

UN Economic Commission for Europe

Policy Reforms to Promote Energy Efficiency
and Renewable Energy Investments in **Kazakhstan**

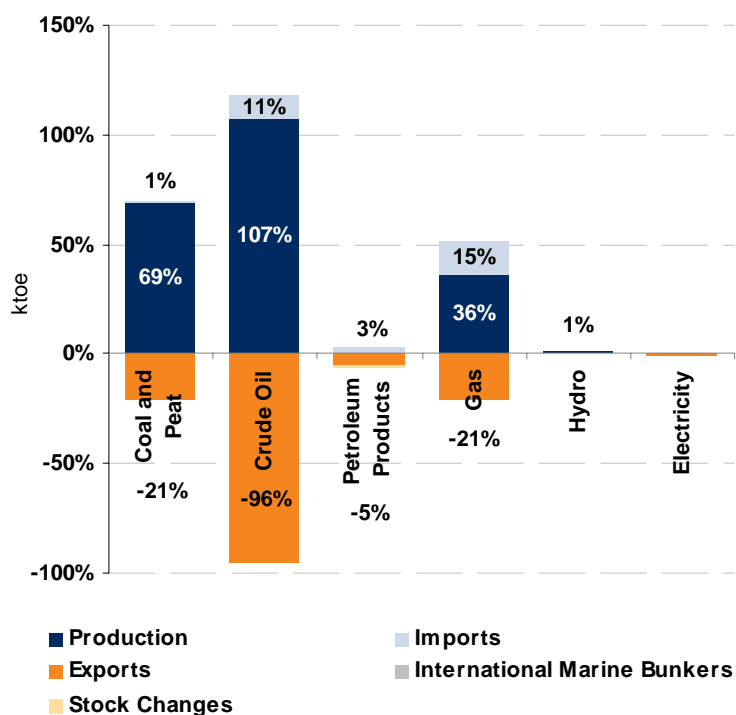
Seminar on Policy Reforms to Promote
Energy Efficiency and Renewable Energy Investments

Geneva, October 7.-8., 2009

Energy Balance of Kazakhstan

Kazakhstan is the second largest producer of oil and coal among the Commonwealth of Independent States

Energy Balance



Comments

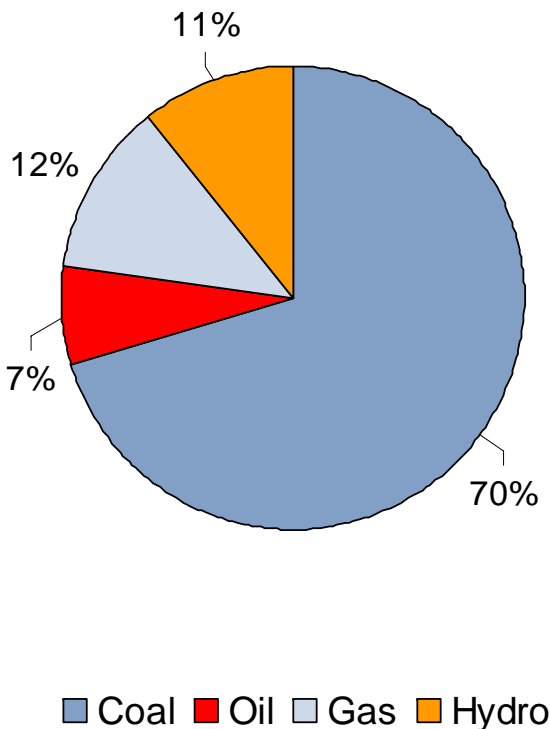
- Kazakhstan has considerable reserves of oil and gas concentrated in its western region
- Kazakhstan has also significant coal reserves, especially in Ekibastuz and Karaganda
- Kazakhstan has the highest primary energy surplus the project region (113%)
- Despite its vast energy resources, Kazakhstan imports significant amounts of gas and oil from Uzbekistan
- Renewable energy sources play a negligible role in the overall energy balance of Kazakhstan

Source: IEA 2006

Power Generation in Kazakhstan

Kazakhstan relies heavily on coal for electricity generation; however, nearly 8 TWh of electricity is produced yearly from hydro power

