



## GANZ ENGINEERING AND ENERGETICS MACHINERY LLC

**EXPERIENCE OF  
SUPPLIES FOR ROSATOM**



## GANZ EEM profile

- ❑ Manufacture of a wide range of pumps and testing at the in-house testing bench.
- ❑ In-house designers, engineers, laboratories and the pump testing bench.
- ❑ Implemented Quality Management System ISO9001
- ❑ Extensive fleet of machines for manufacture and machining of large scale products.
- ❑ Good track record of manufacture and supply of circulating pumps for NPPs.

Location: Budapest, Hungary.

Established in 1844

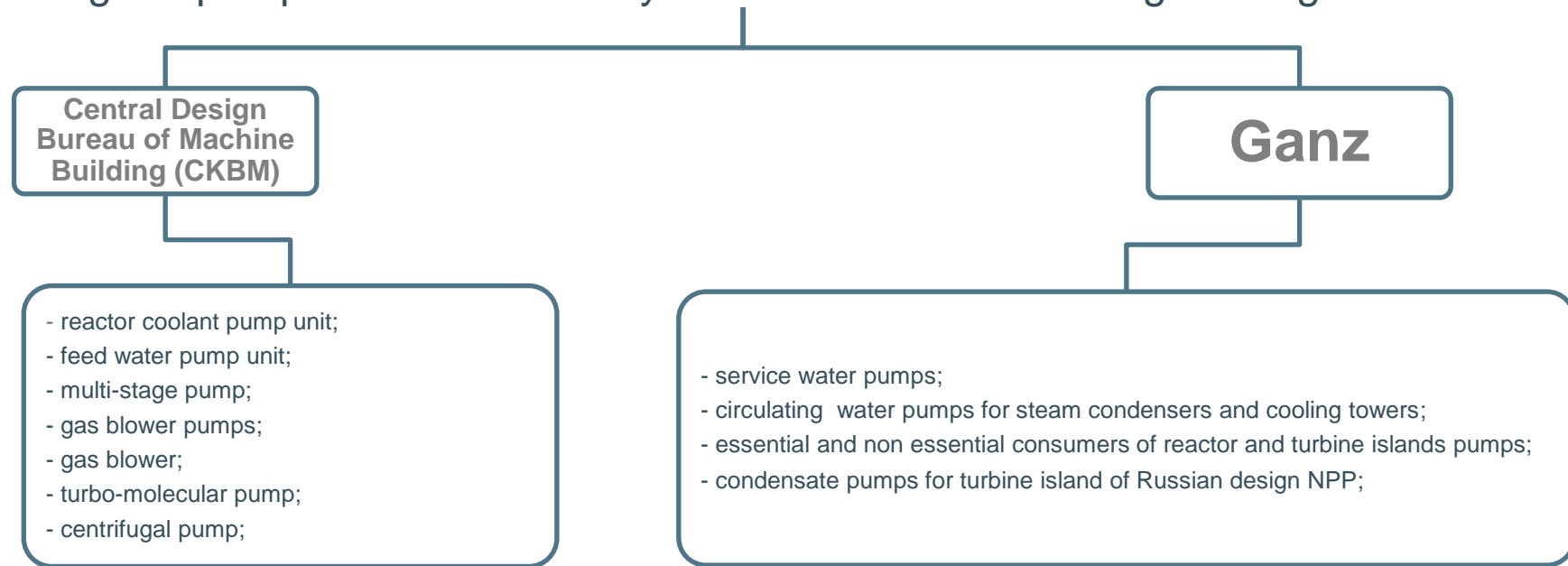
Became a company of ROSATOM in 2008 (as subsidiary of Central Design Bureau of Machine Building (CKBM), Atomenergomash)

### Range of pumps

- service water pumps;
- circulating water pumps for steam condensers and cooling towers;
- pumps for essential and non-essential consumers of reactor and turbine island;
- condensate pumps for turbine island of Russian design NPP;

