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E-mail: sgem@sgem.org | URL: www.sgem.org

ENVIRONMENTAL INDUSTRIAL POLICY IN RUSSIA: ECONOMIC, RESOURCE EFFICIENCY AND ENVIRONMENTAL ASPECTS

Dr. Dmitry Skobelev

Environmental Industrial Policy Centre, **Russia**

ABSTRACT

In Russia, industrial policy is the strategic effort of the government to encourage the development and growth of the manufacturing sector aimed at making it innovative, internationally competitive and sustainable. New regulatory instruments have been gradually developed and used for 5-7 years; this period is sometimes addressed as 'the national neo-industrialisation'.

In advanced industrial countries, environmental modernisation theory is often considered as a possible solution to the key environmental problems. It assumes that regulation can help to minimise environmental impacts while making industry more competitive. In theory, this can be achieved if regulation encourages the development and application of innovative technologies and production techniques.

Environmental industrial policy (EIP) as the effort to encourage the fundamental change in resource efficiency and environmental performance of the industrial sector, has to help companies to overcome the considerable barriers to innovation which prevent them from moving beyond 'end-of pipe' techniques to consider cleaner technologies, from complementing technological change with organisational change and from exploring the strategic as well as the operational opportunities for improvement.

The concept of Best Available Techniques (BAT) and Integrated Pollution Prevention and Control (IPPC) is seen as one of the key instruments of the modern EIP. Since industrial sectors show substantial variation in resource consumption (efficiency) and pollution impacts, and EIP instruments applied to encourage industrial development and to minimise industry's burdens on the environment need to be 'tailor-made', supporting innovation and cleaner production and leading to the internalisation of external costs caused by pollution and over-consumption of natural resources.

Internationally, there are examples of combined economic and environmental improvement in industry as a result of the implementation of BAT and IPPC, particularly where expert community and even environmental inspectors have helped to develop the capacity of regulated companies to respond to the regulation. Still, EIP while encouraging technological and organisational changes, often fails to establish the environment as a strategic concern in industry. This is why special incentives are needed to promote the radical innovations that are associated with the environmental modernisation in the longer-term.

Forming its EIP, Russian policy makers study lessons learnt by the international community moving the industry toward the best performance that is technologically possible and environmentally sustainable and look for the informative macro-indicators that can prove (or disapprove) that the industrial strategy and business environmental reform can be compatible.

Keywords: Environmental Industrial Policy, incentive and regulatory instruments, Best Available Techniques, sustainable development, resource efficiency.

INTRODUCTION

Environmental industrial policy is a relatively new trend in the state industrial policy of the Russian Federation with the main purpose of forming (revamping) technologically advanced competitive industrial sector and simultaneously ensuring the transition of the Russian economy from the exports of raw materials to the innovation-based development [1, 2].

The objectives of the state environmental policy, which is essentially protective in nature, include effective use of natural resources and industrial waste management. The key to achieving these objectives lies in the implementation of innovative and cleaner technologies, as well as establishment of the waste management and processing industry. One of the mechanisms for implementing the environmental policy lies in stimulating implementation of Best Available Techniques, establishing facilities that meet modern environmental requirements and standards for disposal, recycling, processing of industrial and communal waste with overall increase in waste recycling and reuse rates [3].

These objectives and mechanisms relate directly to the industrial development and stimulate the implementation of modern technological processes. In fact, they are more in tune with such objectives of the state industrial policy as stimulating machinery sector industrial enterprises to use the results of the intellectual activity (research) and begin manufacturing technological lines and equipment necessary for the production of innovative industrial products. At the same time, stimuli are needed to support key industrial sectors to apply modern import-substituting, resource-efficient and safe techniques and thereby provide for the technological upgrade of the Russian industry [4]. Thus, environmental and industrial policies are the components of the integral state policy. But the environmental industrial policy is rather a specific component of the industrial policy contributing towards the sustainable development of the Russian Federation and being in-line with several Sustainable Development Goals, in particular:

- Goal 8: Decent Work and Economic Growth
- Goal 9: Industry, Innovation and Infrastructure
- Goal 12: Responsible Consumption and Production

