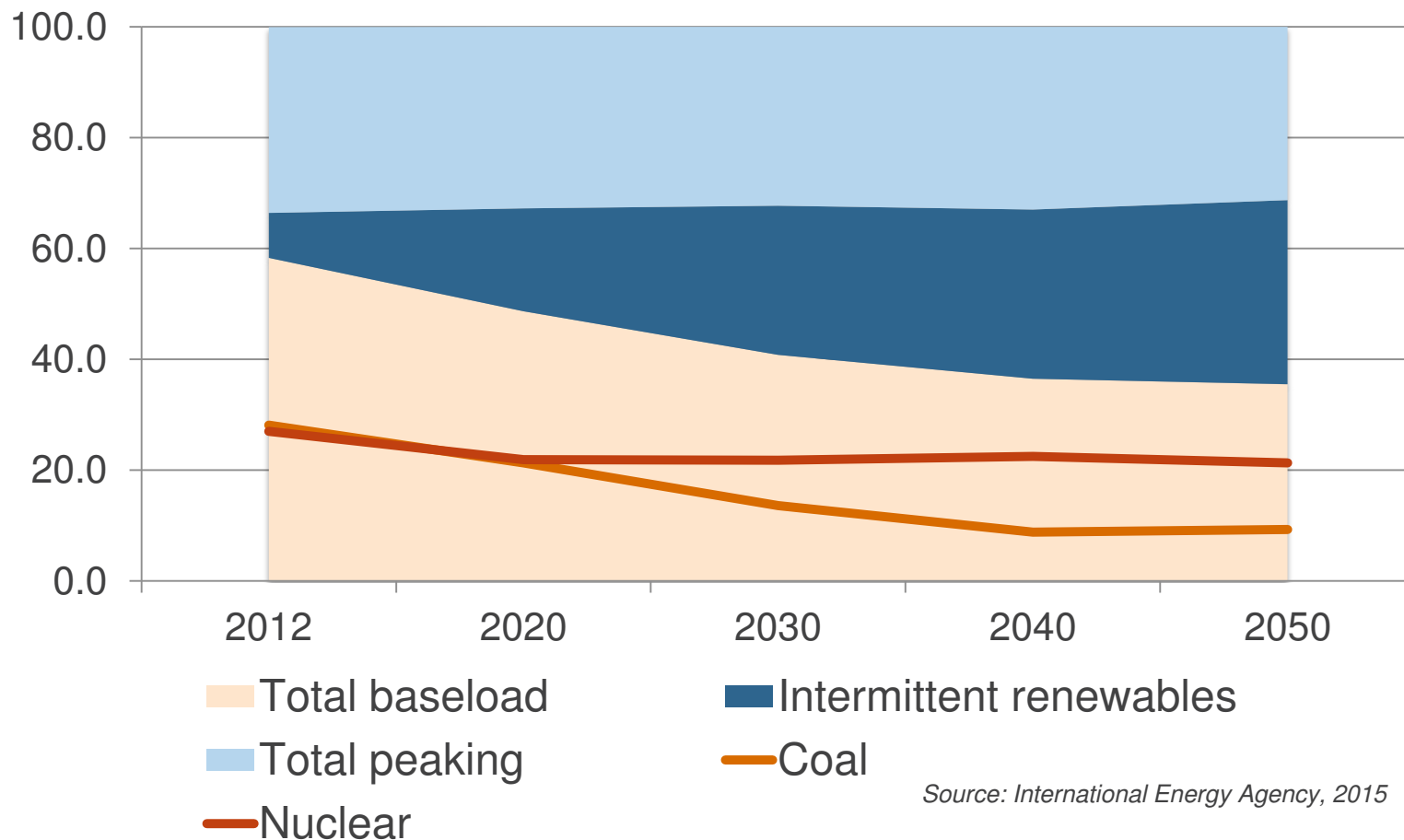
Director, Rosatom Central Europe Hungarian Branch

Budapest

30th November-1st December 2015

Nuclear is indispensable for decarbonisation...

