

**The scheme and program to develop the Unified Energy System of Russia till 2016 were designed
February 4th, 2010**

The System Operator and FGC UES forwarded a jointly developed scheme and program for the development of Russia's Unified Energy System (UES) till 2016 to the Russian Ministry of Energy for approval.

By Russian government provision № 823 (dated October 17th, 2009) "On schemes and programs for the prospective development of the electric power industry," the System Operator and FGC UES were given responsibility for designing a scheme and program to develop UES of Russia. The scheme and program to develop UES of Russia is developed on an annual basis and determines balanced plans for developing the grid infrastructure and generating capacities for a 7-year period. The scheme to develop the Unified Energy System of Russia is an integral component of the program to develop the Unified Energy System of Russia.

The development program for the Unified Energy System of Russia includes the following components:

- The scheme to develop Russia's Unified Energy System;
- Forecast electric power demand within the territory of the Russian Federation, as well as required capacity increases necessary to satisfy this demand;
- The list of implemented and prospective projects for the development of the backbone and distribution grids taking into account the requirement for ensuring regulation (compensation) of reactive electric capacity;
- Description of the regional structure for prospective capacity balances and electric power with indications of the recommended structure for generating capacities and forecast import (export) volumes for power and capacity;
- Forecast fuel demand by power sector companies;
- Requirements on developing the means for dispatch and technical management, including the system of tele-mechanics and telecommunications, anti-damage and regime automatic systems and relay protection and automation.

The development scheme for UES of Russia includes the existing and planned introduction (or removal) of power stations with installed capacity of more than 25 MW, transmission lines of 110 kV and higher ensuring output distribution for these stations, transmission lines and substations with voltage of 220 kV and higher and inter-country power transmission lines.

The first document prepared based on Russian government provision № 823 covers the period till 2016. The document was developed using the prospective calculation model of UES of Russia. Calculations are made based on forecast power energy demand in Russian regions for each year in the planning period and on suggestions on the list of and locations for power stations and grid objects that was prepared by the System Operator. In addition, during document development, the following issues were considered:

- The general scheme for the location of electric power objects till 2020;
- Average-term programs for the social and economic development of Russian Federation subjects in the power sector, approved in accordance with the established order;

- Approved investment programs for power sector subjects in the capital of which the State and grid organizations of the industry participate;
- Data on constructing power sector objects included in long-term target programs, federal addressed investment programs, departmental target programs and the activity program for the State Atomic Energy Corporation “Rosatom” for the long-term.

The scheme and program to develop UES of Russia till 2016, which was developed by the System Operator working in conjunction with FGC UES, will form the foundation for the development of investment programs for power sector subjects and territorial programs for developing Russian Federation regions, forming plans to develop infrastructure organizations for various branches of the industry and the technical requirements for connecting consumers to the grid.

The documents will be the basis for forming input data, taken into account during the competitive selection of capacity and the analysis of existing and forecast technological parameters for the functioning of UES of Russia, forecast capacity for the electric grid and the development of suggestions to define free power transfer zones for electric power (capacity).