

# RUSSIAN FEDERATION

## INTRODUCTION

Russian economy's energy intensity continues to be considerably high in comparison with most of the developed economies. With the introduction of effective energy efficiency (hereafter EE) measures, experts estimate that the energy savings from the improvement of Russian energy intensity could reach 420 million tonnes of fuel equivalent (tfe), including more than 230 million tonnes in the energy-fuel complex which is considered the most energy-intensive sector of the Russian economy.

## 1. GOALS FOR EFFICIENCY IMPROVEMENT

### 1.1. Overall Energy Efficiency Improvement Goals

The Russian government has made it a top priority to facilitate the achievement of its objectives of improved energy savings and energy efficiency. However, due to Russia's geography (climate, territory size and so on), low domestic energy prices (especially gas and electricity), inadequate and outdated energy infrastructure, as well as lack of transparent auditing, the Russian Government's efforts for the effective improvement of energy efficiency and encouragement of energy saving will continue to be hindered.

On 4 June 2008, President Medvedev issued Presidential Decree N. 889 titled "Concerning some measures for improving the energy and ecological efficiency of the Russian economy", which established a more ambitious energy efficiency goal of a minimum 40% reduction in the energy intensity of the Russian economy (defined as energy use, or total final energy consumption, per unit of GDP) by 2020 compared to 2007. The decree also identified several target areas, such as the introduction of measures for technical regulation in the power generation, construction, residential and transportation sectors in 2008–09, and called for the finalising of the drafts of the laws and regulations, federal targeted programs, and other relevant legislative acts in the field of energy efficiency and ecological improvement.

In addition, energy efficiency has been identified as one of the key priority areas for the Russian government in the recently published 'Energy Strategy of the Russian Federation up to the year of 2030' (hereafter ES2030), which was approved and adopted on 13 November 2009, in accordance with the Government Decree No.1715-p. Specifically, the ES2030, which will be put into effect in three stages, stressed that during the second stage (between 2015 and 2022), the goal will be to improve overall energy efficiency on the basis of innovative development of the fuel and energy industry. During the final stage of 2022–2030, the focus will shift to the efficient use of energy resources across the economy, paving the way for the transition to non-fuel types of energy. In addition, as the primary goal for the improvement of energy efficiency, the ES2030 identified a 50% reduction in energy intensity as well as a minimum 1.6 times reduction of electrical intensity in the Russian economy by 2030 compared to 2005. For this purpose, the strategy included a number of detailed policy recommendations and measures for the improvement of energy efficiency and conservation. In addition, it set forth the indexes of energy efficiency of the Russian economy (measured as the energy intensity of GDP) as a maximum 78% for the first stage (2010–2015), maximum 57% for the second stage (2015–2022), and 44% for the third stage (2022–2030).<sup>1</sup> Furthermore, in order to boost energy conservation, the strategy envisioned the USD 244–259

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<sup>1</sup> ES2030, Appendix 2 "Indexes of energy security: Indexes of energy efficiency".

billion total budget for the period 2009–30, constituting about 10% of the overall ES2030 budget during the same period.<sup>2</sup>

## 1.2. Sectoral Energy Efficiency Improvement Goals

Russia has no clearly-established sectoral goals. However, a number of measures and targets (both quantitative and qualitative) for energy efficiency improvement have been introduced across the sectors of the Russian economy upon the adoption of Federal Program “Energy Conservation and Improvement of Efficient Efficiency for the period until 2020” (hereafter FP) on January 21, 2011.

The FP envisioned the following sectoral potential saving targets.

### *Power*

The FP envisages that successful adoption of energy saving technology and measures would result in 312.81 million tonnes fuel equivalent (hereafter “tfe”) total savings of energy resources in the entire Russian fuel and energy complex during 2011–2020.<sup>3</sup>

### *Public and Residential*

It is important to note that there is no clear distinction between the public and residential sectors in Russia, especially concerning the assessment of energy and heat efficiency of buildings, light fixtures, and appliances.

The Russian government has developed an economy-wide building code for energy efficiency that features various requirements for existing and new buildings in both commercial and residential sectors. Special emphasis is placed on refurbishing and upgrades of the existing buildings through the introduction of higher buildings standards, phasing out of inefficient lighting, water and heat systems. According to FP, following the successful implementation of the measures to improve energy saving and energy efficiency in heat supply in the public sector, would lead to 184.18 million tfe; and in the residential sector, focusing on efficient lightning and heat supply, to 97.83 million tfe in total energy savings during 2011–2020.<sup>4</sup>

In addition, Russia has recently announced a plan to phase out incandescent lighting by 2012 and has been developing an energy labelling scheme based on the European energy efficiency labelling standards.

### *Industry*

To date, a wide range of sectoral development programs and individual energy company investment programs have been developed and implemented. They include the Strategy of Metallurgy Development through 2015; the Strategy of Chemistry and Petrochemistry Development through 2015; the Set of Measures to Improve Competitiveness of the Forestry Industry; energy saving and investment programs of JSC Gazprom, JSC Lukoil, JSC Norilsk Nickel, Urals Mining and Metallurgical Company, JSC Severstal, and others.<sup>5</sup>

In addition, the government has been promoting a number of general energy efficiency measures especially in energy-intensive sectors of Russian economy (such as oil refining, steel, cement, cellulose-paper, aluminium, etc.), while putting a special emphasis on the promotion of high efficiency technologies for energy savings in these areas. In accordance with FP, the expected energy savings from the successful implementation of the program measures would lead to the total energy savings of 333.25 million tfe during 2011–2020<sup>6</sup>.

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<sup>2</sup> Ibid, Appendix 4 “Estimates for Russia’s fuel and energy balance up to the year of 2030: Forecast of necessary investment into the development of the fuel-energy complex and energy supply of the Russian economy up to the year of 2030”.

<sup>3</sup> “Federal Program “Energy Conservation and Improvement of Efficient Efficiency for the period until 2020”, (in Russian only), p.18.

