



Speech by

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«Hydroenergy of Russia: development and prospects»

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Hydro generation of Russia: brief description

Role of hydro generation in the energy system of Russia:

- ✓ As of 01.01.2004 the installed hydro capacity of Russia totals 45.2×10^6 kW. The share of hydro in the total of generation capacities in Russia works out to be 22%. The largest share of electricity production is carried by hydro in Siberia where it accounts for 50% of generation, in Far East hydro accounts for 29% of generation and in the European part of Russia it accounts for 12%
- ✓ In 2003 hydro power plants generated 157.7TWh including 61.1TWh (39%) produced in the European part of Russia, 86.8TWh (55%) in Siberia and 9.8TWh (6%) in Far East
- ✓ Unique system functions: only huge hydro power plants, provided by regulating frequency systems, are able to regulate on-line RAO UES operation factors and secure the reliability of functioning of the energy systems.

Hydro generation of Russia - structure of property :

Major part of big hydro power plants are controlled by RAO UES (in fact - by the Russian Federation).

They are united under the management of business-unit “Hydroenergy”

Private companies also have prevalent control under several power plants

Considerable part of the small-size and middle-size power plants is controlled by regional energy companies and during the reforming will be included into Territorial Generation Companies (TGC)



Prospects of hydro generation of Russia

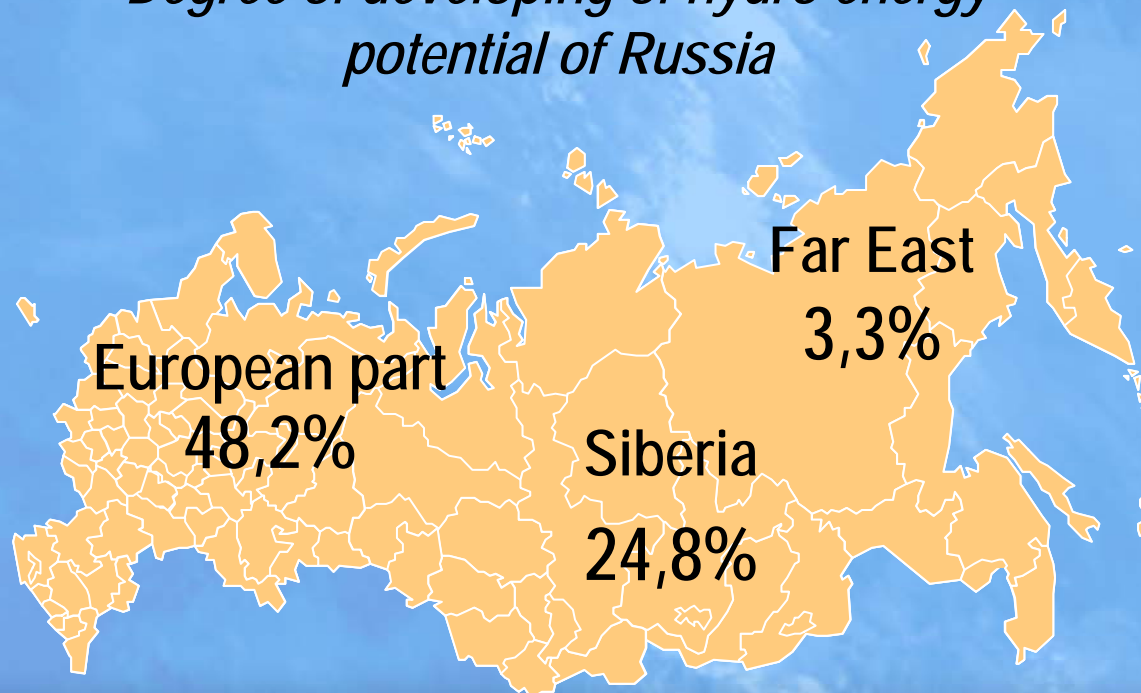
- ✓ **Ecological threats**
- ✓ **Security of hydro stations (technological and terrorist threats)**
- ✓ **Lack of a system of investment mechanisms and state support**



Development of hydro generation of Russia: chief points

- ✓ Russian energy system shows a tendency of necessity of manoeuvre capacity
- ✓ Economy progress by development power-consuming industries
- ✓ Independence hydro power plants from fuel supply (it is important for power supply of the regions difficult of access)
- ✓ Huge unreclaimed hydro energy resources (degree of developing of hydro energy potential of Russia – 20,7%, comes next after People's Republic of China)

Degree of developing of hydro energy potential of Russia





Prospects of hydro generation of Russia

Main ways of development:

- ✓ Effectiveness increase in using huge hydro power plants:
 - ✓ re-novation and extention,
 - ✓ building of energy sets at the non-energy hydro constructions (mostly in European part)
- ✓ Building or finishing construction of new huge hydro power plants (in Siberia, the Far East and partly in the South)
- ✓ Building of small-size and middle-size hydro power plants with remote control regulating frequency systems
- ✓ (also in European part)

Increase of hydro energy power capacity in Russia

Within the next years RAO UES plans to finish construction of several hydro power plants (including Bureiskaya GES, Irganaiskaya GES, Zelenchulskie GES). This will provide increase of hydro energy power capacity in Russia by 11 GW.



Hydro generation of Russia: strategic mission

1. Reform of the energy system of Russia and hydro generation

The reforms which are being carried out by the Russian government in the sphere of electro energy are set to seriously transform all aspects of hydro energy and will necessitate a forging out of a new complex approach to the management and development of the entire sphere of hydro energy.

As a result of the reform hydro generation is going to develop into a separate branch, managed by the "Hydrogeneration" affiliatory company. This will allow to unite financial resources, boost the functioning ability of the structural elements and increase investors' interest in the whole sphere.

Besides, it is supposed to develop rapidly small-size and middle-size hydro energy



Hydro generation of Russia: strategic mission (cont.)

2. Perfection of the state control

- ✓ Increase in stability and predictability of regulation. Perfection of laws with the purpose of lowering tax rates and justifying rates
- ✓ Forming the market of system services
- ✓ Working out «Long-range forecast of the development of the hydro generation of Russia»



Hydro generation of Russia: strategic mission (cont.)

3. Modernization of hydro generation and development of integrated infrastructure

- ✓ Increase in economy and reliability of main hydro turbine and producer equipment of hydro power plants
- ✓ Development of the networks
- ✓ Providing security to hydro power plants and ecological stability
- ✓ Development of the operation systems



International cooperation in hydro energy

Russia is eager to take part in development of hydro energy in Central Asia, especially - in CIS

Main ways of cooperation:

- ✓ Complex usage of hydro potential of margin reservoir
- ✓ Creation of the interregional operation systems
- ✓ Development of the investment cooperation
- ✓ Harmonization of national models of security systems

We are open for negotiations and new joint projects!



THANK YOU FOR YOUR ATTENTION!