



ATOMIC ENERGY POWER CORPORATION

JSC ATOMENERGOPROM



**ATOM
ENERGO
PROM**





PRESENTATION

Presentation Contents

-  **ATOMENERGOPROM in brief**
-  **Nuclear energy development forecast**
-  **Affiliates of ATOMENERGOPROM**






Goals of the establishment of JSC “Atomenergoprom”:


-  To consolidate the civil part of nuclear industry into an integrated full-cycle company of international scale and to increase its efficiency and to enhance its competitiveness
-  To divide civil and defense sectors of nuclear industry
-  To create conditions for corresponding Russian nuclear industry to international integration processes
-  To realize effectively a large-scale program of building NPP in Russia




General Company Information

-  **JSC Atomenergoprom** was established in **2007** according to Russian Federation Presidential Decree № 556 of 27.04.2007. The charter was approved by Russian Federation Government Resolution №432 of 06.07.2007
-  The State Corporation Rosatom owns 100% shares of JSC Atomenergoprom (Federal law N 317-FL of 01.12.2007)
-  Shares of 89 enterprises of Russian atomic industry will be contributed into equity of JSC Atomenergoprom (incl. 31 JSC, 55 FSUE, 3 FSEI)
-  The staff totals approximately 193,000 employees.
-  **Atomenergoprom** absorbs a unique experience, which has been accumulated through all sectors of nuclear fuel cycle and construction of NPP during 60 years
-  Government Support: Federal Target Program “Development of Russian Nuclear Energy Industry in 2007-2010 and for a period till 2015» envisions financing totaling 1471,4 bln RUR (Russian Federation Budget – **674,8** bln RUR – 45%).



 **Atomenergoprom mission** is to provide safe and effective economic development, life quality growth and preservation of the environment

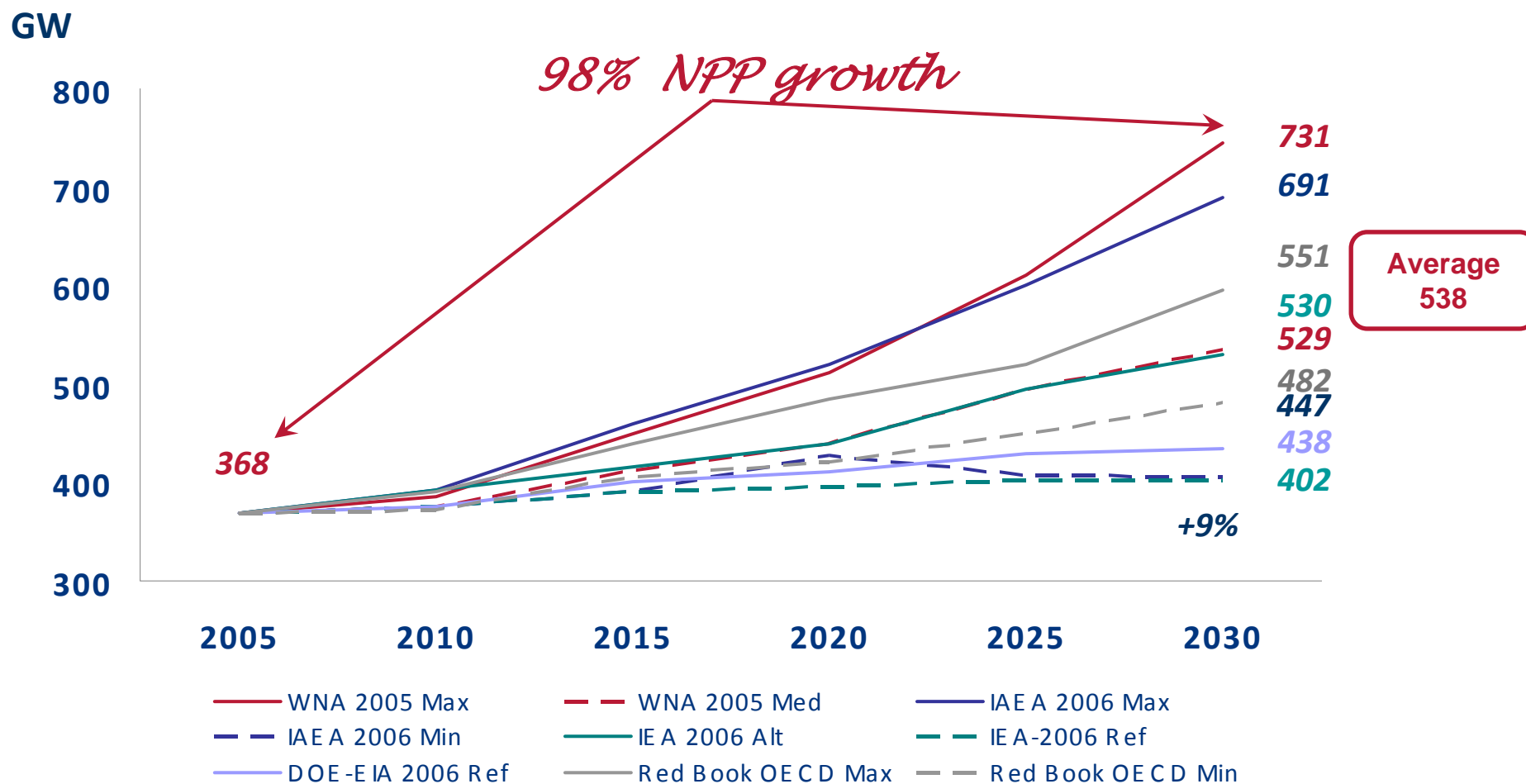
 Atomenergoprom contributes to economic growth, social stability, prosperity and progress, provides protection of environment and rational usage of natural resources. The company aims at being a responsible member of the world community, known and respected all over the world.

 Core strategic principle – **technological leadership in the global nuclear industry**

 Company's strategy is to advance to both to unification and technological improvement of product and to diversification of sources of revenue and the geographic expansion

