



**ROSENERGOATOM**

ELECTRIC POWER DIVISION OF ROSATOM

## **Rosatom offer in the field of operation, maintenance and modernization of NNP**

Daria Voronkova

[www.rosenergoatom.ru](http://www.rosenergoatom.ru)

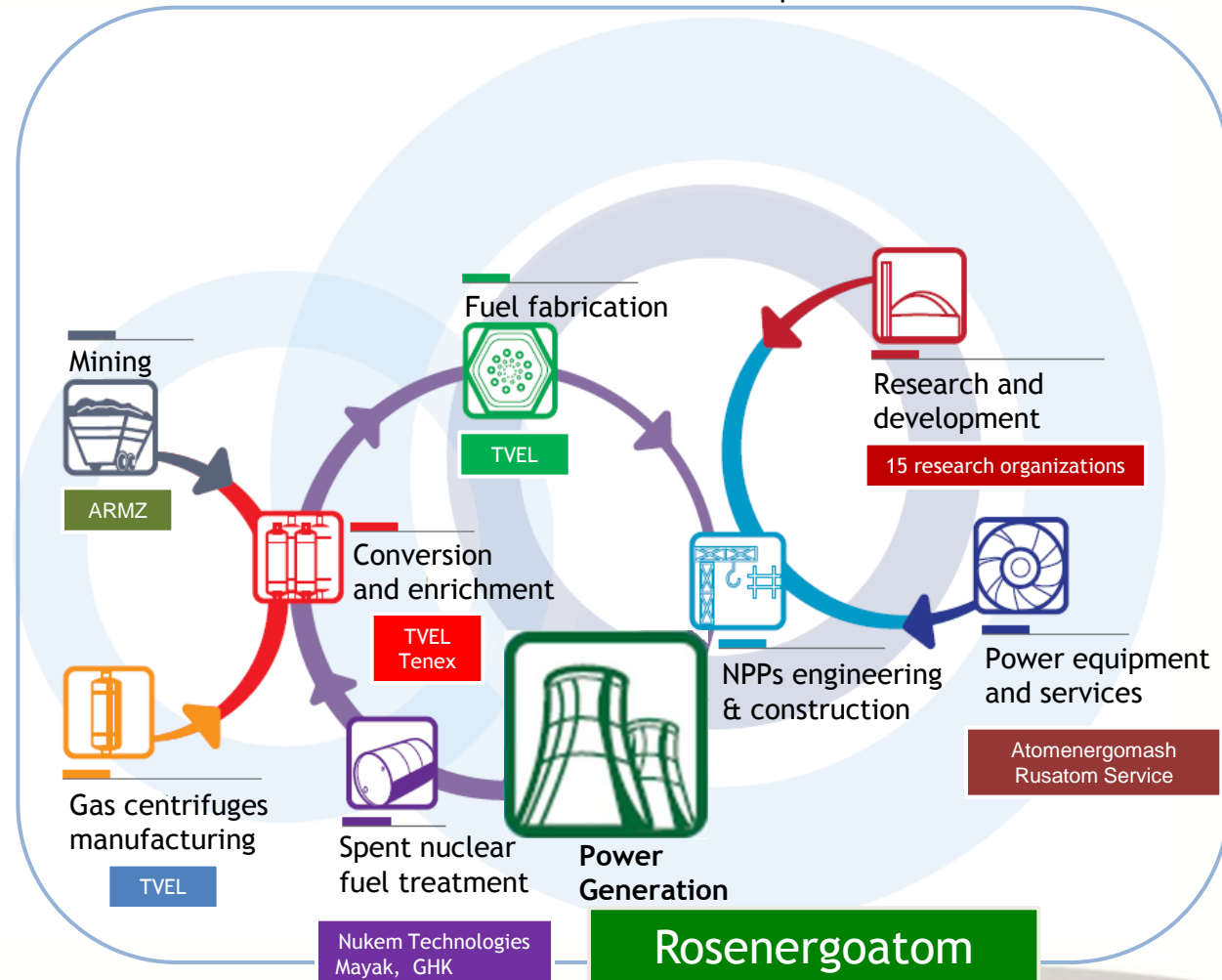
# ROSATOM OFFERS COMPLETE SOLUTION - FROM URANIUM SUPPLIES TO NPP CONSTRUCTION, OPERATION AND DECOMMISSIONING

