

“Smart” state regulation in the sphere of environmental protection and nature management

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The main purpose of spreading the concept of “smart” state regulation to the environment area is natural protection for future generations. A special place in the solution of problems of environmental sustainability, environmental protection and nature management belongs to legal means, and norm-setting in this area should be outstripping in nature.

Important legal acts have already been adopted to address environmental problems, the central one being the development of the list of “best available technologies”, and their implementation will make a significant step in achieving sanitary standards of harmful environmental impact indicators. At the same time, the change of Russia’s main environmental indexes show an increase in the negative impact on the environment and this growth will continue in parallel with the development of the economy, which requires the development of new measures of influence based on the ideas of the concept of “smart” state regulation.

The concept of “smart” state regulation in the sphere of environmental protection and nature management is aimed at the introduction of integrated assessment procedures of decisions and allows purposeful influencing the economic activities of legal entities and individual entrepreneurs, to build as a matter of fact the individual trajectory of legal regulation of their activities in this area. Authors are encouraged to use the Assessment of the Negative Environmental Impact (ANEI) and the Regulatory Impact Assessment (RIA) in preparing regulatory and law enforcement decisions. This allows “flexibly” to influence environmental decisions, more rational use of legal means and synchronize legal regulation with tasks in the field of environmental protection and nature management. It also helps to form an eco-consciousness in the business community.

Keywords: policy of “smart” state regulation, legislation, best available techniques, assessment of the negative environmental impact, regulatory impact assessment, eco-consciousness.

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«Умное» государственное регулирование в сфере охраны окружающей среды и природопользования

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Главной целью политики «умного» государства в сфере охраны окружающей среды и природопользования является бережение окружающей среды для будущих поколений. Концепция «умного» государственного регулирования предполагает принятие правотворческих решений, объединяющих в единую систему несколько факторов, определяющих результаты оценки негативного и допустимого воздействия на окружающую среду. Применение процедуры оценки регулирующего воздействия в сфере охраны окружающей среды и природопользования будет способствовать выбору эффективных средств воздействия на хозяйственную деятельность юридических лиц и индивидуальных предпринимателей. Это позволит оценить позитивные и негативные последствия утверждения нормативных документов. Авторы предлагают комплексный подход к оценке негативного воздействия на окружающую среду и внедрение оценки государственного регулирования (оценки регулирующего воздействия).

Ключевые слова: политика «умного» государственного регулирования, законодательство, наилучшие доступные технологии, негативное воздействие на окружающую среду, оценка регулирующего воздействия, экосознание.

The main condition for the sustainable development of a modern state is the existence of an effective public administration system. The current system of public administration in Russia, as in any other state, facing challenges of a global nature, often demonstrates “confusion” and delay in responding to them, which undermines the principles of the system stability. One of the key domains of public life, where this problem is particularly acute, is ensuring of environmental sustainability.

Environmental development of territories as well as rational use of natural resources on the basis of modern scientific and technological achievements and the formation of “smart” public regulation system aimed at protection of the constitutional rights and freedoms of citizens and preserving the environment for future generations shall be the policy directions of the “smart” state in the sphere of environmental protection and management. An innovative system of public administration aimed at solving environmental problems should be based on the active involvement of innovative technologies in practical activities.

Review of research studies on “smart” state policy shows that a significant amount of scientific papers is devoted to improvement of regulation in the service sector and service security [1–3], improvement of electric power system and reduction of energy losses [4, 5], conversion of the existing electricity infrastructure into so-called intellectual networks [4–10]. The authors [2] offer the “Intelligenter” method “based on the innovative idea of collaborative discovery in urban systems” and draw attention to the fact that, first of all, policy and regulation are made smart through qualitative and quantitative cooperation of all stakeholders in sustainable development. Publications [7–10] give an idea of Smart Grid technology for operating electric grids in order to improve their efficiency, reliability and safety and to reduce the demand and cost of electricity. In the context of environmental policy, the term “smart regulation” was first developed to describe the post-command and control of implementation style, which is expected to be able to cope with increasingly technologically and politically complex management issues [11]. “Smart” regulation is a compromise solution for those who support strong state regulation of business and those who are against such regulation [12–14]. The analysis of the relationships between tools to achieve goals in environmental policy and political success [15] shows that Flemish interventionist approach,

which focuses on traditional instruments, is not as effective compared to the Dutch stimulating approach, as the latter uses a wide range of social and economic instruments, including many new environmental policy tools. It is noteworthy that the government remains the most important regulator in all cases, although the importance of additional regulators is growing [15].