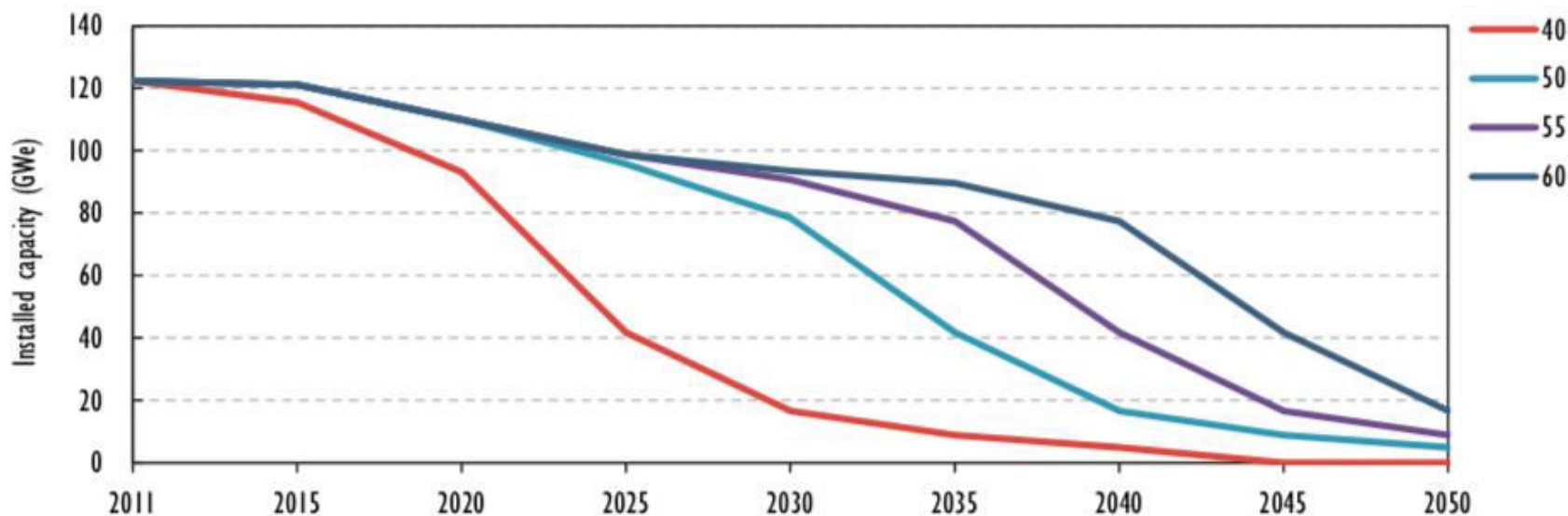
EU Electricity Output Shares Projections (%)



Nuclear capacities in Europe are ageing

Half of the European Union's 131 nuclear power plants have been operating for more than 29 years (IAE).

If all plant lifetimes were 40 years, 25% of the EU nuclear units 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.

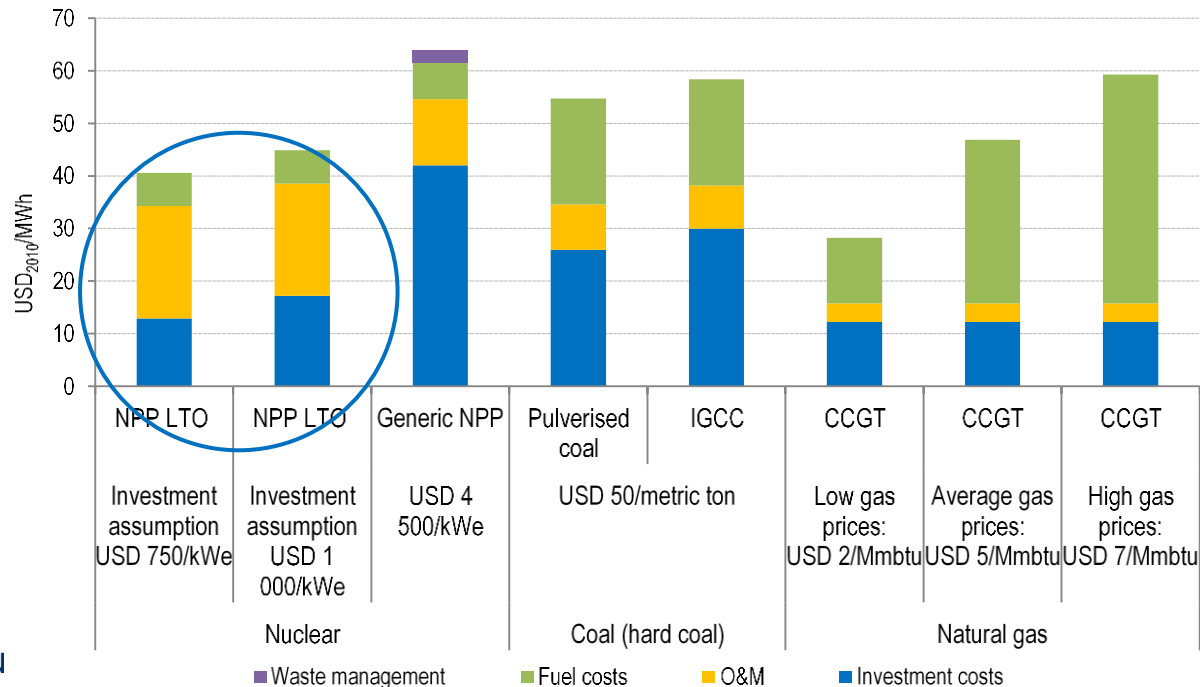
Economics of lifetime extension

OECD Nuclear Energy Agency (2012): *“In most cases, the continued operation of NPPs for at least ten more years is profitable even taking into account the additional costs of post-Fukushima modifications, and remain cost effective compared to alternative replacement sources”*