ROSATOM Operations \*

Guaranteed supply  
of complete life-cycle  
products and services

Flexible capabilities  
ranging from the supply of  
the NPP components and  
services to turn-key and BOO  
projects

Being a state corporation,  
Rosatom takes advantage of  
unique industry  
access to privilege resources

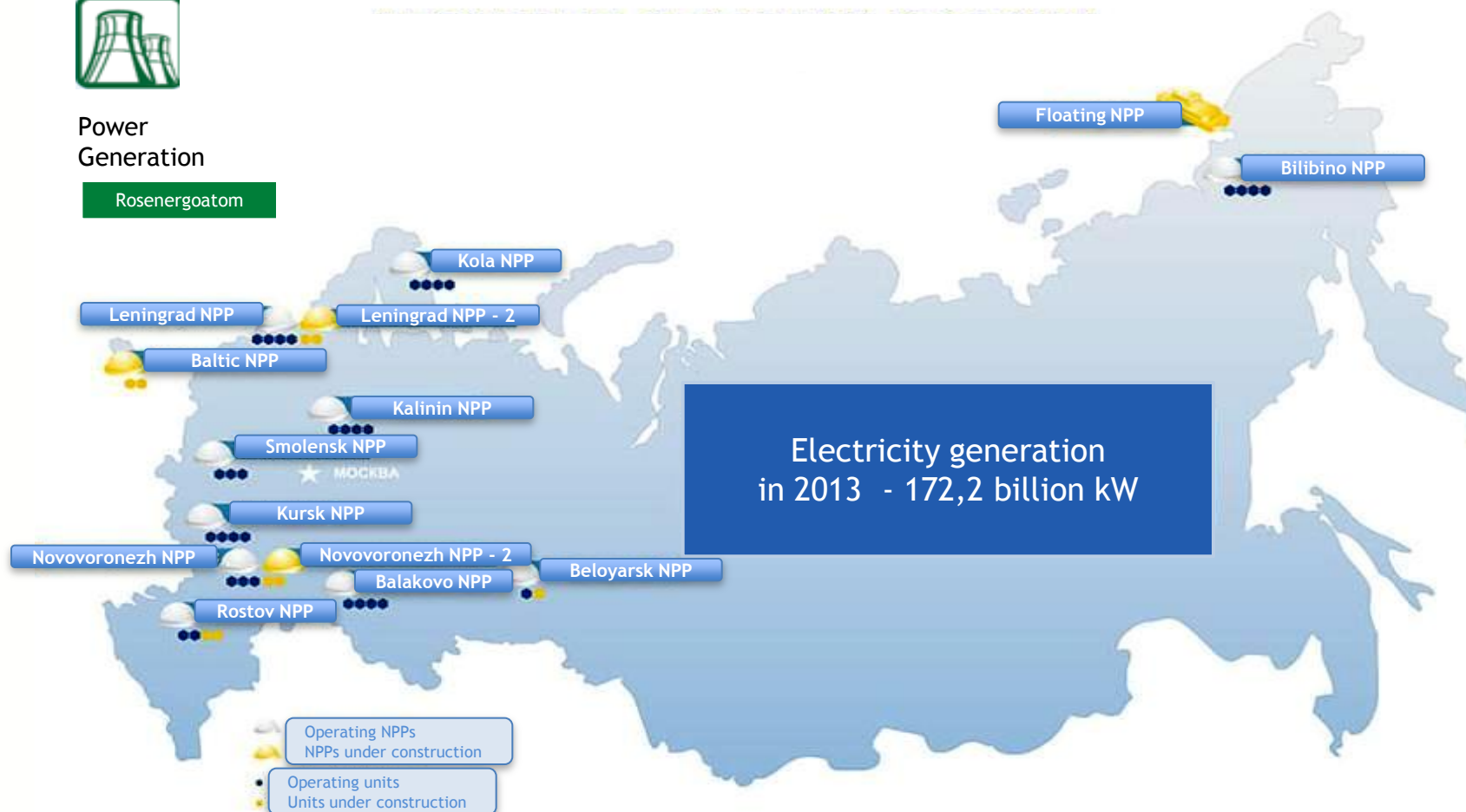


# ROSENERGOATOM CONCERN, JSC

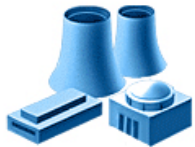


Power  
Generation

Rosenergoatom



# WORLDS BIGGEST OPERATING COMPANIES BY INSTALLED NUCLEAR CAPACITY (GW)





## Operating NPP

**10** NPPs **33** units

IGC=25242 MW

## NPP under construction

**10** units IGC = 8936 MW

1		EDF	63
2		REA	25,2
3		KHNP	20,7
4		EXELON	18

## Generation

2013 г.

**172,2** billion kW



## Electrical generation

2014 г.

**130,9** billion kW



## Revenues

2013 г.