<sup>4</sup> Ibid, p. 20 and p. 26.

<sup>5</sup> PEEREA report, p. 36.

<sup>6</sup> FP, p.21.

### *Transport*

In accordance with the FP, due to the introduction of Western energy efficient technologies in the Russian domestic automobile production and overall improvement of energy efficiency in the transportation sector, total energy savings during 2011-2020 should reach 72.2 million tfe.<sup>7</sup> In addition, a number of qualitative measures and environmental requirements have been introduced for road vehicles and motor fuels.

### *Municipalities and Services*

It is expected that the improvements through introduction of higher building standards, phasing out of inefficient lighting, water and heat systems facilitated by the FP, the total savings in the consumption of energy and heat resources in the municipalities and services sector would be 115.95 million tfe during 2011-2020.<sup>8</sup>

### *Other*

In agriculture, the government adopted a special development program that encourages a gradual replacement of the energy-inefficient agricultural equipment and vehicles. According to the FP, these measures for the reduction of energy intensity should result in 7.94 million tfe in energy savings during the period of 2011-2020.<sup>9</sup>

## **1.3. Action Plans for Promoting Energy Efficiency**

One of the action plans for promoting energy efficiency and saving in Russia is The Federal Program “Energy Conservation and Improvement of Efficient Efficiency for the period until 2020” (hereafter FP), which was adopted on January 21, 2011.

### **a) Objectives**

The FP, in line with the ES2030, is aimed at helping the transition of the Russian economy to an energy-saving development path by decreasing the energy-output ratio of GDP on the basis of energy-saving policies across the economy. The key targets set in the program included the reduction of energy intensity at least by 7.4% (total final energy consumption/GDP) by 2015 and at least by 13.5% by 2020. Furthermore, the program aims to facilitate the creation of energy-efficient Russian society.

### **b) Applicable sectors**

The FP sets targets and outlines measures for energy efficiency improvements in various sectors of the Russian economy.

### **c) Outline**

The FP outlines concrete measures in all sectors of the economy with the aim to help achieve the federal target of a minimum 40%-decrease in energy intensity of the Russian economy by 2020 compared to 2007 through a rational use of energy resources and other measures to encourage EE and energy conservation. These measures include enhancement and coordination of federal, regional and municipal energy efficiency and energy saving programs; establishment of information dissemination, public awareness and promotion of education initiatives; introduction of various financial assistance measures for promotion of efficient use of energy and heat resources; 4.5%-target share of renewable energy resources in the total energy consumption balance by 2020; and others.

The FP consists of several sub-programs aiming for energy conservation and EE improvement in the following sectors of the Russian economy: electric power; heat supply in the public sector; industry; agriculture; transportation; municipalities and services; residential; regions and administrative units of the Russian Federation; and the energy sector as a whole.

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<sup>7</sup> FP, p. 23.

<sup>8</sup> Ibid, p. 25.

<sup>9</sup> Ibid, p. 22.

The program is to be implemented in two stages, 2011-2015 and 2016–2020. During the first stage, energy intensity of the Russian economy should decline by at least 7.4%, and by the end of the second stage, by 13.5%, which is the final EE target of the FP.

#### **d) Financial resources and budget allocation**

The financing for the first stage will reach 3.31 billion roubles and 5.527 billion roubles during the final stage of the program. The financing for the implementation of the FP is expected to come from federal and regional budget as well as the private (commercial) sector, totalling 8.837 trillion roubles<sup>10</sup> (approximately 308 billion USD).

#### **e) Method for monitoring and measuring effects of action plans**

The FP calls for the establishment of various administrative mechanisms for effective management and control of monitoring and measuring the program's effects based on the compilation of data and statistics and trend analysis. Additional monitoring mechanisms include energy-efficiency and energy-saving surveys, data collection, and the comparison of the results with the indicative targets or norms established by the related legal acts. In addition, according to the new Federal Law No. 261-F3 on "Energy Conservation and Increase of Energy Efficiency" (hereafter FLEC IEE) adopted in November 2009, other methods include mandatory energy monitoring and regular auditing (once every five years) for heat and power usage of buildings, energy-intensive equipment, and other energy-consuming entities; installation of compulsory meters and requirements of the energy efficiency certificates ("energy passports"); establishment of a single, unified federal energy efficiency information network system comprised of the data collected from the energy audits; and others.

The State Standard, GOST P 51380-99 "Energy conservation and methods of assurance for energy efficiency compliance", which has been in force since November 1999, sets forth the requirements for the verification of energy-consuming products' energy efficiency indicators and their comparison to the normative values. In accordance with the standard, the following monitoring methods have to be applied: producers' declaration of energy efficiency performance; certification of production testing and verification; collection of data and its analysis concerning product energy consumption in comparison with energy efficiency normative values.

Annual energy efficiency and energy saving surveys are conducted through comparison of energy intensity per GDP unit with the indicative targets of the ES2030. Similar evaluations are made in a number of Russian Constitutional Entities regarding changes in their economy's energy intensity per gross regional product. At the level of enterprises and economic entities, energy efficiency and energy saving are monitored at their discretion and at their expense or with the involvement of energy audit organisations.

At the federal level, monitoring of the realisation of energy efficiency and energy saving policies and measures is carried out by the Section on Monitoring of the Department of the State Energy Policy and Energy Efficiency at the Ministry of Energy. In addition, the Federal Agency on Technical Regulating and Metrology (FATERM), which was founded in May 2004 and placed under jurisdiction of Ministry of Energy of the Russian Federation, carries out the functions on rendering state services, administration of public estate in the field of technical regulating and metrology, including licensing of activities with respect to manufacture and maintenance of various technical requirements. It also controls and supervises the compliance of mandatory requirements of state standards and technical regulations, including in the field of energy efficiency.

