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The 60th anniversary of nuclear power

Driven by the idea:
60 years of the Russian nuclear power industry

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1954: Ambitious idea came true – the 1st NPP in the world launched

Built in a small town of Obninsk near Moscow, the world's first nuclear power plant has successfully worked for 48 years.

Main Data:

- Reactor type: AM-1 (graphite moderated and water cooled)
- Electric capacity: 5 MW
- Thermal capacity: 30 MW
- Commissioned: 1954
- Decommissioned: 2002

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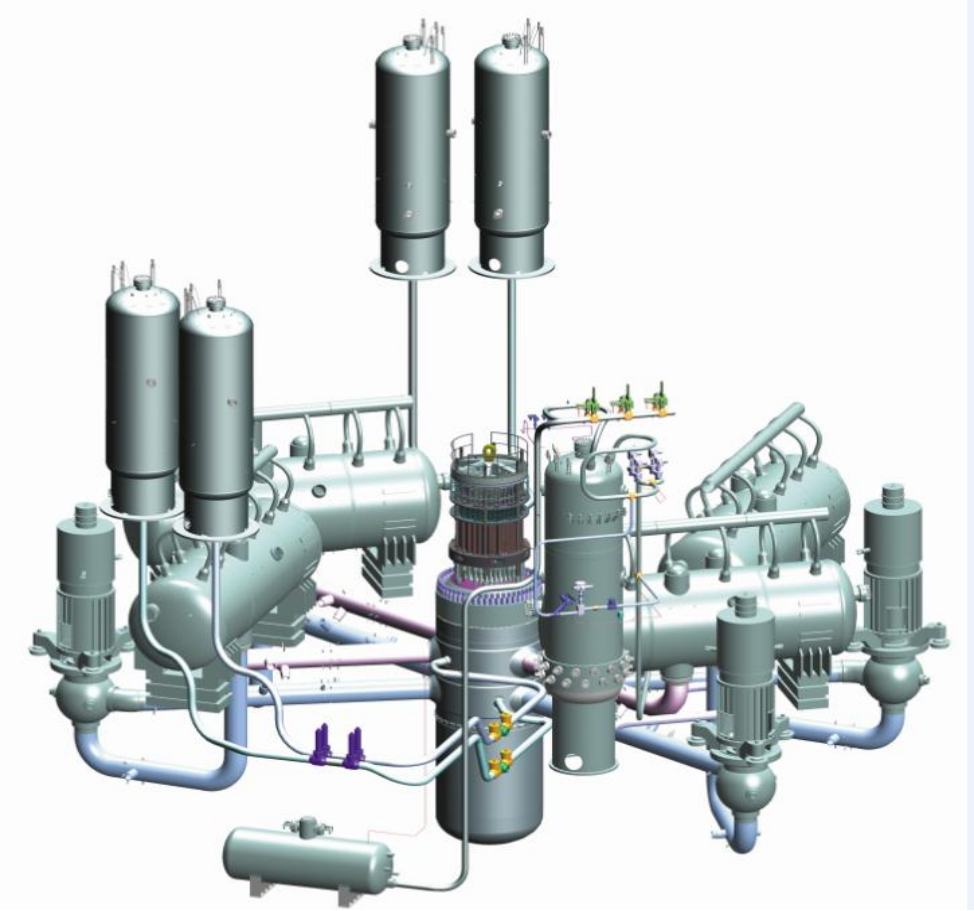

VVER – among the most successful embodiments of an idea to create a safe & effective nuclear power reactor

VVER is a pressurized water reactor, which proved its high reliability over more than 1300 reactor-years of VVER plants operation.

First VVER reactor of 210 MW capacity was commissioned in 1964 at Novovoronezh NPP. This year it is planned to commission a 1200 MW VVER reactor at Novovoronezh site.

