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Financing Energy Efficiency Investments for Climate Change Mitigation



REGIONAL ANALYSIS
OF
POLICY REFORMS
TO PROMOTE
ENERGY EFFICIENCY
&
RENEWABLE
ENERGY
INVESTMENTS



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REGIONAL ANALYSIS OF POLICY REFORMS TO PROMOTE ENERGY EFFICIENCY AND RENEWABLE ENERGY INVESTMENTS



EXECUTIVE SUMMARY

South-Eastern European, Eastern European and Central Asian countries are confronted with a wide range of economic and environmental problems caused by their inefficient and polluting energy systems. At the same time, their energy economies provide some of the most promising opportunities for reducing global greenhouse gas emissions. This will require the use of cost-effective energy efficiency improvements and renewable energy technologies – the main self-financing methods to implement climate change mitigation.

The investment potential for energy efficiency in these countries is so large that only the private sector can provide the capital needed to achieve meaningful results. This in turn will require a market for energy efficiency in which large investments can be made with low transaction costs at an acceptable risk-to-returns ratio and within a reasonable period of time. At present, private investors do not often finance energy efficiency projects in these countries because dedicated sources of financing are lacking and local banks are generally unfamiliar with such investments. Another obstacle in financing energy efficiency projects is the absence of policy and institutional support for their implementation. The lack of knowledge and experience on how to select and formulate energy efficiency investment projects is often a challenge for local experts.

In order to address these obstacles, in January 2008 the UNECE began implementing the Financing Energy Efficiency for Climate Change Mitigation (FEEI) Project. The project is designed to assist countries from Eastern Europe, South-Eastern Europe and Central Asia to enhance their energy efficiency and reduce air pollution and greenhouse gas emissions in order to meet international obligations under the United Nations Framework Convention on Climate Change (UNFCCC) and UNECE environmental conventions. Twelve countries from Eastern Europe, South Eastern Europe and Central Asia are included in the scope of the activities: Albania, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Kazakhstan, Republic of Moldova, Romania, the Russian Federation, Serbia, the former Yugoslav Republic of Macedonia and Ukraine. The goal of the FEEI Project is to promote market formation so that self-sustaining energy efficiency and renewable energy projects can be identified, developed, financed and implemented locally in participating countries.

Funding for the project has been provided by the following supporting institutions:

- United Nations Foundation/UN Fund for International Partnerships (UNF/UNFIP);
- United Nations Environment Programme/Global Environment Facility (UNEP/GEF);
- Fonds Français pour l'Environnement Mondiale/Agence Française de Développement (FFEM/AFD);
- European Business Congress e.V. (EBC).

In-kind contributions for the project are provided by the participating countries and by the UNECE secretariat.

.....Goals, Scope and Approach of the Analysis

The Regional Analysis for Policy Reforms to Promote Energy Efficiency and Renewable Energy Investments is conceived as a wide-ranging regional assessment, including case studies, expert workshops and senior policy-maker seminars. The analysis has been conducted by Pöyry Energy Consulting AG under a contract with the United Nations Office at Geneva. The main goal of the analysis is to provide recommendations addressed to the policymakers of the participating countries in order to develop and implement policy reforms that will support market formation and foster a favorable climate for investments in the sectors of energy efficiency and renewable energy sources. To achieve this goal, an interactive approach has been applied with active involvement of the designated National Coordinators (NCs) and National Participating Institutions (NPIs) from the project countries and direct contributions from experts which have been collected and consolidated in the final report.

.....Overview of the Energy Sector in the Project Region

The countries in the project region show huge differences in their economic development, energy supply and legislative and regulatory framework, while the common aspect appears to be the urgent need for investments in energy efficiency and renewable energy sources. While half of the reviewed countries have a per capita Gross Domestic Product (GDP) which is above the world's average, some countries, in particular the Republic of Moldova and Albania, are well below this threshold. On the other hand, Croatia and the Russian Federation are not far from reaching the average of the 27 member states of the European Union (EU), while the two new EU member states Bulgaria and Romania are still well below that indicator.

Apart from Kazakhstan and the Russian Federation, who are large energy exporters, all other project countries have significant dependency on energy imports, which can reach 86 per cent and 97 per cent in the case of Belarus and the Republic of Moldova, respectively. This fact points out that enhancing efficiency in the primary energy use and exploiting the domestic potential of renewable energy sources is the most sustainable way to reduce dependency on foreign energy imports.

All countries in the project region are in the process of deregulation and liberalization of their energy markets, with electricity markets having generally the highest degree of progress and gas and heat markets very often lagging behind. Regulations and provisions regarding the energy sector are available in all project countries, but the structure, the goals and the scope of the national legislation differ significantly between the countries.

Regarding energy intensities, all countries of the project region (with Albania and Croatia being the only exceptions), are well above the EU-27 average, with such countries as Kazakhstan, Serbia and the Russian Federation being among the countries with the highest energy intensity in the world. While a rather satisfactory situation can be observed with respect to deployment of renewable energy sources in many project countries, it must be noted that the major contribution to renewable energy sources comes from the widespread use of large hydropower stations for the generation of electricity and use of fuel wood for domestic heating purposes, while other renewable energy sources (geothermal, solar, wind and small hydropower) have only a negligible share.

.....Overview of the Energy Sector andPolicy Framework in the Project Countries

.....Albania

Albania has one of the lowest per capita GDP in the project region; however, economic growth has been steady in the last five years before the financial crisis in late 2008. The Albanian economy is based more on agriculture than any other country in the project region, while the industrial sector has a rather modest contribution to GDP.

Albania has the lowest electricity consumption per capita in the project region and power generation is nearly entirely based on hydropower (98 per cent). These facts imply that energy intensity in Albania is low and the share of renewable energy sources very high; however, there are major problems of electricity supply in



the country that need to be addressed with consistent investments in the energy infrastructure and therefore Albania faces the challenge of ensuring sufficient electricity supply to the population while maintaining sustainability standards.

Several policy reforms have been undertaken in Albania in recent years, mainly the implementation of the National Power Law in 2003, which led to the establishment of the National Energy Regulator, the unbundling of the power sector and the privatization of electricity distribution activities. The Concession Law of 2007 introduced a competitive and transparent concession policy, which is very favorable for development of renewable energy projects but is applicable to hydropower plants only.

.....Belarus

Belarus is the country in the project region that has experienced the strongest economic growth in the past years, with an average yearly growth of GDP of over nine per cent between 2003 and 2008 and reaching GDP per capita above the world's average and very close to the GDP per capita of the two most recent EU members Bulgaria and Romania in 2008. The industrial sector (mainly based on heavy industry, machinery and agricultural equipment) plays a strong role in the Belarussian economy, followed by the agricultural sector. In order to stimulate the creation of private enterprises and attract foreign investors in the country, the Belarussian Government has created six free economic zones that offer tax and custom duty exemptions.



Belarus is major strong energy importer, having a deficit of primary energy sources of 86 per cent. Electricity production is entirely based on fossil fuels, in particular on gas imports from the Russian Federation. For these reasons, energy efficiency has been a top priority for the Government of Belarus since mid-1990s. The application of a combination of administrative and market measures has brought tangible results, with energy intensity being almost halved between 1997 and 2007. Examples of administrative measures are ministerial energy saving plans for state-owned companies, while the energy incentives introduced comprise preferential loans, reduced interest rates and tax exemptions. Furthermore, the Belarussian Government is improving the efficiency of the district heating system by replacing heating pipes at a rate of 1,000 km per year.