#### **f) Expected results**

The Russian Ministry of Energy estimates that the savings of energy and fuel resources from the successful implementation of the FP are expected to reach 300 million tfe by 2015 and 1,000 million tfe in total from 2011 to 2020. In addition, successful implementation of the

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<sup>10</sup> FP, p. 6.

program should help overcome negative development tendencies in the fuel and energy complex as well as the achievement of the targets listed in Section 1.2 of this report.

**g) Future tasks**

The FP envisions the following two key policy directions for the improvement of energy efficiency of the Russian economy: 1) the stimulation of various cross-sector processes and mechanisms encouraging the improvement of energy efficiency of the Russian economy, and 2) the realisation of the energy conservation projects by sectors to reach the energy saving potential of the Russian economy. To reach these goals, the program proposes such measures as:

- 1) Significantly increasing the share of renewable energy resources in the total energy consumption balance
- 2) Enhancing and coordinating federal, regional and municipal energy efficiency and energy saving programs
- 3) Establishing information dissemination, public awareness and promotion of education initiatives
- 4) Introducing various financial assistance measures for the promotion of the efficient use of energy and heat resources, and many others.

Additionally, a number of regional and local energy saving programs, which identify major energy saving and energy efficiency measures at a regional or municipal level and use regional or municipal budgetary resources for their implementation, have also been developed and put in effect to supplement the above-mentioned federal programs. Currently, several regions of the Russian Federation have already established or are currently establishing regional energy efficiency programs or initiatives.

In addition to above-mentioned measures and policies for the strengthening of the EE legal framework under the auspices of the FP, the Russian government has launched the following six pilot “Presidential EE projects” that are currently being implemented in several regions of the Russian Federation. Upon their successful completion, these projects are expected to be applied across all regions.

- 1) metering (installation of metering devices and automation)
- 2) EE in budget sector (piloting of energy performance contracting in schools and public buildings)
- 3) energy efficient district (targeting the residential sector)
- 4) energy efficient lighting (replacement of street lighting and other measures)
- 5) small-scale cogeneration
- 6) new energy sources (renewable and other, non-carbon, energy resources).

#### **1.4. Institutional Structure**

In the Russian Federation, legislative power is vested with the two-chamber Federal Assembly consisting of the State Duma (more powerful lower house) and the Federation Council (upper house). In addition, policy responsibility for energy efficiency actions varies between the levels of government, with the federal government holding the higher jurisdiction.

At the federal level, until May 2008, energy saving and energy efficiency policy was placed within the competence of the Federal Assembly. However, during the administrative restructuring of the Russian government in May–June 2008, the responsibility for energy policymaking and oversight was transferred from the Ministry of Economic Development and Trade (which was reorganised into the Ministry of Economic Development and a separate Ministry of Industry and Trade), the Ministry of Industry and Energy and the Federal Energy Agency to the newly established Ministry of Energy (Minenergo), currently headed by Sergey Shmatko.

Within the new Ministry of Energy, for the first time, the Department of the State Energy Policy and Energy Efficiency (currently headed by Mr. Sergei A. Mikhailov) was created to deal specifically with the issues and policies pertaining to energy saving and efficiency. In addition, in 2009, to facilitate policymaking and improve inter-government communication concerning energy saving and energy efficiency, two special intergovernmental groups were established. The first group, the commission on the fuel and energy complex, is located at the prime minister's office and headed by Minister of Energy Sergey Shmatko. It is engaged in legal aspects and institutional structures, as well as preparing and monitoring the National Program. The second group, the Expert Group on energy efficiency within the Commission on Modernization and Technological Development of the Russian Economy, was established in May 2009. The Commission's Expert Group is located at the president's office and is headed by President Dmitry Medvedev himself. It holds regular monthly meetings and is engaged in the coordination of federal, regional, and municipal projects and initiatives, as well as choosing and funding the most innovative projects in energy efficiency and renewable energy that can be implemented within the Russian Federation.

At the government level, the responsibility for the state energy policy, including energy saving and energy efficiency, is also shared by the Ministry of Regional Development, the Ministry of Natural Resources and Ecology, the Ministry of Finance, the Ministry of Agriculture, the State Atomic Energy Corporation "Rosatom", the Federal Tariff Service, and other agencies. At the level of the Russian constituent entities, the relevant functions are performed by the regional legislative and executive bodies.

Furthermore, on December 22, 2009, the government established the "Russian [Federal] Energy Agency" (hereafter REA) within the Ministry of Energy. The REA currently has 70 regional branches. Its key tasks currently focus on operating the federal EE and energy saving information system; administering, monitoring, and coordinating efforts for the effective implementation of the EE law, the FTP, and other measures for the improvement of EE and energy conservation efforts in the budgetary, power generation, industrial, and residential sectors of the Russian economy.

In addition to governmental organisations, there are several energy efficiency centres operating under different external supporting programs in the Russian Federation. Some of the largest are: the Center for Energy Efficiency (CENEF), Center for Energy Policy, AcademEnergoServis, Institute for Energy Policy, RusDem, ESCO Negawatt, Rus Esco, 3E, Energo Servis and regional centers for energy efficiency with the major located in Kaliningrad, Murmansk, Kola, Karelia, and Ekaterinburg.

In order to improve policy coordination at different levels, a number of Coordination Councils for the realisation of energy saving and energy efficiency policies have been established in Russian regions and municipalities. Energy saving and energy efficiency issues and policies have been addressed by energy service organisations and associations, as well as by energy producer and end-user economic entities at the regional and municipal levels. The majority of the Russian constituent entities have relevant energy saving management infrastructures (in 2007 there were 75 centres and agencies and 24 energy saving foundations).<sup>11</sup> Additionally, according to the Russian Ministry of Energy, the establishment of a state energy services company "Federal Service Company" (OAO FESCO) and regional (municipal) public-private energy service companies (RESCO) is planned. It is envisaged to create a network of such companies in the regions to cover with their activities all the territory of the Russian Federation. These federal and regional ESCOs will, however, only serve state-owned enterprises and municipal buildings.

**a) Name of organisation**

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<sup>11</sup> Ibid, p. 19.