A special place in solving problems in the field of environmental safety, environmental protection and natural management belongs to the statutory regulation, which should be proactive and not catching up. Despite significant positive changes in Russian environmental legislation and significant integration of the national statutory framework with the European legislative system, which can be seen in the example of article [16], it worth mentioning that in the Russian Federation there are no legal technologies that allow to introduce a reliable mechanism of long-term regulation, which is the most important factor in the formation of “smart” regulation in the field of environmental and natural management.

The article presents an analysis of regulatory legal documents in the field of natural management and protection, the effectiveness of integrated application of environmental impact assessment and regulatory impact as an important way to implement the policy of “smart” state regulation.

Formation of “smart” State Regulation Policy

The policy of the “smart” state is realized through establishment of theoretical, practical and technological principles of “smart” state regulation system, which objectives are structuring of administrative relations to solve the most important problems of society. This should be supported by a scientifically based assessment of the consequences of the introduction of regulatory norms, their non-redundancy and sufficiency and impact on relations in the field of environmental management and protection.

However, the analysis of the dynamics of the main environmental indicators in Russia shows an increase in the impact of negative factors on the environment, which requires measures to transition to the policy of “smart” State regulation. A striking example of “smart regulation” is the solution to the problem of e-waste utilization in China. In particular, the law of the People’s Republic of China “On protection of environment” in article 25 provides that the fabricator

should manufacture products on the basis of the principle of small use of resources using a high degree of purification from pollutants formed in the production process. Regulatory impact should be flexible and complex, which presumes a combination of state regulation and other new forms of regulation – self-regulation, co-regulation, quasi-regulation [17], and is determined by the balance of international and national levels of regulation, strategic planning and effective law enforcement.

Regulation of indicators of negative impact on the environment at the national level is an important indicator of the policy of “smart” state regulation and it allows to assess the effectiveness of management decisions. The documents of strategic planning in the field of environmental protection and natural management are the national security Strategy of the Russian Federation until 2020 (Strategy–2020) and the Concept of long-term socio-economic development of the Russian Federation for the period up to 2020, which contain, among others, tasks in the environmental sphere. The environmental burden on the Russian economy is still significantly lower than in developed countries. Regulatory legal acts establishing mandatory rules and requirements in the field of environmental protection and natural management are an effective tool in the implementation of strategic objectives.

Statutory regulation in the field of environmental protection and transition to the concept of permissible environmental impact and necessary regulatory impact

The basis of normative regulation of environmental protection and natural management is the Federal law of 10.01.2002 No. 7-FZ “On Protection of Environment” [18], which in the preamble refers to the constitutional and legal norm on the right to a favorable environment and the obligation of everyone to preserve nature and the environment, to take care of natural resources. This Law is aimed at regulating relations in the sphere of interaction between society and nature in the process of economic and other activities and is the basis of sustainable development of the Russian Federation. A comprehensive analysis of the current legislation in this area requires consideration of a number of normative legal acts [19–21].

In general, the legal regulation of activities related to the impact on the natural environment at the present stage is based on the stimulation

of legal entities and self-employed entrepreneurs engaged in economic and (or) other activities to carry out measures to reduce the negative impact on the environment and the introduction of Best Available Techniques” (BAT). However, economic instruments can be used and be quite effective up to a certain point, namely during the period of monitoring of the actions of an economic entity to confirm the achievement of a stimulating effect, when legal entities and self-employed entrepreneurs take measures to reduce the negative impact on the environment, and from 1 January 2020 – supplemented by the introduction of BAT. In case of the absence of activities expected from the state in the actions of the economic entity, it is necessary to move from regulation exclusively with the help of economic instruments of influence to legal means of restrictive and prohibitive nature. This requires the development of assessment tools and the introduction of special legal regimes that provide flexible legal regulation for specific legal entities and self-employed entrepreneurs engaged in economic and (or) other activities.

The creation of such a mechanism is important in the light of the forthcoming significant changes in the legislation on environmental protection on January 1, 2019 which determine the rules of regulation in the field of environmental protection and establish fundamentally new approaches to point regulation in relation to a particular legal entity and individual entrepreneur, which will ensure the focus of regulatory impact and serve the purposes of “smart” state regulation, when the fee for negative impact on the environment (more – NIOE) in the presence of certain indicators of activity of the economic entity does not meet the interests of the state and society.