.....Bosnia and Herzegovina

The state of Bosnia and Herzegovina is composed of two entities, the Federation of Bosnia and Herzegovina and Republika Srpska, and the District of Brčko as set up by the Dayton Peace Agreements of 1995. The Dayton Agreements also allocated the regulatory authority to the two entities, while the state Government has more of a coordinating role. After recovery from the civil war, Bosnia and Herzegovina has seen a steady economic growth over the last five years.

The power system of Bosnia and Herzegovina was developed to supply the remaining parts of the former Yugoslavia: based on its electricity surplus and good interconnection capacities, the country still exports electricity to most of its neighbouring countries. Electricity production is based for a large part on domestic lignite reserves and for the rest on hydropower, placing the country among those with high share of utilization of renewable energy sources. Unfortunately, there are no reliable data on energy consumption in Bosnia and Herzegovina; however, overall energy intensity of the country is rather low.

.....Bulgaria

Bulgaria has experienced strong economic growth since the mid-1990s; successive governments have demonstrated commitment to economic reforms and responsible fiscal planning, mainly with the objective of accession to the European Union, which has been achieved in 2007. However, despite the strong economic growth and significant amounts of foreign direct investments, Bulgaria's per capita income was only 37 per cent of the EU-27 average in 2007.

Bulgaria shows a moderate energy import dependency and has an overall balanced fuel mix. However, the security of supply is highly dependent upon future political decisions regarding nuclear generation, since four out of six reactors of the Kozloduy nuclear power plant (the country's only nuclear power plant) have been decommissioned between 2003 and 2006 and the construction of a new nuclear power plant in Belene is still under discussion. Even in case of a positive decision, the original goal of commissioning the new plant by 2013 is no longer realistic and its operation will have to be postponed of at least two to three years.

Energy intensity of households is lower than in the project region and comparable with EU-27 average, while the energy intensity of the industrial sector is very high, showing the necessity of increased efforts in this sector.

Bulgaria has made good use of the EU accession process to restructure the energy sector and improve its legislative and policy framework promoting energy efficiency and renewable energy sources. This has been done mainly by the introduction of a coherent set of medium- to long-term strategies, specific legislation and concrete action plans. Particularly, the Energy Efficiency Act of 2004 has introduced tax exemptions on property tax for owners of buildings implementing energy efficiency standards (which were further developed at a later stage with the Energy Efficiency Act of 2008). This policy reform has also successfully fostered the development of professional capacity for energy audits and certification.

.....Croatia

Croatia has the highest GDP per capita in the project region, despite a rather modest growth of GDP in the recent years, compared to the other project countries. The Croatian economy is strongly driven by the tourism sector, thus giving the opportunity to the country to establish a successful example of environmentally sustainable tourism.



Even though Croatia has its own gas and oil resources, namely substantial production of natural gas, the dependency on imports of primary energy sources is high. Nearly half of the electricity production in Croatia is based on hydropower; at the same time, the Croatian wind power sector is growing strongly, with more than 300 wind power projects announced. The 2009 Croatian National Energy Strategy plans to implement 1,800 MW of installed electricity production capacity based on renewable energy sources.

Croatia has adopted solid and broad energy policies with a medium-term vision of a sustainable energy system. One example of a successful policy reform is the introduction of the Physical Planning and Building Act in 2007. This law introduces mandatory energy certification for buildings and therefore will allow the improvement of existing and future building stock, while at the same time stimulating the market for energy efficiency projects and fostering the creation of new professional skills.

.....Kazakhstan

The economy of Kazakhstan is heavily concentrated on few commodities, such as oil and natural gas, and faces the challenge of diversification. Oil extraction and oil-related construction, transport and processing make up more than 16 per cent of the country's GDP. With booming energy prices, Kazakhstan enjoyed a strong GDP growth since 2000, averaging over nine per cent between 1999 and 2007, placing the country second only to Belarus in the project region in terms of economic growth.

Kazakhstan is the second largest producer (after Russian Federation) of oil and coal among the countries of the Commonwealth of Independent States (CIS) and has considerable reserves of coal, oil and natural gas. The country has the highest primary energy surplus in the project region (110 per cent). However, despite its vast energy resources, Kazakhstan imports significant amounts of gas and oil from neighbouring Uzbekistan, which indicates the need for modernization of its energy infrastructure that was built up within the Fuel-and-Energy complex of the former Soviet Union. 70 per cent of the total electricity generation in the country comes from thermal power plants that use coal, mainly concentrated in the two sites of Ekibastuz and Aksu. Renewable



energy sources currently only play a negligible role in the overall energy balance of Kazakhstan, despite the vast potential available in the country. As in other countries with high availability of primary energy sources, Kazakhstan has high energy intensity; notably the energy intensity of the household sector has increased by 90 per cent since 1997, pointing out the need for action in this sector.

Successful policy reforms have been carried out in Kazakhstan in the 1990s, such as the reorganization of the electricity sector, which involved a restructuring and privatization programme that separated the liberalized sectors (production and consumption of electricity) from the natural monopolies (transmission and distribution). These policy reforms allowed Kazakhstan to create a competitive market environment in the electricity sector and to open the country to foreign investors. More recently, the Law on support of the renewable energy sources use was adopted by the Parliament of Kazakhstan in June 2009, introducing a feed-in tariff system for electricity generated from renewable energy sources.



.....Republic of Moldova

The Republic of Moldova is the country with the lowest GDP per capita in the project region. However, as a result of reforms carried out in recent years, there have been a number of positive developments and annual GDP growth averaged nearly six per cent between 2000 and 2007. Agriculture plays a very strong role in the economy, with its share of 11 per cent of GDP. The industrial sector, which has only a modest, in comparison with other countries, GDP share of 15 per cent, is mostly focused on agricultural production and food processing.

The Republic of Moldova has no domestic reserves of coal or natural gas and low hydropower potential. This has led to a very high dependence on energy imports (97 per cent); electricity generation is based nearly entirely on gas and the only large power plant is located in the Transnistrian region, on the left side of the river Dniester, which has an uncertain administrative status. Despite the high energy dependence on energy imports and the low supply of primary energy per capita (among the lowest in the project region), the Republic of Moldova has comparatively high energy intensity. Regarding renewable energy sources, the share of hydropower in the electricity generation is low; on the other hand, there is a significant use of biomass for heat generation and the potential for increased use of biomass and biogas is considerable.

In recent years, several policy reforms in the energy sector have been undertaken, particularly unbundling and privatization of the electricity market, which has led to the opening of the country to foreign investors, to a significant decrease of energy losses and to the introduction of cost-covering energy tariffs. Furthermore, the Energy Strategy of the Republic of Moldova until 2020 foresees the ambitious target of increasing the share of renewable energy sources in the country's energy balance to six per cent in 2010 and to 20 per cent in 2020. The Republic of Moldova is one of the few project countries that has introduced feed-in tariff for biofuels. It is actively participating in the Kyoto Protocol mechanisms, with several Clean Development Mechanism (CDM) projects under development.

.....Romania

Romania's macroeconomic gains have only recently started to encourage creation of a middle class and address Romania's widespread poverty. Romania's strong GDP growth is highly dependent on exports. Lack of political reforms, such as those that have been undertaken by neighbouring Bulgaria, has left the country highly vulnerable to the global downturn in financial markets and trade that started in late 2008; subsequently, the recovery from the present financial crisis is expected to be slower compared to other Eastern European countries.