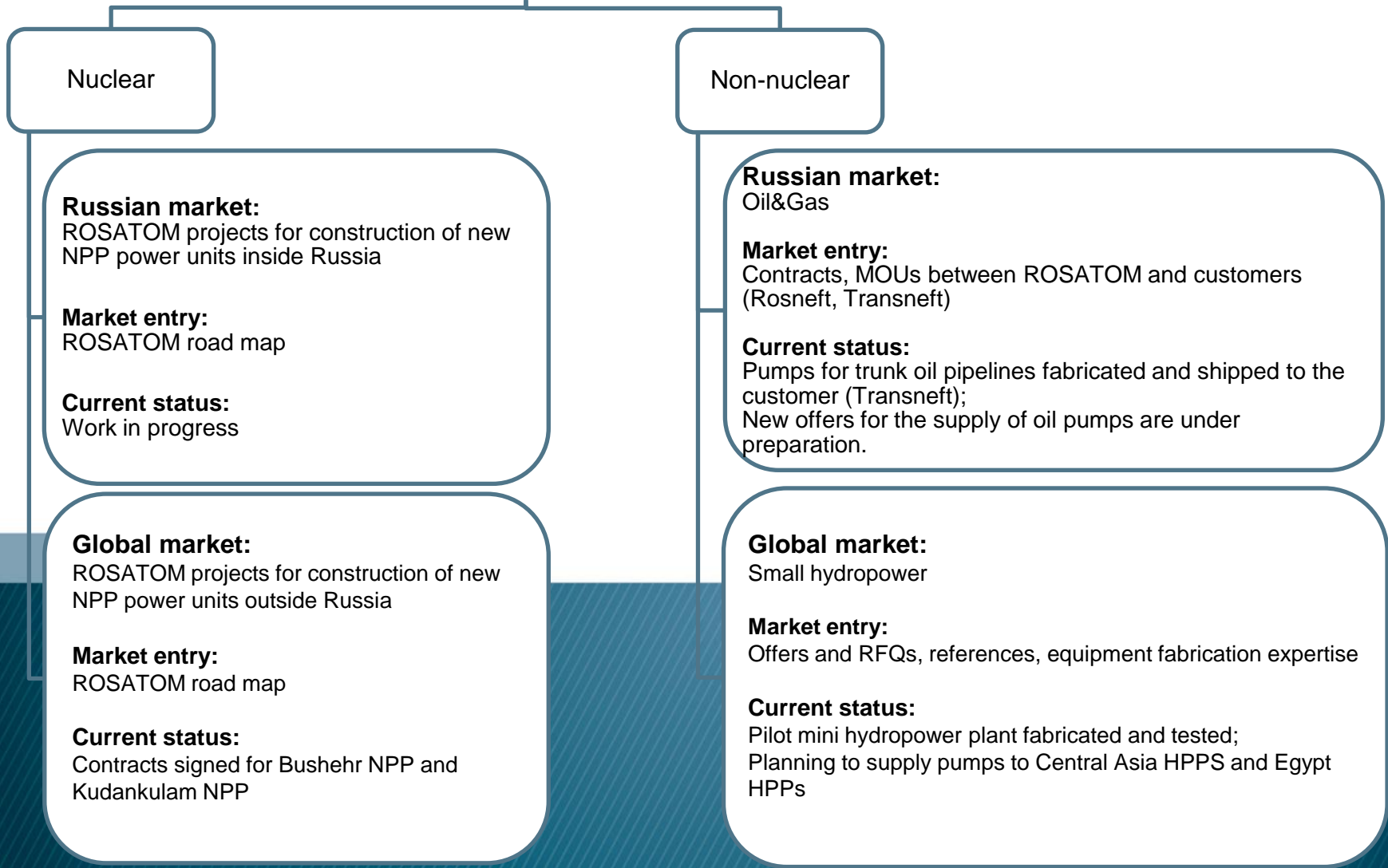


## Range of pumps manufactured by Rosatom Mechanical Engineering division



Integration of Ganz in the structure of Mechanical Engineering division of Rosatom allowed to complete the product range of pump equipment and meet the demand of Nuclear Industry projects

# Target markets for Ganz



## Nuclear

### Russian market:

ROSATOM projects for construction of new NPP power units inside Russia

### Market entry:

ROSATOM road map

### Current status:

Work in progress

### Global market:

ROSATOM projects for construction of new NPP power units outside Russia

### Market entry:

ROSATOM road map

### Current status:

Contracts signed for Bushehr NPP and Kudankulam NPP

## Non-nuclear

### Russian market:

Oil&Gas

### Market entry:

Contracts, MOUs between ROSATOM and customers (Rosneft, Transneft)

### Current status:

Pumps for trunk oil pipelines fabricated and shipped to the customer (Transneft);  
New offers for the supply of oil pumps are under preparation.