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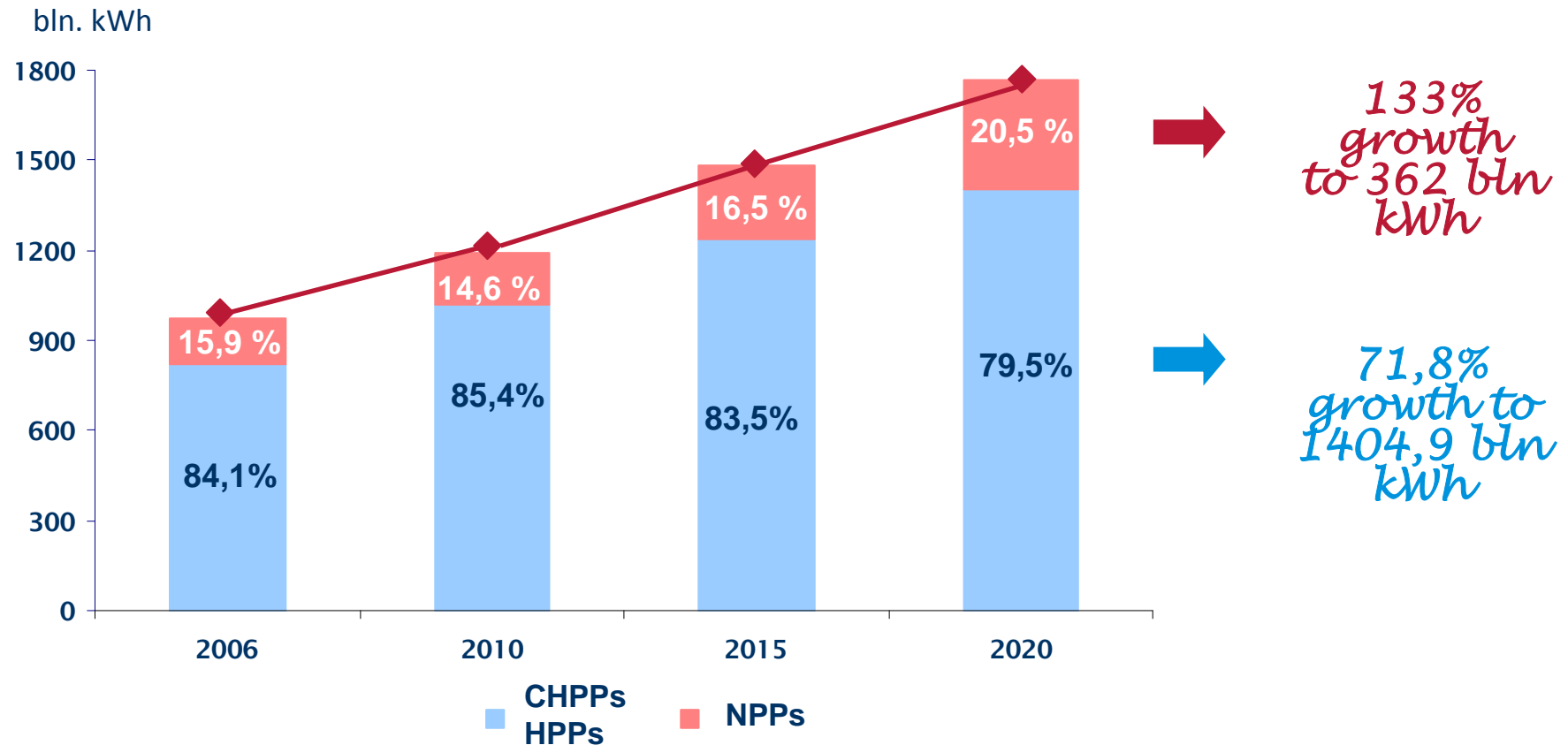
The Worldwide Nuclear Installed Capacity Forecast Till 2030



WNA 2007 projects growth from 415 to 833 GW or from 12% to 126% of installed capacity from 2030



Electricity Consumption Growth In Russia *



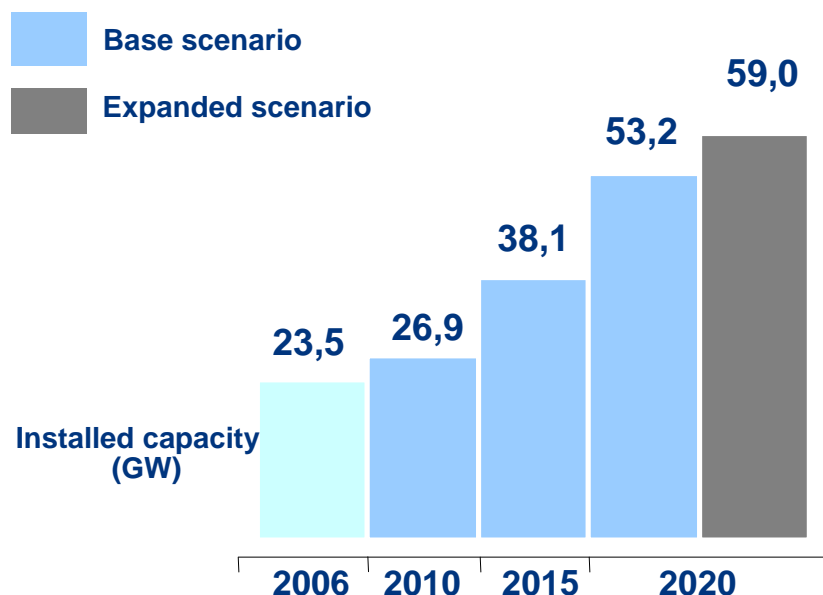
 NPP generation growth from 155,1 bln.kWh to 362 bln.kWh (2006→2020) – base scenario, i.e. 20,5% of total Russian electricity generation;

 NPP growth is achieved by new construction and modernization of existing NPPs

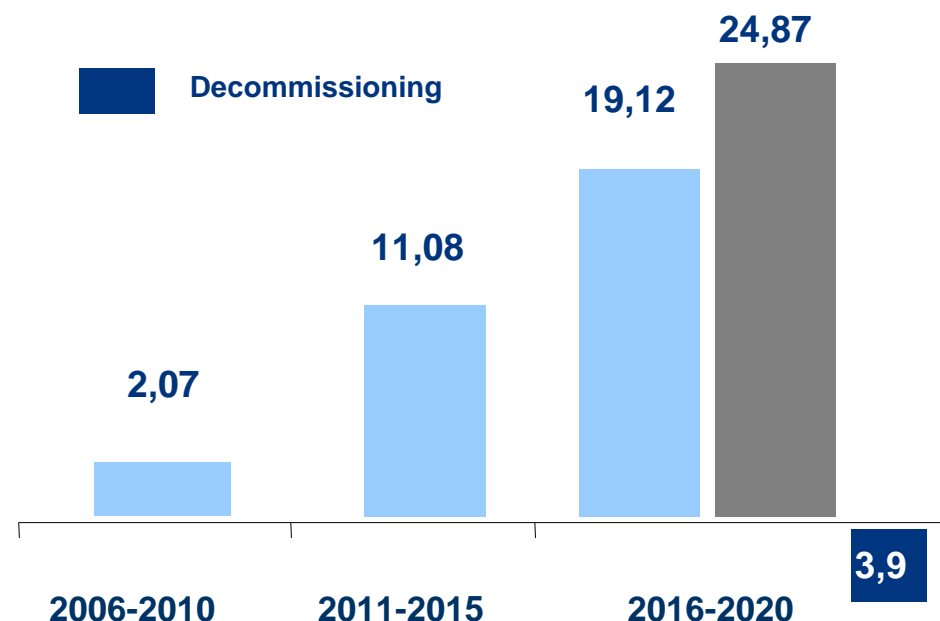
*According to General Plan of Electricity Power Plants Allocation (base scenario) adopted by Russian Government Decision dated February 22th 2008 #215-p

Increase of capacity according to General Allocation till 2020

Dynamics of nuclear generation (taking into account modernization*)



Program of putting into operation and decommissioning of nuclear units



Till 2010 4 new nuclear units are to be put into operation; 2011-2015 – 10 new nuclear units ; 2016-2020 – 23 units according to base scenario, or 28 units according expanded scenario