Russian design VVER reactors keep providing electricity throughout the world: above the Arctic Circle and at the southern tip of India

70 power units with VVER reactors have been constructed since the 1960s. At present, 57 VVER reactors are in operation at 19 NPPs in 11 countries.

Did you know that:

- two VVER-440 reactors in Armenia continued to operate through the 0.7g Spitak earthquake in 1988;
- Tianwan NPP in China with two VVER-1000 reactors was the 1st NPP with a core catcher installed in 2007.

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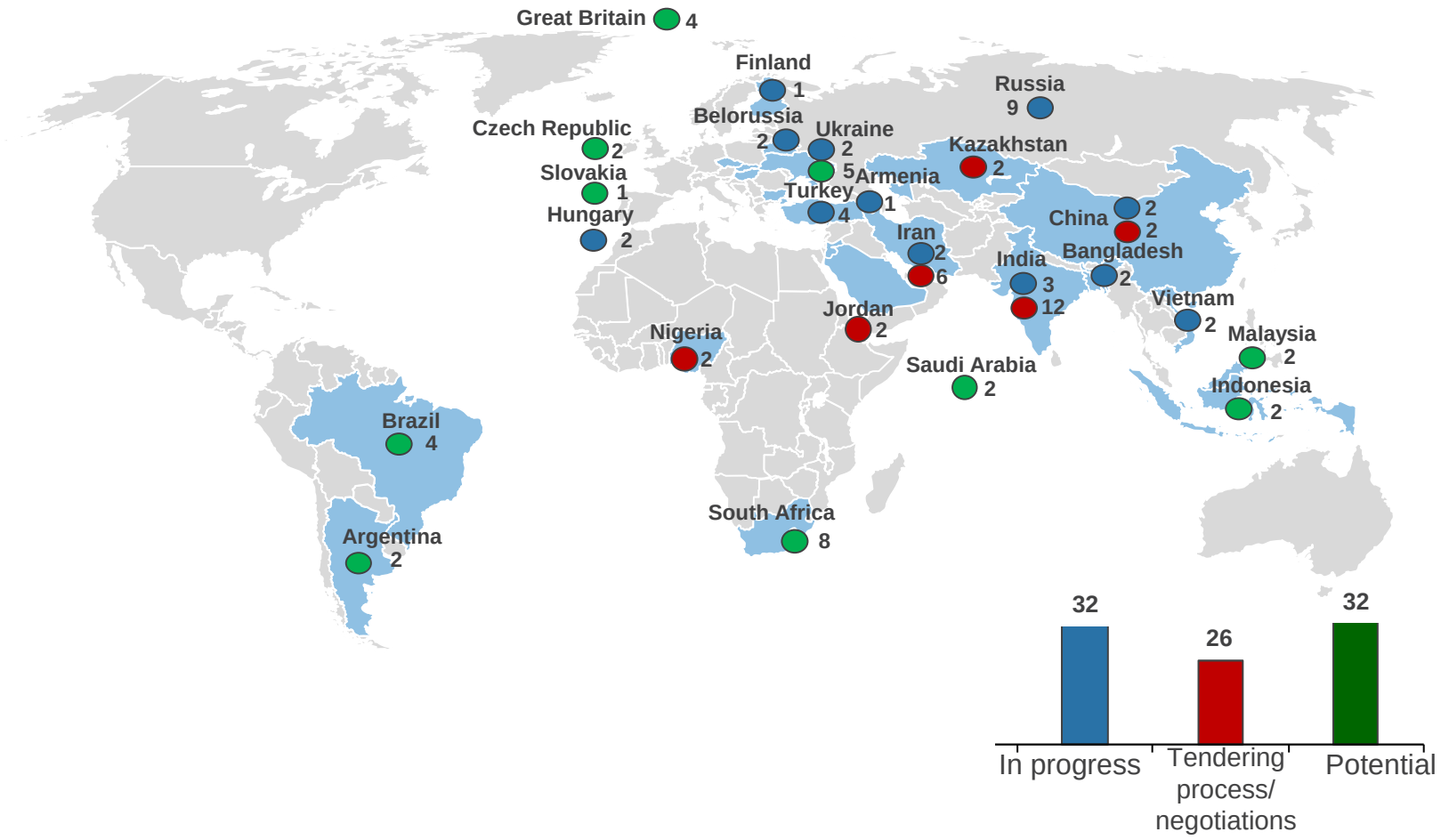
Modern VVER-1200 – evolutionary idea of the revolutionary safety

