

RUSAL

RUSAL's Energy & Metals Strategy: the BEMO as an Example of Project Implementation

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- **Growing demand for aluminium: the markets emerge very fast**
- **A need for assets consolidation explained by:**
 - **Increasing energy prices**
 - **Fierce competition to get access to raw materials (bauxites, alumina)**
- **The 'Chinese factor': by 2015, analysts expect that China will:**
 - **Consume 33.3% of the global aluminium output**
 - **Represent 50% of the entire global demand for aluminium**

There is an urgent need for consolidation in the aluminium industry today

- **Electricity is one of the key most important in the aluminium production costs structure:**
 - electricity costs: 25% - 40%
 - raw materials costs (alumina): 40% - 60%

The 'Energy Factor': Its Impact On the Global Aluminium Sector



- **+ 150%** - average growth of energy tariffs for the aluminium companies worldwide in the recent four years
- **- 514 ktpa** – reduced aluminium output in 2005 after the shutdown of loss-making smelters in the US and Europe
- **- 765 ktpa** - planned reduction of smelting capacities due to small or negative margins in 2006
 - ➔ This all triggers searches for new projects in the regions with good energy resources

Importance of Electricity



- Electricity costs determine competitive advantages of aluminium smelters
- In many cases, the costs of consumables required in energy generation have doubled
- The power industry in Europe is now facing fiercer rivalry
- Investments in power-generating capacities in the developing countries are insufficient

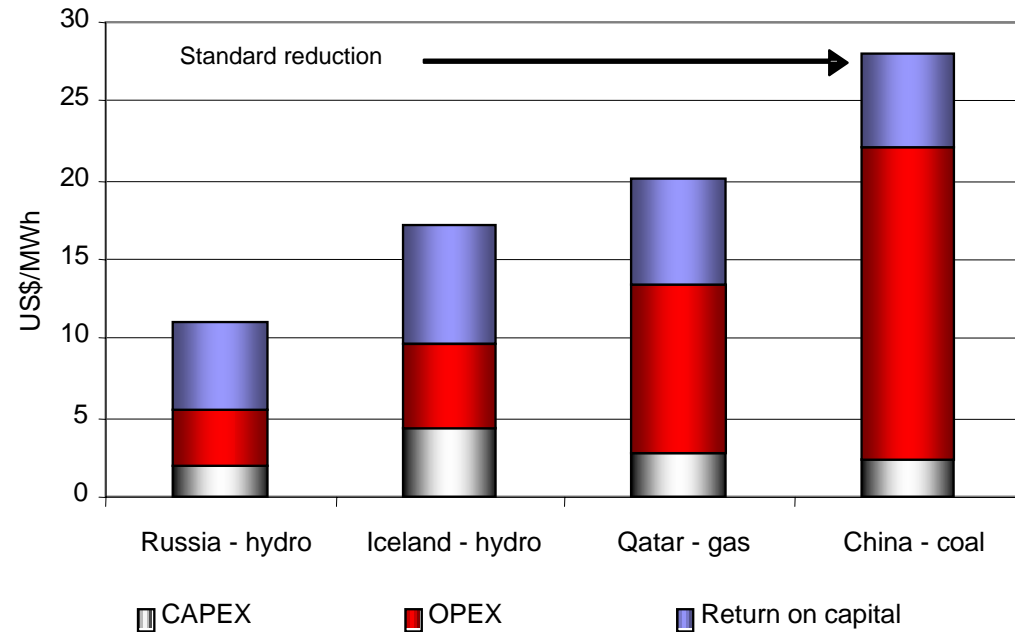
Opportunities for Development of the Global Energy Sector



Electricity costs are calculated on regional principle, for countries which implement aluminium projects based on the following initial data: capex and opex + forecast IRR

- Russia has a relatively low capex rate and good savings because of a large-scale economy
- In Iceland, capex are substantially offset by low opex
- Qatar has raised gas prices. Who knows, maybe they did it following the oil prices surge? Do they follow the increase of oil prices?
- Chinese energy producers are in need of lower coal prices so that they can bring electricity price to USD 25-30 / MWh

