



Energy policy of Uzbekistan: opportunities, problems and prospects

Kamila Mukhamedkhanova

Center for Economic Research, Uzbekistan

Uzbekistan: general information

- Area: 447,4 thous. sq. km.
- Population: 28,0 mln., (incl. able-bodied population – 16,3 mln)



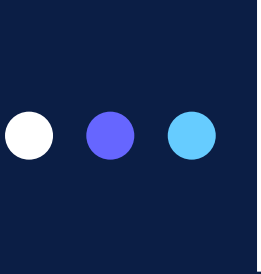
■ Uzbekistan borders on 5 countries with the total population of 60 mln. people



Energy sector of Uzbekistan

1. Energy sector of Uzbekistan produces:
 - **27,6%** of total output of the industrial sector
 - **86,2%** of total carbon emissions
2. **Change in energy prices** has a significant impact on prices of other commodities in the economy

➔ **Energy sector is important to ensure economic, political and social stability and sustainable development in the long term**



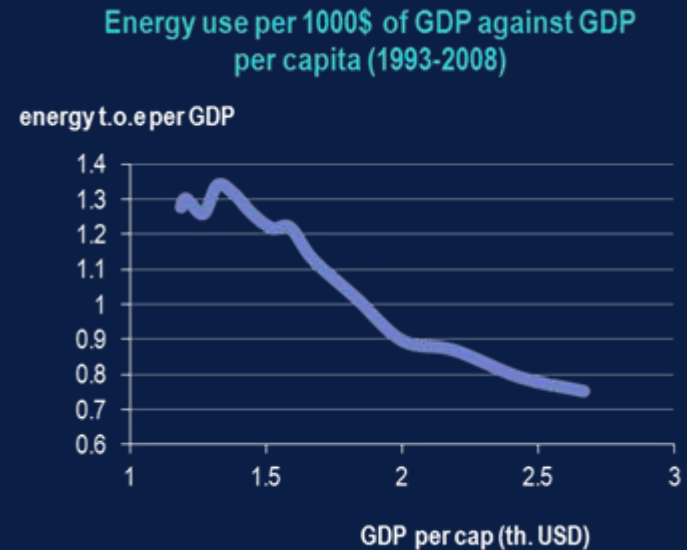
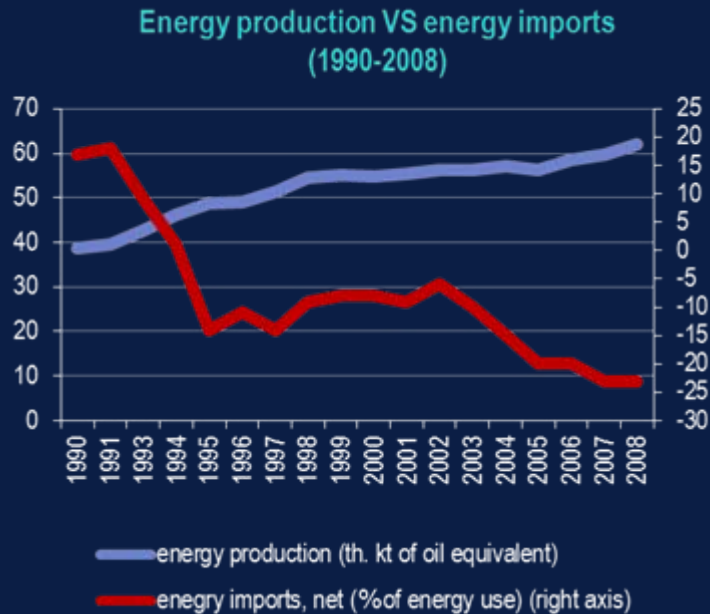
Energy policy of Uzbekistan: retrospective analysis

1- stage (1991-1996) - Energy independence and reorientation of the fuel-energy market to achieve society's priority social goals.

2 –stage (1997 – 2002) – Introduction of market management mechanisms; incentives for domestic and foreign investment into the sector.