It seems promising during the gradual transition to the concept of “smart” state regulation to use techniques that allow in taking legislative decisions, to combine into a single system several factors – the results of the assessment of the negative impact and the permissible impact on the environment, as well as the current state of implementation of the best available techniques at a certain production area. In our opinion, the application of the regulatory impact assessment procedure (hereinafter-RIA) will help in the selection of effective means of impact on the economic activities of legal entities and self-employed entrepreneurs [22].

RIA procedure allows you to set the problem to be solved, as well as the goals of regulation and possible ways to achieve the desired result. Based on this, it is planned to draft a legal act that is

designed taking into account the optimal model of duties, prohibitions and restrictions in relation to individuals and legal entities in the field of entrepreneurial and other economic activities or contribute to their introduction [23]. This is especially important in order to form a cutting-edge legislation in the field of environmental protection and natural management within the concept of “smart” state regulation, which provides for the selection of the most effective version of the proposed legal regulation.

The mechanism of RIA procedure involves the assessment and comparison of qualitative and quantitative parameters of all possible consequences of the introduction of each of the possible ways of legal regulation of the relevant sphere of public relations in comparison with the existing one. This requires a comprehensive assessment of qualitative and quantitative parameters affecting the limits of permissible negative impacts on the environment, which justify the need to change the legal means of impact on relations in the field of environmental protection and environmental management.

Measures for complex assessment of negative impact on the environment and implementation of the best available techniques

The approach proposed for a comprehensive assessment of the negative impact on the environment is to combine indicators established by the current legislation into a single system. New indicators in the future can be implemented in this model. The first indicator of the system are the objects that have NIOE, which according to [18] and Resolution of the Government of the Russian Federation of September 28, 2015 No. 1029 “On approval of criteria for classifying objects that have a negative impact on the environment, to objects I, II, III and IV categories” are divided into four categories. Thus, the categorical characteristic of the object establishes their differentiation depending on the degree of negative impact on the environment (significant, moderate, minor, and minimum) (Indicator 1 in the table).

The next indicator of a complex assessment is the hazard classes of waste established by the Federal law “On Production and Consumption Wastes” [19] and the Order of the Ministry of Natural Resources of Russia dated 04.12.2014 No. 536 “On approval of criteria for classifying waste to I – V hazard classes according to the degree of negative impact on the environment”, which allow not only quantitatively but qualita-

tively assess the degree of negative impact on the environment (Indicator 2 in the table). In this aspect, a research, representing the scientific basis for the development of methods for assessing the cost of waste disposal, and especially waste high-tech industries become relevant.

The third indicator has a stimulating character – the coefficient for NIOE for legal entities and individual entrepreneurs engaged in economic and (or) other activities, which thus encourage the implementation of measures to reduce the negative impact on the environment and the introduction of Best Available Techniques (BAT). The coefficient for NIOE will come into effect from 1 January 2020 and will determine the rate of payment for the negative impact on the environment depending on the amount of emissions of pollutants, discharges of pollutants, production and consumption waste (Indicator 3 in the table).

In the table, the normative indicators are located with increase of the impact risk and are designed to apply three levels of possible regulatory impact: the upper level (green zone) – the priority of economic means of impact; the middle level (yellow zone) – the strengthening of economic means of impact and control measures; the low level (red zone) – the transition from exclusively economic to statutory means of impact in the form of restrictions and prohibitions.

Thus, state regulation for reducing the negative impact on the environment is aimed at stimulating the introduction of BAT. Despite the logic and reasonableness of the provisions of the guidelines for the definition of technology as BAT in accordance with GOST R 56828.1-2015, the economic evaluation criterion in this case is considered on a par with the environmental, which is conceptually incorrect. The environmental criterion should have priority, and economic entities entering the red zone (see Table) must be recognized as environmentally hazardous, and must be subject to a special legal regime. This issue has not yet been fully resolved and requires a complex assessment. It is necessary to legally establish the principles of introducing special regimes in relation to economic and other activities carried out by legal entities, individual entrepreneurs and citizens, “entered” in the red zone, as well as differentiate the types of state environmental supervision, depending on the level of environmental hazard of objects.