The Ministry of Energy of the Russian Federation; its official website is available in Russian only at <http://minenergo.gov.ru/>.

**b) Status of organisation**

The Ministry of Energy is a Federal governmental body within the legal branch of the Russian government. In accordance with the administrative reform of May 2008, it replaced the Federal Energy Agency and the Ministry of Industry and Energy. The ministry reports to the executive branch of the Russian Federation, the prime minister's office and the Russian president.

**c) Roles and responsibilities**

The ministry is responsible for design, realisation, and oversight of the state energy policy and legal framework of the Russian energy structure, particularly in the oil and gas, power generation, coal, renewable energy sectors as well as in the area of energy efficiency, saving and transportation.

**d) Covered sectors**

The Ministry's Department of the State Energy Policy and Energy Efficiency covers all sectors of the Russian economy.

**e) Established date**

In May 2008, the Ministry of Energy replaced the old Ministry of Industry and Energy and the Federal Energy Agency.

**f) Number of staff members**

No information available

**Russian Energy Agency**

Important step in implementation of the Russian energy efficient programme was establishment the national operating unit – Russian Energy Agency. Federal State Organization Russian Energy Agency was established under the auspice of the Ministry of Energy on December 22, 2009, on the basis of Russian Association for Scientific and Technical Development Information Resources (Rosinformresurs Association since 1966).

REA is a center for information exchange, analytic research, encouragement, examination and implementation coordination of projects related to energy efficiency, energy saving, renewable energy sources and innovations in the Fuel & Energy Complex of the Russian Federation. REA's HQ is in Moscow; further 70 branches in Russia's 8 major federal regions, including St. Petersburg, total staff is 2000 employees.

REA's Goals are:

- Support of implementation of the Federal Law “On energy saving and energy efficiency improvement” and coordinate practical actions for state policy on energy efficiency realisation and apply energy efficiency principles as a priority direction for Russian economic modernization and technological development;
- Facilitation of improvement of effectiveness of the state energy efficiency policy;
- Creation of the single platform for interaction of all market participants;
- Improvement of electric energy industry investment profile.

Russian Energy Agency is a Directorate of the Russian Federation State Programme on Energy Conservation and Energy Efficiency till 2020.

Activity domains include:

1. Fuel and energy complex and energy efficiency information and analytical centre
2. Energy Efficiency Scientific & Technical Information and Innovation Implementation Support Center
3. Center of Organizational and Methodological Support for Energy Efficiency Activities
4. Support Center for Implementation of Energy Efficiency Projects, including financing
5. Coordination Center for International Cooperation in the Field of Energy Efficiency
6. Energy Efficiency Knowledge Center

REA has to collaborate with relevant ministries on development, implementation and review of energy efficiency policy, including development of industrial standards and certificates on energy efficiency, key indicators for energy audits and energy balance, etc.

### **1.5. Information Dissemination, Awareness-raising and Capacity-building**

Information dissemination, EE education and capacity-building in the field of EE and energy conservation have become the key priority areas of the Russian Ministry of Energy.

#### **a) Information collection and dissemination**

The Ministry of Energy has put forth a number of programs and various events for the promotion of awareness-raising among the general public.

The FLEC IEE includes a separate chapter entitled “Information provision concerning energy conservation measures and energy efficiency increase.” Article 22 of Chapter 6 outlines the following activities for the dissemination of information:

- Establishment of a single integrated federal information network on energy conservation and energy efficiency
- Publication of information about energy saving and energy efficiency programs in the print and other media at the federal, regional, and municipal levels
- Organisation of various television and radio programs on the measures and best practices for energy efficiency improvement and latest equipment and technologies in the field of energy conservation
- Distribution of information on energy saving issues to the consumers
- Dissemination of information about the energy saving measures and potential in the building and residential sectors
- Organisation of exhibitions of equipment and technologies with high energy efficiency
- Realisation of other measures for energy conservation and energy efficiency improvement in accordance with the FLEC IEE.

In addition, a number of measures to improve information dissemination and awareness-raising have been developed by the Russian government under the “Complex Measures Plan for the realisation of the federal policy for energy saving and improvement of energy efficiency,” which was presented by the Ministry of Energy in June 2008. Furthermore, on June 1, 2010, in line with Article 23 of the FLEC IEE, the Russian Government issued a Decree No. 391 “About Establishment of the State Information System on Energy Conservation and EE,” which calls for the completion of the integrated federal EE information network within a 9-month period.

Finally, private companies distribute information about the energy efficiency and energy saving potential of their products to consumers through their websites or informational brochures.

#### **b) Awareness-raising**

In accordance with Chapter 6 of the FLEC IEE on “Information provision concerning energy conservation measures and energy efficiency increase”, the federal, regional and municipal governments are required to organise and support various media-based awareness campaigns and events for the promotion of energy saving, improvement of energy efficiency, and effective use of natural resources in industrial and social spheres of Russia. In addition, the producers of energy-consuming equipment and suppliers of energy resources are obliged to inform consumers on a regular basis about energy- and heat-consuming potential of their products by using the Internet, advertisements and other means.

#### **c) Capacity-building**

As one of the measures for improvement in the area of EE capacity-building, President Medvedev, in his Decree No. 889 “Concerning some measures for improving the energy and ecological efficiency of the Russian economy” (4 June 2008), stressed the need to include basics of ecology, including improving basic knowledge on energy saving, into the federal standards for secondary education, which was incorporated in Chapter 6 of the FLEC IEE. Furthermore, on April 7, 2010, the Ministry issued a Decree No. 148 in support of FLEC IEE provision focusing on the improvement and support of EE auditors’ professional training and education.

### **1.6. Research and Development in Energy Efficiency and Conservation**

The ES2030 stressed the need to gradually replace imported technology and equipment with domestically produced innovative and advanced technologies and equipment in order to help boost energy efficiency and energy conservation in various sectors of the Russian economy.