3 – stage (2003 – present) – Raising energy efficiency and introduction of renewable energy sources

Energy policy of Uzbekistan: results



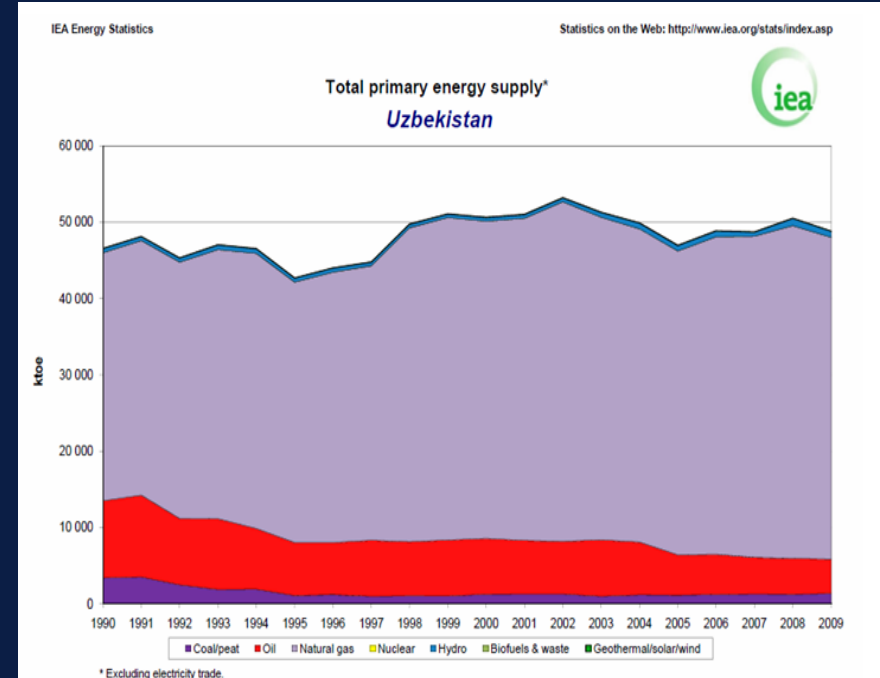
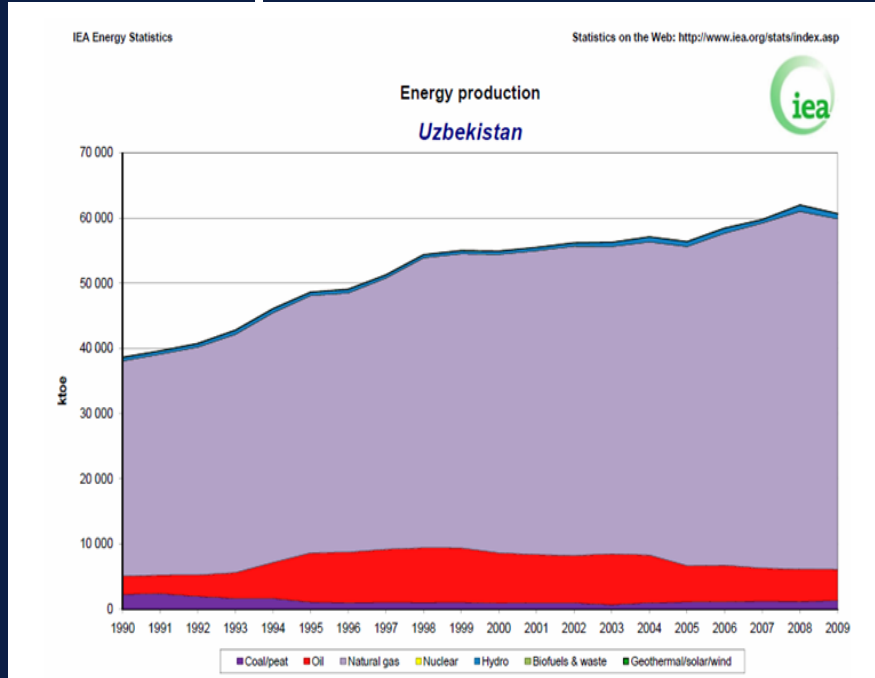
Energy self-sufficiency is provided.

Self-sufficiency index is 1.23 VS EU -0,49, OECD – 0,7

Energy importer → energy exporter

Energy intensity has been decreasing in the recent years

Energy supply and demand



- **Energy production** has been increasing since gaining the independence and reached **60 mln. t.o.e.** by 2010.
- The **demand for primary energy** is **50 mln. t.o.e.** The structure of energy supplied to economy and population is dominated by natural gas.