ENVIRONMENTAL BUSINESS REFORM AND GREEN ENVIRONMENTAL POLICY: INTERNATIONAL APPROACHES

In order to ensure the structural transformation of Russian industry on the basis of re-industrialisation and technological modernisation it is reasonable to take into account the international experience in this field. For example, France has undergone the implementation process of new industrial policy at the beginning of the XXI century. The modernisation of traditional industries (chemical, metallurgical, construction materials sectors, etc.) was carried out on the basis of products by high-tech industrial sectors (information technologies, bio- and nanotechnologies) [5]. The recognition of the role of the state in this process (or rather the return of such a recognition from industries) has become the characteristic feature of the French economic development. At the same time, several European Union (EU) Member States have directed their attention to the state and supranational regulation aimed at the environmental industrial modernisation and overall

‘greening’ of business. The key role in the development of such regulation was played by the EU Industrial Emissions Directive (Directive 2010/75 / EU) [6]; its main provisions reflect many years of experience in consistently tightening the requirements for resource efficiency and using pollutant emissions as lever to improve technological processes utilized by EU industries. At the core of the EU Directive lies the concept of the Best Available Techniques.

The Organisation for Economic Co-operation and Development (OECD) pays close attention to the development of the BAT concept, its practical application, viability and effectiveness of the continual improvement (tightening) of mandatory requirements. In 2014, the OECD Observer magazine published an interview with the French entrepreneur Frederick Mazzella, the founder of the world's largest international online search service for car travel companions, entitled ‘Environmental policies don't have to hurt productivity’ [7]. Tightening state policy requirements in OECD member states not only does not slow down the production growth, but on the contrary, it contributes to the significant increase in the output of innovative products and rendering fundamentally new services, more efficient and environmentally friendly throughout their life cycle. The sustainable growth under tightening regulatory requirements is demonstrated by the leading companies in all industrial sectors. Their leading positions are due to the organisation’s quality and environmental policy (often merged in sustainable development policy) features: the studies of expected changes in the external environment (research in the field of environmental marketing).

As a rule, the less advanced enterprises (‘rear guard’) are merely adjusting with the leaders by gradually modernizing manufacturing processes. For example, in the United Kingdom legislation shows a common practice of temporarily mitigating environmental industrial policy requirements (derogation) for installations that will be able to prove with the objective data the need for a certain period of time to carry out cost-effective environmental modernisation. This practice is also spread in the EU [8].

Recently, a technological platform ‘Industrial Modernisation’ has been set up by the EU [9]; ‘Efficient and Sustainable Manufacturing’ is the key sub-area proposed for the co-operation within the framework of the ‘Industrial Modernisation’ Platform. The purpose of this thematic area is given as follows, “Development of innovative solutions for the European industrial sector that should be used for the formation of effective production chains and deliverables with high added value output”. The ‘Efficient and Sustainable Manufacturing’ focus areas are:

- increasing throughput, quality, environmental and social sustainability of manufacturing activities while reducing costs;
- reducing emissions, energy, resources and materials consumption,
- enabling European reindustrialisation and preserving the environment and the planet’s resources.

The publications posted on the ‘Industrial Modernisation’ platform focus on such development of industrial policy as whole and neo-industrialisation policy in particular that will meet the general requirement for industrial ‘green’ growth and sustainable development.

Harvard economists Dani Rodrik and Ricardo Hausmann analyse main characteristics of industry in developing countries [10, 11] and emphasise that state administration in these countries is undergoing a period of value reassessment; this ‘second discovery’ of the

industrial policy leads to approaches to development and implementation of innovative solutions that promote the competitiveness growth and sustainability of industrial manufacturing. John Weiss, the author of ‘Strategic Industrial Policy and Business Environment Reform: Are They Compatible?’ [12], argues that from the strategic long-range view, contemporary industrial policy and business environment reform not only compatible, but closely interrelated. Moreover, the focus of the business environment reform on a more rational use of resources in manufacturing processes stimulates emerging new technological processes and innovative product and service types.

The ‘Green Industrial Policy: Concept, Policies, Country Experience’ report [13] specifically contemplates with an industrial policy concept and approaches that could be used as a basis for a ‘greener’ industrial production. ‘Green’ industrial policy is defined as a set of government measures aimed to accelerate the structural transformation towards a low-carbon, resource-efficient economy in ways that also enable productivity enhancements in the economy [13].

The formation of a ‘green’ industrial policy involves:

- an emphasis on the internalisation of externalities, on the prevention of the negative environmental impacts;
- a clear distinction between ‘good’ and ‘bad’ technologies based on their resource efficiency and their potential to prevent or minimise negative environmental impacts;
- fund-raising for certain manufacturing field that may become ‘greener’ and is in need of a fundamental renovation;
- carrying out industrial reform in the shortest possible time in order to solve the urgent tasks of industrial ‘greening’;
- arrangement for inter-departmental co-operation and establishment of particularly encompassing body responsible for ‘green’ industrial policy development and implementation.