**6 013** million USD



## Staff

**35 000** pers.



**ROSENERGOATOM**  
ELECTRIC POWER DIVISION OF ROSATOM

# INTERNATIONAL COOPERATION OF ROSENERGOATOM

## Rosenergoatom participation in international organizations activity



**IAEA**

Intergovernmental organization  
Participation rate – Russian Federation



**WANO**

International organization  
Participation rate – operating company



**NEA**

Intergovernmental organization  
Participation rate – Russian Federation

## Bilateral cooperation

### Operating companies

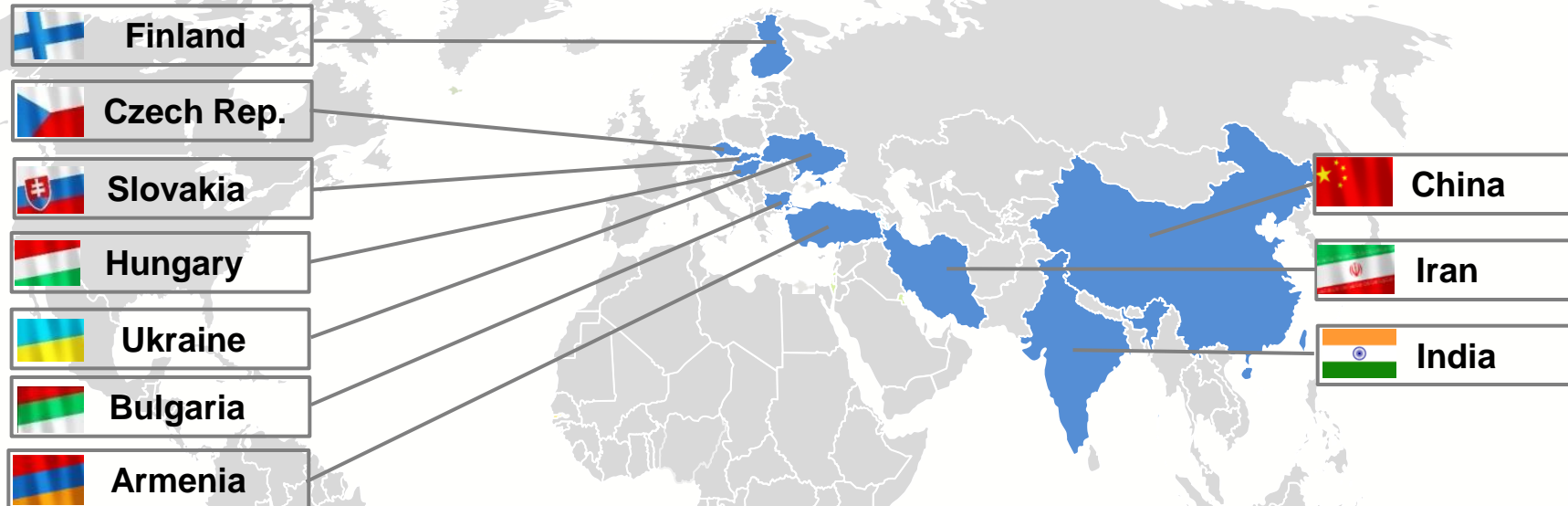


Electricite de France



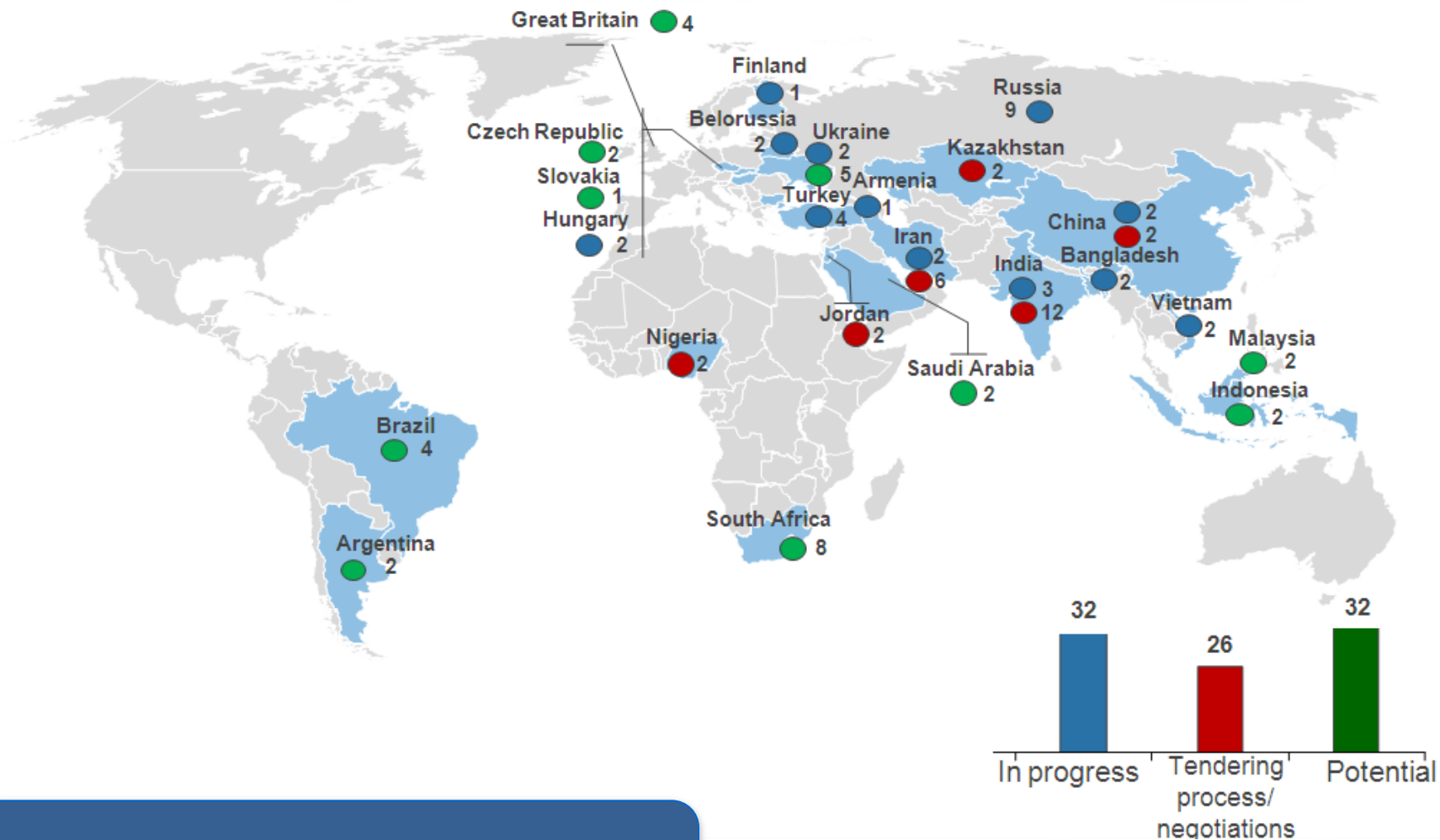
Iberdrola

# RUSSIAN-DESIGN NPP ABROAD



Reactor	Quantity
VVER-440	17
VVER-1000	21
TOTAL	38

# ROSATOM PRESENTED IN MORE THAN 40 COUNTRIES ON 5 CONTINENTS

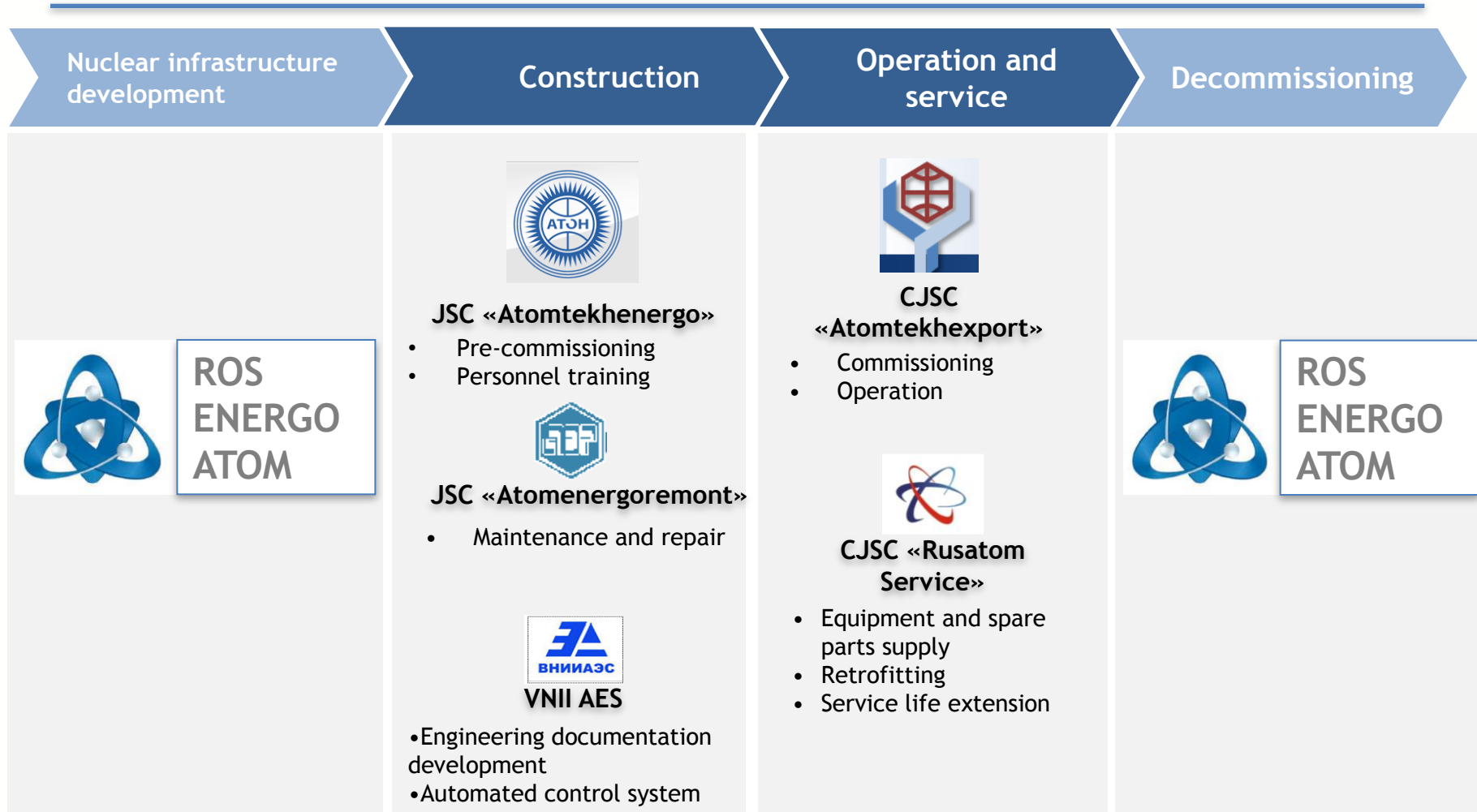


Potential NPP construction projects based on Rosatom experience - 90 units

# OPERATOR'S SERVICE PORTFOLIO FOR FOREIGN NPPs

- 1 • Commissioning of Russian-design units
- 2 • Quality control of installation and construction, and supplied equipment
- 3 • Supply of equipment and spare parts/tools/accessories
- 4 • Engineering documentation development (operation and maintenance)
- 5 • Personnel training
- 6 • Operation of Russian-design units
- 7 • Retrofit and service life extension
- 8 • Decommissioning
- 9 • Automated control system (service package)