During 2016-2020 r.r. – decommissioning of 9 units – 3,9GW

* Increasing of capacity on operating equipment taking into modernization

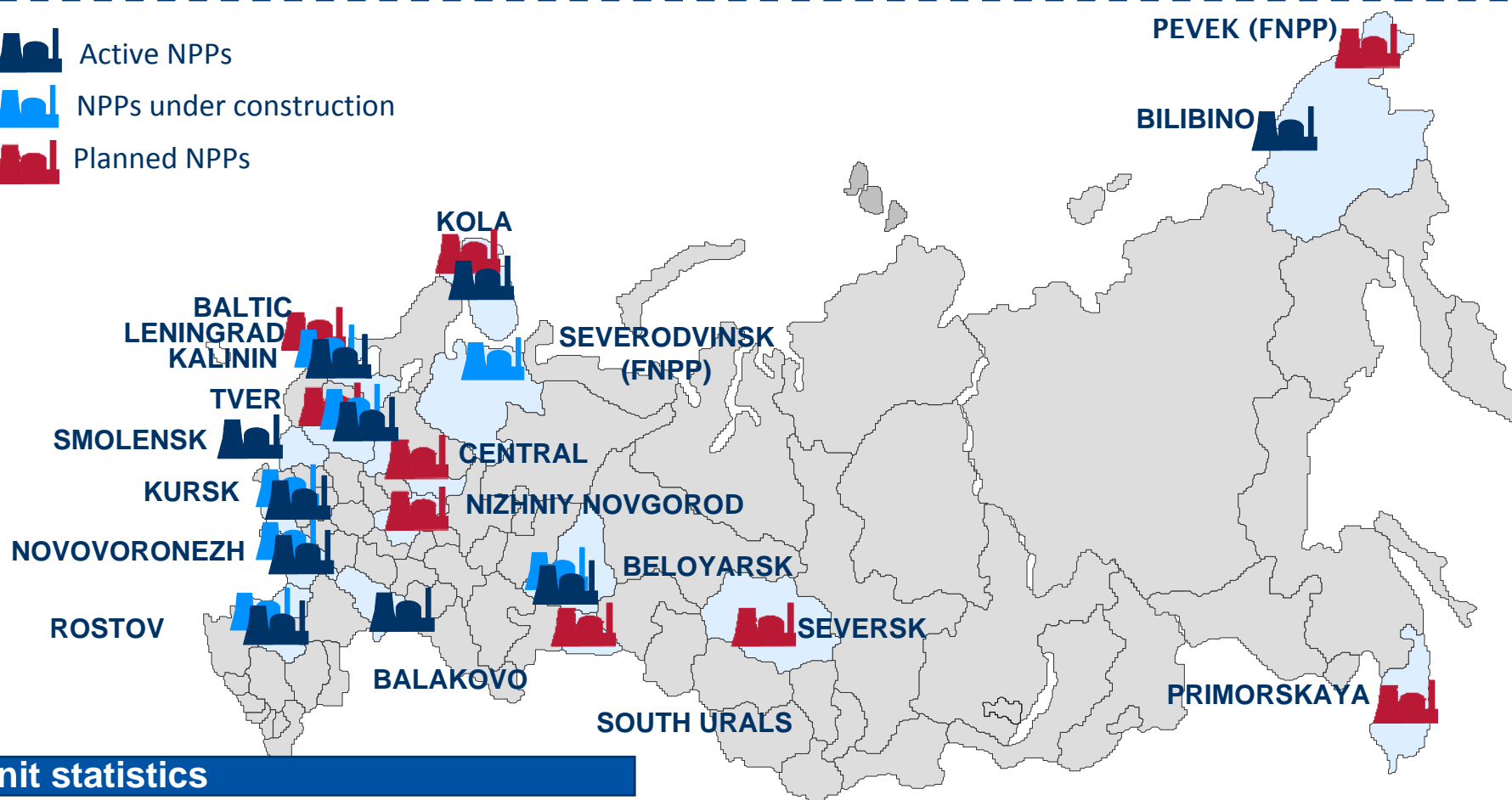


General Allocation Plan: Map of Russia in 2020

 Active NPPs

 NPPs under construction

 Planned NPPs



Unit statistics

Active - 31 units

Under construction - 11 units (incl. 2 floating)

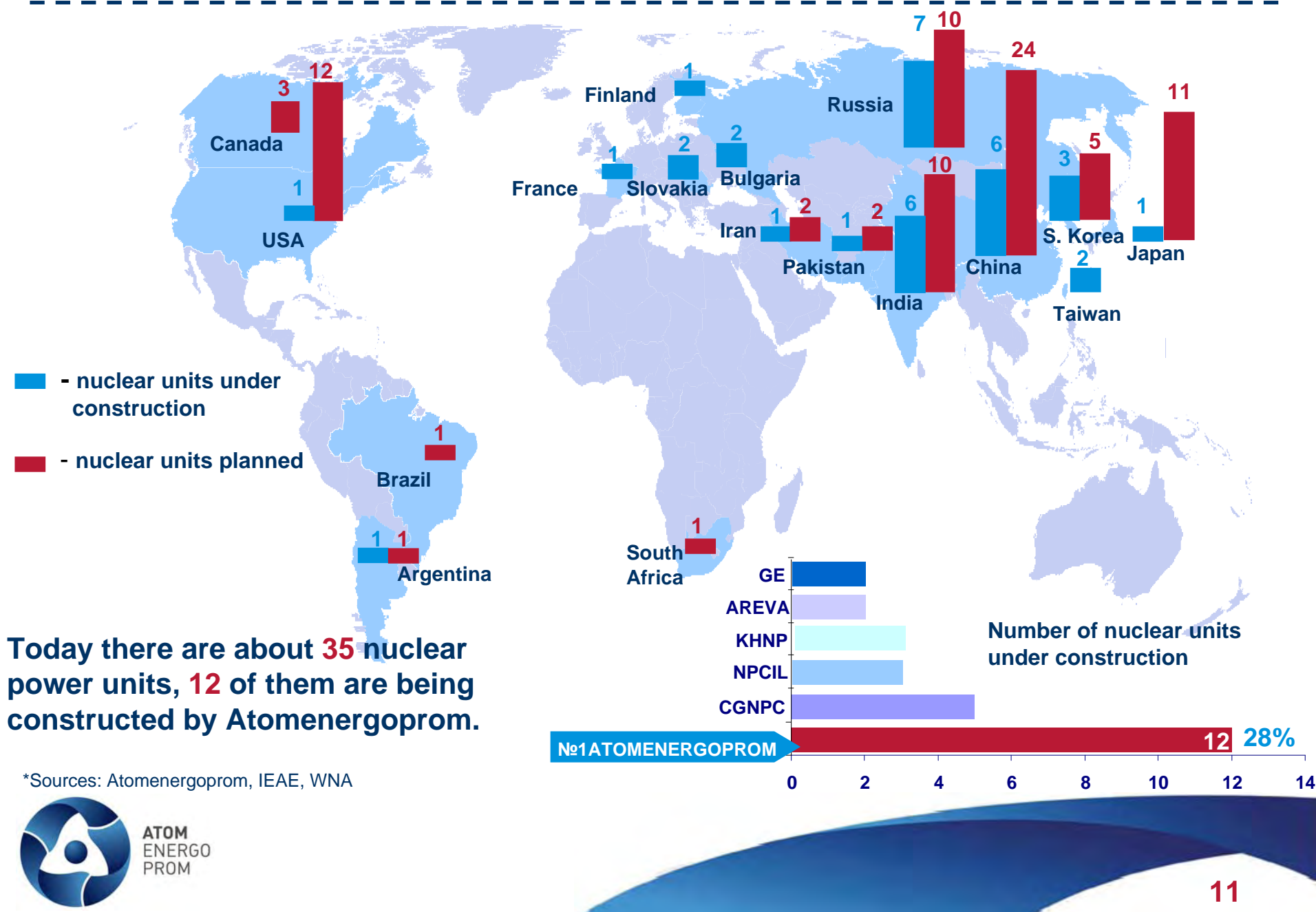
Planned - 31 units (incl. 2 floating)

