

UN Economic Commission for Europe

Policy Reforms to Promote Energy Efficiency
and Renewable Energy Investments
in the **Russian Federation**

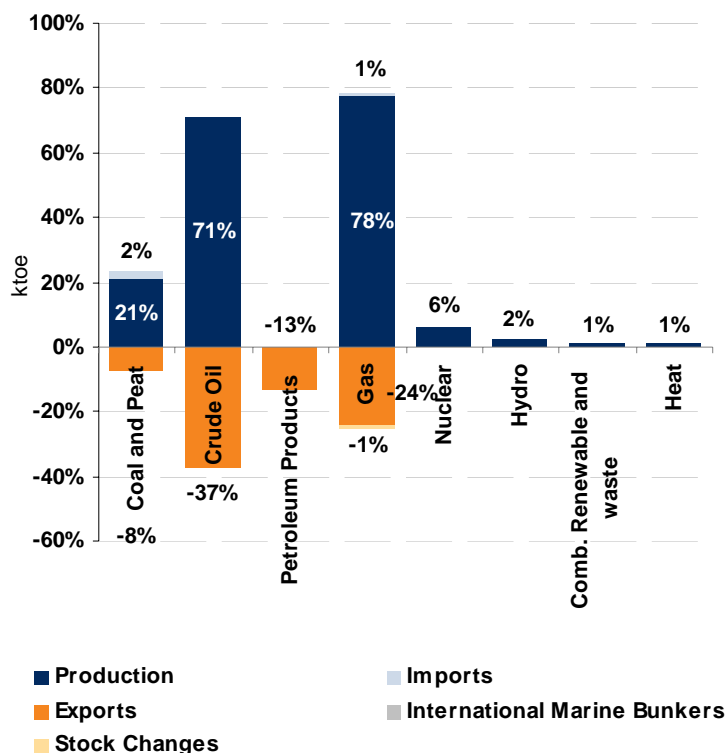
Seminar on Policy Reforms to Promote
Energy Efficiency and Renewable Energy Investments

Geneva, October 7.-8., 2009

Energy Balance of the Russian Federation

Due to its vast fossil fuel resources, the Russian Federation has an energy export surplus of 78.5%

Energy Balance



Source: IEA 2006

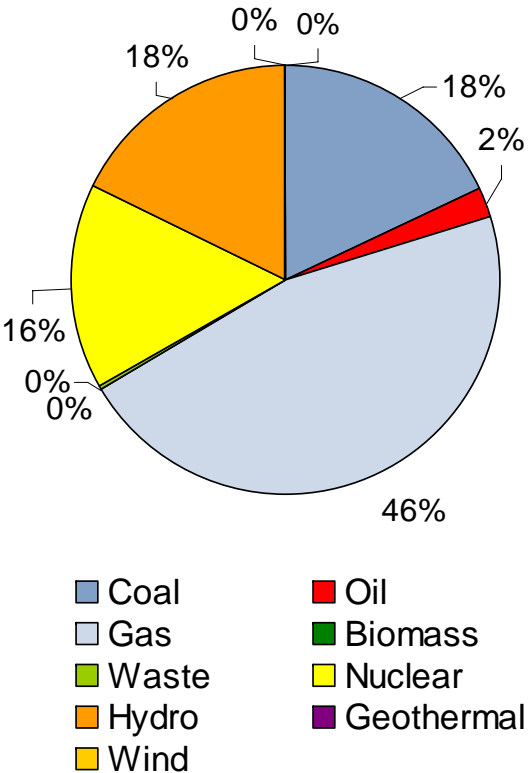
Comments

- The Russian Federation disposes of the world's largest natural gas reserves, the second largest coal reserves and the eighth largest oil reserves
- Exports (mainly oil and gas) account for 82% of the total energy balance, while imports account for only 3.5%
- The Russian Fuel-and-Energy Complex represented 31% of the GDP in 2005
- Renewable energy sources only have a share of 3% in the country's energy balance

Power Generation in the Russian Federation

Nearly half of the power generation of the Russian Federation is based on gas, while hydropower has an equal share as coal and nuclear