The authors [13] point out that a ‘green’ industrial policy should eventually lead to mutual benefits for the state, civil society and business.

ENVIRONMENTAL INDUSTRIAL POLICY, IMPROVED RESOURCE EFFICIENCY AND IMPLEMENTATION OF BEST AVAILABLE TECHNIQUES IN RUSSIA

The prerequisites for establishing approaches to the state environmental industrial regulation in the Russian Federation have emerged in 2014 after the adoption of two Federal Laws, namely: ‘On amending Federal Law on Environmental Protection and other legislative acts of the Russian Federation’ [14] and ‘On Industrial Policy in the Russian Federation’ [4].

The main challenge back in 2014 was the lack of a sufficient regulatory framework for new government regulation and, as a result, the dissent (if not confrontation) in the opinions and interpretations of the BAT transition process. It was decided to rely on the EU experience, where BAT-based regulation had more than two decades of successful practice [15]. Nevertheless, full copying of the European system was not an option since Russia

obviously has a different legal structure of state environmental regulation and, moreover, the Russian industrial structure differs significantly from that in Europe.

The goal of the BAT transition in Russia was to form conditions for the industrial development, to increase industry competitiveness and investment attractiveness while simultaneously reducing negative environmental impacts. One of the most feasible approaches to achieve this goal is the improvement of state regulation in the fields of environmental protection and industrial policy by gradually introducing the practice of setting reasonable and achievable compulsory norms and limit values (such as BAT-associated emission levels established for the key EU industrial sectors).

A consensus has been found with the help of already mentioned thesis that a responsible business entity undergoing the modernisation of its assets is economically interested in acquiring a more resource saving and energy efficient technology than the previous one, and thus reducing the overall environmental impact. Consequently, the interests of industrial development supporters may coincide with the interests of the environmental protection agencies and non-governmental organisations. The main issue here to take into account is the alignment of regulatory requirements on time frame and steps for reduction of impact factors (air emissions, waste water discharges, waste generation) with business investment plans for industrial modernisation.

Still, the complete harmonisation of the two policies still has not been achieved in practice. The target setting systems and the priorities of the key Russian regulators in the field (the Ministry of Natural Resources and Environment (MNRE) and the Ministry of Industry and Trade (MIT)) differ, even though the concept of the rational nature resource use still plays a major role in environmental safety and industrial policy of the Russian Federation (Fig.1).

The most effective solutions to prevent negative environmental impacts often called by European practitioners as primary, process integrated approaches. These solutions actually relate to the technological improvement and, in some cases, even the development of fundamentally new manufacturing processes, free from hazardous substances; or change the process energy intensity and subsequently dramatically reduce emissions of combustion products into the air. This is the very representation of the internalisation of external costs: the 'polluter pays' principle; what is crucially important here that a polluter pays not by transferring fees for the negative environmental impact to environmental protection agencies but rather by investing into new technological processes thus preventing or significantly reducing the impact on the environment by his business activities.

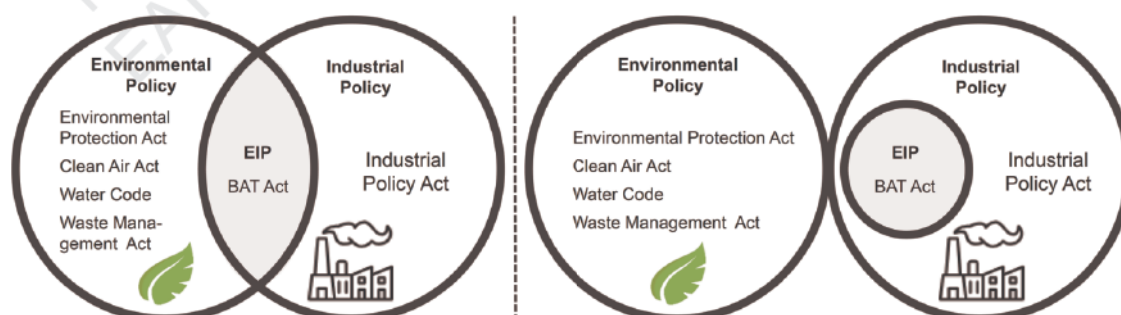


Fig. 1 Environmental industrial policy as an integral part of the state industrial policy

Thus, the EIP is a part of the state industrial policy (Fig. 1) with the main focus on the industry modernisation through its ‘greening’, on the development of resource-efficient and environmentally friendly industries. The long-term IEP purpose, as well as its main trends, priorities and objectives are presented in Table 1.