### Global market:

Small hydropower

### Market entry:

Offers and RFQs, references, equipment fabrication expertise

### Current status:

Pilot mini hydropower plant fabricated and tested;  
Planning to supply pumps to Central Asia HPPS and Egypt HPPs

# Involvement in Nuclear Power Plant projects

## **NPP manufacturing program**

Each NPP project requires up to 1000 different pump units of the following types:

- reactor island pumps;
- secondary circuit safety pumps;
- third circuit pumps.

## **Competitive advantages**

Manufacturing competencies and product references:

- circulating water pumps for steam condensers and cooling towers
- high quality and competitive price.

## **Additional advantage:**

- Competencies and gained references of condensate pump units manufactured on the basis of ALSTOM, SIEMENS, TOSHIBA turbine island design

## **Production plans**

- Ganz owns all the competencies and qualification required for supply the whole range of pump equipment for new NPP units

## In 2012 GANZ-EEM resumed the fabrication of NPP pumps



Axial and mix-flow one-stage semi submersible pumps equipped with control system hydro characteristic

### Technical parameters

Discharge, m<sup>3</sup>/h: 2000 - 150000

Head, m: 4 – 30

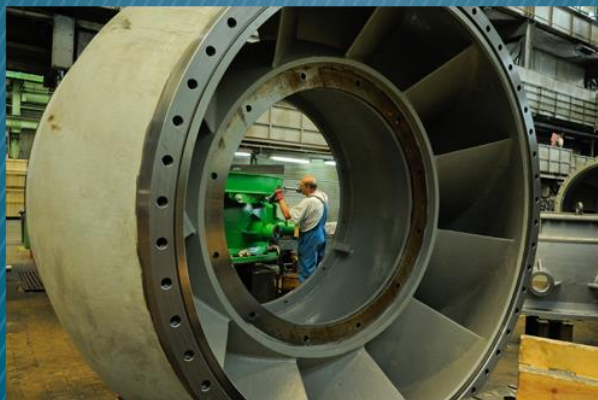
Capacity, kW: 50 - 12500

### References

Rostov NPP, units 3 and 4

Belorussia NPP, unit 1

Novovoronezh NPP-2, units 1 and 2



## Market position and competitive advantages

### ● NPP equipment

#### Competitive advantages:

- Competencies and gained experience of NPP circulating pump units manufacturing
- Possibility to extend the product range due to manufacturing of new pump equipment type: displacement pumps, cantilever pump, dual-sided pumps, feed-water pumps, including further tests at in-house testing bench
- References of condensate pumps manufactured for ALSTOM, SIMENS, TOSHIBA design turbine islands;
- Current production capacities allow to implement the whole manufacturing program up to 2025 year without investments for purchase of additional equipment and major repairs;

### ● Oil & Gas equipment

- Four pumps for trunk oil pipelines have been fabricated, shipped and commissioned. Pump capacity - 1250 m<sup>3</sup>/hour

### ● Small Hydro-power

- Turn-key solution of small hydro plants designed and produced by Ganz: from water intake up to power generation
- Ganz mini-hydro plant solution has huge market potential

## Challenges for international supplier cooperating with Russian customer

- Due to difference between Russian and European regulations the documentation shall be brought into compliance with the Russian standards
- Qualification procedure as per Russian regulations and training of engineers and workers in accordance with Russian standards
- Requirement to preparation of all documentation (including both technical and contract documentation) in Russian language
- Special aspects of Russian export control

## Advantages of cooperation with ROSATOM companies

- Prompt feedback to inquiries and readiness to provide all possible support by engineering division and other companies
- Cooperation with ROSATOM companies brings positive experience in the performance of contracts and enhances the level of staff qualification





Ganz EEM owns the required engineering expertise for manufacture of pumps, turbines and fuel handling machines, which is proved by the impressive reference list.

Owing to its experience and innovative engineering solutions Ganz EEM is a competitive manufacturer of pumps and other equipment!

# THANK YOU FOR ATTENTION!