Energy Sources for Power Generation



Comments

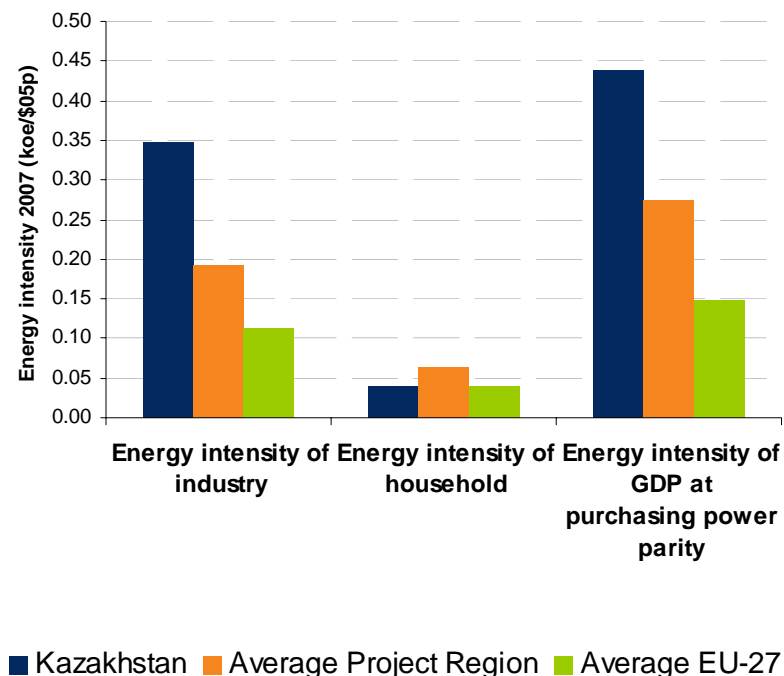
- 70% of the total electricity generation in the country (50 TWh) derives from coal power plants, mainly concentrated in two sites (Ekibastuz and Aksu)
- Despite Kazakhstan's significant gas resources, gas-fired power plants generate only 12% of the total electricity
- 11% of the total electricity production is based on hydropower, for the large majority from large hydro
- Of the total installed capacity of 19 GW, only 15 GW are currently in use due to old and inefficient equipment
- Construction of a nuclear power plant in Aktau is expected to start in 2011

Source: IEA 2006

Energy Intensity in Kazakhstan

Kazakhstan has the highest energy intensity within the project region

Energy Intensity



Source: Enerdata 2007

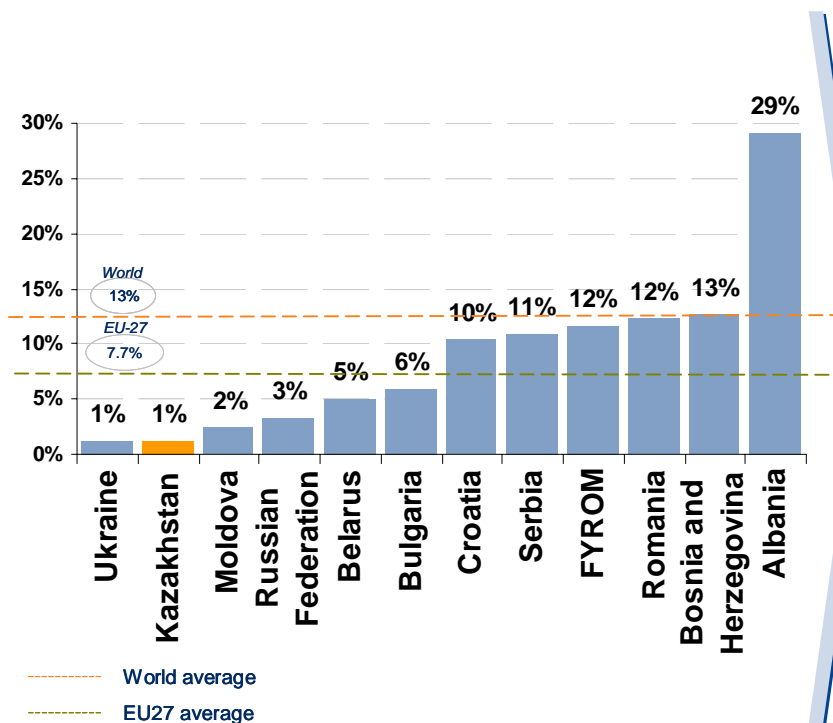
Comments

- Kazakhstan's overall energy intensity is triple the EU-27 average and considerably higher than the project region average
- The industrial sector accounts for more than 60% of the national electricity consumption and 40% of the primary energy consumption
- The energy intensity of the household sector increased by 190% since 1997; it is however lower than the average of the project region and in line with the EU-27 average

