



ROSATOM

THE STATE ATOMIC ENERGY CORPORATION ROSATOM

NUCLEAR SOLUTIONS TO MEET SPECIFIC TERRITORIAL DEMANDS

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2019

ARCTICA

THE NEW NUCLEAR ICEBREAKER



The Arctic Cooperation: Nuclear Icebreakers and NSR Development



“Taymir” and “Vaygach” constructed in 1989-1990 for USSR in Finland by Wärtsilä Helsinki Shipyard.



IN DECEMBER 2018 THE PRESIDENT OF RUSSIA SIGNED A DECREE ENTRUSTING ROSATOM THE LEADING ROLE IN THE NORTHERN SEA ROUTE (NSR) DEVELOPMENT.

IN 2018, ABOUT 18 MILLION TONS OF GOODS WERE TRANSPORTED ON THE SEA ROUTE, AN INCREASE OF ALMOST 70 PERCENT FROM 2017.





ROSATOM

SEVMORPUT

THE WORLD'S
ONLY NUCLEAR
CONTAINER SHIP





ROSATOM

LNG CARRIER



AKADEMIK LOMONOSOV FNPP

COMMISSIONING DATE:
2019



FIRST-OF-A-KIND FLOATING NUCLEAR POWER PLANT

FNPP: optimized mobile solution for coastal areas power supply



2×RITM-200M

OPTIMIZATION RESULTS COMPARED WITH
FNPP AKADEMIK LOMONOSOV

by **28 m** – length reduction

by **5 m** – beam reduction

by **9 000 t** – displacement reduction

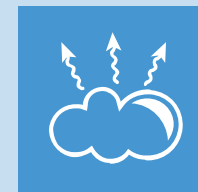
30% – capacity increase

TECHNICAL PARAMETERS

Electric capacity	100 MW
Refueling cycle	up to 10 years
Design life	60 years
Displacement	12 000 tons
Length	112 m
Beam	25 m
Draught	4.5 m



Electricity



Heat



Desalination

Onshore NPP based on RITM Series SMR

2x57 MW(e) – 114 MW(e)

2 RITM-200 Reactors  **Modularity available**

TECHNICAL PARAMETERS

Electrical capacity 114 MW (2 x 57 MW)

Thermal capacity 330 MW (2 x 165 MW)

Refueling cycle up to 6 years

Design life 60 years

Availability factor 90%

Plant area 15 acres (0.06 km²)

Construction period 3 - 4 years



ELECTRICITY



HEAT



DESALINATION

H₂

HYDROGEN

FLEXIBLE, TAILOR-MADE SMALL NPP SOLUTION BASED ON RITM SMR IS DESIGNED TO ADDRESS A WIDE RANGE OF CUSTOMER DEMANDS

Status of FOAK onshore NPP based on RITM-200 reactors



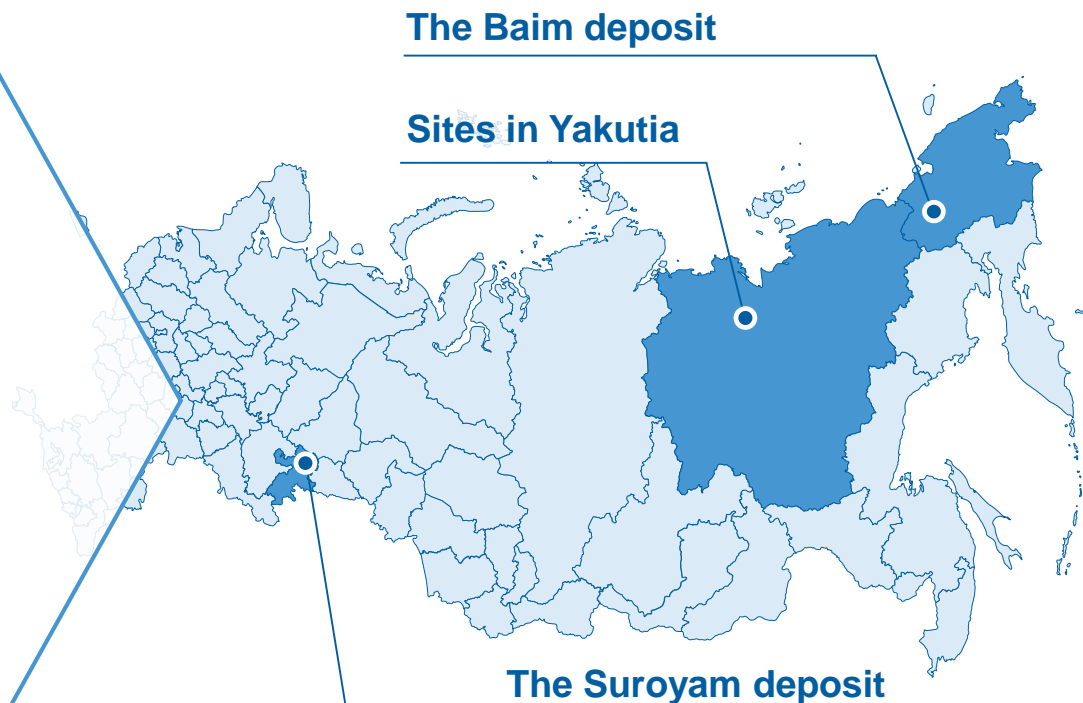
ROSATOM

➤ ONSHORE SMR NPP
IN-DEPTH CONCEPTUAL DESIGN
DEVELOPED

➤ R&D WORK ON FUEL WITH
UNDER 20% ENRICHMENT LEVEL
FOR RITM-200 REACTORS IS
UNDERWAY

➤ ROSATOM IS CONSIDERING
SEVERAL LOCATIONS FOR THE
DEPLOYMENT OF THE FIRST
LAND-BASED SMR NPP IN
RUSSIA

➤ **2027** – COMMERCIAL
DEPLOYMENT OF FOAK LAND-
BASED SMR NPP



Nuclear to contribute to all key pillars of the sustainable development



SUSTAINABLE DEVELOPMENT 3 KEY PILLARS:



ECONOMIC GROWTH

Incorporating nuclear energy and research results in **NATIONAL ECONOMY BOOST** and **GDP GROWTH**



SOCIAL INCLUSION

Nuclear projects boost innovation development and **PROMOTES EDUCATION AND R&D ACTIVITIES**



ENVIRONMENTAL PROTECTION

Nuclear energy and non-energy applications contribute to climate change mitigation and ecosystem protection

NUCLEAR TECHNOLOGY IS AN EFFICIENT SOLUTION FOR COUNTRIES TO BOOST ALL THE SECTORS

NUCLEAR IS A DOORWAY TO ACHIEVE SUSTAINABLE DEVELOPMENT GOALS SET BY THE UNITED NATIONS