Romania has the largest oil and gas reserves in Central Europe, leading to a rather modest dependency on energy exports. Overall energy supply is well diversified, using the complete range of fuels; nonetheless, the majority of energy supply is still based on fossil fuels and the country depends entirely on the Russian Federation for its natural gas supply. Primary energy intensity of Romania is only moderately above the EU-27 average and is 35 per cent lower than the average of the project region. Three ESCO companies are currently

active in Romania. Hydropower accounts for one third of the total electricity generation in Romania, while combustible renewable and waste account for around eight per cent of the total Romanian primary energy supply, most of them being used directly by households for heating purposes. Renewable energy sources have an significant untapped potential, which can be used at both local and national levels.

Similarly to Bulgaria, Romania has made good use of the accession process to the European Union and has implemented several policy reforms in the energy sector. In particular, the Law on Energy Efficiency states that all new buildings and all public buildings (both new and existing) must be audited and must have energy performance certificate. Furthermore, Romania has introduced in 2008 a programme for replacing and supplementing traditional heating systems with solar and geothermal power systems. Finally, Romania has introduced a system of green certificates for electricity from renewable energy sources and has feed-in tariff in place; investors can also receive additional incentives such as tax exemptions.

.....Russian Federation

The Russian Federation is by far the largest country in the project region and spreads over a vast diversity of climatic, geographic and economic regions; also the administrative structure is complex, since the Federation is composed of 83 federal subjects subdivided into republics, oblasts (provinces), krais (territories), autonomous

oblasts, autonomous districts and federal cities. While these subjects have the same federal rights, in the sense that they have equal political representation, they differ greatly in their size, administrative structure as well as political and economic organization. The Russian Federation has, along with Croatia, the highest GDP per capita in the project region – even if this average value hides major differences between the country's regions. Although the Government has laid out plans to diversify the economy, the country's economy is still heavily dependent on oil and natural gas exports.



The Russian Federation possesses the world's largest natural gas reserves, the second largest coal reserves and the eighth largest crude oil reserves; overall, the Russian Fuel-and-Energy complex

represents over one third of the country's GDP. The Russian power system includes 440 thermal power plants and 31 nuclear reactors; however, the grid infrastructure faces the challenge of the vast size of the country: e.g. the power generation facilities located in the Far East are not connected to the power grid of the rest of the country. The share of renewable energy sources in the Russian Federation is rather low (3 per cent); most of it is produced by large hydropower plants, with total installed capacity of 45 GW, while the remaining part comes from combustible renewables. Given the vast country size and the huge variety of climatic conditions, the country has a huge potential for renewable energy sources, which is largely untapped. The Russian Federation has one of the highest energy intensity levels in the project region. Climate conditions and a high share of energy-intensive industries in the Russian economy are major reasons for this; among other reasons are inefficient and obsolete equipment, insufficient consumption metering and extensive gas flaring.

Significant policy reforms have been implemented in the Russian Federation, especially in the area of energy efficiency. Of the 83 federal subjects of the Russian Federation, 43 have adopted regional laws on energy efficiency and there are three large energy efficiency regional programmes in place; these specific regional policies take into account climatic, geographic and economic diversity between the regions. Another significant step further in the development of energy efficiency policy was taken in late 2009 with the approval of the Law on Energy Saving and on Increasing Energy Efficiency and on Introduction of Changes in Selected Legislative Acts of the Russian Federation, which replaced the Law on Energy Efficiency of 1996 and provides an extensive and groundbreaking regulatory framework for all further policy developments in the area of energy efficiency, thus giving the Russian Federation an opportunity to undertake concrete activities in support of energy efficiency and to set an example of innovative and comprehensive regulatory framework for energy efficiency for other countries in the region and in the Commonwealth of Independent States.



.....Serbia

Serbia is the legal successor of the former State Union of Serbia and Montenegro, which were the two last republics within the Federal Republic of Yugoslavia. The five districts of Kosovo are governed under the provision of the UN Security Council Resolution 1244. After the transition from the Federal Republic of Yugoslavian, Serbia has made progress in trade liberalization, enterprise restructuring and privatization, as well as the development of small- and medium- size private companies. From 2004 to 2008, the annual GDP growth varied between six and eight per cent.

Similarly to neighbouring Bosnia and Herzegovina, Serbia possesses significant coal reserves, which are the main fuel for electricity generation in the country. One third of electricity is generated by large hydropower plants, placing Serbia in the group of countries with the highest share of renewable energy sources in the project region. However, Serbia has also one of the highest energy intensities in the project region, as along with Russian Federation and Kazakhstan. Three industries, namely iron and steel metallurgy, basic chemical products and construction materials consume roughly half of the total energy supply of the industrial sector, although their share of GDP is below 15 per cent.

Serbia has the framework Law on Energy, which was adopted in 2004 and regulates main aspects of the energy sector. Serbia has developed the Energy Sector Development Strategy until 2015, with the objective of technological modernization of the existing energy infrastructure and adopted a corresponding Implementation Programme for the period 2007-2012. More progress is needed in the sector of energy efficiency, where there is currently no dedicated law in place, and in the sector of renewable energy sources, where legislation is mainly provided by decrees rather than through a comprehensive legal framework. Serbia has recently introduced feed-in tariff, which has been developed in compliance with the obligations under the Energy Community Treaty.

.....The former Yugoslav Republic of Macedonia

The former Yugoslav Republic of Macedonia is the smallest country in the project region. Since the independence from the Federal Republic of Yugoslavia, the country has come a long way in its transition to a market economy, even though the reform efforts have been frequently interrupted by political instability within the country and spreading over from neighbouring countries. Agriculture plays a strong role in the country economy, with a 12 per cent share of GDP.

The former Yugoslav Republic of Macedonia has significant coal reserves, but imports large quantities of crude oil and electricity. Nearly three quarters of the national electricity production is based on domestic coal, while large hydropower plants account for 24 per cent of the electricity production. The technological status of the thermal and hydro power plants can be regarded as obsolete and the largest plants are going to be modernized with financial support from international institutions. Additionally, the new energy strategy of the former Yugoslav Republic of Macedonia envisages three new coal power plants with a total capacity of 900 MW, two large gas power plants with a total capacity of 600 MW and 800 MW additional capacity from large hydropower plants by 2030. The country has moderate energy intensity and a high share of renewable energy sources, which explains the choice of an energy strategy based largely on conventional fuels and to a lesser extent on large hydropower.

Following the provisions of the Energy Community Treaty and with the objective of harmonization with the EU legislation, the former Yugoslav Republic of Macedonia has undertaken several policy reforms in recent years. The restructuring, unbundling and privatization of the energy sector started in 2004. The liberalization of electricity prices, starting with customers connected to the high-voltage grid, led to a reduction of energy intensity in the industrial sector due to increased energy costs. While there is no dedicated law on renewable energy sources, some policy reforms has been undertaken in the area of energy efficiency. Since 2002, municipalities enjoy more budget autonomy and can implement energy efficiency and renewable energy projects; furthermore, they have an obligation to develop and implement five-year local energy efficiency programmes and action plans. In 2010, energy audits will become mandatory for new large buildings.

.....Ukraine

Despite significant economic progress and an average annual GDP growth above seven per cent between 2000 and 2007, Ukraine is still among the countries with the lowest GDP per capita in the project region. The national economy is largely based on heavy industries such as coal, metallurgy and machineries. The main export product of the country is steel, making the national economy highly vulnerable to external shocks, such as sharp decrease of steel prices in the international commodity markets.