Energy Sources for Power Generation



Comments

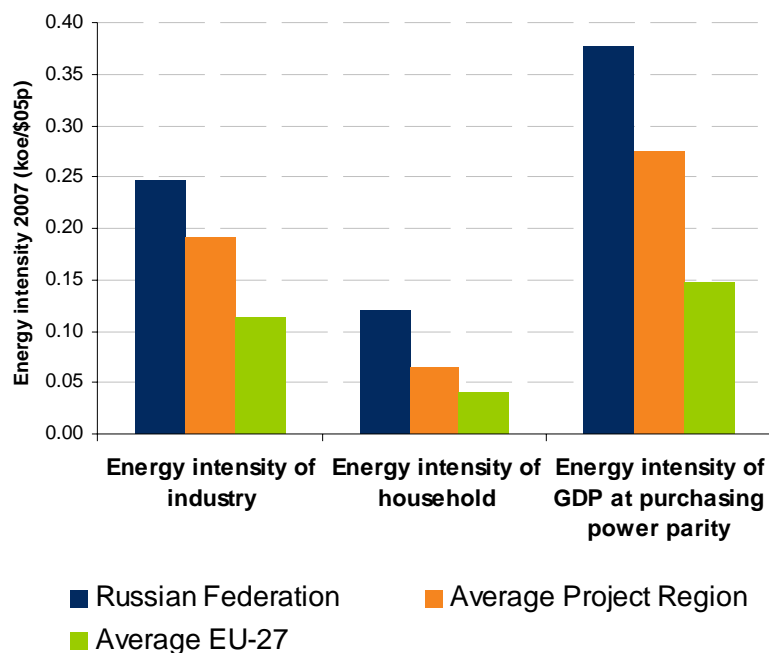
- 46% of the overall electricity generation of 996 TWh is based on gas power plants
- The Russian electric system has an installed generation capacity of 217GW and includes over 440 thermal power plants and 31 nuclear reactors
- The electricity generation located in the far-eastern part of the country is not connected to the Russian power grid

Source: IEA 2006

Energy Intensity in the Russian Federation

The Russian Federation has one of the highest energy intensity levels within the project region

Energy Intensity



Source: Enerdata 2007

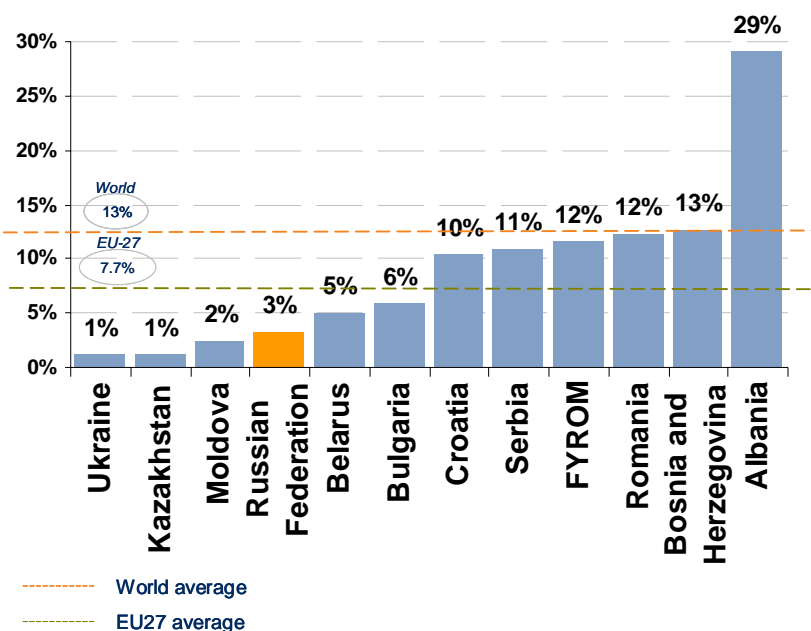
Comments

- Within the project region, only Kazakhstan and Serbia have higher energy intensities than the Russian Federation
- The energy intensity of the Russian Federation is over twice as high as the average of the EU-27 in all relevant sectors
- One main reason for the high energy intensity level is the high share of energy intensive industries in the Russian economy (60% of the industrial sector)
- Other reasons lie in outdated equipment in use, insufficient energy metering and gas flaring

