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**Analysis of interdependencies between Gas and Electric Power systems for optimal dispatching and reliability assessment**

Gas and Electric Power systems have been well studied individually. However, there are not many studies on the combination of the two networks. Last decade there is a growing interest in the field of modeling gas and power systems together. Such modeling makes sense in many countries because of extended gas and power networks and significant amount of power plants with gas turbines, which are the main interconnection points between the two systems. Combined modelling can be especially effective in the Russian Federation, where the unified gas supply system contains more than 171 000 km of pipeline, the unified energy system contains more than 2,3 mln km of power lines and 53% of primary energy use is based on natural gas.

However, most of the performed studies have come to a rather obvious result that in case of global optimization social welfare will increase. The goal of current study is to estimate how much resources and money can be saved in particular case (in the Russia Federation) and what benefits can get each player of the market (power grid companies, power plants, Gazprom, etc.). An outcome of this study can be a methodology of optimal dispatching and reliability assessment that takes into account interdependencies between gas and electric power systems.