Despite having significant resources of coal and natural gas, Ukraine is a net importer of primary energy sources; in particular, natural gas is the main primary energy source in the country, thus making the country dependent on gas supplies from the Russian Federation. In order to reduce this dependence, Ukraine plans to increase the share of coal in the primary energy supply by 150 per cent until 2030. Nearly half of the electricity generation comes from the 15 operational nuclear power reactors in the country. Hydropower accounts for only seven per cent of total electricity generation; in fact Ukraine has the lowest share of renewable energy sources within the project region (1.2 per cent of primary energy supply), despite the availability of a large untapped potential for biomass, wind and solar energy. Although energy intensity decreased by 45 per cent since 1997, it is among the highest in the project region. Among the main reasons for this are: slow restructuring and modernization of energy-intensive industries, low efficiency of power generation and losses from district heating grid, low tariffs in the heat and power sector and cross-subsidization of households by industrial customers.

Ukraine has a complex legal framework for the energy sector, which includes several laws supplemented by a number of government resolutions, presidential decrees, by-laws, regulations, norms, standards and methodological guidelines. A draft Law on Efficient Use of Fuel and Energy Resources developed in April 2009 is expected to replace the Law on Energy Saving of 1994 after it is adopted. An example of a successful policy reform in Ukraine is provided by the 2008 Law on Amendments to Some Ukrainian Laws on Green Tariff Establishment, which introduces new feed-in tariff for renewable energy power plants established after 1 January 2009 and modifies the Land Code in order to grant preferential land purchase prices for renewable energy power plants. The latter measure is expected to promote a market for renewable energy projects and to kick-start the establishment of independent power producers in the renewable energy sector.

.....Barriers to Investments in Energy Efficiency and Renewable Energy Projects in the Project Region

One of the main goals of the Regional Analysis is the identification of barriers to investments in energy efficiency and renewable energy projects in the project region, in order to develop recommendations for policymakers on how to overcome them. The identified barriers are classified in three groups:

- Legal, institutional and administrative barriers;
- Economic and financial barriers;
- Lack of awareness, human capacities and professional skills.

.....Legal, Institutional and Administrative Barriers

Legal, institutional and administrative barriers can be manifold and very difficult to address because of the different administration and policymaking levels involved. The most frequently encountered barriers of this kind in the project region are:

- Complexity and lack of transparent structure of the regulatory framework;
- Regulatory instability and discontinuity, caused either by political instability in the country and/or frequent and uncoordinated updates and revisions of the current policy framework;
- Lack of secondary legislation and operational instructions, tools, standards and procedures



necessary to implement primary legislation or strategic programmes;

- Excessive bureaucratic obstacles, non-transparent administrative procedures and complex and cumbersome authorization procedures for new projects;
- Absence of dedicated public procurement guidelines for acquisition of energy-efficient equipment and requests for provision of energy services to public entities;
- Inefficient or limited use of public tendering processes for energy efficiency and renewable energy projects;
- Lack of cooperation between different ministries and agencies involved in energy policy as well as between authorities at the national and at the local level;
- Unresolved property issues in multi-resident apartment buildings and significant fragmentation of land property, which significantly limit feasibility of energy efficiency investments in the housing sector and increase costs for the development of renewable energy projects.

..... Economic and Financial Barriers

Many economic barriers that hinder financing and implementation of attractive projects come from inefficiencies in the structure of the energy markets:

- State intervention in the price formation, artificially low tariffs for final customers and cross-subsidies between customer segments;
- Energy tariffs which do not fully cover costs and therefore limit the profitability of energy efficiency projects; furthermore these tariffs do not take into account the environmental costs of energy supply and do not offer incentives for a change of behaviour of the final consumers;
- Environmental and economic efficiency of energy efficiency and renewable energy projects is hindered by obsolete and insufficient infrastructure for transmission and distribution of energy (grid losses, lack of adequate grid connection, lack of metering), even when the business case for the project itself is attractive;
- Local utilities and distribution companies that are facing serious profitability problems regarding insufficient payment rates and/or unprofitable regulated customer tariffs do not have adequate financial means for infrastructure improvement and are therefore reluctant to support or push forward even promising energy efficiency projects;
- Public ownership of the energy companies, which creates a conflict of interest between the company profitability and the pursuit of political interests through socially popular pricing policies;
- Insufficient availability of public funds for financing of initiatives and programmes: premium tariffs for renewable energy sources are developed but often not operational and are frequently of limited extent (e.g. they apply only to certain technologies or have restrictive requirements). Energy efficiency funds, if they are operational, have limited resources; alternative incentive measures such as dedicated credit lines providing soft loans, tax exemptions or support schemes for third-party financing are often not in place;
- Small size of energy efficiency and renewable energy projects, resulting in relatively high evaluation and transaction costs per project;
- High interest rates applied by local banks to medium- and long-term loans and restrictive requirements for collaterals.

..... Lack of Awareness,

..... Human Capacities and Professional Skills

These barriers comprise all stakeholders involved in identification, development, financing and implementation of energy efficiency and renewable energy projects and require extensive work of awareness-raising and capacity-building to achieve tangible results:

- Insufficient political commitment to implement the necessary policy reforms;
- Lack of qualified human resources and insufficient professional expertise among local authorities for implementation of identified projects;
- Lack of experience in financing energy efficiency and renewable energy projects and lack of awareness of possible economic benefits arising from energy efficiency and renewable energy projects among commercial banks;
- Lack of training and education possibilities for the formation of professionals with adequate skills for conducting energy audits, identification of attractive project opportunities, and preparation of bankable project proposals;
- Lack of awareness on the side of consumers, which are used to regard energy more like a public service than a valuable good and are very reluctant to change their consumption behaviour unless this implies a tangible improvement of their living standard;
- Limited or absent demand for the services of Energy Service Companies.

Barriers to Investments in Energy Efficiency and Renewable Energy Projects in the Project Countries

Albania

Albania has undertaken several policy reforms, mainly in compliance with its status of a candidate country to the European Union. However, there are no dedicated laws regarding energy efficiency and renewable energy sources and therefore the policy framework seems to be more declaratory than operational. Furthermore, the power infrastructure in Albania is in urgent need of rehabilitation. Without significant investments in the power transmission and distribution infrastructure potentially attractive projects in the power sector, such as wind power projects, are unlikely to be implemented.

From the economic point of view, the absence of public funding for projects and initiatives is an obstacle for the development of energy efficiency and renewable energy projects. The feed-in tariff for electricity produced from renewable energy sources applies only to small hydropower plants up to 15 MW installed capacity and does not include other promising sources such as solar or wind energy.

Finally, a widespread habit of energy fraud and highly inefficient use of electricity for heating purposes indicate low awareness of the value of energy and natural resources among the population, public administration and policy makers.

Belarus

The main barrier for investments in energy efficiency and renewable energy investments in Belarus is the strong influence of the state in the economic sector, which hinders the development of a proper private sector (most Belarussian companies, which are not fully state-owned, still have partial and often significant share of state ownership). Furthermore, monetary savings achieved in an organization that receives state funding for its operations must be returned to the state budget and cannot be used for repayment of the investment (unless the investor is the state itself), therefore representing a barrier for the development of ESCO business models.