Table 1. Environmental industrial policy: purpose, trends, priorities and objectives

Purpose				
Developing technologically advanced competitive industry and simultaneously ensuring the transition of the Russian economy from the exports of raw materials to the innovation-based development				
Trends				
Industry modernisation by increasing resource efficiency and reducing the negative environmental impact		Return of industrial waste to economic circulation on all levels: enterprises, industrial associations, industrial sectors, Russian regions and at the national level		
Priorities				
Sustainable industrial development	Abandoning obsolete processes in favour of innovative and efficient ones	Rational use of natural resources and raw materials	Reducing the production waste generation	Reducing negative environmental impacts on the industrial sector
Primary Objectives				
– Analysis of natural resources flow in the national / regional / sectoral economy				
– Quantitative assessment of technology development stage (Encyclopaedia of Technologies)				
– Quantitative determination of resource productivity/resource efficiency (taking into account resource and process chains) for certain industrial sector and region as municipal body (taking into account inter-industry effects)				
– Setting up integrated indicators and resource productivity (resource efficiency) indicators at sector /region / country level				
– Developing methods for estimating investment and operating costs for achieving integrated indicators and resource productivity (resource efficiency) indicators				
– Developing the BAT assessment system				
– Improving information resources (tools)				

The Environmental Industrial Policy does not merely comprise a repetition of the industrial policy approaches. It includes government measures that aim to accelerate the structural transformation towards a resource-efficient economy, in a way that also enables productivity enhancements within the economy. At the heart of EIP is the need to foster inclusiveness, productivity and competitiveness while decoupling economic (industrial first of all) growth from social inequalities and environmental degradation. In

Russia, EIP is an emerging concept that involves a significant amount of input from a variety of disciplines and stakeholders representing a wide spectrum of interests.

CONCLUSION. ENVIRONMENTAL INDUSTRIAL POLICY IMPLEMENTATION

The EIP implementation implies the implementation of specific measures to achieve the policy priorities; these priorities will be replaced by new, more ambitious ones in the nearest future. The next step in the EIP development process is planning for measurable and achievable results. This will require public dialogue tools tested during Russian BAT development process in 2014 – 2018: expert workshops, business role games and online open discussion platforms.

Though the planning process has just been started, it is already possible to describe the expected results in general (without numerical estimates):

- generally, the Russian industry agrees with the established norms and technological parameters and their updating schedule (the norms are (1) the product of developing Russian Reference Documents on BAT, (2) approved by Russian environmental protection regulator (MNRE) and (3) to be implemented by the industry in order to comply with the legislative requirements);
- the number (share) of the compliant enterprises is growing because of the fact that compliance with the norms and technological parameters established during the EIP implementation becomes more profitable than non-compliance;
- consistent rise in resource productivity in Russian regions; industrial sectors are becoming more resource efficient;
- reduction in re-equipment cycle for fixed assets;
- reduction in the share of production waste that have not been reused or recycled.

In order to achieve the planned results, it is necessary to develop and implement programmes both at national, industrial and regional levels. To a certain extent, indicators used to assess the progress in the achievement of Sustainable Development Goals, can be used while setting national indicators.

The international framework consists of 244 indicators; the full list was adopted by the UN Statistical Commission, and by the UN General Assembly in 2017. Each indicator was assigned to a custodian agency to lead methodological developments and reporting. For example, indicators for Goal 12 reflect such aspects as material flow accounts, chemicals and wastes, environmental policy, food waste and fossil fuels.

The federal project ‘The Implementation of Best Available Techniques’ (2018-2024) with its main goal to ensure transfer to BAT-based regulation for all major installation with substantial impact on the environment, also provides for a range of activities that will contribute to the achievement of several objectives of the Environmental Industrial Policy, including the developing the BAT assessment system and methods for estimating investment and operating costs for achieving integrated BAT indicators. However, the ‘resource’ component of EIP requires the formation of other research programmes and additional R&D on the assessment of regional resource flows and resource productivity in accordance with the UN recommendations and national development goals of the Russian Federation.

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