Renewable Energy Sources in Kazakhstan

Kazakhstan's share of renewable energy sources in the total primary energy supply is among the lowest within the project region

Renewable Energy Sources



Comments

- Renewable energy sources account for only 1% of the total primary energy supply
- 90% of all renewable energy sources are based on hydro power, while combustible renewables and waste account for 10%
- Hydro power plants generated 11% of the total electricity generation in 2006
- Despite huge potential for most RES, their deployment is still very limited
- A project for development of wind power plants is ongoing in the Djungar Gate region

Source: IEA 2006

Barriers for Investments in EE and RES in Kazakhstan

Huge availability of fossil fuels and low government commitment in the past, have hindered the development of energy efficiency and renewables projects in Kazakhstan so far

**Legal,
institutional
and
administrative
barriers**

- **Regulation on EE has never been set in force so far and there are neither targets, nor an action plan**
- **The uncertain status regarding the Kyoto protocol has prevented the development of CDM/JI projects**
- **Inefficient infrastructure from the former Fuel-and-Energy Complex hinders the rational use of resources**

**Economic and
financial
barriers**

- **A project-based feed-in tariff for RES has been developed only recently**
- **However, the new feed-in tariff is subject to non-transparency and carries discrimination risks**

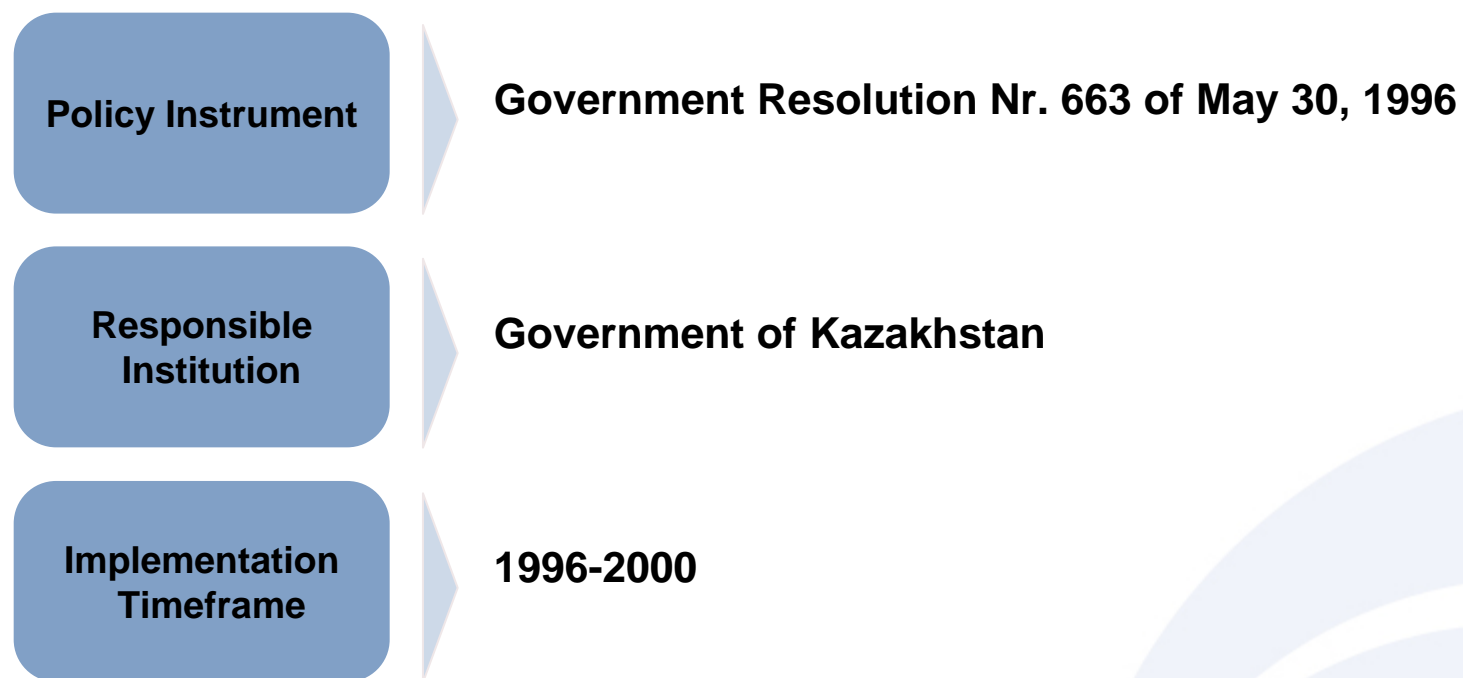
**Lack of
awareness,
human
capacities and
professional
skills**