With this task in mind, the FP’s funding and budgetary scheme is expected to provide support for measures and activities aimed at promoting scientific and technology research, as well as innovating and investing in the field of energy saving and EE.

In addition, two Federal Targeted Programs, titled “Research and Development in Priority Areas of Science and Technology Complex of Russia 2007-2012” and “National Technological Basis for 2007-2011”, which contain tasks and measures related to appropriate research and development activities (including on energy saving) in the Russian economy have been introduced.

There have been a growing number of private research institutes and organisations engaged in research on improving energy efficiency and energy saving in various sectors of the Russian economy, such as the Center for Energy Efficiency (CENEF), the Sustainable Energy Development Center (ISED), the Institute of Energy Strategy (IES), and others.

According to the PEEREA Report, research is under way on priority areas of the development of science, technology, and equipment in the Russian Federation and on the List of Critical Technologies having a direct bearing on the improvement of energy efficiency (including technologies of nuclear energy, hydrogen energy, new and renewable energy resources, development of energy saving heat and electricity transportation, distribution and consumption systems, development of energy efficient engines and propulsion plants for transportation systems, nanotechnologies and nanomaterials, etc.)<sup>12</sup>

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<sup>12</sup> PEEREA report, p. 36.

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## 2. MEASURES FOR ENERGY EFFICIENCY IMPROVEMENTS

### 2.1. Government Laws, Decrees, Acts

#### 2.1.1. Energy Efficiency Act

The legal framework for energy efficiency is based on various codes and Federal laws, such as the Civil Code, the Tax Code, the Customs Code, the Urban Development Code, the Laws on Electricity Sector and Municipal Housing Sector. In November 2009, the Russian Government has taken the policy for energy efficiency improvement and energy conservation to a new level by adopting the Federal law No. 261-FZ “On Energy Conservation and Increase of Energy Efficiency” (hereafter FLEC IEE), which was approved by the President on 23 November 2009 and came into effect on 1 January 2010. In addition, the Law on Heat Supply came into force in July 2010, which calls for the development of cogeneration facilities as the most effective way to increase EE. A number of draft laws amending some existing laws and technical regulations with a view of improving opportunities for the use of non-traditional energy and improving energy efficiency and energy conservation are being currently developed to supplement the new law.

##### a) Name

Federal Law No. 261-FZ “On Energy Conservation and Increase of Energy Efficiency” has been approved and adopted by the Russian government on 18 November 2009. It came into effect on 1 January 2010, and the latest amendments were introduced on 27 July 2010.

##### b) Purpose

The FLEC IEE is designed to create economic and organisational conditions leading to the increase in energy savings and improvement of energy efficiency of the Russian economy. It also sets a legal framework for the use of energy resources in Russia in terms of promoting rational use of exhaustible energy resources and alternative fuel resources for electricity and heat generation.

##### c) Applicable sectors

The FLEC IEE applies to all large energy users across all sectors throughout the Russian Federation.

##### d) Outline

The FLEC IEE, which is effective throughout the territory of the Russian Federation, sets forth the following five key principles of the policy for energy saving and energy efficiency increase in the Russian Federation:

- Effective and efficient use of energy resources
- Support and encouragement of energy conservation and energy efficiency improvement
- Systematic and full-fledged realisation of the measures to encourage energy conservation and energy efficiency improvement
- Planning activities for energy conservation and energy efficiency improvement
- Use of energy assets based on resource, technological, ecological, and social conditions.

The law is comprised of 10 Chapters and 50 Articles, including the following regulations and provisions:

- General government regulations in the area of energy conservation and energy efficiency

- Requirements for energy efficiency labelling of goods and commercial inventory of energy resources
- Energy efficiency of buildings and installations in the residential and commercial sectors
- Requirements for mandatory energy efficiency audit, inspection, and monitoring (including requirements for data collections and analysis of the energy passports)
- Requirements for information dissemination (including the establishment of the federal integrated information system) and campaigns for awareness raising
- Requirements for energy conservation and energy efficiency in the budget/governmental sector
- Government support and stimulation of energy conservation and energy efficiency
- Enforcement of compliance with energy conservation and energy efficiency requirements.

#### e) **Financial resources and budget allocation**

There is currently no information available about budget allocation in support of the FLEC IEE. However, the law includes a separate chapter (Chapter 8), which stipulates the directions and forms of government support in the field of energy conservation and energy efficiency. In accordance with Article 27 of Chapter 8, the programs and activities in this field should be financed by federal, regional, and municipal budgets; domestic and foreign private investments; and other resources in accordance with the existing laws and regulations. In addition, the article stipulates that the government support of investment activities in the field of energy conservation and energy efficiency improvement will come in the forms of various stimulation measures, such as direct subsidies, special loans, tariff regulations, special privileges, tax deductions, fee reductions, payback schemes, and others.

#### f) **Expected results**

The new law on energy saving and energy efficiency will become the core of a legal framework for the use of energy resources in the Russian Federation in terms of promoting rational use of exhaustible energy resources and alternative fuel resources for electricity and heat generation. Notably, it will help provide state support for the companies implementing investment activities in the energy efficiency field. Furthermore, the law will help encourage additional financial incentive mechanisms for energy saving activities, separation of energy saving competences between the federal, regional, and municipal level authorities, promotion of increased production and sales of equipment that corresponds to the most advanced energy efficiency requirements, a linkage between addressing environmental and energy saving programs, and increased use of renewable energy and alternative types of fuel. The enactment of the FLEC IEE will ultimately help create the necessary environment to achieve the overall energy efficiency goal of reducing energy intensity of the Russian economy by a minimum 40% by 2020 compared to 2007.

## 2.2. **Regulatory Measures**

The FLEC IEE has several articles dedicated to standardisation, mandatory certification, audit, and declaration of energy efficient indicators (“energy passports” and energy efficiency certificates). Specifically, Article 9 and Article 10 in Chapter 3 “Federal regulations in the field of energy conservation and increase of energy efficiency”, require governmental standard declarations for all energy-consuming production to be supplemented by energy efficiency data, including energy consumption data; prohibition of the production and circulation of goods with low energy efficiency performance; mandatory inventory of energy resources; energy efficiency requirements for buildings and installations; requirements of mandatory energy audit and energy passports, and so on.