Conclusion

Improving the efficiency of state regulation in the field of environmental protection and natural

Table

Complex assessment of the negative impact of objects on the environment

Indicator 1	Indicator 2	Indicator 3
Categories of objects [18, art. 4.2]	Waste hazard classes [19, art. 4.1]	Coefficient for the negative impact on the environment [18, art. 16.3] (paragraph 5 comes into force on January 1, 2020)
Green Zone		
IV – having a minimum negative impact on the environment; III – having a negligible negative impact on the environment	V – practically non-hazardous waste; IV – low hazardous waste	0 – for the volume or mass of emissions of pollutants, discharges of pollutants within the limits of technological standards after the introduction of the best available technologies at the site that has a negative impact on the environment; 0 – for the volume or mass of production and consumption waste that are subject to accumulation and actually used from the moment of establishment in own production in accordance with the technological regulations or transferred for use within the period provided for by the legislation of the Russian Federation in the field of waste management; 1 – for the volume or mass of emissions of pollutants, discharges of pollutants within the limits of permissible emissions standards, standards for permissible discharges; 1 – for the volume or mass of production and consumption wastes placed within the limits for their placement, as well as in accordance with the reporting on the formation, use, disposal and disposal of production and consumption waste submitted in accordance with the legislation of the Russian Federation in the field of handling waste;
Yellow Zone		
II – have a moderate negative impact on the environment; I – having a significant negative impact on the environment and relevant to the areas of application of the best available techniques	III – moderately hazardous waste; II – highly hazardous waste	25 – for the volume or mass of emissions of pollutants, discharges of pollutants within the limits of temporarily permitted emissions, temporarily permitted discharges; 25 – for the volume or mass of production and consumption waste placed beyond the established limits for their placement or specified in the declaration on environmental impact, as well as in reporting on the formation, use, disposal and disposal of production and consumption wastes in accordance with the legislation of the Russian Federation in the field of waste management;
Red Zone		
I – having a significant negative impact on the environment and relevant to the areas of application of the best available techniques	II – highly hazardous waste; I – extremely hazardous waste	100 – for the volume or mass of emissions of pollutants, discharges of contaminants exceeding the volume or mass specified for Category I objects, and also exceeding or exceeding the volume or mass specified in the declaration on environmental impact for Category II facilities

management should be based on the use of different types of impact tools – technical, technological, economic, legal. The policy of “smart” state regulation requires parallel development of science and production technologies, stimulation of scientific activity in those areas where the deficit is most acute. We can say that there is virtually no large-scale research, uniting the efforts of scientists in various branches of science, so far. Connection of mechanisms of assessment of NIOE and BAT is a promising task for the formation of “flexible” impact on public relations in the field of environmental protection and natural management, as

well as the formation of advanced legislation in this area. A concomitant, but no less significant result of the application of the concept of “smart” state regulation can be the progressive formation and establishment in the business community of the saving eco-consciousness.

References

1. Khan Z., Pervez Z., Abbasi A.G. Towards a secure service provisioning framework in a Smart city environment // Future Generation Computer Systems. 2017. V. 77. P. 112–135. <https://doi.org/10.1016/j.future.2017.06.031>.