- **The huge availability of fossil fuels have so far prevented the development of public awareness for energy efficiency and renewable energy sources**

Successful Policy Reforms in Kazakhstan

A successful policy reform in Kazakhstan was the reorganization of the electricity sector in the nineties

THE RESTRUCTURING AND PRIVATIZATION PROGRAM SEPARATED THE LIBERALIZED SECTORS (PRODUCTION AND CONSUMPTION) FROM THE NATURAL MONOPOLIES (TRANSMISSION AND DISTRIBUTION)



Privatization and restructuring process in Kazakhstan

The reorganization of the electricity sector allowed Kazakhstan to create a competitive market environment in the electricity sector

Description

The privatization and restructuring program established separate distribution, transmission and generation companies and led to privatization of most generation assets

Beneficiaries

- Foreign investors such as AES and Access Industries from USA, who were able to enter the generation market in Kazakhstan
- Final consumers, who profit from the lowest electricity prices in the Commonwealth of Independent States
- National Government, who benefits from the revenues of privatization and investors' presence in the country

Results

- Creation of separate transmission, distribution and generation companies
- Creation of a competitive wholesale electricity market, which accounts for about 60% of the total consumption

Long-Term Effects

The reform had positive effects on the creation of a competitive market and decreasing tariffs on electrical power within the country

Recommendations to overcome barriers for investments in EE and RES in Kazakhstan

The adaptation of the existing renewables law is recommended in order to establish an advanced feed-in tariff scheme in Kazakhstan

Legal, institutional and administrative barriers

- **Monitoring of policy implementation**
- **Development of energy strategies at the regional level**
- **Transparent public procurement guidelines**
- **Creation of energy agencies network**

Economic and financial barriers

- **Small municipalities energy efficiency and renewable energy finance facility**
- **Adaptation of existing law supporting renewable energy use**

Lack of awareness, human capacities and professional skills

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

Recommendations to overcome barriers for investments in EE and RES in Kazakhstan

Legal, institutional and administrative barriers (1/3)

Monitoring of policy implementation

- **The Energy Sector Development Program until 2030 sets the framework for the promotion of energy efficiency and renewable energy in Kazakhstan. However, there are few signs of progress in policy implementation, e.g. the Law on Energy Savings of 1997 was never effectively implemented.**
- **An institutionalization of regular energy policy monitoring, analogous to the recommendation for Belarus and Bulgaria, should aim at developing and clarifying policies, monitoring for compliance and implementation effectiveness, continuous improvement and appropriate use of funds.**
- **The Ministry of Energy and Mineral Resources of the Republic of Kazakhstan shall assign one or more new or existing authorities or agencies for the overall control and responsibility for monitoring of policy implementation. The results of the monitoring and recommendations shall be summarized in an evaluation report.**

Recommendations to overcome barriers for investments in EE and RES in Kazakhstan

Legal, institutional and administrative barriers (2/3)

Development of energy strategies at the regional level

- **Decentralization of regulation and administration from national to local level, calls for the development and implementation of regional energy strategies 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 region.**
- **The content of the Provincial Energy Strategies should comprise:**
 - **indicative overall and intermediate targets,**
 - **a description as well as ex-post evaluation of the current measures promoting energy efficiency and renewable energy (e.g. laws, regulations, support and financing instruments available on municipal, regional, national and international level, soft measures such as information campaigns, training and capacity building initiatives etc.),**
 - **a description of new measures including authority in charge for implementation, and expected date of implementation,**
 - **an ex-ante evaluation of the expected contribution of each measure in place and planned to reach the overall and intermediate target in terms of energy saved and socio-economic effects,**

Recommendations to overcome barriers for investments in EE and RES in Kazakhstan

Legal, institutional and administrative barriers (3/3)

Transparent public procurement guidelines

- **Corruption and administrative restrictions prevent foreign companies in investing in energy efficiency and renewable energy projects in Kazakhstan.**
- **To overcome this barrier transparency on procurement opportunities, contract evaluation and award procedures is required. Therefore the development of Standard Bidding Documents as guideline for transparent procurement is highly recommended.**