Electricity generation costs for power plants which supply aluminium smelters

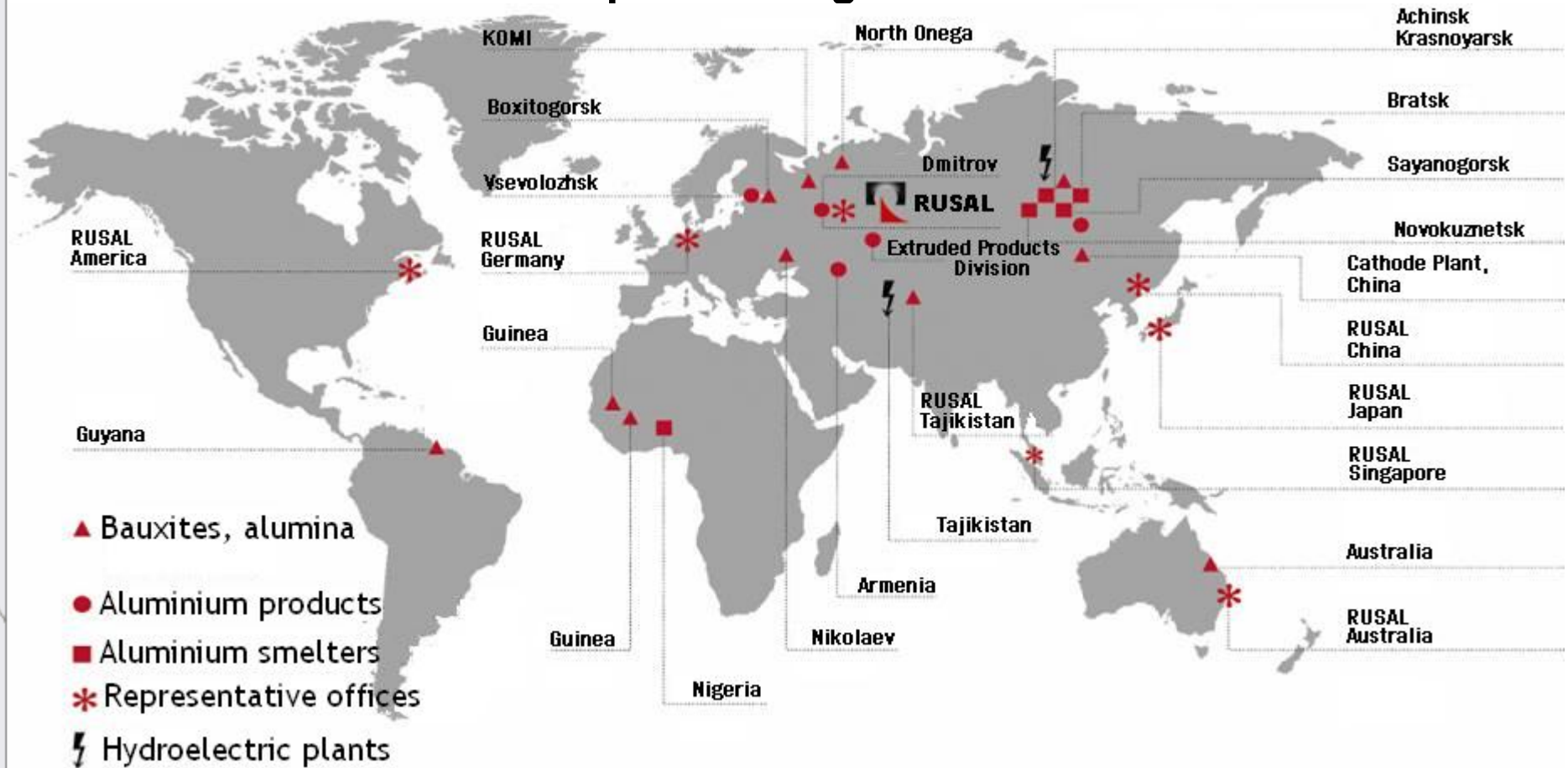


Source: Electricity producers and RUSAL's own data

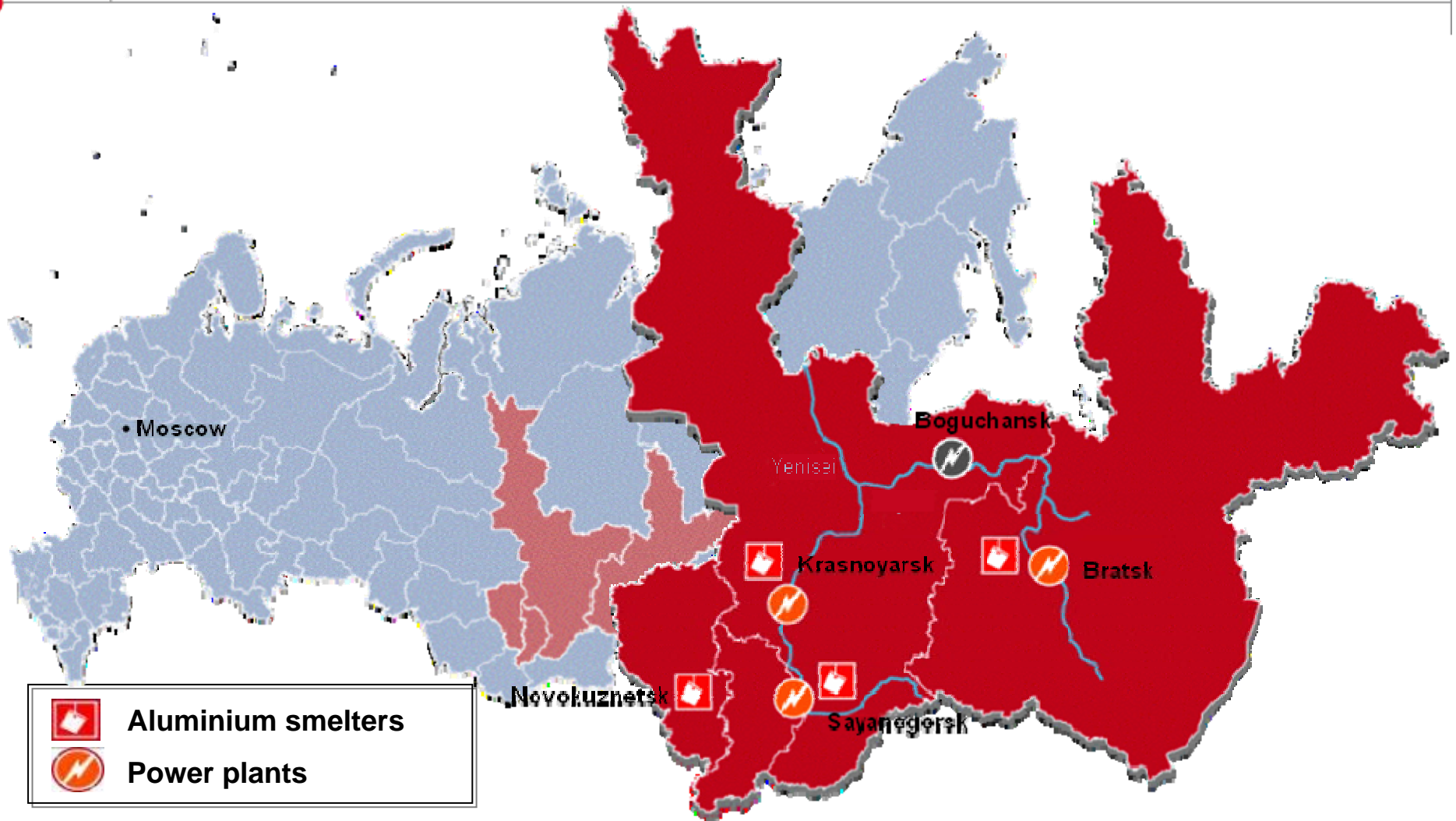
RUSAL: From Siberia to the Global Economy



