RUSSIAN ELECTRIC-POWER INDUSTRY TRANSITION TO "DIGITAL" DEVELOPMENT MODEL - TECHNOLOGICAL AND INVESTMENT ASPECTS

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Abstract. The article describes the current state and prospects for the development of the electric power industry in Russian Federation. The main development trends are identified: digitalization of production and transmission of energy, distributed generation infrastructure creation, demand aggregators, virtual power plants. The main reasons are named for the high end user's price of electricity. The construction principles are listed of a modern Russian electric power industry infrastructure. The paper represents schematically the existing and planned market architecture of this industry, taking into account its digitalization. The concept of "electrical network digitalization" is presented in accordance with the National Technology Initiative Energy Netroad map, as well as the development of the country's electric power industry for the period up to 2035. The pilot projects are named in which the digital architecture of the electric power industry is implemented. Possibilities for large-scale private investments attraction in power engineering, consumer services monetization and various energy exchange practices formation are described. Instead of the generally accepted opinion about the reconstruction of most of the existing large power plants as a non-alternative option to compensate for the growing capacity demand, it is proposed to use various distributed energy technologies to reduce energy demand. Positive economic effects are identified in the electric power industry transition to the digital development scenario, as well as risks.

Keywords: electric power industry; digital technologies; investments into electric power industry; digital development model; risks of modernization.

JEL codes: L 94; O 30; D 92.

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