In addition, there is many federal and regional codes and regulations (State Standards or “GOST”) in the area of energy conservation and energy efficiency improvement, most

important of which include GOST P 51541-99 “Composition of indicators and basic concepts in the field of energy saving and efficiency”, GOST P 51379-99 “Power-engineering certificates for industrial consumers of fuel-energy resources” (adopted and set in force on 30 November 1999) that regulates the mandatory issuance of energy passports to energy- and fuel-consuming industrial producers; GOST P 51380-99 “Energy conservation and methods of assurance for energy efficiency compliance”, GOST P 51388-99 “Energy conservation and informing consumers about energy efficiency of equipment in the residential sector”, as well as a number of building codes and thermal performance regulations.

### **2.2.1. Minimum Energy Performance Standards and Labelling**

Presently, there are no MEPS in Russia, but the government is planning to introduce mandatory MEPS for white goods and electric appliances.

In accordance with GOST P 51388-99 “Energy conservation and informing consumers about energy efficiency of equipment in the residential sector”, instead of MEPS, partially mandatory energy performance certificates and energy saving labelling (based on a 7-class, 95/75 ES and 92/2 ES international standards system) for specified equipment, materials, and products are currently being used. In addition, Article 10 of the FLEC IEE stipulated the requirements for obligatory posting of technical information, including energy efficiency class/rank, by marking and labelling most domestically-produced and imported goods, which came into effect on 1 January 2011 for white goods, elevators, and computer-related goods.

In addition, in accordance with Article 10, Section 8 of FLEC IEE, in order to improve energy saving of lighting devices, the government has ruled to introduce a ban on the distribution, sale, and general use of inefficient lighting, such as 100-watt or higher incandescent lamps, starting on 1 January 2011, particularly in the budgetary and government sector. This ban will be followed by the prohibition of sale and distribution of 75-watt lights from 1 January 2013, and completely prohibiting the sales and distribution of all incandescent lighting (25-watts or higher) starting on 1 January 2014.

#### **a) Name**

Labelling and “energy passports” (energy efficiency and thermal efficiency performance certificates for specified equipment and materials)

#### **b) Purpose**

To provide the energy labelling of the goods, appliances, and materials in order to improve their energy efficiency

#### **c) Applicable sectors**

The requirements apply to white goods, appliances, heat and lighting units, and other equipment and materials in the industry, transport, residential/commercial, and government sectors.

#### **d) Outline**

In accordance with GOST P 51388-99 “Energy conservation and informing consumers about energy efficiency of equipment in the residential sector” as well as FLEC IEE and FTP EEE, it is required to verify, and provide consumers with information about, energy efficiency and actual energy performance of the following types of products: household appliances and equipment, including lighting; gas stoves and heaters for residential/commercial use; heat-insulation products and materials; as well as automobiles and vehicles in private use.

In addition, the aforementioned GOST established an energy efficiency performance classification system, particularly for white goods and appliances. It is based on the 7-class standards system, with the A class being the most efficient (less than 55% actual energy consumption than expected), while the G class being the worst (exceeding expected energy performance by over 125%).



1. Maker
2. Model
3. Energy Consumption Class (A to G)
4. Actual energy consumption (kWh/year)
5. Size of the freezer and refrigerator, etc.



### 2.2.2. Building Energy Codes

#### a) Name

Federal and regional building and heat efficiency (thermal performance) codes

#### b) Purpose

The aim of the existing building codes is to improve the energy efficiency of the design and construction, as well as thermal efficiency of existing and new buildings.

#### c) Applicable sectors

Residential/commercial and government (especially budgetary offices)

#### d) Outline

Energy efficiency provisions for housing were first introduced in the mid-1990s at both federal and regional levels. Established in 1996, GOST 30494-96 “Residential and Public Buildings: Microclimate parameters for indoor enclosures” (the code for the temperature and humidity of indoor facilities) was among the first Russian building codes to promote building efficiency and account for energy consumption.

In addition, in February 2003, the new Thermal Performance of Building Code (also known as Construction Code and Regulations, or SNiP 23-02-2003) was introduced. Effective 1 October 2003, it required architects, builders and contractors to comply with energy efficiency requirements and technical regulations. More specifically, the new code established numerical values for required technical targets, corresponding to world levels; classified new, renovated, and existing buildings according to their energy efficiency and thermal performance, encouraging buildings that are more efficient than required by code (such buildings would qualify for economic incentives); created a mechanism for identifying low-performing existing buildings and mandating necessary upgrades; developed design guidelines for both prescriptive and performance-based compliance paths; and developed methods for oversight and enforcement of compliance in terms of thermal performance and energy efficiency (energy passports), during the design, construction, and prospective operation phases.

Between 1995 and 2004, 50 regions of the Russian Federation implemented their own building codes in accordance with federal building standards. Some local enforcement agencies offered incentives for exemplary performance, while others mandated auditing. Regions established their own requirements for calculating a building’s energy consumption and compliance with local codes.<sup>13</sup>

<sup>13</sup> IEA Energy Efficiency: Policies and Measures database (Russia).

Furthermore, Article 11 and 13 of FLEC IEE introduced requirements for the monitoring of energy efficiency standards for existing and new buildings and installations, including such measures as keeping records on energy efficiency compliance information in the mandatory energy passports; updating at least once every five years energy efficiency requirements for buildings and installations; installing compulsory meters to encourage lower use of water, electricity, and heating as well as reducing budget expenditures on energy use and heating (the compliance deadline is set on 1 January 2011 for most of the public sector and on 1 January 2012 for most of the residential sector); regular building audit and monitoring in existing and new buildings and construction units to ensure compliance with the established regulations and laws; and so on. Similar to EE labelling, there are 7 EE categories for the buildings and structures. As of July 2010, construction of new buildings that would fall in the lower EE categories of C, D, and E has been prohibited.