Upgrade – 14 units

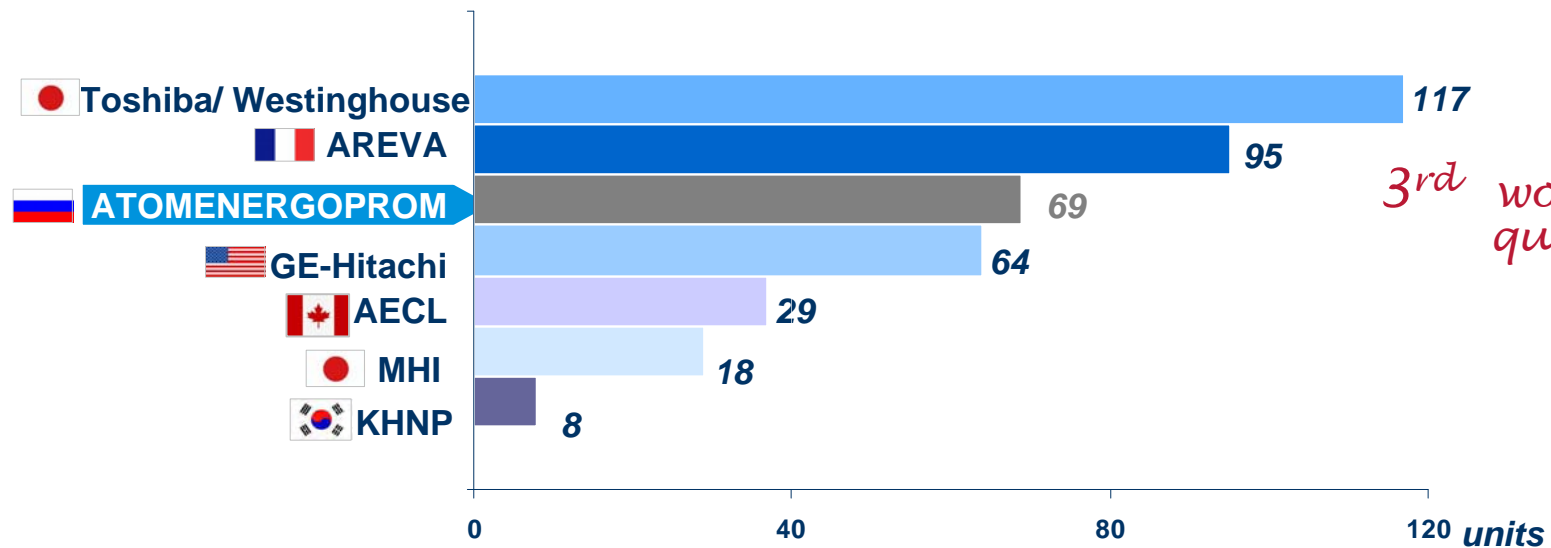
Decommissioning – 9 units (incl. 3 in Bilibino)



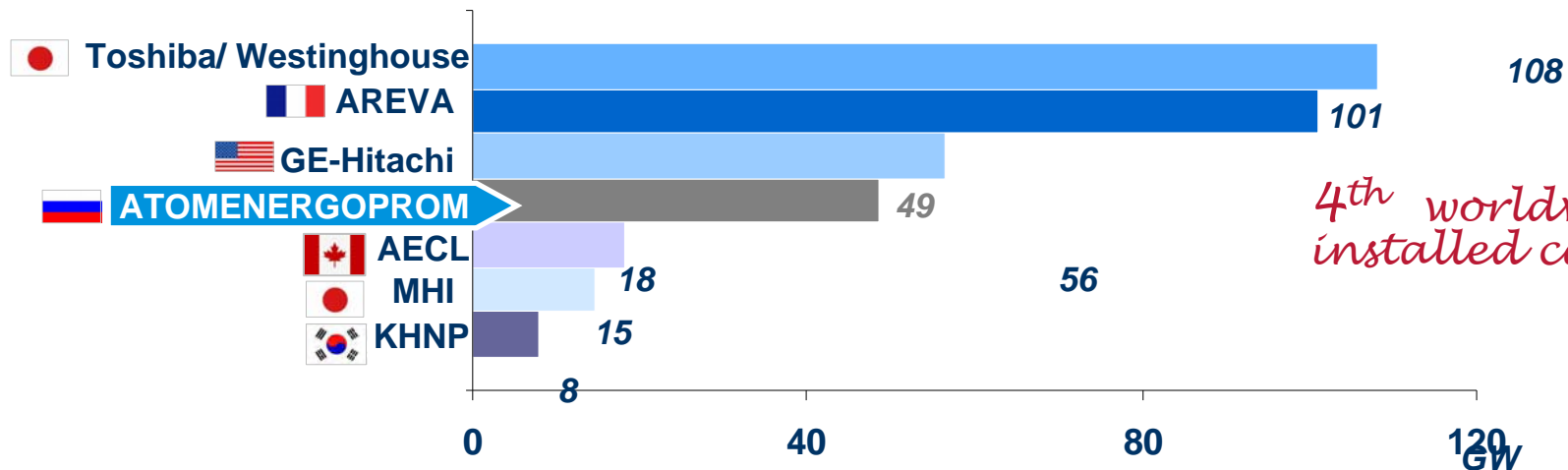
World nuclear power units under construction (2008)*



Active Units Worldwide



3rd worldwide by quantity



4th worldwide by installed capacity

Source: Atomenergoprom



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Main Enterprises

OAO "ATOMENERGOPROM"

MINING

OJSC "Atomredmetzoloto"
OJSC "PIMCU", OJSC "Khiagda",
OJSC "Dalur", JV "Zarechnoye",
JV "Akbastau", JV with Cameco,

CONVERSION AND ENRICHMENT

OJSC "AECC", OJSC "SCC", OJSC "UECC"
OJSC "PO ECP"

FABRICATION

OJSC "TVEL", OJSC "MSZ", OJSC "NCCP",
OJSC "ChMP", OJSC "CMP", OJSC "MZP"

EXPORT OF URANIUM PRODUCTS & SERVICES

OJSC "TENEX"

RESEARCH AND DEVELOPMENT

OJSC "VNIINM", OJSC "NIIAR", OJSC "IRM"

GENERATION

OJSC "ENERGOATOM"

MACHINEBUILDING

OJSC "Atomenergomash", JV "Alstom
Atomenergomash", OJSC "ZiO",
OJSC "VPO Tochmash", "MSZ Molniya"

ENGINEERING

OJSC "Design-bureau Hydropress",
OJSC "OKBM", OJSC "NIKIET",
3 OJSC "Atomenergoprojekt" (Moscow,
Saint-Petersburg, Nizhniy Novgorod)

EXPORT OF ENGINEERING

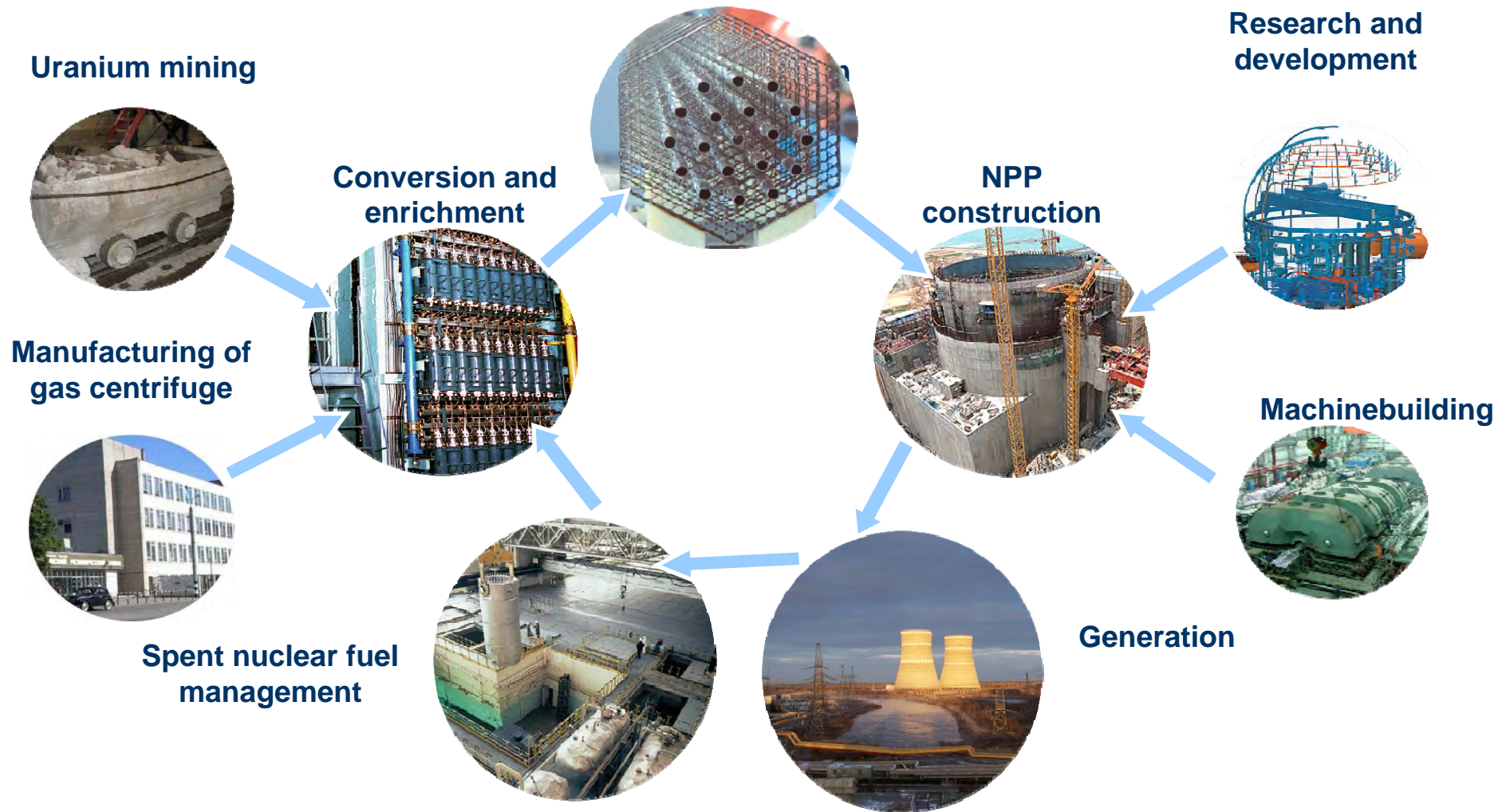
CJSC "ATOMSTROYEXPORT"

