Seventh International Forum on Energy for Sustainable Development

Promoting Energy Efficiency in Kazakhstan

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Irina Goryunova
Assistant Resident Representative
UNDP in Kazakhstan
CHALLENGES and KAZAKHSTAN’S POLITICAL VECTOR ON TRANSITION TO “GREEN ECONOMY”

0.88 t.o.e/$1000
Power intensity GDP
(2005 prices)

5 085 kw*hr.
Electricity consumption per capita

>1%
Renewable energy share

97 mln.t.CO₂
CO₂ reduction at 25% by 2030

73% energy
coal generated

up to 35%
Heat losses in grids

up to 32%
Non-production water losses

1992
Kazakhstan accepted obligations on realization of program and principles integration of Global Conventions (Rio de Janeiro)

2011
Kazakhstan stated the idea on inter-region partnership at the 66th session of the UN General Assembly. The idea is mentioned in the text of Astana Initiative “Green bridge”

2012
“Green bridge” partnership program for 2011-2020 was approved by all the states at the UN Conference on sustainable development (Rio + 20)

2016
Approval of the Paris Agreement by lower Chamber of Parliament (October 12).
RK goals to the Paris Agreement:
INDC – 15% absolutely (58 mln. t. CO₂ equiv.) and 25% if support is given (97 mln. t. CO₂ equiv.) by 2030

2017
Republic of Kazakhstan is preparing to host the International Specialized Exhibition Astana EXPO-2017 with the theme “Energy of the Future”
UNDP support of Kazakhstan Government on transition to “Green Economy”

Through realization of Pilot projects the UNDP identifies institutional, legal, economic, social, and other barriers which prevent from implementation of steps on transition to “Green economy”.

Based on the gained Pilot projects experience the UNDP offers its recommendations to the Government of Kazakhstan in order to eliminate the identified barriers.
Pilot projects experience of UNDP-GEF and partners

Installation of automated heating units in buildings

- Regulating of heat supply depending on air temperature outside
- Investments per one building from $10,000
- Pay-back period from 3 to 5 years
- Energy saving and CO2 reduction up to 35%
- Where: institutions connected to central heating

Modernization of existing boiler-rooms to EE modern types

- Increase of performance index of the fuel burnt
- Investments per one school from $15,000
- Pay-back period from 4 to 6 years
- Energy saving and CO2 reduction up to 50%
- Where: institutions with no connection to central heating

Modernization of street lighting systems

- Replacement of mercury containing lamps with LED with automated dimming function
- Investments per one street lighting fixture from $600
- Pay-back period from 2 to 3 years
- Energy saving and CO2 reduction up to 30%
- Where: street lighting in cities

Modernization of indoor lighting systems

- Replacement of mercury containing lamps with LED
- Investments per one school from $15,000
- Pay-back period from 5 to 6 years
- Energy saving and CO2 reduction up to 60%
- Where: indoor lighting of all the public buildings

Transition to sustainable urban transport

- Streets reconstruction in terms of bicycle-pedestrian infrastructure
- Investments per km $300,000 - $900,000
- Pay-back period from ___ to ___ years
- Increase of non-motor transportation, decrease of road accidents
- Where: cities

Institutions connected to central heating

- Participation in passing the new Law on energy saving and energy efficiency.
- Housing and utilities sector was included into the Law, added a new measure of energy saving – “thermal modernization of buildings”.
- New sites cannot be put into operation without heat meters and automated heating units.
- “Energy manager” is included as a part of systematic energy efficiency measures.
- The first ESCO company formed.

Promotion of ESCO – market subject as a mechanism for realization of energy efficiency measures and technologies.

- Assistance in developing a system for LED products quality control through creating testing laboratories.

Development of new construction norms and regulations for improving municipal roads.

- Social propaganda of bicycle-pedestrian movement on streets and in media.

Promotion of ESCO – market subject as a mechanism for realization of energy efficiency measures and technologies.


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Sustainable city

**Barriers**

- Deterioration of public infrastructure in municipal sector requires modernization, reduction of energy losses, and introduction of modern energy saving technologies
- Poorly developed market of ESCO companies
- Planning of municipal facilities often doesn’t take into account peculiarities of linked facilities

**Plans**

- Promotion of standards of complex interconnected municipal planning when planning one sector of municipal facilities is inseparably linked with others directly or with close sectors (transport and infrastructure, housing and utilities, green districts, industry, municipal agriculture)
- Assistance in creation of institutional structures for realization of municipal low-carbon plans
- Promotion of changes in normative-legal documents using the best world practices for people’s comfort living
- Involvement of population into processes related to improvement of urban environment
- Study and promotion of issues related to attraction of investments into sectors of municipal facilities that have potential for decrease of energy consumption and/or energy generation from urban wastes
Green economy in water sector

Barriers

- Limited access to new "green" technologies in water sector
- Unaccomplished economic tools in sector of water supply and sanitation
- Inefficient management of water infrastructure

Results/plans

- Developed and described 18 models of green economy in water sector
- Developed the Program on monitoring, improvement and conservation of favorable environment in Ili-Balkhash basin with consideration of Green Economy principles
- Given assistance in introduction of international water legislation (Water and Health Protocol, Protocol on Strategic Environmental Assessment)
- Designed the business-model on management of hydraulic facilities to increase its financial attractiveness
- Offered precise mechanisms to improve economic tools in water sector (pricing, subsidies, etc.)
LOW CARBON PROJECTS

- Jobs
- Investments
- Business development
- Quality of infrastructure
- Bills for electricity consumption
- CO2 emissions
THANK YOU FOR YOUR ATTENTION

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