RUSAL has operations and offices in 13 countries and 9 regions inside Russia. Our export sales go to 50 countries overseas



RUSAL's Energy Assets



Energy & Metals Strategy: an Example of Project Implementation



BEMO

**Completion of
the Boguchansk HEP**

**Construction of
an aluminium smelter**

- **In terms of investments size and the scope of work, BEMO is the largest project in the latest Russian history (energy & aluminium sectors)**
- **BEMO is one of the first examples when a private company does a project in cooperation with a state-owned company**



Project Implementation Schedule



- 2005 - a joint work group which comprised experts from various departments was set up to select the scenario for completion of the Boguchansk HEP. As a priority, the group chose to complete the construction of the hydropower plant and based on the design parameters, build a large energy smelter nearby
- 2006 – the signing of the memorandum for a joint completion of the Boguchansk HEP between HydroOGK and RUSAL
- 2006 – the signing of the Partnership Agreement for the construction completion
- 2007 – it is planned to finalise the formation of the Project's corporate structure

Joint Implementation of the Project: Key Provisions and Terms



- Parity partnership (50/50)
- Principle of 'two signatures' for all and any large transaction
- A system which will allow to jointly manage the construction
- If necessary, involvement of independent experts
- Joint sales

The Boguchansk HEP: Project KPIs



- Design capacity – 3,000 MW
- Average annual electricity generation – 17.6 bln kWh
- Commissioning of Phase One (540 MW) – 2009
- Ramp-up to full design capacity – 2012
- Capex – USD 1.5 bln (exclusive of flooded area relocations costs)



The Aluminium Smelter: Project KPIs



- Location – the Karabula station (130 km from the Boguchansk HEP)
- Design capacity – 600 ktpa of aluminium
- Technology – RA-300
- The smelter premises - ~ 311 hectares
- Annual electricity consumption rate – 9.85 bln kWh
- Capex – USD 2.1 bln



Infrastructure



- Relocation of the flooded area near the Boguchansk HEP - to be financed by the Federal Budget
- Power transmission lines to distribute the energy generated by the Boguchansk HEP and supply electricity to the smelter – to be financed by the Russian Federal Investment Fund
- Construction of a highway Karabula-Kodinsk – to be financed by the Russian Federal Investment Fund

The BEMO Project: What Will It Give to the Lower Priangarye Region?



The BEMO Project is the key initiative on the list of activities aimed at developing the Lower Priangarye region

During the construction period:

- Over 80% of the equipment – made by Russian manufacturers
- Additional tax revenues to local budgets from contractors – RUR 2.4 bln.
- New jobs – ~ 10,000 jobs

After the completion and commissioning:

- Annually, RUR 3.19 bln of additional taxes to budgets
- Annually, additional railway transportations – 2.3 million tonnes of cargo, or RUR 3.46 bln -> a 16-18% increase in freight turnover of the BAM (the Baikal-Amour national railroad)
- New jobs - ~ 4,000 jobs
- Contribution to national GDP – 0.35% (GDP of 2004)



Conclusions



- Current electricity surplus and opportunities for further increase in electricity generation in Siberia are important natural advantages for RUSAL
- By 2013, RUSAL plans to generate 30% of required electricity by its own capacities
- This is one of the best areas to secure own development and growth in the industry

RUSAL: Strategy of Growth



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