The other major regulatory and institutional barriers in Belarus are lack of a clear framework in the energy sector (such as a framework law for the electricity sector or framework regulation on renewable energy sources) as well as lack of transparent implementation plans for policy reforms.

Bosnia and Herzegovina

Bosnia and Herzegovina faces several institutional and administrative barriers which are related to the specific administrative structure of the country. In particular, development and implementation of energy policies are conducted in parallel at the entity level with little coordination between the entities.



From the economic and financial point of view, the availability of low-cost domestic power generation implies very low energy prices, which hinder the development of energy efficiency programmes. Furthermore, the comparatively low feed-in tariff for electricity from renewable energy sources is not sufficient to encourage substantial investments in the renewable energy projects.

Finally, absence of reliable energy statistics is an obstacle to the development of concrete action plans to reduce energy intensity.

.....Bulgaria

Despite strong commitment by the Bulgarian Government and significant progress in political reforms, some institutional and administrative barriers still persist. In particular, lack of penalties for companies failing to comply with the obligation to perform energy audits or implement improvement measures is an obstacle to the successful implementation of the energy efficiency policy. Frequent amendments of existing regulations cause uncertainty and confusion among potential investors and project developers.



Even though there are no significant economic and financial barriers in Bulgaria for energy efficiency and renewable energy, Bulgarian commercial financing institutions are reluctant to invest in this sector. On the other hand, the strong commitment of the Bulgarian Government to energy efficiency improvements appears to be driven mainly by the EU accession and post-accession requirements, while at the municipal level increased awareness and human capacity among policy-makers are still necessary for tangible improvements.

.....Croatia

The administrative barriers for energy efficiency and renewable energy projects in Croatia are mainly identified in the complex authorization procedures for energy efficiency and even small renewable energy projects as well as lack of coordination between different governmental agencies involved in energy efficiency and renewable energy policies.

Another barrier specifically related to the development of wind projects, which could however have significant effects on the implementation of the overall renewable energy strategy, is limited capacity of the power transmission grid to accommodate new wind power generation. The current grid capacity for new wind power plants is estimated at a maximum of 360 MW, compared to the already expressed interest of 5,000 MW.

Finally, despite the availability of credit lines from the Croatian Government and from international financing institutions, the promotion of funds for energy efficiency and renewable energy projects among bank customers is virtually non-existing on the part of commercial banks. As a result, available financing mechanisms remain unused. This indicates the necessity of awareness raising and capacity building among local financing institutions.

.....Kazakhstan

Huge availability of fossil fuels and weak governmental commitment in the past have hindered the development of energy efficiency and renewable energy projects so far. This regulatory gap is particularly acute in the sector of energy efficiency, where the Law on Energy Savings of 1997 has never been enforced and where there are neither targets nor an action plan in place. Another barrier is represented by the uncertain status of Kazakhstan regarding the Kyoto Protocol ratified by the country in 2009, which has so far prevented the development of both CDM and JI projects.

From the economic and financial point of view, the greatest barrier to energy efficiency projects is lack of

provisions for establishment of national or municipal funds or budgets. Energy efficiency incentives are envisaged by the draft Law on Energy Efficiency. However, there is concern that these incentives might not be introduced due to the current financial crisis. A project-based feed-in tariff for electricity produced from renewable energy sources has been developed and approved only recently. However, the new feed-in tariff is not transparent and may be applied differently to different project developers thus requiring further development.

.....Republic of Moldova

The main barrier for investments in energy efficiency and renewable energy projects in the Republic of Moldova is capital constraints. There are no national or municipal funds for development of energy efficiency projects, and high interest rates on bank loans hinder the formation of a market for private companies involved in development of energy projects.

From the institutional and administrative point of view, one of the barriers to the energy efficiency investments is the fact that so far development and implementation of all energy efficiency and renewable energy projects have been done by state institutions. Lack of public tendering process has hindered the formation of a competitive environment for private companies.

.....Romania

No major administrative barriers for development of energy efficiency and renewable energy projects have been identified in Romania. With the adaptation of the feed-in tariff and green certificate scheme, there are no major economic and financial barriers for the development of renewable energy projects.

However, at the municipal level the availability of co-financing on a non-guaranteed basis remains uncertain, as project preparation, utilization capacity and co-financing ability are generally weak. These issues are particularly apparent in small municipalities, which have not been able to secure financing from either international financing institutions or local banks.

The presence of dedicated energy agencies, several ESCOs and international energy utilities may indicate that there is no significant need for capacity building in the country. However, relatively low activity in energy efficiency and renewable energy projects outside existing support schemes from international financing institutions suggests lack of capacity to fully develop bankable project proposals.

.....Russian Federation

The new Law on Energy Saving and on Increasing Energy Efficiency approved in late 2009 addresses many of the barriers that have been identified so far, such as the outdated regulatory framework, the absence of dedicated agencies and the lack of economic tax incentives for the promotion of energy efficiency. However, in practice, it will still take some time after approval of the Law, before the barriers will be actually removed. In particular, establishment of a network of agencies at the national, regional and local levels will take some time, given the huge size of the country and the current diversity in the progress of policy reforms in this area. Also the widespread installation of metering devices and the establishment of databases with consumption data for public and residential buildings will take some time before tangible results can be seen.

From the economic and financial point of view, the Law on Energy Saving and on Increasing Energy Efficiency provides attractive incentives for energy efficiency projects. However, there is no mention of dedicated credit lines or establishment of a national fund to provide financing for the activities related to the implementation of the new regulatory framework. This may be clarified at a later stage through secondary legislation, which is expected to be approved by mid-2010.





From the point of view of capacity building and professional skills, the mandatory provisions on certifications and audits in the Law on Energy Saving and on Increasing Energy Efficiency will encourage the development of adequate professional skills. However, absence of operational credit lines among financial institutions suggests general lack of experience in the Russian banking sector regarding financing schemes for energy efficiency and renewable energy projects which needs to be addressed.

.....Serbia

The Serbian Government appears to have a strong commitment towards the development of energy efficiency and renewable energy sources, as indicated by the priorities in the National Energy Strategy and by a number of policy activities. However, dedicated laws supporting energy efficiency and renewable energy sources are still under development and therefore the timeframe necessary for final approval, entry into force and practical implementation must be taken into account before tangible benefits can be evaluated. Furthermore, there is lack of secondary legislation, such as building and labeling standards, obligations to perform energy audits and a legal framework for ESCO companies.



From the economic point of view, the primary barrier to successful project implementation is absence of economic incentives in the area of energy efficiency, as well as the fact that the feed-in tariff for electricity from renewable energy sources is developed but not yet operational.

Lack of qualified human resources appears to be a major barrier throughout the entire public administration. In the private sector, technical skills are available, but there is lack of experience in the preparation of bankable projects to be submitted to funding institutions.

.....The former Yugoslav Republic of Macedonia

The Government of the former Yugoslav Republic of Macedonia makes significant efforts to develop policies to support energy efficiency and renewable energy sources, with the objective of full compliance with EU regulations. However, much of the dedicated regulatory framework, including secondary legislation and operational procedures is still under development.

Similarly, from the economic point of view, the main barrier appears to be lack of clear economic incentives; the feed-in tariff is not yet operational. Furthermore, energy tariffs for regulated customers are extremely low and the market structure does not provide any prospects for full price liberalization until 2015.

However, the main barrier for investments in energy efficiency and renewable energy sources in the country is lack of professional skills, both in the public administration at the national and municipal levels, and in the business sector as well as among banks and other national financial institutions.