VVER-1200 (AES-2006) is based on the most recent achievements of the Russian nuclear industry. Its unique safety concept is a balanced combination of both active and passive safety systems.

VVER-1200 (AES-2006) design is:

- under construction in Russia at Leningrad II NPP, Novovoronezh NPP II, Baltic NPP and at Belorussian NPP;
- to be implemented at Hanhikivi-1 NPP in Finland, Paks NPP Units 5-6 in Hungary, Akkuyu NPP in Turkey.

Rosatom is present on 5 continents and more than 40 countries



Rosatom NPP construction perspective backlog – 90 units

Estimate of positive economic impacts for the Czech Republic (2 units)

Economic impacts

Increase of GDP

Budget impacts

Increase of personal taxes, corporate taxes, VAT and consumer taxes

Increase of medical and social insurance paid by employees and by companies due to increased employment

Decreased of social payments to unamployed persons

Labour market impacts

Increase of employment

Item	Value
Investment phase	
Investment phase duration	14 years
Example of contract value	CZK 239,4 billion
Share of Czech companies in CZK	CZK 165,3 billion
% share of Czech companies	68,98%
Operation phase for initital 20 years	
Average amount of procurement plus increased personal costs per year	CZK 4,1 billion.
Contracts of Czech companies for similar proejcts in 3rd countries for 20 years	
Average amount of induced purchases per year	CZK 2,55 billion

Summary of impacts in figures

- **Additional GDP created by the Project within 20 years : CZK 242,6 billion**
- **Additional average increase of GDP per year : 0,21%**
- **Decrease of unemployment : 0,14% per year**
- **New created jobs during investment phase : 15 592 (average per year)**
- **New created jobs during operation and due to additional contracts in 3rd countries : 4 720 a year**
- **Increase of state budget income : CZK 85,8 billion, approx. 2,86 a year**

Nuclear medicine – a life-saving idea

In medicine atom is also taking on the most complex challenges. It is used for diagnosis and therapy of the severest illnesses, including cancer.

Rosatom is a significant player on world isotope market: 360º product portfolio incl. medical, industrial and stable isotopes.

One of Rosatom key project is construction of Russia's federal nuclear medicine centers, which will become a platform for comprehensive efforts in research, professional training and the development of nuclear treatment technologies.

Dream of the deep space – will the atom ever make it true?

In Russia the first research works related to the use of nuclear energy in the space exploration were started in 1950's.

First Russian testing of a nuclear reactor in the space took place in 1970. Another milestone was the launch of thermionic reactor in the space within TOPAZ project in 1987.

Today ROSATOM is working on the creation of 1 MW nuclear propulsion engine for a spaceship.

Nuclear icebreakers – a horizon-breaking idea

"Lenin", the world's first nuclear-powered surface ship and the first was commissioned in 1959 and gave the green light for nuclear-powered civilian shipbuilding.

Nuclear icebreakers and the Northern Sea Route – a way to the boost of world trade & economic development

Only from Yamal peninsula it is planned to annually export 17.6 mln t of LNG. Icebreaking and navigation services will be essential for the operation of 16 LNG-carriers.

For such purposes new generation of icebreakers is planned. Construction of the new LK-60 icebreaker is already underway. With the displacement: 33.540 tones its will the world's largest nuclear-powered icebreaker, which may be used both in the open sea and on rivers.

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