TECHNOLOGY DEVELOPMENT

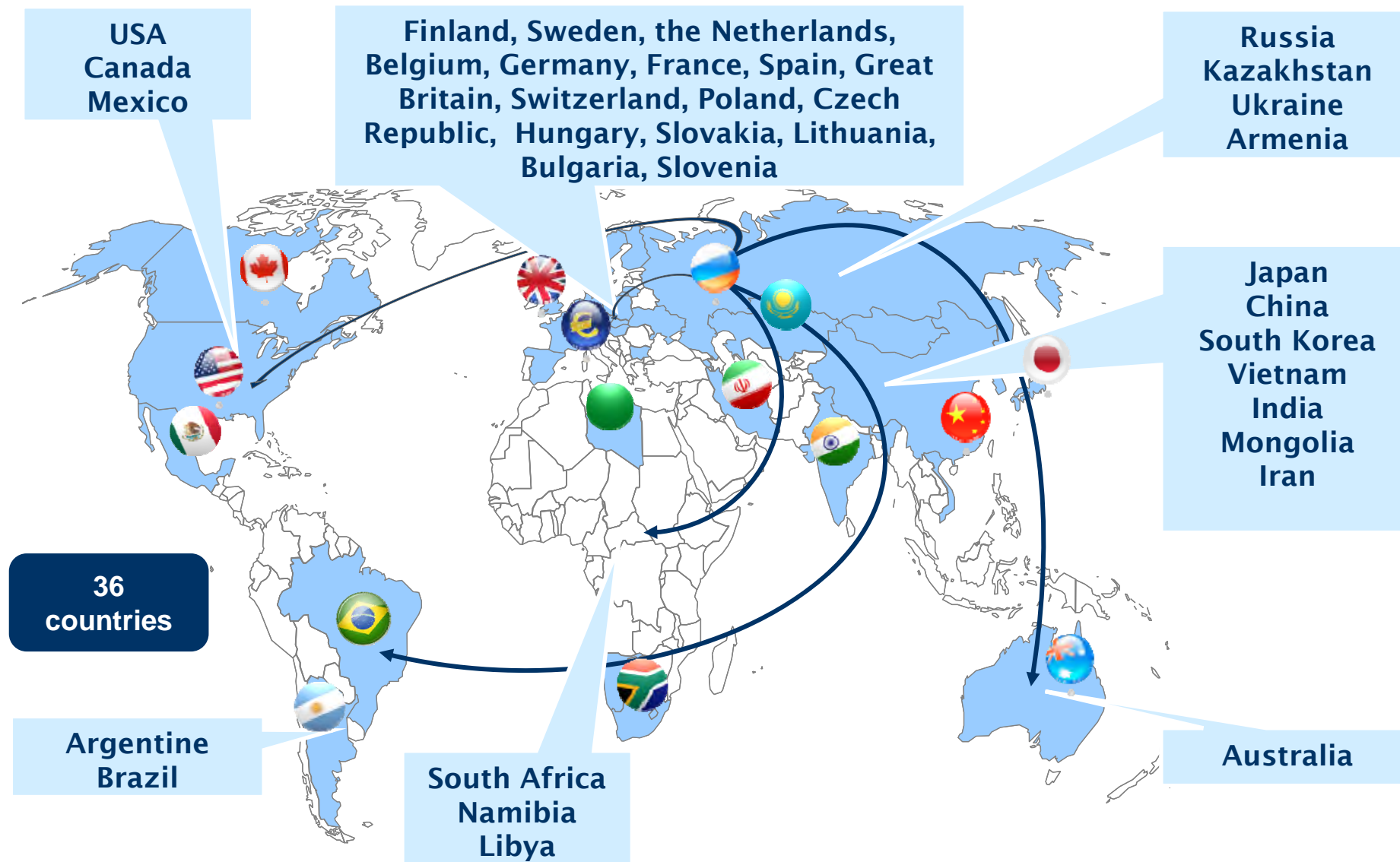
OJSC "Engineering Centre "Russian
Gas Centrifuge",
OJSC "NPK Khimpromingining"



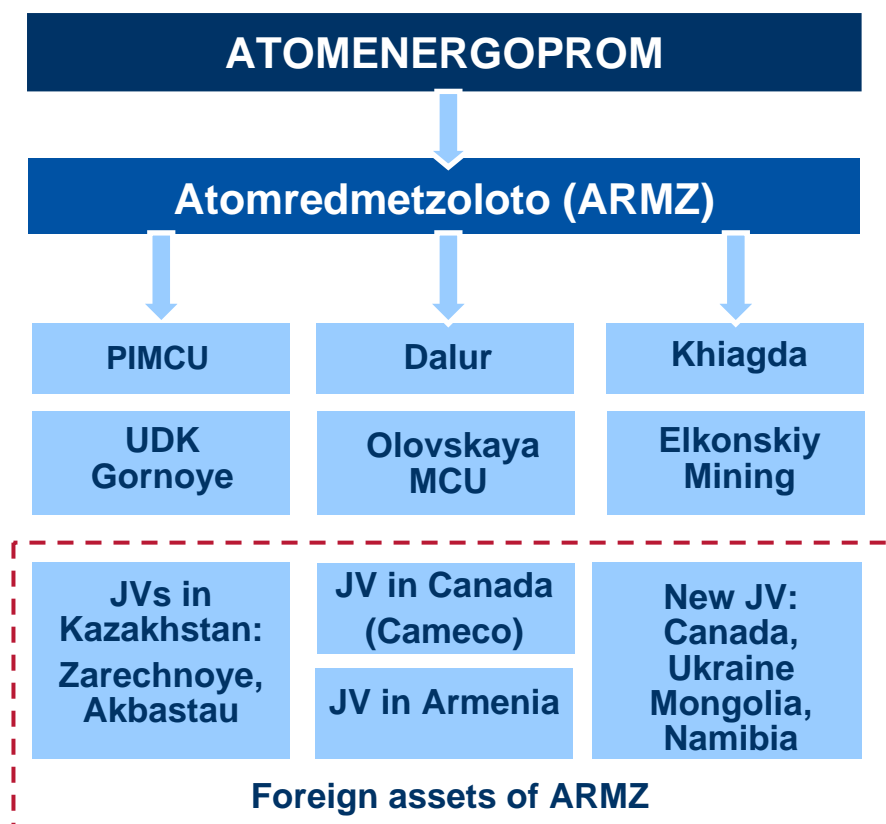
Technology Chain



Global Presence of JSC “Atomenergoprom”