#### **e) Financial resources and budget allocation**

In addition to introducing various incentives to improve energy consumption performance in the building sector, the government established a special Housing Reform Fund at the amount of RUB 25 billion (USD 726.3 million) in early 2009 in order to provide financial support for the remodelling of existing housing facilities by private citizens and entities.

#### **f) Expected results**

Overall improvement of energy efficiency and thermal performance of new, existing, and renovated buildings, indoor facilities, and related equipment

#### **2.2.3. Fuel Efficiency Standards**

Currently, Russia does not have enforceable fuel efficiency standards for its domestic transport industry. However, Article 14, Chapter 3 of FLEC IEE introduces the measures for the use of vehicles with a high level of fuel efficiency, specifically by replacing gasoline with more efficient fuels such as natural gas in motor vehicles in the transport sector.

#### **2.3. Voluntary Measures**

No information available

#### **2.4. Financial Measures Taken by the Government**

FLEC IEE and the FP encourage tax-related, budgetary, and other financial measures of governmental support designed specifically for energy efficiency and energy saving programs and initiatives in the Russian Federation.

In accordance with FLEC IEE (Article 27 of Chapter 8), the programs and activities in the field of energy conservation and improvement of energy efficiency should be financed by federal, regional, and municipal budgets; domestic and foreign private investments; and by other resources in accordance with the existing laws and regulations. In addition, the law stipulates introduction of incentives and tax benefits for Russia's heavy industry to replace highly energy-inefficient machinery and equipment.

With the aim to promote energy saving and improvement of energy efficiency in Russia, the article also recommends the following forms of government support of investment activities and stimulation measures in this field, such as direct subsidies, special loans, tariff regulations, special privileges, tax deductions, fee reductions, payback schemes, and others.

##### **2.4.1. Tax Scheme**

Currently under consideration

##### **2.4.2. Low-Interest Loans**

Currently under consideration

##### **2.4.3. Subsidies and Budgetary Measures**

President Medvedev, in his Decree No. 889 “Concerning some measures for improving the energy and ecological efficiency of the Russian economy” (4 June 2008), called to develop certain types of subsidies allocated from the Federal budget in order to support ecologically clean and energy effective technologies.

FLEC IEE (Section 3, Article 27 of Chapter 8) introduces various methods of budgetary support, including direct budget distribution through subsidies and co-financing among federal, regional, municipal organs, and other entities of the Russian Federation in support of their respective energy conservation and energy efficiency programs. However, the entities can qualify for such government support based on their proposed programs’ energy efficiency performance and energy saving potential.

#### 2.4.4. Other Incentives

In accordance with Article 27 of Chapter 8 of FLEC ICC, economic entities in the Russian Federation can qualify for government support in order to develop energy efficient technology as well as energy saving procedures and measures in their production (including the use of renewable energy resources). If they have successfully introduced such technologies and measures, they can also apply for various financial benefits and privileges and will also have a right to internalise their energy saving costs in the prices and tariffs of their products, goods, and services for the amount and period determined by the law.

#### 2.5. Energy Pricing

In Russia, prices for the products of natural monopolies, such as electricity, gas, pipeline transport, etc., are regulated by the state, which sets an upper limit on heat and power tariff increases. These state-regulated prices are established by the Federal Tariff Service (FTS) and regulated by the Federal and Regional Energy Commissions within their authority (due to Russia’s geographical size, electricity and gas prices are differentiated by 9 territorial zones). The Federal Energy Commission regulates wholesale electricity tariff and prices, while the Regional Energy Commissions regulate retail tariffs for power and energy at a regional level.

In order to stimulate efficient use of energy resources, the government established a system of seasonal energy consumption quota and gas prices, seasonal tariffs for heat and electricity, as well as differentiated (based on the time of the day) electric power rates in accordance with the federal law on price and tariff regulations and FLEC IEE recommendations.

It is important to note that despite the existence of several independent gas producers and oil companies that can sell gas in a deregulated sector, the overall gas sector is not fully liberalised yet since the market is dominated by the de-facto monopolist Gazprom. Currently, domestic gas and electricity prices in the industrial, residential, and commercial sectors are kept at an artificially low level and regulated below market prices. The government has committed to liberalise domestic gas prices, at least for industrial users, by 2014.

Since 1 September 2006, the new rules of operation of wholesale and retail electricity markets have come into force. As a consequence, the wholesale electricity (capacity) market saw a transition to regulated contracts to be concluded between buyers and generation companies, the free trade sector was liquidated, and spot market (day ahead market (DAM)) was launched. In accordance with Russian Federation Government Resolution of 7 April 2007, there are plans to replace regulated contracts with free (unregulated) ones by 2011. The rules of operation of retail markets suggest that gradual liberalisation of retail markets should go in parallel with wholesale market liberalisation. It is important to note that during the transition period electricity tariffs for the population will remain regulated.

One of the important developments as the first step towards liberalisation and privatisation of the Russian electricity market was the completion of the reorganisation of the former monopolist Unified Energy System of Russia (RAO-UES) and the subsequent creation of several electricity generation, transmission and distribution companies located over the territory of the Russian Federation in July 2008. As a result of the ongoing policy of a phased

liberalisation (except in the household and public services sectors), electricity and gas prices in industrial and power sectors are expected to reach market levels by 2012-2014.

## 2.6. Other Efforts for Energy Efficiency Improvements

### 2.6.1. Cooperation with Non-Government Organisations

There is no official record of the Russian government cooperating with non-government organisations in order to stimulate energy saving and energy efficiency improvements.