# ROSENERGOATOM PARTICIPATION IN NPP LIFE CYCLE STAGES



# NUCLEAR INFRASTRUCTURE IS THE BASIS FOR NATIONAL NUCLEAR PROGRAM

## National Nuclear Program

Research  
reactors,  
isotope  
production

Industrial  
applications

Medical  
applications

Energy  
Generation  
Construction  
of  
NPPs

Uranium  
production

## NUCLEAR INFRASTRUCTURE

For administration, operation and regulation  
of the National Nuclear Programme



**ROSENERGOATOM**  
ELECTRIC POWER DIVISION OF ROSATOM

# ONE-STOP-SHOP SYSTEM - INTEGRATION OF SERVICES OFFERED BY ROSATOM

NPPs technical service and repair



Modernization of NPPs, Lifetime extension, Power increase



**RUSATOMSERVICE**



Planning and supply of NPP spare parts and equipment



Retraining of the NPPs personnel



**ROSENERGOATOM**  
ELECTRIC POWER DIVISION OF ROSATOM

# BUSINESS DEVELOPMENT OF OPERATING COMPANY AND ITS SUBSIDIARIES AT RUSSIAN-DESING NPPs



## China - Tianwan NPP



- Engineering support of operation
  - Engineering consulting for CEFR
  - Equipment and spare parts supply
  - Consulting services during preventive maintenance of the units
- 
- Supervising of:
    - ✓ Designing
    - ✓ Construction
    - ✓ Equipment production for primary circuit
    - ✓ Installation and construction work, start-up and commissioning
  - Engineering documentation development
  - Personal training

# BUSINESS DEVELOPMENT OF OPERATING COMPANY AND ITS SUBSIDIARIES AT RUSSIAN-DESING NPPs



## Iran - Bushehr NPP



- Engineering for NPPD
  - Maintenance work
  - Modernization services of the unit
  - Boosting of plant-performance figures
  - Switch to 18-month fuel cycle
  - Personnel training
  - Training and methodological documentation development
- 
- Supervising of:
    - ✓ Designing
    - ✓ Construction
    - ✓ Equipment production for primary circuit
    - ✓ Installation and construction work, start-up and commissioning
  - Operation documentation development
  - Personal training

# BUSINESS DEVELOPMENT OF OPERATING COMPANY AND ITS SUBSIDIARIES AT RUSSIAN-DESING NPPs



## India - Kudankulam NPP



- Technical support to operation
  - Engineering consulting
  - Supply of equipment and spare parts/tools/accessories
  - Services during maintenance work
- 
- Engineering consulting during installation and construction work, start-up and commissioning
  - Development, approval and transfer of organizational, commissioning and operational documentation for units 1 and 2 to the Owner
  - Technical support during start-up and commissioning

# BUSINESS DEVELOPMENT OF OPERATING COMPANY AND ITS SUBSIDIARIES AT RUSSIAN-DESING NPPs



## Bulgaria - Kozloduy NPP



Life extension of units 5 and 6:

- For Kozloduy NPP, the decision was taken to carry out its comprehensive inspection, evaluate its equipment and units remaining life.
- After completion of the international tender procedure in April 2012, an international contract between Kozloduy NPP and Rosenergoatom and EDF (Electricité de France) Consortium was countersigned.

Initial life cycle of units 5 and 6 - 30 years:

Unit 5 - 11.2017

Unit 6 - 10.2019

# BUSINESS DEVELOPMENT OF OPERATING COMPANY AND ITS SUBSIDIARIES AT RUSSIAN-DESING NPPs



## Turkey - Akkuyu NPP



**This is the first world NPP  
Project implemented according  
to BOO-model**

- Services during nuclear infrastructure development in the country
- Technical customer services
- Technical support to the project

# ROSENERGOATOM - RELIABLE PARTNER



---

Thank you for your attention!



**ROSENERGOATOM**  
ELECTRIC POWER DIVISION OF ROSATOM