- ✓ Typical investment in LTO is in the range of **500-1100 USD/kWe**
- ✓ The license of **73 reactors in the US** was extended for 20 more years

Source: <https://www.oecd-nea.org/ndd/reports/2012/7054-long-term-operation-npps.pdf>

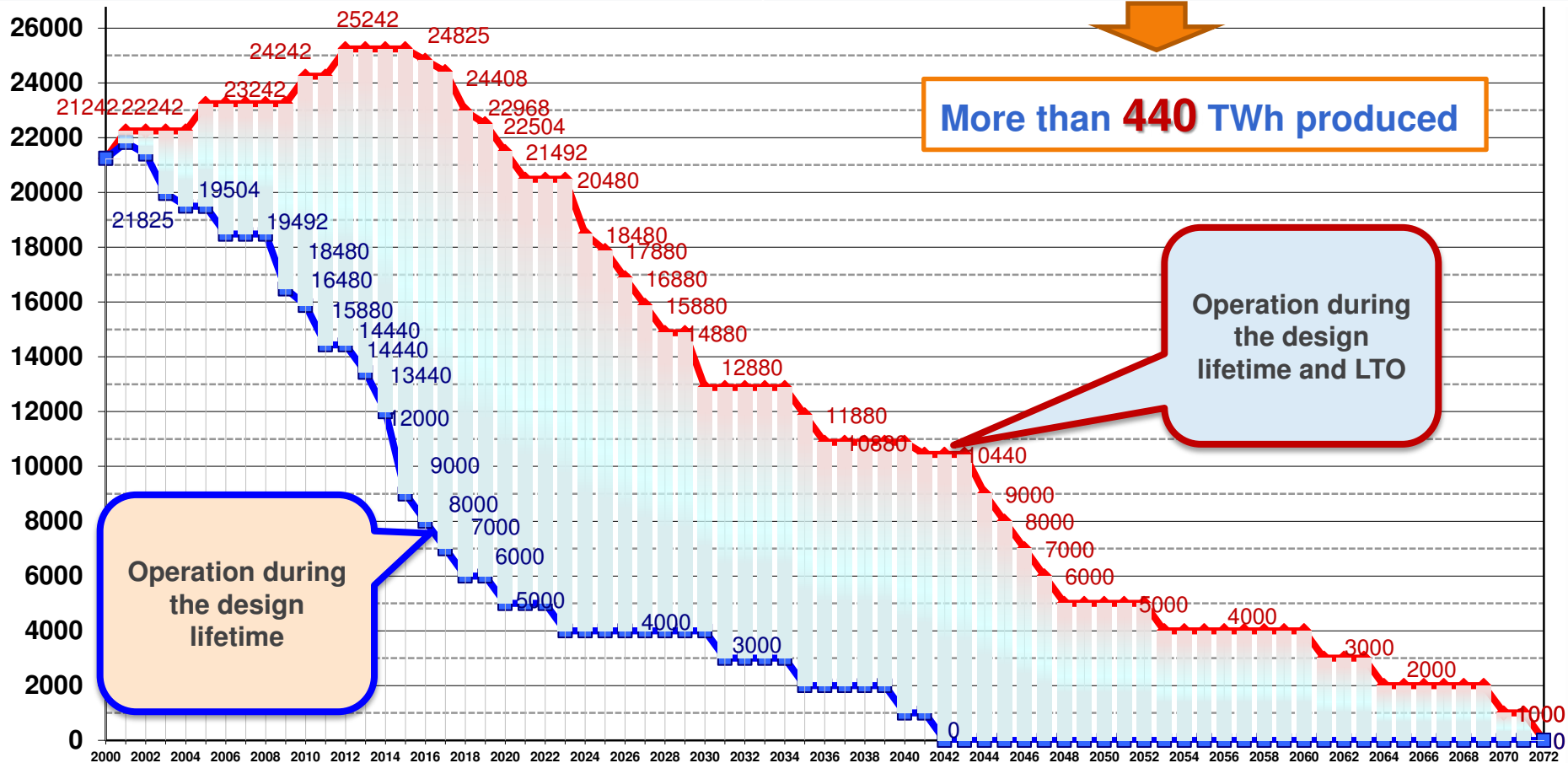
Projected costs of electricity generation with alternative sources in the United States, at 8% real discount rate



Evolution of existing nuclear capacity in Russia

10 NPPs, 33 units, Nominal power=25242 MW

NPPs with LTO - 21 unit, Nominal power=13242 MW





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“In damaging our climate we become the architects of our own destruction.”

Prince Charles / Climate Change Conference Paris 2015