### 2.6.2. Cooperation through Bilateral, Regional and Multilateral Schemes

A number of important agreements concerning cooperation in the area of Energy Efficiency and Energy Conservation were recently signed between the Ministry of Energy of the Russian Federation and the partnering foreign ministries of the following countries:

- 1) China - the Memorandum of Understanding (MoU) on cooperation of Energy Efficiency and renewable energy resources between the Ministry of Energy of the Russian Federation and the National Development and Reform Commission of China signed on 27 September 2010;
- 2) France - the Memorandum on Cooperation in the field of Energy Efficiency and renewable energy resources between the Ministry of Energy of the Russian Federation and Ministry of Ecology, Energy, and Sustainable Development of France concluded on 20 September 2008);
- 3) Italy - the MoU on cooperation of Energy Efficiency and renewable energy resources between the Ministry of Energy of the Russian Federation and the Ministry of Economic Development of Italy signed on 7 April 2009;
- 4) Japan - the Memorandum on Cooperation Regarding Increasing Energy Efficiency and Renewable Energy Usage between the Ministry of Energy of the Russian Federation and the Ministry of Economics, Trade and Industry (METI) of Japan concluded on May 2009;
- 5) Netherlands - the Memorandum of Understanding Regarding Energy Efficiency and Renewable Energy Sources between the Ministry of Industry and Energy of Russia and the Ministry of Economy of the Netherlands (2006);
- 6) Portugal - Joint Statement on a Russian-Portuguese Protocol of energy innovation, Energy Efficiency and renewable energy (signed on June 2010);
- 7) the United Kingdom - the MoU to cooperate in Energy Efficiency projects between the energy ministries of Russia and the United Kingdom (5 October 2009);
- 8) the USA – Protocol of Intent with the USAID on improve cooperation in the areas of EE, smart grid technology, and clean energy.

The Russian government cooperates actively with many economies within bilateral and multilateral formats. Some examples include the establishment of the Russia-EU Energy Dialogue, which has been in place since 2000 and has a special area dedicated to energy efficiency; the Joint Ministry of Industry and Energy of Russia and US Department of Energy Working Panel on Energy Efficiency; and Russian-German Energy Efficiency Forum under the auspices of the Russian-German Energy Agency (RUDEA). In addition, Russia is an active participant in international energy organisations, such as CERA, IEA, IEF, Gas Exporting Countries Forum, and others.

REA, which is responsible for coordinating international cooperation of the Ministry of Energy, concludes MoUs and establishes Centres on EE with its foreign partnering agencies and companies. To date, REA has signed a range of Joint Statements on establishing centres for Energy Saving, Energy Efficiency and Innovations with the public and private partnering organizations of the following countries:

- 1) France (the Joint Statement on establishing the Russian-French Centre on Energy Efficiency was signed on 19 June of 2010 in Saint-Petersburg);

- 2) Slovakia (the Joint Statement on establishing the Russian-Slovakian Centre on Energy Efficiency was signed on 6 April 2010 between REA and Russian-Slovakian Business Centre);
- 3) South Korea (the Joint Statement on establishing the Russian-Korean Centre on Energy Efficiency and Innovations was signed on 19 June of 2010 in Seoul between REA, the Korea Energy Management Corporation of the Republic of Korea, and the Korea Association for Photonics Industry Development of the Republic of Korea).

In addition, REA plans to establish such centers and expand cooperation with the following economies:

Japan:

REA conducts the policy of the staged development of cooperation with Japanese private and public organizations, passing from the series of exploratory seminars to the deeper forms of cooperation which comprise joint realization of technological and manufacturing projects in Russia.

The main partners of REA the following Japanese organizations:

- 1) Japanese Business Alliance for Smart Energy Worldwide (JASE WOLRD);
- 2) Japan Bank for International Cooperation (JBIC);
- 3) Japan External Trade Organization (JETRO);
- 4) Institute of Energy Economics Japan (IEEJ);
- 5) Energy Conservation Centre Japan (ECCJ) and others.

USA:

Russian-American relations regarding Energy Efficiency, Energy Saving, renewable energy, smart grid (SG) dynamically develop within the framework of the working group on energy of the U.S.-Russia Bilateral Presidential Commission.

The main U.S. partners of REA are the following:

- 1) United States Department of Energy (US DOE);
- 2) United States Agency for International Development (USAID);
- 3) United States Energy Association (USEA);
- 4) United States in the framework of Federal Energy Management Program (FEMP).

South Korea:

REA has signed MoUs on Energy Efficiency and renewable energy with the following partners:

- 1) Korea Energy Management Corporation – KEMCO;
- 2) Korea Association for Photonics Industry Development –KAPID;
- 3) Korea Trade Insurance Corporation (K-Sure);
- 4) LG Corporation and other companies.

Iceland:

REA cooperates with Iceland on the basis of the MoU in the field of EE and Renewable Energy Sources (RES) which was concluded on 28 September 2010 between REA and National Energy Agency (NEA) of Iceland. The next step of the joint activity with NEA which REA plans is establishing the Russian-Icelandic Centre on Energy Efficiency, Energy Saving and RES.

United Kingdom:

REA develops Russian-British cooperation in EE and renewable energy, in particular, carries out projects and regular meetings with the representatives of the United Kingdom ministries, responsible for policy in energy sector (Ministry of Policy and Economy, Department of Energy and Climate change, Department of Enterprise, Trade and Investments).

Italy:

REA has been cooperating with Italy in the framework of the MoU in the field of EE and RES concluded between REA's predecessor Rosinformresurs Association and Italian National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA) on 3 December 2009. REA and NEA are currently planning to establish the Russian-Italian Centre on Energy Efficiency and RES. Russian – Italian Center on Energy Efficiency and Innovations (RICEI) is a new project, tailored specifically to the goals of effective cooperation between Italy and Russia in the fields of energy efficiency, energy saving and renewable energy.

**2.6.3. Other Cooperation/Efforts for Energy Efficiency Improvements**

Russia has been pursuing international cooperation in the area of energy efficiency on the basis of such instruments as the Kyoto Protocol and the Energy Charter Protocol on Energy Efficiency and Related Environmental Aspects (PEEREA).

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