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MODEL FOR EVALUATION OF LARGE-SCALE POWER SYSTEM INTERCONNECTION COSTS AND BENEFITS

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ABSTRACT

This paper considers the analysis of large-scale power system optimal interconnection concept as well as description of the model for evaluation of its costs and benefits. All existing power systems are willing to connect with other power systems. Power systems of one country merge together, countries developing interconnections and power systems of whole regions are constantly growing up. Developing new bigger power system from several small systems is slow process, but interconnected system has several big advantages – higher stability; higher reliability of power supply, especially in accident situations; better opportunities for optimal allocation of power reserves; better opportunities for optimal utilization of fuel and generation power.

This paper contains the method for comparison different scenarios of interconnection of two world largest power systems - ENTSO-E and IPS/UPS by economical criteria. The research has shown that developed model is capable to make deep analysis and is ready for calculation of interconnection links optimal locations, transmission capacities and interconnection type.

Keywords: large power system interconnection, ENTSO-E, IPS/UPS.