Access to energy

Access	Urban	Rural	General
Electricity	100%	94%	97%
Gas supply	100%	90%	95%

- **Gas** transportation system of 13 thous. km
- Developed system of transportation and distribution of **electricity** (0,4-500 kWt)

Nearly 100% access to gas and electricity → sustainable energy supply



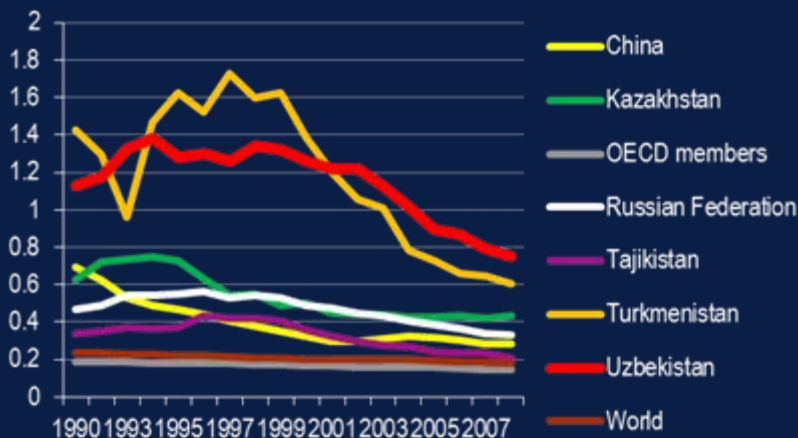
Energy rate policy

	2000	2005	2006	2007	2008	2011
Energy rates for enterprises, US cents	3,17	2,88	2,98	3,23	3,95	4,6
Energy rates for population, US cents	1,98	2,75	2,97	3,23	3,95	4,6

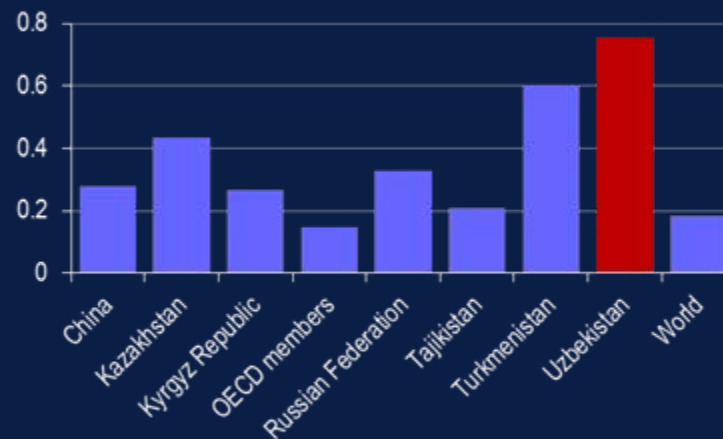
Energy rate policy is oriented at raising **energy efficiency**, ensuring **social stability** and **raising competitiveness** of enterprises.

Energy efficiency

Energy intensity (t.o.e. per 1000 USD of GDP)



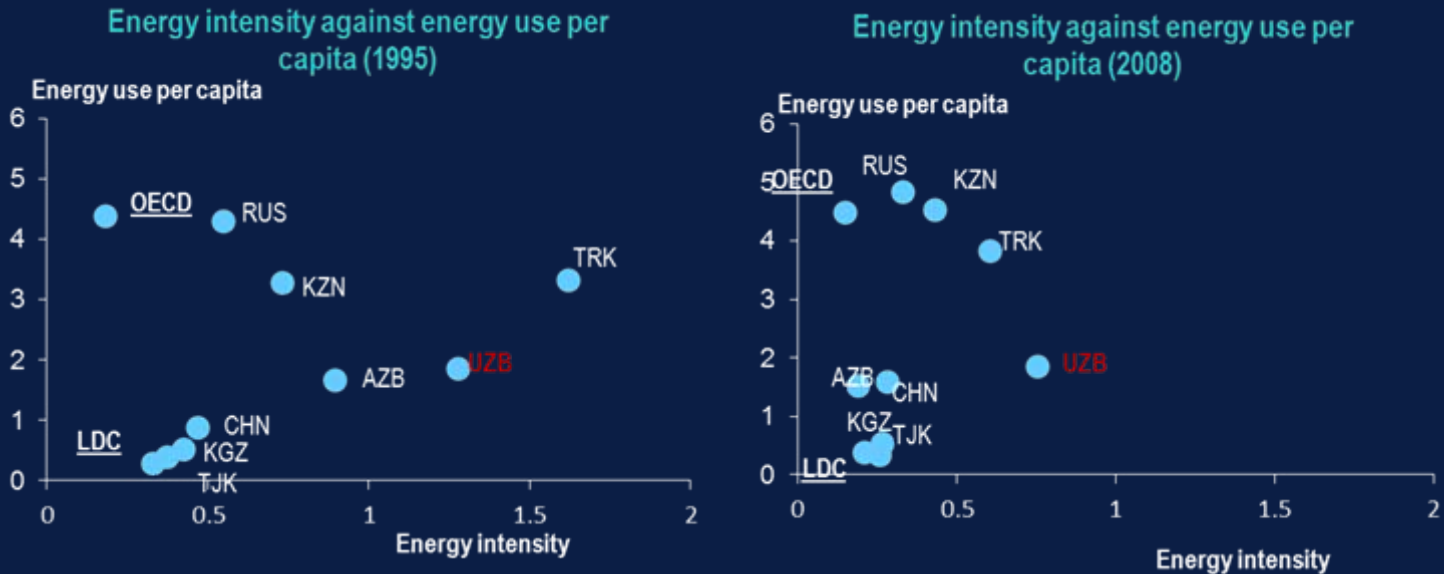
Energy intensity in 2008 (t.o.e. per 1000 USD of GDP)