Renewable Energy Sources in the Russian Federation

The share of renewable energy sources in the Russian Federation primary energy sector is modest

Renewable Energy Sources



Source: IEA 2006

Comments

- Renewables account for only 3% of the primary energy supply of the country
- 2/3 of this share derives from large hydro power plants with an installed capacity of 45 GW
- 1/3 of the renewables share is based on combustible renewables and waste
- Given the vast country size and the huge variety of climatic conditions, the country as a huge potential for RES which is largely untapped
- Unfortunately, the high availability of fossil fuels and the energy surplus do not provide a motivation factor for development of EE and RES

Barriers for Investments in EE and RES in the Russian Federation

The huge size and diversity of the country are a barrier for the uniform implementation for energy policies, thus possible discouraging foreign investors

**Legal,
institutional
and
administrative
barriers**

- **Absence of dedicated policy makers or agencies**
- **Low priority for RES and EE in the energy strategy**
- **Outdated regulatory framework for EE and absence of regulatory framework for RES**
- **Absence of relevant international commitments**

**Economic and
financial
barriers**

- **Customer tariffs are below long-term sustainable costs of production**
- **There are currently no specified economic or tax incentives for the promotion of energy efficiency**

**Lack of
awareness,
human
capacities and
professional
skills**

- **The vast availability of fossil resources hinders the development of energy efficiency measures**
- **The absence of databases with consumption data on public and residential buildings**

Successful Policy Reforms in the Russian Federation

One example of a successful policy reform in the Russian Federation is the establishment of regional energy efficiency laws and programs

THE ESTABLISHMENT OF REGIONAL ENERGY EFFICIENCY LAWS IN 43 FEDERAL SUBJECTS OF THE RUSSIAN FEDERATION ENSURES THAT THE CLIMATIC, NATURAL AND ECONOMIC DIVERSITY BETWEEN THE 83 FEDERAL SUBJECTS IS TAKEN INTO ACCOUNT

Policy Instruments

- 43 Regional laws on energy efficiency
- 3 regional energy efficiency programs (Archangelsk, Tatarstan, Nizhni-Novgorod)