.....Ukraine

The main legal and institutional barriers encountered in Ukraine are complexity and fragmentation of the regulatory framework on the energy sector in general and on energy efficiency and renewable energy sources in particular. The Energy Strategy until 2030, as the main policy instrument in the energy sector, envisages the need to reduce dependency on fuel imports. However, this is expected to be achieved mostly by substitution of imported natural gas with domestic coal and additional nuclear capacity.

Economic and financial barriers that were identified are lack of transparency in distribution of state funds for energy conservation and energy saving measures, difficulties with access to credit resources, since banks are reluctant to provide loans for investments with a payback period of over one year, and the current difficult economic situation in the country. The heat tariffs applied by the municipalities do not fully cover the costs, thus hindering highly necessary investments in the renovation and upgrade of the infrastructure.

.....Case Studies

The Regional Analysis includes 12 Case Studies, which are meant to serve as examples of success stories to overcome bottlenecks and barriers for investments. Their purpose is to allow cross-country comparison and to motivate policymakers to replicate the success stories in their countries, through adjustment to local conditions. The Case Studies are listed and described in Table E.1.

No.	Case Study	Topic	Country (Origin)	Removed Barriers	Countries for which Case Study is recommended
1	2	3	4	5	6
1.	Energy Efficiency Demonstration Zone	Capacity building on municipal energy efficiency planning and specialized training for local energy decision makers and municipality management	Bulgaria	The Case Study refers to municipalities and their functions with respect to energy planning and management. Its objectives are to provide municipalities with the required competencies in energy efficiency related projects. This is achieved through a variety of activities - specialized studies, dissemination of general and specific information about efficient use of energy resources, training of local decision makers and experts on energy planning and management. The Case Study contributes in removing financial barriers (poor investments) and strengthening financial capabilities for municipalities to undertake energy efficiency projects while missing competencies and know-how.	Kazakhstan, Serbia, the former Yugoslav Republic of Macedonia and Ukraine
2.	Water Efficiency – Tariff Reform Programme	Tariff issues	Russian Federation	The Case Study refers to the implementation of a tariff reform aiming at rehabilitating water infrastructures of the City of Cherepovets. The Case Study contributes in removing financial barriers from utilities facing a decrease of water end customer's tariffs and therefore lack of financial resources to realize investments regarding water-efficiency projects.	Bulgaria and Ukraine
3.	TSKB - Environmental Impact Assessment of Projects	Establishment of standards within the banks, imposing an environmental and energy screening of all projects prior to financing	Turkey	The Case Study refers to the setting-up of standards procedures aiming at screening each project on a financial, technical and environmental point of view. The concerned Turkish bank has been the first one having been certified ISO 14001. The Case Study contributes in removing barriers related to the provision of medium- and long-term loans for projects not achieving targeted objectives in terms of social, financial and environmental benefits. Through screening procedures, projects are prioritized and only co-financed when answering bank requirements.	Albania, Bosnia and Herzegovina and Republic of Moldova
4.	Incentives for Foreign Investments	Support to foreign investments	Bosnia and Herzegovina	The Case Study refers to the establishment and approval of a set of incentives aiming at supporting and attracting foreign investors. The Case Study contributes to removing legal and administrative barriers of doing business in the country.	Kazakhstan and Republic of Moldova
5.	Sustainable Energy Financing Facilities - Dedicated Loan Facilities to Local Banks Undertaking Energy Efficiency Projects	Design of dedicated credit lines	Bulgaria	The Case Study refers to the establishment of dedicated loan facilities to local banks for on-lending to clients (residential and industrial credit lines) undertaking energy efficiency and renewable energy projects. The Case Study contributes to removing financial barriers in particular related to the lack of loans from local commercial banks to companies in industrial and residential sectors willing to undertake energy efficiency and renewable energy projects.	Albania, Republic of Moldova and the former Yugoslav Republic of Macedonia



1	2	3	4	5	6
6.	Enhancement of Awareness-Raising through the Development of a Network of Certified Energy Auditors	Awareness-raising	Slovenia	The Case Study refers to the establishment of an Energy Auditing Programme implemented by an association of certified energy auditors with the objective to enhance the penetration of energy auditing procedures through transfer of know-how and experience in energy auditing. The Case Study contributes to removing such barriers as lack of awareness, know-how and experience on the part of decision makers, municipalities, property owners related to energy efficient building technologies and lack of market for energy auditing services.	Albania and the former Yugoslav Republic of Macedonia
7.	Greening Facility - State Environmental Fund	Financing a Public Fund	Czech Republic	The Case Study refers to the financing of a public fund through the sale of CO ₂ emission certificates. The Case Study contributes to removing financial barriers and strengthening financial capabilities of national governments by raising additional money for a public fund supporting energy efficiency and renewable energy measures.	Bulgaria, Romania, Ukraine and Russian Federation
8.	Market Transformation on Solar Water Heating	Awareness-raising, labeling, capacity building and financial support	Albania	The Case Study refers to the establishment of a programme to build up a market for solar water heating. The Case Study contributes to removing barriers related to lack of awareness and capacities as well as financial barriers by raising awareness of the target audience and providing information, strategic advice, technical training and financial support.	Belarus, Bosnia and Herzegovina, Kazakhstan, Republic of Moldova, Serbia and the former Yugoslav Republic of Macedonia
9.	Establishment of ESCO	Energy Performance Contracting/ ESCO services	Croatia	The Case Study refers to a successful establishment of an Energy Service Company (ESCO) engaged in financing energy efficiency projects on a commercial basis. The Case Study contributes to removing financial barriers as well as barriers related to lack of technical capacities by establishing an ESCO, which prepares, finances and implements energy efficiency projects on a commercial basis.	Albania, Belarus, Bosnia and Herzegovina, Republic of Moldova and Serbia
10.	Ukraine Energy Efficiency Programme	Third-party financing, capacity building	Ukraine	The Case Study refers to the establishment of a financing facility permitting private sector companies to reduce their energy intensity and operating costs. The Case Study contributes to removing financial barriers and strengthening financial capabilities of industrial companies to develop bankable energy efficiency and renewable energy projects.	Albania, Bosnia and Herzegovina and the former Yugoslav Republic of Macedonia
11.	Municipal Finance Facility	Third-party financing including technical capacity building	Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic and Slovenia	The Case Study refers to the successful implementation of a finance facility stimulating commercial bank lending to small- and medium-sized municipalities and their utility companies. The Case Study contributes to removing barriers to commercial third-party financing and risk-sharing as well as lack of capacity for the development of bankable projects, specifically for municipalities.	Kazakhstan, Republic of Moldova and Romania
12.	Forest Resources and Technology Project (FOREST)	Awareness-raising and capacity building	Russian Federation	The Case Study refers to the successful implementation of a wood energy programme. The Case Study contributes to exploring and promoting the use of wood and wood waste as a source for production of electricity and heat power to be used in wood processing facilities and municipal communities.	Albania, Romania and the former Yugoslav Republic of Macedonia

Recommendations for Policy Reformsat the Regional Level

The ultimate objective of the Regional Analysis is the development of a set of recommendations for policy reforms addressed to the attention of national and local policymakers in order to overcome the identified barriers to investments in energy efficiency and renewable energy sources. These recommendations have



been developed based on the detailed analysis of the country-specific progress in implementation of policy reforms and market formation and subsequently identified barriers that still need to be overcome, as well as on the results of implementation of the analysed Case Studies in project countries and in neighbouring countries with similar framework conditions. The Case Studies provide examples of successful implementation, thus indicating ways and means for replication of these success stories in other project countries that face similar barriers. Country-specific recommendations are developed for each project country. However, the following more general recommendations are applicable to all or many project countries:

