



АКЦИОНЕРНОЕ ОБЩЕСТВО

«СИСТЕМНЫЙ ОПЕРАТОР
ЕДИНОЙ ЭНЕРГЕТИЧЕСКОЙ СИСТЕМЫ»

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SO UPS Chair spoke about the development of the power systems of the Central Asia and presented the vision of hydro input in energy transition at REW-2022

On October 13, during International Forum “Russian Energy Week – 2022”, SO UPS Chairman of the Management Board Mr. Fedor Opadchiy spoke about the development of the power systems of the Central Asia countries and the horizons for cooperation in the electric power industry. Mr. Opadchiy presented his vision of hydropower progress in the energy transition.

List of projects that affect the synchronous operation of member countries of the Central Asia Power System (CAPS) includes construction of new NPPs with a total installed capacity of up to 4800 MW, HPPs with a total installed capacity of 4000 MW in Tajikistan, as well as the Upper Naryn HPP chain and two hydro units at Kambarata HPP-1 and HPP-2 with a total capacity of 1860 MW in Kyrgyzstan. Major plans also include solar and wind to be installed in the next decade in Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan with total capacity of up to 11 GW. Mr. Opadchiy emphasized that the high share of RES in the grid will require a fundamentally new approach to system operation including power flow control, balancing supply and demand, operating reserves allocation with regard to intermittent RES generation.

Among the most significant projects for cross-border interconnections is the restoration of synchronous operation of the Uzbekistan and Tajikistan power systems and the completion of 500 kV OHL between Guzar SS in Uzbekistan and Regar SS in Tajikistan. CASA-1000 project involves construction of one transmission line between Kyrgyzstan and Tajikistan, DC lines from Sangtuda 1 HPP through Afghanistan to the converter SS in Peshawar (Pakistan).

Projects related to allocation of automatic frequency and active power flows regulation are of great importance for CAPS as well as projects that provide making up of interstate energy markets – common energy market with the participation of Kazakhstan and Kyrgyzstan in the common energy market of the Eurasian Economic Union (EAEU).

Mr. Opadchiy presented the vision of hydropower development for energy transition. He mentioned the potential need for generation in the Russian UPS that drives the necessity for further hydro specifically to reach net-zero by 2060. HPPs as a full-scale source of flexibility provide the opportunity to effectively integrate other types of generation, in particular, NPP and, moreover, RES.

Development scenario of the Russian industry till 2050 provides remaining share of 20% for hydro. To meet the target, it will be necessary to commission around 22 GW of HPPs and HPSPs till 2050 and a list of priority projects has been prepared already in line with long-term forecast. Feasibility of projects requires to deal with two challenges: on one hand, to learn how to calculate the overall economic benefits of HPPs construction, and to manage capital costs of construction and equipment manufacturing, on the other. HPPs construction period (which usually exceeds 10 years) is another factor that influences the development of hydro industry and prevents HPPs from being included in current market mechanisms that ensure resource adequacy as long as these mechanisms are adjusted for 6-7 years.

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