

Greening of Economy as a Factor of the Russia's Innovative Development

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Abstract. Through the lens of the “green growth” concept prepared by OECD and used in many developed countries, the article addresses issues of development and adoption of environmentally clean technologies with an appeal to the Russian legislation’s current trends. Enacted by laws and regulations, plans of the Russian industry for the transition to the principles of best available technologies demonstrate a significant progress towards improvement of environmental regulation.

Keywords: green growth; innovation; industrial modernization.

Экологизация экономики как фактор инновационного развития России

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Аннотация. Через призму используемой во многих развитых странах концепции «зеленого роста», разработанной ОЭСР, статья рассматривает аспекты развития и внедрения экологически чистых технологий с обращением к текущим тенденциям российского законодательства. Закрепленные нормативно-правовыми актами планы перехода российской промышленности на принципы наилучших доступных технологий представляются серьезным прогрессом на пути совершенствования экологического регулирования. В дополнение рекомендуется уделять большое внимание осуществлению НИОКР в целях получения экологически чистой продукции, которую следует реализовывать на внешних рынках.

Ключевые слова: зеленый рост, инновации, промышленная модернизация.

In anticipation of the government choosing and adopting a Strategy for social and economic development of Russia for the period of 2018–2024, debates on sources of economic growth and technological modernization continue. In this view, it is crucial to understand ways of achieving innovative development. In light of existing tendencies in the leading Western economies, as well as in

the largest economies such as China and India, there is a special place for the development of environmentally clean technologies.

It seems reasonable to consider a concept of green growth, developed by experts of OECD in 2011, that is being incorporated into economic strategies of leading developed countries. Comprehension of the green growth strategy (henceforth referred to as the Strategy), firstly, gives

an idea of trajectories of further development of countries, which are leaders in the world economy, and secondly, allows for forming a theoretical basis of programs aimed at productivity enhancement, technological modernization, and improvement of resource management.

Green growth means ‘fostering economic growth and development while ensuring that natural assets continue to provide the resources and environmental services on which our well-being relies’ [1, p. 4]. Authors of the Strategy highlight that the possibility of substituting reproducible capital (such as machines) for (depleted) natural capital is limited in the absence of innovation. It is important for policymakers in Russia to take this fact into consideration given a high share of extractive industry in the country’s economic structure, the situation is known as ‘resource curse’—the state of affairs when a resource-rich country does not develop other than mineral industries and faces stagnant growth or even economic contraction. For this reason, it is relevant to pay more attention to ideas underlying the concept of green growth.

According to the Strategy, efficient resource use and management are the main goal of economic policy. One cannot disagree with this statement. The more resources, which are the core for life support and in the international trade, are depleted, the more relevant the issue of their optimal use becomes. The OECD experts on green economy point to the necessity to charge for pollution or excessive use of scarce resources. In this view, it is appropriate to determine whether resources of Russia are considered deficit or not and therefore, how ‘excessive’ is appreciated. In 2016 The Ministry of the energy of the Russian Federation evaluated that the country’s hydrocarbon reserves will suffice for the next 40 to 50 years¹. Oil production limits were set in Russia as a result of an international agreement in an attempt of solving the problems of the global oversupply and low oil prices, and not as a result of concern about depletion of the resource. If one considers projects and governmental programs on a substantial development of the Arctic zone and statements made by senior officials of relevant

ministers on them, reduction in hydrocarbon reserves do not seem to pose a problem. The Ministry of natural resources and environment of the Russian Federation estimates that the Arctic zone of Russia holds initial recoverable reserves standing at 258 billion toes or 60% of all hydrocarbon reserves of the country².