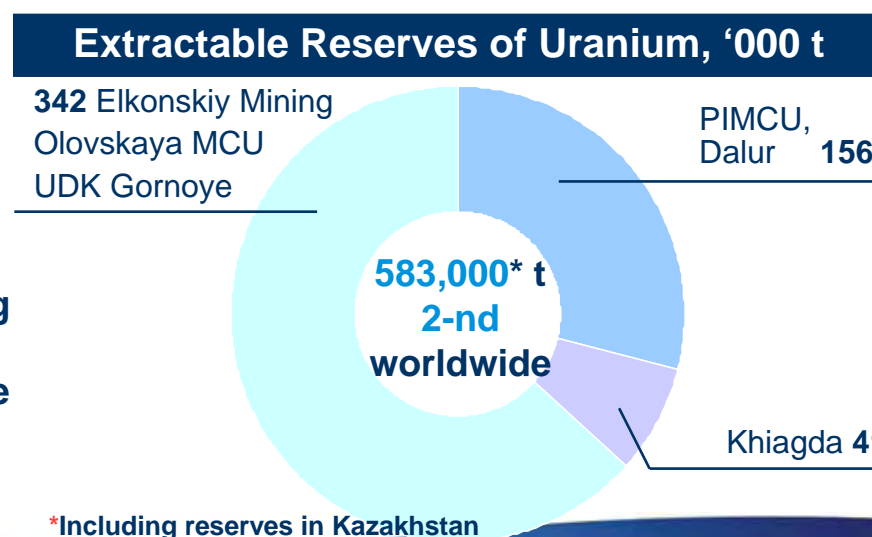
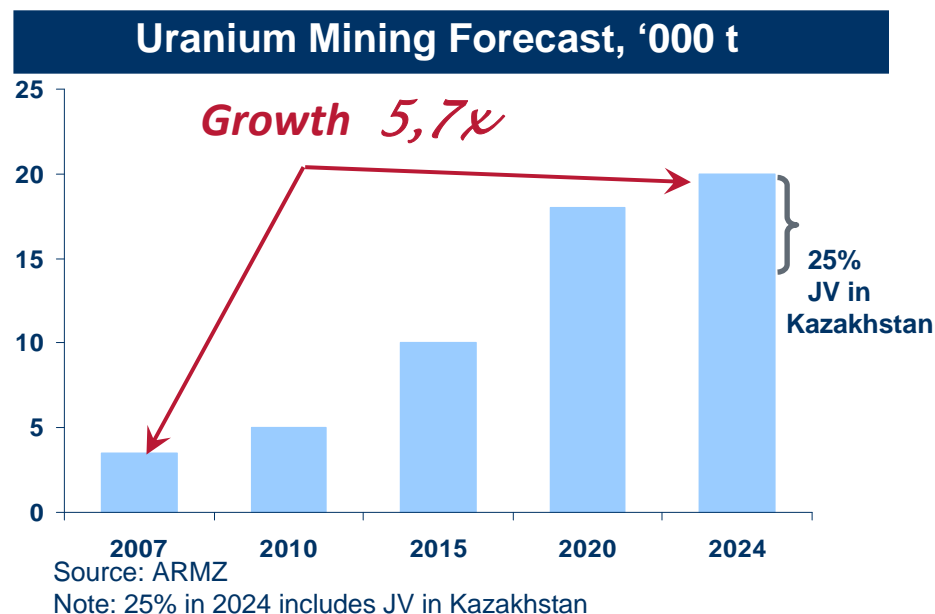


Uranium mining

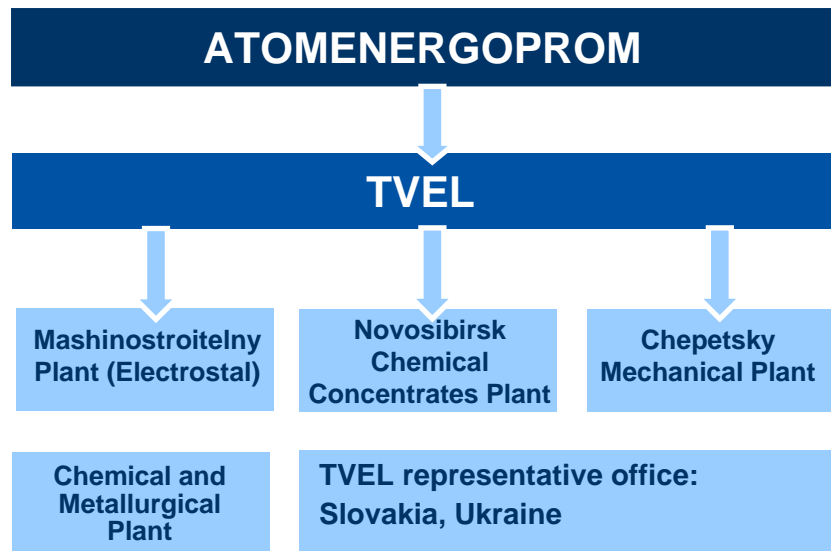


Main Business Activities:

- Secured supply of raw materials matching growing demand of nuclear industry;
- Uranium mining and raw material base replenishment;
- Use of the newest technologies (in-situ leaching);



Fuel Fabrication Affiliates

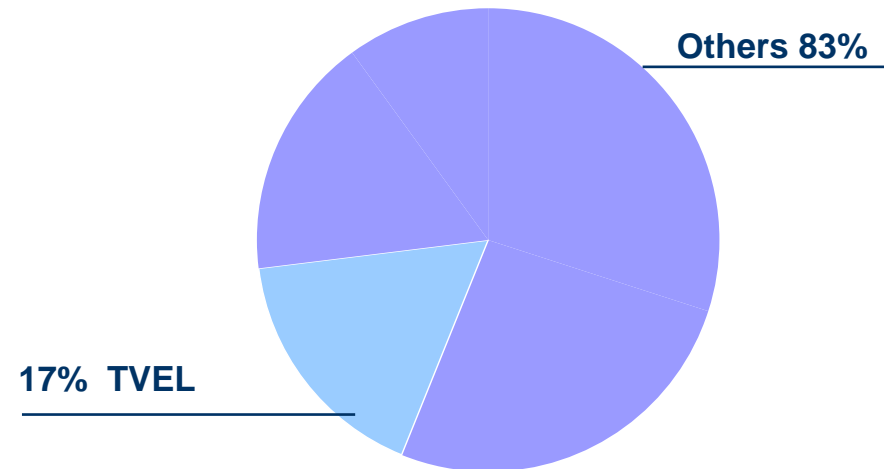


Main Business Activities

- Increased Domestic and Export Fuel Market Demands Secured Supply
- Nuclear Fuel Development and Optimization;
- Fuel assembly “TVS-Kvadrat” project development ;
- Participation in MOX project development;
- Participation in ITER project development ;
- Cooperation expanding with Areva, AECL and KNFC etc.