- **Development of policy frameworks.** Countries of the project region should develop sound strategies, action plans and implementation programmes, which constitute the policy framework that identifies the measures that can cost-effectively yield energy savings and increase renewable energy generation in the short-term, assigns the responsible institutions in charge of developing, implementing and monitoring the policies and programmes and indicates the financial resources for these activities;

- **Monitoring of policy implementation.** Countries of the project region should establish regular and institutionalized monitoring of policy implementation. This should involve communicating policy requirements to all concerned parties, ensuring that targets of positive support for policy changes are identified, clearly stating the need for and the nature of required changes as well as sources of potential resistance to these changes and ways to overcome it;

- **Transparent procedures for tendering, authorizations, grid connections.** Standard Bidding Documents provide a guide to transparency in procurement opportunities and in contract evaluation and award procedures, while authorization procedures require clear guidelines and the definition of an obligatory response period for the institutions involved. Master Plans for the Transmission grid should identify and evaluate the needs for an upgrade and expansion of the transmission capacity, while grid connection and accounting rules for grid costs should be formulated in appropriate legislation and regulations;

- **Spatial planning for renewable energy projects.** Adjustments to existing legal frameworks that take into consideration specific needs of new renewable energy initiatives can be time consuming and can delay implementation of such initiatives. National and local authorities can stimulate development of renewable energy projects by allocating areas suitable for their implementation in the framework of spatial planning;

- **Metering and consumption-based billing.** As a first step, installation of individual meters in new buildings and buildings undergoing major renovations should be mandatory where this has not been applied yet. As a second step, an action plan for a nationwide rollout of individual metering systems should be developed, evaluating different options, which are technically possible, financially reasonable, and proportionate in relation to the potential energy savings, and indicating overall and intermediate targets.

- **Establishment or strengthening of institutional structures.** Dedicated institutions responsible for implementation of the energy efficiency and renewable energy policies should be established or strengthened. Such institutions may include national agencies for renewable energy and energy efficiency, regional networks of energy agencies under the umbrella of a national energy agency, and municipal energy agencies. These institutions should ensure the availability of reliable statistical information essential for understanding the current situation and monitoring the effectiveness of policies;

- **Energy tariff reforms.** The countries should conduct a tariff reform, which should not simply mean



higher tariffs for energy services but should primarily encourage energy efficiency measures and use of renewable energy sources. Tariff levels and tariff structure (also by the type of consumer) should reflect fully the costs of provision of energy services, including operation and maintenance costs and capital investments to improve services. The tariffs should internalize environmental costs in the energy prices;

- **Provision of financial incentives for energy efficiency and renewable energy sources.** The most comprehensive legislation cannot guarantee that energy efficiency and renewable energy measures are implemented without provisions in place that encourage and support investments. Financial incentives (e.g. capital grants, third-party finance, investment tax credits, property tax exemptions, production tax credits, sales tax rebates, excise tax exemptions etc.) focused on cost reductions and improving the relative competitiveness of sustainable energy technologies in given markets should be put in place;

- **Advanced feed-in tariffs.** Advanced feed-in tariff schemes should be introduced to ensure the least cost approach while considering future technology development, changes in market competition and optimum resource utilization;

- **Increasing public awareness and dissemination of information.** The national governments with participation of local and regional authorities should develop information and awareness raising programmes in order to inform citizens of the benefits and practicalities of energy efficiency measures and use of renewable energy sources;

- **Capacity building.** Capacity building programmes should be developed and implemented to better inform decision makers of the ways to improve energy efficiency and to achieve renewable energy objectives. Such programmes (appropriately customized for the specific audience) should provide information and training to government officials, investors, banks and project developers on the state-of-the art technologies, successful institutional models, innovative financing mechanisms, as well as methodologies and tools for practical identification and preparation of bankable projects.



Recommendations for Policy Reforms for the Project Countries

Albania

The development of a comprehensive renewable energy action plan is strongly recommended for the constant and sustainable growth of energy supply in Albania: this implies setting national targets for renewable energy sources, adaptation of the feed-in tariff and development of an action plan to encourage sustainable use of natural resources.

Development and implementation of the National Energy Efficiency Programme requires development of concrete actions, assignment of responsible institutions for monitoring the implementation progress and provision of financial incentives for industrial, services and residential sectors.

Information campaigns, and awareness raising and training programmes are recommended in order to inform citizens and companies of the benefits of energy efficiency and use of renewable energy and to provide practical guidelines. Capacity building for local financing institutions is recommended in order to facilitate financing of energy efficiency and renewable energy projects.

Belarus

Belarus has developed a number of strategic programmes to modernize the energy sector, improve energy efficiency and increase the use of renewable energy sources. Implementation of a transparent monitoring system for effective policy implementation is recommended.

In order to allow state-funded organizations to reap the benefits of energy efficiency and renewable energy investments, the Ministry of Finance should ensure that these organizations are allowed to enter into multi-year contracts and enable flexible budgeting principles. Introduction of transparent public procurement and tendering guidelines would encourage development of private investments, particularly in the sector of energy efficiency.

.....Bosnia and Herzegovina

The main recommendations for Bosnia and Herzegovina concern the development and implementation of measures to exchange information between the two entities and to develop common energy policies, such as the establishment of a Communication Council (with representatives of both entities), specifically dedicated to energy matters, and the development and implementation of a national energy strategy based on the relevant energy policy frameworks of the entities.

A tariff reform for heat and electricity should reflect the internalization of environmental costs in the energy prices (especially concerning electricity and heat produced from low-quality lignite) as well as adaptation of the existing feed-in tariff for electricity produced from renewable energy sources.

.....Bulgaria

Bulgaria has adopted extensive policy framework to promote energy efficiency and use of renewable energy sources. The challenge for policy-makers is to ensure the efficient implementation of policy measures and coherence of various sectoral instruments. Therefore, the establishment of a system, which will ensure monitoring, clarification and further development of the existing energy policies, is recommended.

In order to overcome the degradation of the district heating systems in Bulgaria, development and implementation of a least-cost investment plan for the rehabilitation of district heating is recommended. In order to increase the number of commercial banks participating in financing energy efficiency projects, experts from the [Bulgarian Energy Efficiency Fund](#) (which has proven to be a successful financing instrument) should provide assistance and support for awareness raising and capacity building among local banks.



.....Croatia

Policy development to promote energy efficiency and use of renewable energy sources is well advanced in Croatia. However monitoring of effective implementation of the policies and simplification of administrative procedures are recommended. In particular, establishment of a transparent one-stop authorization procedure for energy efficiency and small renewable energy projects would be a welcome step.

Other recommendations include development of public procurement guidelines and a master plan for expansion of the transmission grid.

Implementation of advanced feed-in tariff schemes to support electricity produced from high-efficiency cogeneration plants and other measures to promote demand for heating and cooling from renewable energy sources is also recommended. At the same time, marketing efforts and capacity building directed towards local financing institutions are necessary to ensure that available financing mechanisms are promoted among bank customers.