Regarding payments for pollution, a literature review of numerous sources, including OECD’s green growth strategy, shows that Western authors stress such forms as taxes and tradable permit systems. These pricing mechanisms are promoted on the grounds that they tend to minimize the costs of achieving environmental targets and provide incentives for further efficiency gains and innovation. Notably, pollution taxes are seen not as an additional burden on economic agents, but as an alternative to increase in other taxes, for example, on labor or returns of enterprises. However, an argument about the attractiveness of pollution taxes due to their nature of being a source of public revenue should be carefully weighted in case of their imposition as an alternative to raising other taxes. It is worth noting, as a response to criticism by opponents of adoption of the above-mentioned market instruments (they fall into this category of environmental measures according to the OECD classification) in Russia, that the OECD experts and other ideologists of green growth underline that these measures are not applicable in every case.

The central argument for incorporating the green growth concept into economic strategy is a modernization of industries and catalyzation of innovation, which should definitely trigger economic growth and increase a country’s competitiveness. This idea dates back to 1990s when Michael Porter introduced his hypothesis (later coined as Porter hypothesis) and developed it together with Claas van der Linde. The hypothesis states that well-designed instruments of environmental policy are able to induce innovation, benefits from which can partly or fully compensate compliance costs [2]. There is no doubt that a more efficient use of energy, saving of materials by recycling and lower costs of product disposal for users bring about the

¹ GAZETA.RU. URL: <https://www.gazeta.ru/business/2016/10/04/10229945.shtml>. Accessed: 26.09.2017.

² RIA NEWS. URL: <https://ria.ru/economy/20160525/1439399879.html>. Accessed: 02.10.2017.

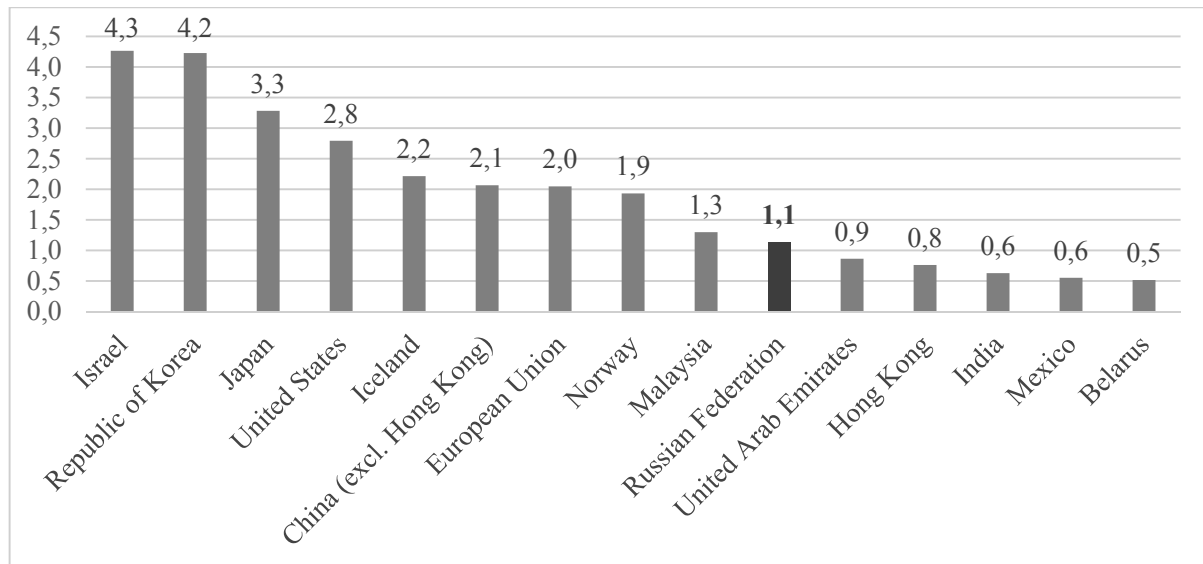


Fig. 1. R&D expenditure as percentage of GDP, 2015

Source: World Bank [4]. URL: <https://data.worldbank.org>.

financial benefit. The question is about ways of spurring innovation because research and development require additional expenses. And this is where the government should step in.

