### **MARKETS**

# POSITION IN THE INDUSTRY

In the Russian electricity generation market, RusHydro Group holds leading positions: the main competitors are independent Russian energy companies established following the reform of RAO UES of Russia and the State Corporation Rosatom.

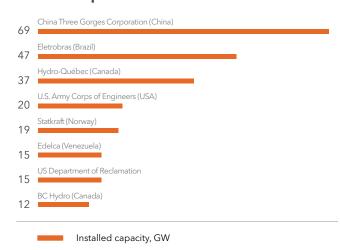
The main factors affecting the state of the industry:

- GDP growth rates, which determine the demand for electricity and require the schedules of its consumption, the level of investment in the creation of new capacities;
- legislative framework that determines the payback of projects in the energy sector, the sources and structure of the investment portfolio of energy companies, the level of competition, etc.;
- level of state stimulation of the development of separate types of generation;
- state of the basic production assets of the enterprises of the industry;
- socio-economic climate in the country;
- availability of capital markets, including credit resources;
- level of payment discipline of electricity consumers.

The share of RES and hydropower on the Group's energy balance is 78%. Competitive advantages of HPPs:

- Environmentally friendly. Hydraulic resources are a renewable and the most environmentally friendly source of energy, the use of which allows to reduce emissions of thermal power plants into the atmosphere and to preserve hydrocarbon fuel reserves.
- High maneuverability hydroelectric power plants are most maneuverable and capable of significantly increasing production volumes in a matter of minutes, covering peak loads.
- Absence of a fuel component in the cost price of production - independence from changes in prices for energy carriers and as a result the possibility of longterm guarantees of the price for consumers.

#### Similar companies abroad



Installed capacity, GW

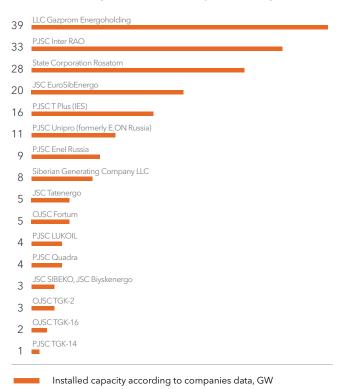
#### RusHydro Group's share in the market

Electricity output, bn kWh

Year	<u> </u>			1 3,		
	Russian Federation	RusHydro Group <sup>1</sup>	Share, %	Russian Federation	RusHydro Group <sup>1</sup>	Share, %
2015	1,049.90	127.35	12.13	243.20	38.65	15.89
2016	1,071.80	138.81	12.95	244.10	38.87	15.92
2017	1.073.70	140.29	13.07	246.90	39.04	15.81

Data are given taking into account the PJSC Boguchanskaya HPP (a joint venture of PJSC RusHydro and UC RUSAL), taking into account the HPP-2 of PJSC KamGEK, without taking into account the HPP-1 and HPP-3 of PJSC KamGEK located in trust management.

#### The main competitors of RusHydro Group<sup>1</sup>



In 2011, RusHydro Group acquired a 90% stake in the Sevan-Hrazdan HPPs Cascade with 561.4 MW of installed capacity in the Republic of Armenia. Thus, entering the electricity market of Armenia, PJSC RusHydro gained a significant share of this market.

### MARKET OVERVIEW

RusHydro Group companies operate with electricity and capacity in the wholesale electricity and capacity market, as well as in retail markets - the electricity market and the heat energy market. [102-6]

## Electricity and capacity market

The electricity and capacity market in the Russian Federation is divided into wholesale (WECM) and retail (REM) markets. According to the requirements of the law, all owners of power generation (capacity) facilities with an installed capacity of over 25 MW sell electricity (power) only on the Wholesale Electric Capacity Market.

Stations with a capacity below 5 MW operate only on REM, stations from 5 to 25 MW can sell electricity (capacity) on both markets.

Participants in the wholesale electricity and capacity market are: generation companies, electricity export / import operators, energy sales organisations, electric grid companies (in terms of acquiring electricity to cover transmission losses), large-scale consumers. The wholesale electricity and capacity market operates in price and non-price zones. The first price zone includes the territories of the European part of Russia and the Urals, the second - Siberia. In non-price zones (Arkhangelsk and Kaliningrad regions, the Komi Republic, regions of the Far East) wholesale trade in electricity (capacity) is carried out according to special rules (4-sided contracts). The rules of the retail electricity market are enforced on the territories of the country, which are not categorised in price and non-price zones and different from REM zone rules

For some zones of the Far East, there is a special premium, which is collected in the first and second price zones of the WECM. This premium is aimed at reducing tariffs in the Far East to the average Russian level. PJSC RusHydro is appointed by the Government of the Russian Federation to collect and transfer such allowance to the Far East.

#### **Electricity market zones**



Without taking into account the capacities used by the companies - consumers of electricity for their own production needs.