Responsible Institution

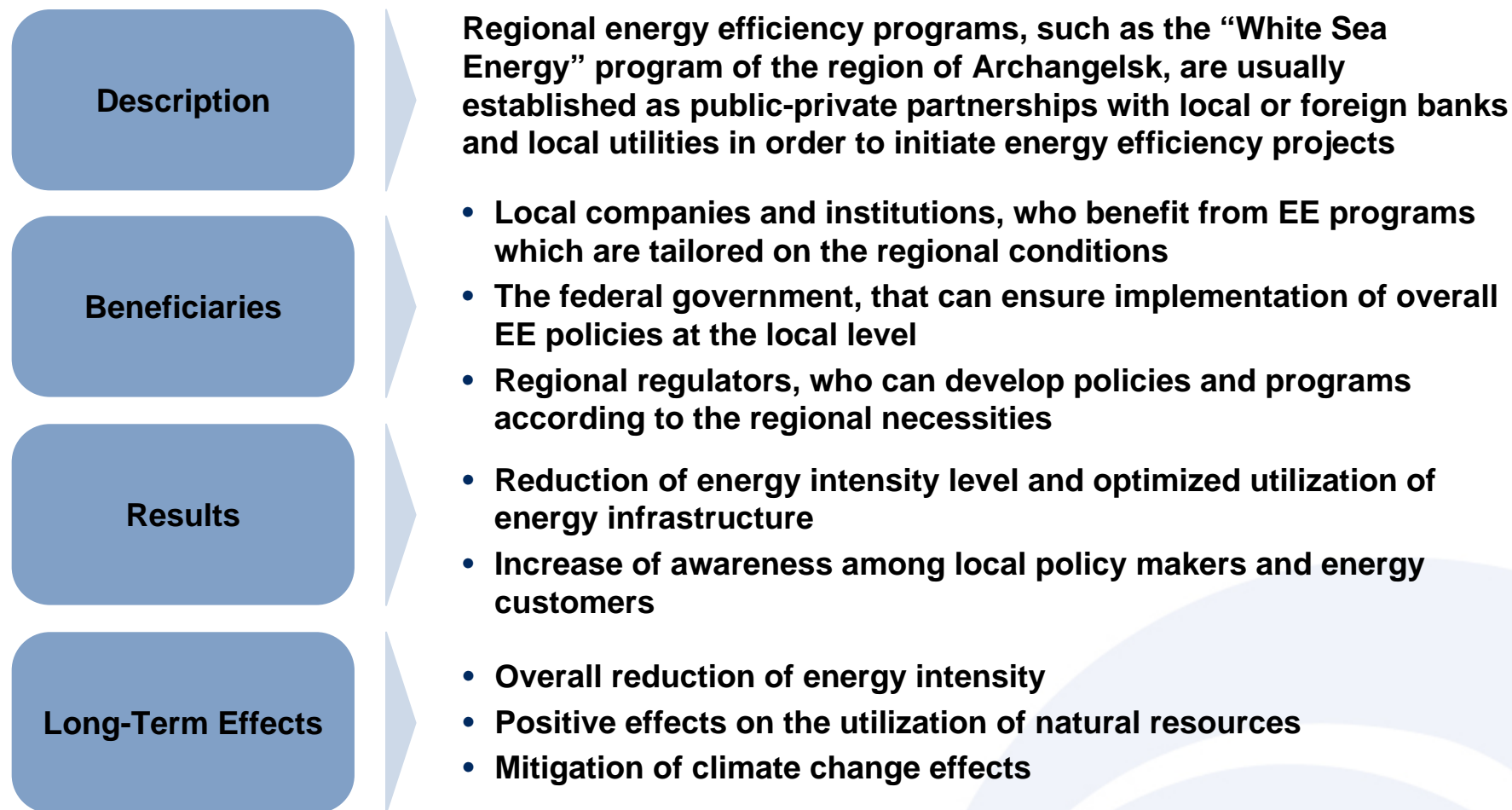
- Federal subjects of the Russian Federation
- Ministry of Energy of the Russian Federation for coordination

Implementation Timeframe

Varies from federal subject to federal subject

Regional energy efficiency programs in the Russian Federation

The establishment of regional energy efficiency programs will allow the Russian Federation to tackle energy efficiency issues at the local level



Recommendations to overcome barriers for investments in EE and RES in the Russian Federation

The full establishment of EE and RES strategies and policies at the regional level with a national coordination is strongly recommended

Legal, institutional and administrative barriers

- **Monitoring of policy implementation**
- **Regional strategies on energy efficiency and renewable energy**
- **Statistical data gathering on provincial level**
- **Metering and consumption based billing**

Economic and financial barriers

- **Energy tariff reform**
- **Financial incentives for energy efficiency and renewables in the private sector**
- **Budget flexibility for state-funded organizations**

Lack of awareness, human capacities and professional skills

- **National education, training and public awareness program**
- **Capacity building for policy makers**
- **Capacity building for local financing institutions**

Recommendations to overcome barriers for investments in EE and RES in the Russian Federation

Legal, institutional and administrative barriers (1/3)