The idea of ramping up R&D financing in Russia is not new and is attributable to technological underdevelopment and a low share of high-tech products in exports. Comparison of R&D expenditure as a percentage of GDP across a range of countries shows that in order to prosper internally and gain a significant position in the world economy Russia should spend more than 1% of its total output for scientific and experimental works. Israel, Republic of Korea, Japan, United States, Iceland, China (excluding Hong Kong), and the European Union are leaders by this indicator at 2015 year-end (Fig. 1) with the world average standing at 2.2% of GDP. Environmentally clean innovations are an area of investment that is and will recoup costs due to an increasing demand for 'green' products in international markets. The international market for environmental goods is estimated at approximately 1 trillion dollars [3, p. 6]. Hence, it is viable to support R&D in this area. And successful promotion of green innovations requires regulatory instruments to be implemented, such as for instance, public procurement and standards and rules in particular local markets.

It is important, however, to take into consideration experts on green growth draw attention

to technological lock-in—a situation when only existing technologies are used while new ones are ignored. In order to avoid technological lock-in specialists recommend leaving industries and not state bodies to choose approaches to innovate in order to meet environmental targets. The system of best available technologies (BAT) was practically introduced by Federal law No. 219-FZ 'On amendments being made to Federal law 'On environmental protection', dated 21.07.2014. Apart from this, a series of other laws and regulations were adopted to regulate and promote BAT, specifically the following:

- Order of the government of the Russian Federation No. 398-r dated 19 March 2014 (policy package on BAT)
- Order of the government of the Russian Federation No. 2178-r dated 31 October 2014 (Reference books on BAT)
- Decree of the government of the Russian Federation No. 1458 'On procedure for defining technology as best available technology and preparing, updating and publishing of information and technical reference books on BAT' dated 23 December 2004
- Order of the government of the Russian Federation No. 2674-r dated 24 December 2014 (Implementation areas for BAT)
- Decree of the government of the Russian Federation No. 1029 'On approving criteria for qualifying objects that have a negative environmental impact as categories I, II, III, and



Fig. 2. Stages of the Russian industry's transition to the principles of BAT

Source: Ministry of industry and trade of the Russian Federation [5].

IV' dated 28 September 2015.

Previously, there has been one article (28.1) in the Federal law No. 7-FZ 'On environmental protection' dated 10.01.2002 related to BAT, which includes several key statements. Firstly, criteria for defining best available technologies are set. They are the following:

- The minimum negative impact on environment calculated by unit of time or production output, works performed, serviced provided or other indicators stated in international treaties of the Russian Federation
 - Economic effectiveness from its adoption and exploitation
 - Use of resource- and energy saving methods
 - Period of its adoption
 - Industrial adoption of a technology at two or more objects that produce negative environmental impact.

Secondly, the article of the law dated 2002 comprises information that should be incorporated into reference books on BAT in different sectors, on the basis of which business chooses ways of environmentally related modernization (point 2). Thirdly, Federal law 'On environmental protection' defines adoption of a best available

technology as 'the time-limited process of design, reconstruction, technical re-equipment of facilities that have negative environmental impact, equipment installation as well as the use of technologies that are described in reference books and (or) environmental impact indicators of which do not exceed specified technological parameters of BAT' (point 10).

Work undertaken during the past several years in the area of regulation of technologies aimed at diminishing harmful environmental effects led to fixing deadlines for the Russian industry to switch to operations according to the principles of the BAT. There is a slide on stages of best available technologies' adoption in the presentation of the Ministry of industry and trade dated May 2017 (Fig. 2). The plan is that 51 reference books should be approved by the end of 2017. These reference books contain information on technological solutions, adoption of which is expected to reduce the burden on nature alongside with preserving potential of industrial development. The Ministry of natural resources and environment will set requirements, which will be used when granting a complex environmental permit to companies, on the basis of the reference books. The com-

plex environmental permit will replace three currently existing permits: for air pollution, discharges to water, and for industrial and consumer waste storage. By 2020 year-end complex permits are to be granted to 300 enterprises that are largest polluters.

