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### **Governing Conventional and Renewable Energy: Global Experience and Siberia**

Governing appears to be an important dimension of the evaluation of comparative advantages for different sources of energy in the ongoing worldwide electrification and growing competition between prevailing now fossil fuels and emerging renewables. Two types of energy reveal different principles of organization and patterns of governing energy processes, i.e. hydrocarbons use has been arranged by hieratical and centralized systems, but vice versa governing renewable energy is based on the principles of diversification and network approaches with participation of NGOs and philanthropies.

The purpose of this report is the comparative analysis of governing conventional and renewable energy, taking into account new agents in energy sector, such as NGOs, international partnerships and philanthropies. Effectiveness of governing approaches has been mainly determined by socio-economic context of region. So, it is necessary to assess the effectiveness of practice in energy-rich Siberia as relevant to global experience megaregion. It's important to keep in mind, that here electricity is chiefly generated by fossil fuels, but the same time this megaregion has obtained significant capacity of most-promising renewables, i.e. solar and wind energy.

According to broadly recognized theory of industrial organization, efficient organization and rational governing provide additional benefits. Williamson O. E. claims that the economics of governance appears to be the theory of studying “*the provision of good order and workable arrangements*”, which continuity provides economic agents with “*a source of value*” [1].

For conventional energy the extraction of fossil fuels, their transportation to power stations, the necessity of profound cleaning from injurious emissions and capital-intensive R&D enact the formation of vertical hierarchal systems, centralized decision-making, command style of management. Being a novel source of energy, renewables don't need any mining or drilling, transporting fuel to power stations, it is highly innovative and ecology positive, all of these

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<sup>1</sup> Williamson O. E. The Economics of Governance // The American Economic Review. 2005. Vol. 95, № 2. P. 1–18.

determine new models of governing – diversification, decentralization, ‘soft’ and network methods of guiding, attracting NGOs and philanthropists [2].

Besides objective characteristics, costs and benefits in governing depend on the value attitudes and intentions of actors, either state, business, or non-government organizations. The dimension of governing is vividly realised in the performance of government agencies, energy companies and NGOs, when they try to manage the processes of electricity generation and their relationship to the common good [3]. The more predictability, flexibility, quickness in response to electricity fluctuations are possible, the more governed is this or that source of energy.

Main criteria of assessment of governing of energy processes appears to be efficiency of performance on behalf of public, corporate and nonprofit institutions with the purpose of reaching net benefits in quantitative and qualitative dimensions. Synthesis of quantitative, primary monetized, metrics and qualitative evaluations of energy utilities occurs on the basis of correlation with goals of long-termed activity performed by different economic agents.

Empirical basis of research relies on the diversified information massive, which includes the primary source of data, like semi-structured interviews, selected regional cases, statistics and also the secondary materials such as regional strategies of socio-economic and energy developments, local mass media releases, analytical reports of think tanks, publications of research centers and NGOs. In addition to the primary data collection there has been done a comprehensive survey of scientific literature, analytical papers, released by some government bodies, annual reports of Russian energy companies, regional newspapers, releases and memos of NGOs.

As result of comparative analysis of global experience and regional practice of energy use in Siberia has been drawn the conclusion that benefits of new approaches have been underestimated, i.e. diversification and decentralization of governing energy processes, network forms with the participation of NGOs and philanthropies in innovation sphere, international partnership in the fields of ecology and climate change. This new endeavours go hand by hand with governing costs in the sphere of renewables, i.e. intrusion of vertical integration of energy business, monopolization and technological lock-in of perspective technologies of renewables, failures of NGOs and philanthrocapitalism.

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<sup>2</sup> Ferguson N. The square and the tower: networks and power, from the freemasons to Facebook. New York : Penguin Press, 2018. XXVII, 566 p.

<sup>3</sup> Mazur A. Energy and electricity in industrial nations: the sociology and technology of energy. New York : Routledge, 2013. 248 p.