2. Marsal-Llacuna M.-L., Segal M.E. The intelligenter method (II) for “smarter” urban policy-making and regulation drafting // *Cities*. 2017. V. 61. P. 83–95. <https://doi.org/10.1016/j.cities.2016.05.006>.
3. Ibrahim M., El-Zaart A., Adams C. Smart sustainable cities roadmap: Readiness for transformation towards urban sustainability // *Sustainable Cities and Society*. 2018. V. 37. P. 530–540. <https://doi.org/10.1016/j.scs.2017.10.008>.
4. Connor P.M., Baker Ph.E., Dimitrios X., Balta-Ozkan N., Axon C.J., Cipcigan L. Policy and regulation for smart grids in the United Kingdom // *Renewable and Sustainable Energy Reviews*. 2014. V. 40. P. 269–286. <https://doi.org/10.1016/j.rser.2014.07.065>.
5. Bhati A., Hansen M., Chan Ching Man. Energy conservation through smart homes in a smart city: A lesson for Singapore households // *Energy Policy*. 2017. V. 104. P. 230–239. <https://doi.org/10.1016/j.enpol.2017.01.032>.
6. Leiva J., Palacios A., Aguado J.A. Smart metering trends, implications and necessities: A policy review // *Renewable and Sustainable Energy Reviews*. 2016. V. 55. P. 227–233. <https://doi.org/10.1016/j.rser.2015.11.002>.
7. Ponce-Jara M.A., Ruiz E., Gil R., Sancrist bal E., Pérez-Molina C., Castro M. Smart Grid: Assessment of the past and present in developed and developing countries // *Energy Strategy Reviews*. 2017. V. 18. P. 38–52. <https://doi.org/10.1016/j.esr.2017.09.011>.
8. Meadowcroft J., Stephens J.C., Wilson E.J., Rowlands I.H. Social dimensions of smart grid: Regional analysis in Canada and the United States. Introduction to special issue of *Renewable and Sustainable Energy Reviews* // *Renewable and Sustainable Energy Reviews*. 2018. V. 82. Part 2. P. 1909–1912. <https://doi.org/10.1016/j.rser.2017.06.106>.
9. Brown M.A. Enhancing efficiency and renewables with smart grid technologies and policies // *Futures*. 2014. V. 58. P. 21–33. <https://doi.org/10.1016/j.futures.2014.01.001>.
10. Lin Chen-Chun, Yang Chia-Han, Shyua Joseph Z. A comparison of innovation policy in the smart grid industry across the pacific: China and the USA // *Energy Policy*. 2013. V. 57. P. 119–132. <https://doi.org/10.1016/j.enpol.2012.12.028>.
11. Howlett M., Rayner J. (Not so) “Smart regulation”? Canadian shellfish aquaculture policy and the evolution of instrument choice for industrial development // *Marine Policy*. 2004. V. 28. No. 2. P. 171–184. [https://doi.org/10.1016/S0308-597X\(03\)00086-1](https://doi.org/10.1016/S0308-597X(03)00086-1).
12. Grabosky P. Green markets: environmental regulation by the private sector // *Law and Policy*. 1994. V. 16. No. 4. P. 419–448. <https://doi.org/10.1111/j.1467-9930.1994.tb00132.x>.
13. Grabosky P. Regulation by reward: on the use of incentives as regulatory instruments // *Law and Policy*. 1995. V. 17. No. 3. P. 257–282. <https://doi.org/10.1111/j.1467-9930.1995.tb00150.x>.
14. Gunningham N., Rees J. Industry self-regulation: an institutional perspective // *Law and Policy*. 1997. V. 19. No. 4. P. 363–413. <https://doi.org/10.1111/1467-9930.t01-1-00033>.
15. Van Gossom P., Arts B., Verheyen K. “Smart regulation”: Can policy instrument design solve forest policy aims of expansion and sustainability in Flanders and the Netherlands? // *Forest Policy and Economics*. 2012. V. 16. P. 23–34. <https://doi.org/10.1016/j.forpol.2009.08.010>.
16. Yarygin G.A., Ravikovich V.I., Wilczek G.E., Nazarevsky N.N., Fedorenko A.V., Fomkina O.M., Persidsky P.S., Medvedev K.B. Ecological aspects of the implementation of the South Stream gas pipeline project in the territory of the Republic of Serbia // *Zashchita okruzhayushchey sredy v neftegazovom komplekse*. 2014. No. 3. P. 5–11 (in Russian).
17. Petrov D.A. Concept and types of state regulatory impact on socio-economic relations // *Vestnik Sankt-Peterburgskogo universiteta. Pravo*. 2013. No. 4. P. 20–25 (in Russian).
18. Federal Law “On Environmental Protection” of 10.01.2002 No. 7-FZ (last version) [Internet resource] <http://www.consultant.ru/> (Accessed: 07.03.2018) (in Russian).
19. Federal Law “On Waste from Production and Consumption” dated June 24, 1998 No. 89-FZ (last version) [Internet resource] <http://www.consultant.ru/> (Accessed: 07.03.2018) (in Russian).
20. Directive of the Government of the Russian Federation of July 8, 2015 No. 1316-r “On approval of the list of pollutants subject to measures of state regulation in the field of environmental protection”. [Internet resource] http://www.consultant.ru/document/cons_doc_LAW_182546/ (Accessed: 07.03.2018) (in Russian).
21. Resolution of the Government of the Russian Federation of March 3, 2017 No. 255 “On the calculation and collection of fees for negative environmental impact” (together with the “Rules for Calculating and Charging for Negative Impact on the Environment”) [Internet resource] http://www.consultant.ru/document/cons_doc_LAW_213744/ (Accessed: 07.03.2018) (in Russian).
22. Kostenko M.A. Legal policy in the innovation sphere: goals and means (information-theoretic aspect). Saarbrücken: Lambert Academic Publishing, 2012. 169 p. (in Russian).
23. Resolution of Government of the Russian Federation of 17.12.2012 No. 1318 (as amended on 31.10.2018) “On the assessment procedure of the regulatory impact of draft regulations, draft amendments to draft Federal laws and draft decisions of the Council of the Eurasian Economic Commission by Federal Executive Authorities, as well as on amendments to some acts of the Government of the Russian Federation” [Internet resource] http://www.consultant.ru/document/cons_doc_LAW_139424/ (Accessed: 10.12.2018) (in Russian).