Creation of energy agencies network

- **Kazakhstan lacks an institutional organization in charge of implementation and monitoring of energy efficiency and renewable energy policy.**
- **Creation and work of Energy Agencies is a way for capacity building and reinforcement of local communities, project developers and private investors for development of cooperation with local and regional authorities. Such Agencies could facilitate private and public sector investments in sustainable energy. The Provincial Energy Agencies should have the primary responsibility for implementation and monitoring of energy efficiency and renewable energy policy. Due to the size of the country, the creation of a network of Provincial Energy Agencies under the umbrella of a National Energy Agency is recommended. Allocation of adequate funding is a prerequisite for the agencies to be active.**

Recommendations to overcome barriers for investments in EE and RES in Kazakhstan

Economic and financial barriers (1/2)

Small municipalities energy efficiency and renewable energy finance facility

- **Lack of municipal funds dedicated to energy efficiency and renewable energy is a barrier towards sustainable development at local level.**
- **To overcome this barrier, a dedicated fund such as the EU/EBRD Small Municipalities Finance Facility could be established.**
- **The project objectives were to:**
 - **Meet the need for long-term funding for municipal infrastructure and energy efficiency investments;**
 - **Use local intermediaries to reach smaller municipal borrowers than EBRD can directly;**
 - **Share risk with banks to encourage them to extend the maturities of municipal loans;**
 - **Build the institutional capacity of banks in municipal finance, in particular with respect to energy efficiency;**
 - **Improve the creditworthiness of small municipal borrowers through programmes to enhance creditworthiness;**
 - **Enhance the capacity of municipalities to structure and apply for financing for energy efficiency investments.**
- **The set up of such a Financing Facility is highly recommended in Kazakhstan with the aim to stimulate energy efficiency and renewable energy investments at municipal level.**

Recommendations to overcome barriers for investments in EE and RES in Kazakhstan

Economic and financial barriers (2/2)

Adaptation of existing law supporting renewable energy use

- **Investors in renewable energy generation require announced and guaranteed financial incentives in combination with obligation to purchase electricity from renewable energy sources and preferential grid access.**
- **Law on “Support of the renewable energy sources use” adopted by the Kazakh Parliament in June 2009 foresees preferential grid access, a purchase obligation as well as the provision of land plots for the construction of renewable power plants. However, the fact that tariffs have to be negotiated bilaterally between the project developer and the Ministry of Energy and Mineral Resources is a clear barrier towards investments in renewable energy projects.**
- **Thus, the establishment of an advanced feed-in tariff scheme is highly recommended.**

Recommendations to overcome barriers for investments in EE and RES in Kazakhstan

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 of a domestic market for energy efficiency and renewable energy projects in Kazakhstan.**
- **To overcome this barrier and to create a positive image for investments in sustainable energy, the Kazakh government with participation of network of provincial energy agencies recommended above, shall develop suitable information, awareness-raising, guidance or training programs 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.**

Recommendations to overcome barriers for investments in EE and RES in Kazakhstan

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 financing institutions

- **By the end of 2008, the European Bank for Reconstruction and Development (EBRD) established the Kazakhstan Sustainable Energy Financing Facility (KAZSEFF) providing USD 75 mln in the form of dedicated credit lines to local financial institutions for on-lending to private sector companies to finance investments in energy efficiency in the industrial sector and small renewable 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.**

Conclusions

Kazakhstan has still a long way to go regarding EE and RES; however, the market environment is competitive and the potential for investments huge

- **Kazakhstan has the highest energy surplus of the project region due to its vast natural resources**
- **However, the energy infrastructure is used inefficiently, energy intensity is the highest in the project region and deployment of RES is negligible**
- **Due to the reorganization of the electricity sector, the market environment is competitive and the privatization of assets will hopefully lead to higher efficiency in the management of assets in future**
- **Due to the vast size, climatic conditions and structural nature of the industry sector, Kazakhstan disposes of a huge potential for RES and EE projects**
- **Despite the law commitment in the past, the Kazakh government has started several initiatives recently for the development of EE and RES:**
 - **A new Law on Renewables has been introduced in July 2009**
 - **The Draft Law on Energy Savings should be adopted in Autumn 2009**
- **The adaptation of the existing renewables law is recommended in order to establish an advanced feed-in tariff scheme in Kazakhstan**

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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 wire crosses over a metal pulley. 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