The danger of technological lock-in can be seen at the stages of, firstly, development of reference books and, secondly, preparation of requirements by the Ministry of natural resources and environment. Regarding the former, the country's federal body in the area of standardization (Rosstandart) is responsible for arranging development of reference books, for the purpose of which a Bureau on BAT was created. On the one hand, it is very useful that working groups of the Bureau, which formed to prepare reference books in a particular sector, included representatives of companies, industrial associations, unions of entrepreneurs and others (including scientific and non-commercial organizations, etc.), because concerns they expressed were then taken into consideration and, at the same time, there was an opportunity of promotion of businesses that focus on innovative activities. On the other hand, as it was mentioned above, environmental policy compliance and related innovation require additional expenses. For the reason that general practice shows reluctance of companies to reallocate funds for the purpose of environmental cleanup and pollution prevention and taking into consideration opposition of the Russian business community to measures described in the Paris Climate Agreement, it is most likely, that participation of business in preparation of reference books on BAT has weakened this instrument of environmental modernization and limited opportunities for choosing technological solutions.

The Ministry of industry and trade estimates that transition of industry to the principles of best available technology will require 8.2 trillion rubles while re-equipment of production facilities will amount to 13.6 trillion [5]. Forms of governmental support envisaged can be considered as a significant shift in environmental regulation. Specifically, the following measures are envisaged and already used:

- Reductions of payments for negative environmental impact
- Investments tax credit

- Introduction of a special depreciation rate
- Subsidies for interest payments on the loan (for amounts of subsidies and requirements for investment projects see slide 11 of the same presentation)

- Subsidies for R&D costs.

The initiated scheme of transition to operating under the principles of the BAT will become an important trigger of increase in internal demand for existing technologies, will ensure a large-scale modernization of the key Russian industries, thus making them more competitive in the international markets. Moreover, adoption of environmentally clean technologies will secure the Russian economic agents from potential trade barriers from foreign partners. Nevertheless, apart from ramping up use of technologies by the country's economic agents, it is of great significance to, firstly, promote existing knowledge and skills abroad, and secondly, carry out R&D for the purpose of producing environmentally clean goods, which will be of high demand with foreign buyers in the near- and mid-term. In order to finance these initiatives, funds could be partly diverted from the Government program on the coal industry development until 2030 (hereinafter referred to as the Program).

As the author stated in the previous publication [6, p. 149], it does not seem reasonable to plan large-scale exports from newly developed coal fields to China and building coal-fired power plants at the border, which are mentioned in the Program. The first signal is that according to China's 13th Five-Year Plan the country plans to reduce its use of coal to less than 58 percent of total energy consumption³. China has focused on meeting its obligations under Paris Climate Agreement and intends to increase the share of non-fossil fuels in total primary energy consumption to 20% by 2030⁴. The second indication is that the International Energy Agency resting on all the environmental and energy initiatives announced by China forecasts that

³ The State Council of the People's Republic of China. URL: http://english.gov.cn/policies/latest_releases/2016/11/04/content_281475482956889.htm.

⁴ As stated in the Intended Nationally Determined Contributions (INDC) submitted by China to the United Nations before signing the Paris Climate Agreement.

the country's coal use is set to decline by almost 15% over the period to 2040 [7, p. 4]. Therefore, some funds of the Program could be used to gain a double benefit: firstly, economic one from selling environmentally clean products (as a result of research and development), and secondly, environmental by not allowing air pollution from burning more coal.

To sum up, it is possible to conclude that there has been a significant shift in the Rus-

sian legislation targeting reduction in negative environmental impact with a basis on adoption of existing technologies that are to bring about large-scale industrial modernization. In order to avoid technological lock-in and give impetus to innovative activities, it is necessary to invest in R&D. Reallocation of funds from the Government program on the coal industry development could become a source of public financing of green research and development.

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