Monitoring of policy implementation

- **The Energy Strategy for the Period up to 2020, approved in August 2003, provides the basis for the future development of the Russian market for energy efficiency and renewable energy. However, the strategy lacks clear responsibilities for policy implementation and monitoring for sustainable energy policy.**
- **An institutionalization of regular energy policy monitoring is highly recommended. This should involve communicating policy requirements to all concerned parties using appropriate strategies, ensuring that targets of positive support for policy changes are identified, encouraging supporters of policy change to agree to clear statements of need for, and nature of, changes and improvements, ensuring that potential resistance to policy change is identified.**
- **The need for further incentives to support policy implementation and available resources for incentives and potential funding bodies have to be identified, most appropriate types of incentives evaluated and incentive requirements accurately prioritized.**
- **The Ministry of Energy shall assign one new or existing authority or agency for the overall control and responsibility for monitoring energy efficiency and renewable energy policy implementation. A suitable monitoring system, which is capable of generating valid and reliable data, has to be implemented and performed regularly. A monitoring report summarizing the results and drawing justifiable conclusions should be presented in a suitable format to the decision makers.**

Recommendations to overcome barriers for investments in EE and RES in the Russian Federation

Legal, institutional and administrative barriers (2/3)

Regional strategies on energy efficiency and renewable energy

- **Decentralization of regulation and administration from national to provincial level, calls for the development and implementation of provincial strategies promoting sustainable energy based on the targets formulated in the relevant national strategies.**
- **It will be the tool for development, monitoring, evaluation and constant further development of a sustainable energy policy taking into consideration the specific conditions and potentials for energy efficiency and renewable energy in the respective province.**
- **The content of the Provincial Strategies on Energy Efficiency and Renewable Energy should comprise indicative targets, a description and ex-post evaluation of the current measures, a description of new measures as well as an ex-ante evaluation of the expected contribution of existing and future measures.**
- **The results of the provincial energy strategies should be summarized and incorporated in the relevant national strategies. The time table for implementation, monitoring and reporting should be determined by the national government as recommended above.**

Recommendations to overcome barriers for investments in EE and RES in the Russian Federation

Legal, institutional and administrative barriers (3/3)

Statistical data gathering

- **Lack of systemic and comprehensive data gathering is one barrier for creating and monitoring energy policy. Availability and quality of energy data on provincial level is still poor.**
- **Thus, the set up of a sound statistical system on provincial level which is in line with the national (and international) standards is highly recommended. An energy accounting system for large buildings (both public and private) would constitute a reliable information base for the development of energy efficiency projects.**

Metering and consumption based billing

- **Incomplete metering of energy consumption and billing based on size of the customer's apartment are barriers towards energy efficiency in residential buildings.**
- **To increase the viability of energy supply systems in the Russian Federation, it will be necessary to implement effective metering of energy consumption and an effective billing system to increase revenue collection. A metering incentive program as implemented in Rostov could be introduced nation-wide.**
- **In a first step, the obligatory provision of individual meters in new buildings or buildings undergoing major renovations is recommended. In a second step, an action plan for a nationwide rollout of individual metering systems should be elaborated.**

Recommendations to overcome barriers for investments in EE and RES in the Russian Federation

Economic and financial barriers (1/3)

Energy tariff reform

- **Customer tariffs are below long-term sustainable production and supply of energy sourcing, thus endangering the profitability of potential renewable energy and energy efficiency projects.**
- **In the Russian Federation, the recommended tariff reform will mean not just higher tariffs but also the introduction of different tariff structures and charges which specifically encourage investments in energy efficiency and renewable energy projects. In the Russian Federation, this means phasing out customer cross-subsidization and the widespread dissemination of metering systems. To ensure that low-income consumers, which are not able to absorb the price increases, are compensated, the tariff reforms should be coupled with targeted subsidies.**

Recommendations to overcome barriers for investments in EE and RES in the Russian Federation

Economic and financial barriers (2/3)

Financial incentives for energy efficiency and renewables in the private sector

- **Lack of public funding is an economic barrier for energy efficiency and renewable energy projects in the Russian Federation. The establishment of a public fund supporting sustainable energy projects is recommended.**
- **Founding could support renewable heating systems, cogeneration as well as energy efficiency measures and shall be open to private business and households. The support of accompanying measures such as energy audits and the installation of metering devices is highly recommended.**
- **The key areas of support and key sectors should be selected based on the available energy savings potential as well as the cost-benefit ratio to be evaluated.**
- **This fund should be managed by a new or existing authority or agency to be nominated on a national level. Co-funding by international institutions such as the United Nations Economic Commission for Europe (UNECE), the European Bank for Reconstruction and Development (EBRD) or World Bank is an option which should be considered.**