Nuclear Fuel World Market (Fuel Assembly)



Source: TVEL data, 2007

TVEL-labeled fuel keeps running

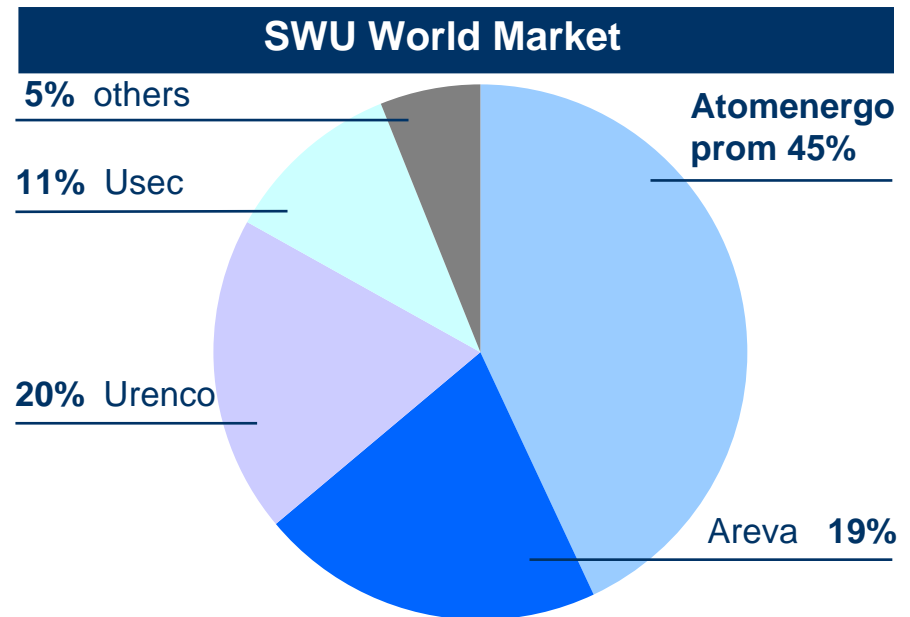
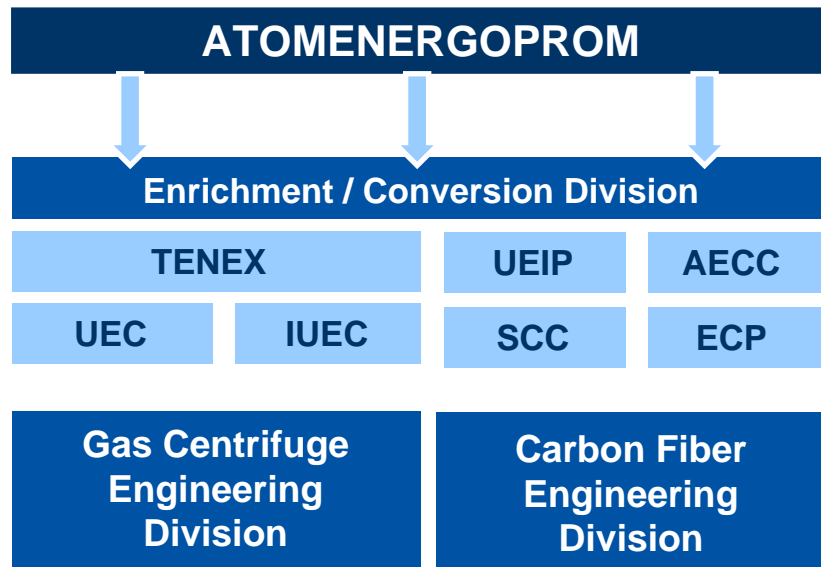
74 commercial reactors – 14 countries

30 research reactors – 17 countries

In cooperation with AREVA NP supplies fuel for PWR/BWR (6 reactors in 2007)

Continuation of Finland (from 2008) and Czech (from 2010) fuel supply projects

Enrichment / Conversion Affiliates



Source: Atomenergoprom data, 2007 r.

Main Business Activities :

- Secured supply of enriched uranium and enrichment / conversion services to domestic NPPs and export supply to NPP Operators;
- Development of enrichment technologies



Nuclear Electric Generation

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Balakovo NPP
(4xVVER 1000)
4000 MW

Beloyarsk NPP
(LWGR-600)
600 MW

Bilibino NPP
(4xLWGR 6) 48 MW

Rostov NPP
(1xVVER 1000) 1000 MW

Kalinin NPP
(3xVVER 1000)
3000 MW

Kola NPP
(4xVVER 440)
1760 MW

Kursk NPP
(4xRBMK 1000)
4000 MW

Leningrad NPP
(4xRBMK 1000)
4000 MW

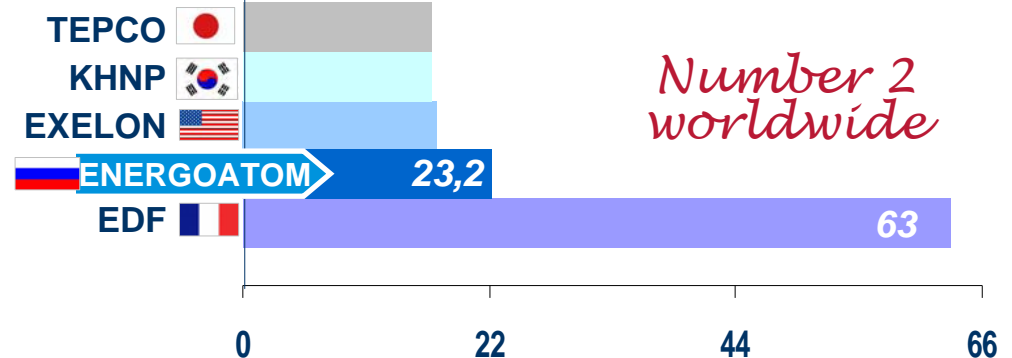
Novovoronezh NPP
(2xVVER 440,
1xVVER 1000)
1834 MW