.....Kazakhstan

Given the vast size economic diversity of the country, decentralization of regulation and administration from national to regional level with mandatory requirements for development and effective implementation of



regional energy strategies based on national guidelines are recommended for Kazakhstan. In order to reinforce the implementation and monitoring of energy efficiency and renewable energy policies, it is recommended to establish a network of regional Energy Agencies under the supervision and coordination of a National Energy Agency.

Provision of financial incentives for energy efficiency in form of a dedicated fund such as the EU/EBRD Small Municipalities Finance Facility is recommended. The existing feed-in tariff for electricity from renewable energy sources should be further developed in order to ensure transparency and non-discrimination for potential investors.

In order to create a positive image for investments in sustainable energy, the Government should develop information campaigns and awareness raising and training programmes. A training and certification programme for energy auditors should be at the core of the capacity building programme.



.....Republic of Moldova

Given the economic constraints of the Republic of Moldova and the important role of the agricultural sector in the national economy, the establishment of a biomass energy programme is recommended to fully exploit the large biomass potential of the country and significantly increase the share of renewable energy sources at a relatively low cost. In order to support this biomass for energy programme, adaptation of the Land Code to overcome significant fragmentation of land ownership and dedicated spatial planning are recommended. In order to ensure transparency in public procurement and to foster a competitive environment for private business, transparent public procurement and tendering guidelines should be established.

From the economic point of view, in order to stimulate energy efficiency and renewable energy investments at the municipal level, a dedicated fund, such as the EU/EBRD Small Municipalities Finance Facility should be established by the Government, with support of international financing institutions.

In order to create a positive image for investments in sustainable energy, the Government should develop information campaigns for general public and awareness raising and training programmes for local policy makers, commercial banks and project developers.

.....Romania

Romania has the largest oil and gas reserves in Central Europe, but still is a net energy importer. The country needs to diversify its energy sources, including promotion of renewable energy use. In particular, to overcome barriers to more efficient use of wood as energy source and to increase sustainable use of existing forest resources, a wood energy programme should be developed and implemented.

In order to overcome the current situation with gas prices for customers that are below costs and to increase financial viability of energy efficiency projects, the Romanian Energy Regulatory Authority should proceed with full liberalization of the national gas market and establish a schedule for gas price increases to gradually reach cost recovery levels for tariffs.

The Government should improve dissemination of information about project financing schemes targeted to project developers, municipalities and local banks and their customers.

.....Russian Federation

The recent Law on Energy Saving and on Increasing Energy Efficiency and on Introduction of Changes in Selected Legislative Acts of the Russian Federation of late 2009 is likely to be the key to the efforts of the Russian Federation in increasing energy efficiency. Therefore, strong attention must be paid to the effective

implementation of the new regulatory framework, especially regarding the availability of sufficient financial means to implement the provisions of the Law, and the development of a network of agencies at the national, regional and local level.

Further development of policies to support energy efficiency and renewable energy sources should concentrate on secure energy supply in the entire country, on the modernization of the infrastructure (particularly the power transmission and distribution grids, which play a key role in the development of renewable energy projects) and on the development and implementation of a comprehensive regulatory framework for renewable energy sources similar to the one developed for energy efficiency.

.....Serbia

Serbia should concentrate on the implementation of the national policy framework, which includes a market-based regulatory framework enforced by an independent regulator and support of energy efficiency and renewable energy sources. In parallel, the energy infrastructure must be further modernized, e.g. through a



least-cost investment plan for district heating, through the complete rollout of heat metering and through establishment of a consumption statistical database.

Current district heating subsidies hamper energy efficiency in the district heating sector. Environmental costs associated with mainly coal-based electricity production are not taken into account and thus artificially decrease energy costs and hinders development of profitable energy efficiency projects. Therefore, a tariff reform for heat, adaptation of the feed-in tariff to include high-efficiency cogeneration and the provision of financial incentives for energy efficiency is recommended.

To overcome lack of awareness with regard to sustainable energy, the Government should develop information and awareness raising campaigns and implement training and capacity building programmes for energy auditors, local policy makers and local financing institutions.

.....The former Yugoslav Republic of Macedonia

Increased use of renewable energy sources and improved energy efficiency could significantly improve the security of supply and reduce energy import dependence of the former Yugoslav Republic of Macedonia.



Therefore, an acceleration of the policy-making progress in this sector is recommended, with the adoption of dedicated laws and action plans, establishment of municipal energy agencies, implementation of transparent public tendering procedures and development of a programme for sustainable management of wood energy.

Implementation of feed-in tariff for electricity from renewable energy sources is recommended in order to encourage investments in this sector. Another recommendation is establishment of capacity-building and training programmes for project development and project financing in the areas of sustainable energy.

.....Ukraine

The energy policy of Ukraine is mainly driven by the desire to improve energy security and reduce natural gas imports. To ensure implementation of the strategic objectives, monitoring and promotion of implementation of already developed policies is recommended. Development of a National Energy Efficiency and Renewable Energy Action Plan with clear targets and implementation steps is also recommended. Targeted actions in the area of district heating are necessary, such as development of a least-cost investment plan for district heating, a heat tariff reform and introduction of incentives for heat from renewable energy sources.



CONCLUSIONS

The conducted analysis resulted in the development of a set of recommendations for policy reforms addressed to the policymakers in the project countries, in order to overcome the existing barriers to investments in energy efficiency and renewable energy projects. All recommendations provided meet the following criteria:

- They have potential to provide significant energy savings or generate significant amounts of renewable energy sources at a relatively low cost;
- They address existing market barriers and significant gaps in existing policy frameworks;
- They are broadly supported by international institutions and experts.

The recommendations present a cohesive set of measures and instruments, responding to the need of overcoming barriers to energy efficiency and renewable energy, which are pervasive, dispersed, and complex. The implementation of the full set of measures is highly recommended to achieve significant improvements in energy efficiency and use of renewable energy. At the same time, before an implementation programme can begin, it is essential to set priorities in the implementation of policy reforms. For this purpose, the governments should focus on three clusters of measures, each of which is necessary to achieve the full energy efficiency and renewable energy potential in the project region:

- **“Quick Wins”** will demonstrate some rapid results and increase political support. These measures can be introduced in less than a year and are likely to produce significant impact at moderate costs;
- **“Essentials”** are the backbone of a comprehensive energy efficiency and renewable energy policy, affecting the areas of greatest potential by raising standards and stimulating investments that are already financially viable;
- **“High Cost, High Return”** measures will remove fundamental barriers and will make more energy efficiency and renewable energy investments financially viable. These interventions carry a much higher initial cost to the economy but most of them have a high return in terms of energy savings and are crucial to ensure long lasting impact and sustainability.

Another essential step towards successful implementation of the policy reforms recommended is the allocation of clear responsibilities for implementation and monitoring to governmental institutions and agencies. Development of an action plan or a roadmap including a realistic estimate of the necessary timeframe and resources and provision of dedicated financial and other resources would be critical for this purpose.

Development and successful implementation of policy reforms to support energy efficiency and renewable energy is vital for the economies in the project countries in order to overcome the present dependency on energy imports (with the exception of the Russian Federation and Kazakhstan) and non-rational use of energy resources as well as to mitigate adverse climate change effects and should be therefore assigned a high priority in the political agenda of the national governments.



SUPPORTING INSTITUTIONS

- United Nations Foundation (UNF) and the United Nations Fund for International Partnerships (UNFIP)
- Fonds Français pour l'Environnement Mondial (FFEM)
- United Nations Environment Programme/ Global Environment Facility (UNEP/GEF)
- European Business Congress e.V. (EBC)

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