Recommendations to overcome barriers for investments in EE and RES in the Russian Federation

Economic and financial barriers (3/3)

Budget flexibility for state-funded organizations

- **The current method of budgeting for state-funded organizations does not consider actual energy needs. Expenditures are determined by the government and do not allow to retain or reallocate any savings for long term investments in energy efficiency or renewable energy projects.**
- **State-funded organizations need more budget flexibility and autonomy to overcome this barrier. In order to reap the benefit of energy efficiency and renewable energy investments, they need to be able to enter into multi-year contracts. Budgeting principles should be based on full life-cycle costing in order to capture the benefits of long term investments. In doing so, they could encourage the usage of energy service. Energy Service Companies (ESCOs) enter into financing arrangements with banks, take the risk of the loan, while providing energy services to state-funded organization.**

Recommendations to overcome barriers for investments in EE and RES in the Russian Federation

Lack of awareness, human capacities and professional skills (1/2)

National education, training and public awareness program

- **Lack of awareness among different public administration, the financing sector and final customers has been identified to be one of the main bottlenecks for the development energy efficiency and renewable energy projects in the Russian Federation.**
- **To overcome this barrier and to create a positive image for investments in sustainable energy, the Russian government shall develop suitable information, awareness-raising, guidance or training pro-grams in order to inform about the benefits and practicalities of developing and using energy from renewable sources and energy efficiency measures. The program might comprise information dissemination and advertising campaigns, advice on behavioral practices and capacity building.**
- **This national program should be based on the ongoing regional initiatives.**

Recommendations to overcome barriers for investments in EE and RES in the Russian Federation

Lack of awareness, human capacities and professional skills (2/2)

Capacity building for policy makers

- **In order to ensure a successful implementation of renewable energy and energy efficiency policy and to overcome legal, institutional and administrative barriers, it is necessary to provide adequate funding and training for the staff of ministries, regulators, provincial and municipal authorities with responsibilities in the energy sector.**

Capacity building for local financing institutions

- **The European Bank for Reconstruction and Development (EBRD), the International Finance Corporation (IFC) of the World Bank Group or the Nordic Environment Finance Corporation (NEFCO) launched dedicated credit lines financing sustainable energy projects.**
- **To raise awareness about the availability of funding schemes, intensive marketing including dissemination of information about schemes to local financing institutions is necessary. Furthermore, to increase expertise with financing energy efficiency and renewable energy projects, support to local banks in terms of assistance and training in refining, standardizing and evaluating loan applications and appraisal procedures is recommended.**
- **This capacity building and awareness raising initiative should be a joint initiative with EBRD, IFC, NEFCO.**

Conclusions

The Russian Federation is successfully taking into account to huge extension and diversity in its territory by gradually establishing regional energy efficiency laws and energy efficiency programs

- **The Russian Federation disposes of huge reserves of fossil reserves and has one of the highest primary energy surplus within the project region**
- **The share of renewable energy sources in the total primary energy supply is comparatively low and is mainly based on large hydro power – the untapped potential is huge**
- **High availability of fossil resources, the presence of an energy-intensive industry and climatic conditions the energy intensity is high and the motivation for energy saving is low**
- **The establishment of regional energy efficiency law programs allows to take into consideration the diversity in climatic, natural and economic conditions between the 83 federal subjects of the Federation and is therefore more promising than the application of a “one-for-all” policy**
- **However, central coordination and implementation monitoring must be ensured to avoid policy gaps between more and less advanced federal subjects**

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The background of the slide features a close-up, artistic photograph of a sailboat's rigging. A small, glowing globe of the Earth is positioned where a rope or cable meets a metal fitting. The overall color palette is dark green and blue. At the bottom of the slide, the word "PÖYRY" is written in a large, bold, light-colored sans-serif font, with a double slash symbol above the 'Y'.

PÖYRY