

**December 22, 2014**

### **Boguchanskaya hydropower plant launches the last hydropower unit**

JSC RusHydro (ticker symbol: MOEX, LSE: HYDR; OTCQX: RSHYY) announces that the last 333 MW hydropower unit has been commissioned and put into commercial operation at the Boguchanskaya hydropower plant (a 50/50 JV of RusHydro and UC RUSAL). Total installed capacity of all nine hydro-units in operation amounts to 3000 MW.

Vyacheslav Kravchenko, Deputy Minister of energy of Russia, Evgeny Dod, Chairman of the Management Board – General Director of RusHydro and Vladislav Soloviev, CEO of UC RUSAL, participated in the ceremony of hydro-unit launch through videoconference with the Boguchanskaya HPP.

The first three 333 MW hydropower units of the Boguchanskaya HPP were put into operation on November 26, 2012, the fourth hydropower unit was launched on January 21, 2013, unit No.5 – on November 5, 2013, unit 6 on December 6, 2013 and units 7 and 8 in the end of September 2014. The plant has started commercial supplies to the wholesale electricity and capacity market from December 1, 2012. Since its launch the Boguchanskaya HPP has generated 13 TWh of electricity. The plant is a major taxpayer: for the nine months of 2014 it has paid over RUB 1.3 bn to the federal and regional budget.

Major part of electricity (around 93%) and capacity (around 85%) is supplied under unregulated prices determined at the competitive capacity auctions of the second price zone (Siberia). The rest of electricity and capacity are sold at the wholesale market under regulated agreements with last resort providers. Tariffs for these supplies are set by the Federal Tariff Service.

Actual capacity of nine hydro-units in operation amounts to 2,880 MW. The plant will reach its full capacity of 3,000 MW once the reservoir level is filled to the design reservoir level is 208 m (the reservoir level as of today is 204.5 m). The reservoir should be filled during 2015.

From 2006, JSC RusHydro, together with UC RUSAL, has been implementing a project aimed at establishing Boguchansky Energy and Metals Complex (BEMO) in Krasnoyarsk region. In accordance with the Agreement signed by investors, BEMO includes the completion of construction of the Boguchanskaya HPP on the Angara river with project capacity of 3,000 MW and the construction of the Boguchansky Aluminum Smelter with the capacity of 588 thousand tons of metal per year.

The Boguchanskaya HPP might be considered the most modern among the big Russian HPPs and, in the future, the technology and technical solutions used in this project will be applied in implementation of other hydropower projects both in Russia and abroad. The Boguchanskaya HPP has up-to-date control and equipment management systems. The facilities of the Boguchanskaya HPP include two spillways – primary and secondary. Given that the part of water inflow will be accumulated in the reservoir, these spillways allow to pass the extreme floods through the dam which, according to experts' estimates, could occur once in 10,000 years. A diaphragm made of mastic asphalt concrete is located inside the rock-fill dam. This is a unique construction designed by Russian scientists aimed at ensuring the water resistance of the entire rock-fill dam. A cementation veil is placed under the dam to prevent any filtration through its base.

There are nine hydropower units in the turbine room of the plant. Each has the capacity of 333 MW. The hydropower units of Boguchanskaya HPP are the largest in terms of their weight and size among all units manufactured in Russia over the past decade. By its dimensions, the wheels of turbines at the Boguchanskaya HPP exceed similar assemblies of hydropower units on the largest Russian hydroelectric power plants, such as the Sayano-Shushenskaya HPP and the Krasnoyarskaya HPP.

The wheel of hydropower unit at Boguchanskaya HPP has the weight of 156.6 tons, diameter of 7.86 m, and it is made of special stainless steels and has 11 working blades.

1,100 km of 220 kV and 500 kV transmission lines has been built, and six substations were constructed and reconstructed for the scheme of power distribution at the Boguchanskaya HPP. Switchgear for 220 kV and 500 kV, as well as an open crossing point have been built and commissioned at the HPP. The equipment, included in the scheme of power distribution at Boguchanskaya HPP, is the most modern and ensures the reliable power supply for the households and industrial facilities of the Lower Angara region. The Boguchanskaya HPP serves industrial customers in four regions of the Siberian Federal District, as well as the households in 11 districts of the Krasnoyarsk and Irkutsk region.

A number of advanced solutions used in the construction of the Boguchanskaya HPP is associated with stricter requirements for reliability and safety after the accident at the Sayano-Shushenskaya HPP. These include the automatic closing of penstock gates and turbine wicket gates in the event of loss of power; backup power supply in case of complete loss of power; new system of vibration control, which will immediately stop hydropower unit and switch it off from the grid in case of exceeding the allowable vibration limits; moving to flood-free areas the premises for personnel, repair shops and equipment responsible for the power supply of the HPP.

A bridge across the Angara river in Boguchansky district, a railway section Karabula - Yarky, dozens of bridges and hundreds of kilometers of roads have been built as part of the project "Developing the Lower Angara Region". In September 2014, the first phase of Boguchansky Timber Processing Complex has been commissioned. The reconstruction and expansion works have begun at Razdolinskaya substation from which, in 2015-2016, the transmission lines will be built to transmit the electricity from Boguchanskaya HPP to the fields of Polyus Gold company.

## **About RusHydro**

RusHydro Group is one of Russia's largest generating companies. RusHydro is the leading producer of renewable energy in Russia with over 70 generating facilities in Russia and abroad. The company also manages a number of R&D, engineering and electricity retail companies. Group's thermal assets are operated by subsidiary – RAO Energy System of East in the Far East of Russia. Total electricity generation capacity of the Group is 37.5 GW, heat capacity – 16.2 thousand GCal/h.

Russian Federation owns 66.8% in RusHydro, the rest is held by other institutional and individual shareholders (over 360,000). The company's stock is traded on Moscow Exchange (MOEX), and included in MSCI EM и MSCI Russia indexes. Company's GDRs in the IOB section of LSE, ADRs – in OTCQX.

### **For more information:**

Investor Relations Department

Tel. +7 (800) 333 8000 ext. 1607, 1319, 1304

[ir@rushydro.ru](mailto:ir@rushydro.ru)

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