Smolensk NPP
(3xRBMK 1000)
3000 MW

Total: 10 NPPs, 31 reactors with 23242 MW capacity installed

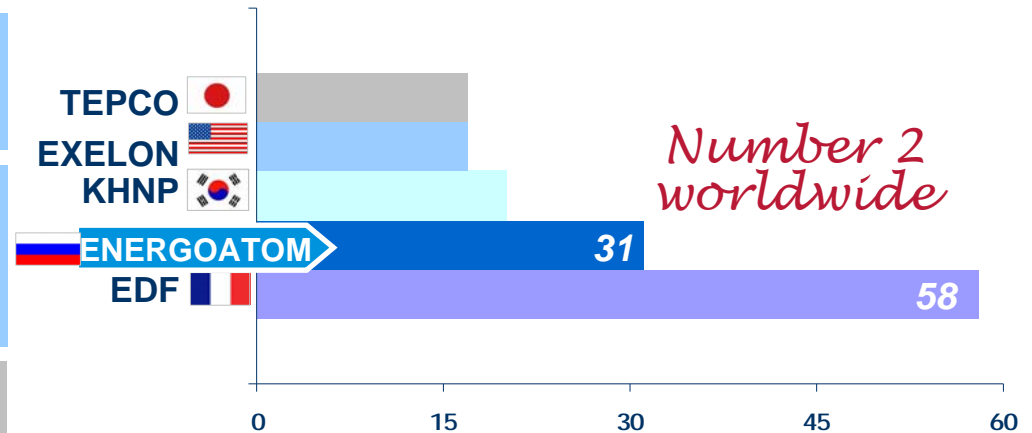


Installed Capacity TOP-5 Operators, GW



Source: IAEA (NPP World Wide Report 2006), Rosenergoatom

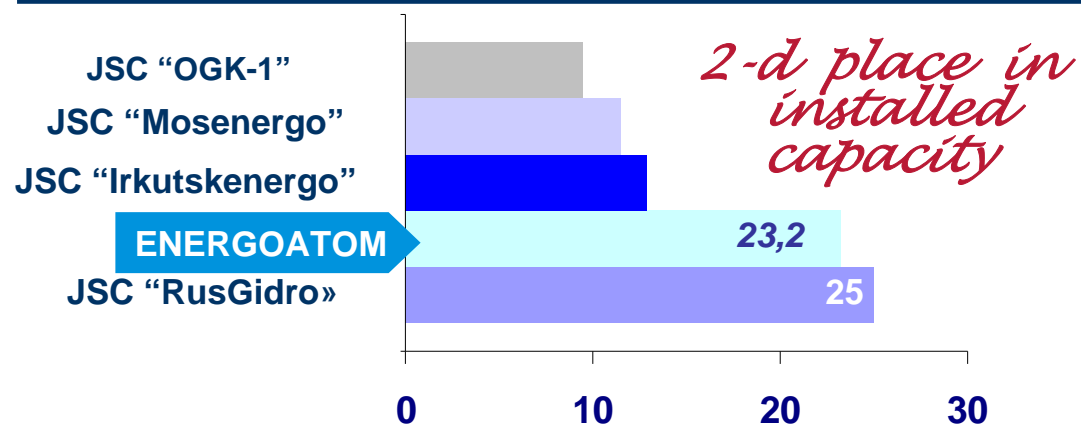
Reactor Number TOP-5 Operators



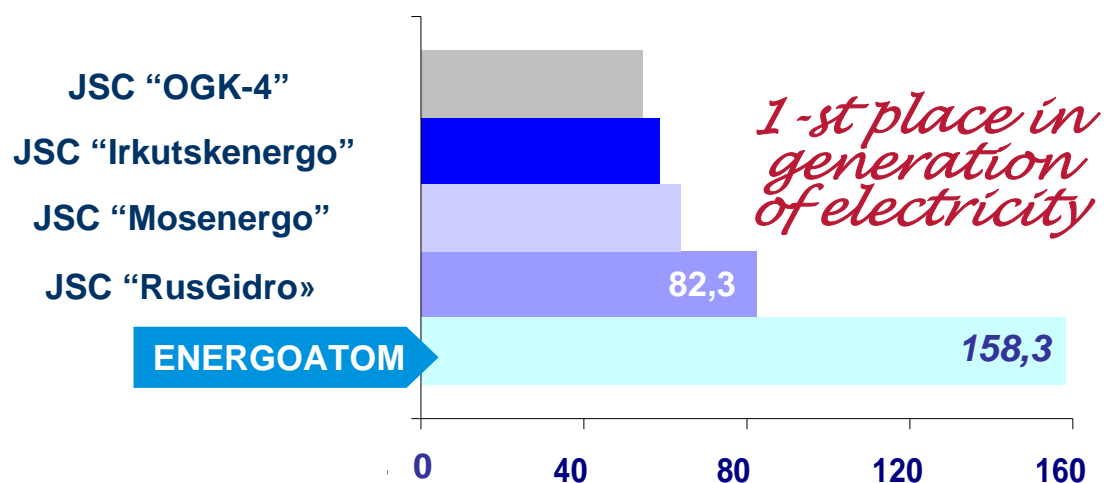
Source: IAEA (NPP World Wide Report 2006), Rosenergoatom

Position of ENERGOATOM among Russian generation companies

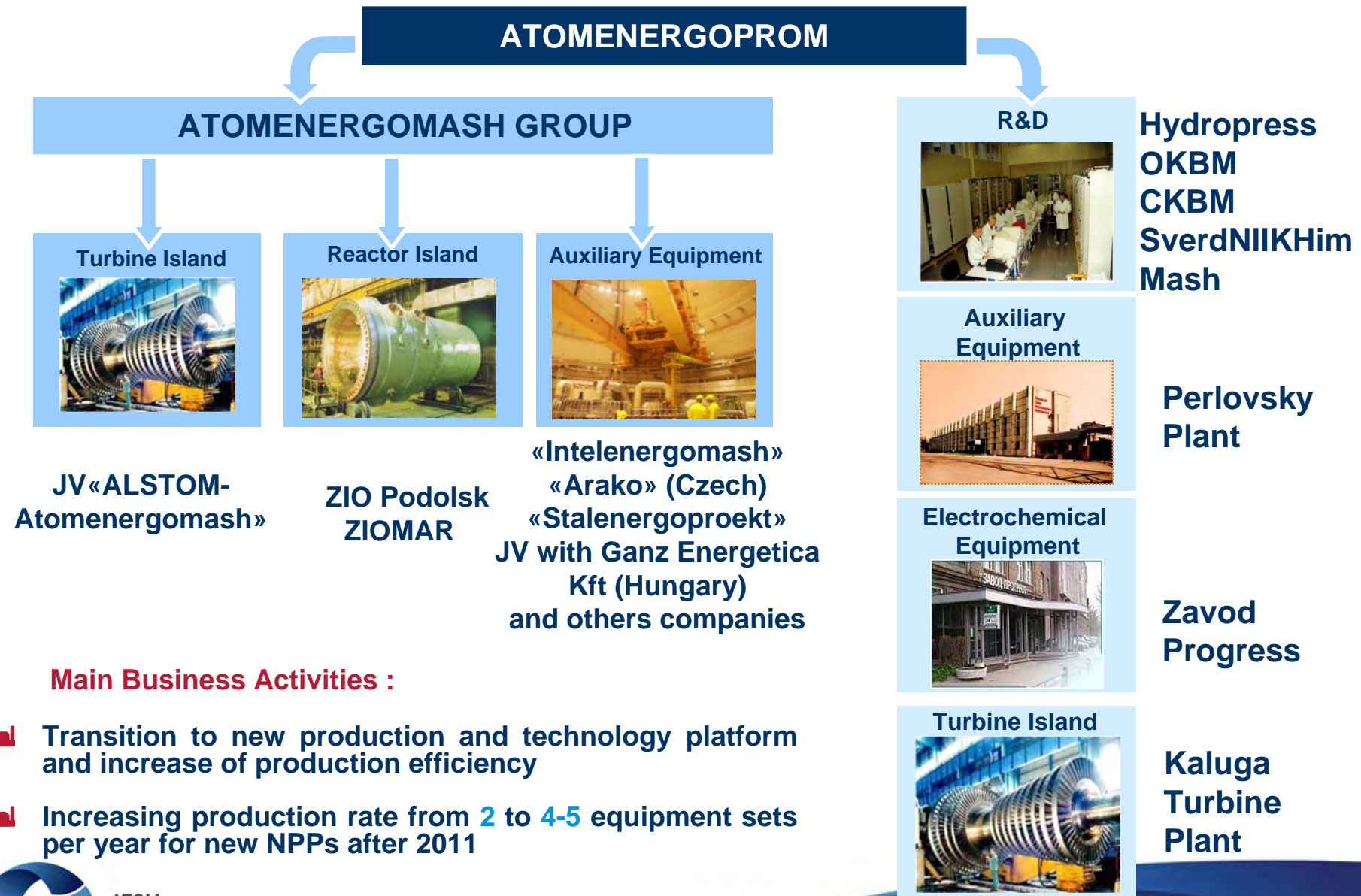
TOP-5 Installed capacity, GW





TOP-5 Generation of electricity 2007, bln. kW/h



Nuclear Machinebuilding Industry Affiliates



Main Business Activities :


-  Transition to new production and technology platform and increase of production efficiency
-  Increasing production rate from 2 to 4-5 equipment sets per year for new NPPs after 2011



Cooperation JSC “Atomenergoprom” with Japanese Companies

-  Japanese nuclear energy market has strategic importance for JSC “Atomenergoprom”
-  At present JSC “TENEX” provides about 15% of fuel requirements for Japanese NPP
-  JSC “Atomredmetzoloto” (ARMZ) active cooperates with Mitsui company in realizing collaborative exploration and uranium mining projects in Russia

Cooperation JSC “Atomenegoprom” with Japanese Companies

-  On March 20, 2008 Atomenergoprom signed General Framework Agreement on business cooperation with Toshiba Corporation
-  Parties have started an investigation of collaborative projects in different fields, including NPP's design and construction, production and technical services for heavy equipment, products and services for nuclear fuel cycle
-  Close interconnections between two companies can led to the creation of strategic partnership



THANK YOU FOR YOUR ATTENTION

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