Despite a sharp decrease, energy intensity is still high

→ Energy saving policy is essential for Uzbekistan

Per capita energy supply & energy intensity



- Uzbekistan is in between OECD and LDC →
- Increase in per capita energy supply could contribute and improve human development
- Increase in energy use should be provided without “wasteful use of resources”



Challenges:

- ✓ Depletion of **gas** reserves in **28-30** years, **coal** reserves – in **50** years
- ✓ **High energy consumption** of the economy
- Economic growth may be constrained by increasing **scarcity of traditional energy resources**
- ✓ Energy saving potential is **18-20 mln t.o.e.** (35-40% of EC)
- ✓ The potential of **renewables** = current consumption of hydrocarbons * 3
- Sound justification for **energy efficiency on supply and demand side and development of RE**

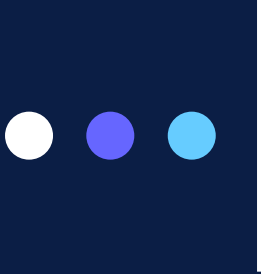


Energy sector of Uzbekistan: key problem

- **Main challenge**: to preserve the achieved results and ensure sustainable economic, social and environmental development in the long term
- **Key problem**: - The current “brown” pattern of energy sector will constrain sustainable growth and development in the long-term and present tremendous risks and challenges for future generations



Transition to a new “Green” model of energy sector is important to ensure sustainable development



Uzbekistan: expected benefits from energy saving and introduction of RE

- Total annual benefits from export of saved amount of natural gas - \$4, 664 bln
- Total annual benefits via carbon market schemes and mechanisms – \$ 625,8 mln
- “Green” jobs
 - renewables 175 th. jobs by 2020
270 th. jobs by 2050
 - green buildings 15 th. jobs by 2020
120 th. jobs by 2050
 - transportation 95 th. jobs by 2020
175 th. jobs by 2050



Key strategies:

- Improving **technologies** to ensure energy saving and introduce renewables;
- Development of the **legal framework** for the new pattern of energy sector;
- **Institutional reformation** of the energy sector and creation of **incentives** for energy efficiency and development of RE



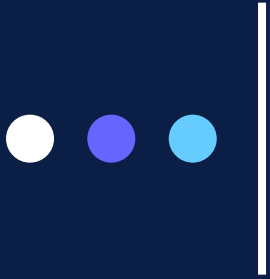
Energy Policy: CER's Research activities

- Transition to **Green Economy** in Uzbekistan: conceptual framework
- **Alternative energy** sources: opportunities and perspectives
- **Green buildings** in Uzbekistan: technologies, legal framework and incentives
- **Draft Law** "On renewable energy sources"
- Towards **Rio +20**: agenda for Uzbekistan
- Transition to Green Economy in Energy Sector: **Baseline assessment** for Uzbekistan
- "**Green**" transportation in Uzbekistan



Transition to Green Economy in Energy Sector: Baseline Assessment for Uzbekistan

1. Analysis and **assessment of the current situation** applying 4 A principle
 - Access
 - Availability
 - Affordability
 - Acceptance
2. **Qualitative analysis of greening potential** (policies, institutions and capacities)
Identification of **key problems** for sustainable “green” development at the following levels:
 - Technologies
 - Management
 - Normative base
 - Incentives
3. **Quantitative analysis** of “greening” potential: **how much resources can be saved and at which costs**. Construction of conservation supply curve for energy sector: the costs of saving per unit, resulting saving per technology
4. Development of effective **strategy framework** and practical **recommendations** for further progress towards green energy (new policies and programs; financial mechanisms of implementation etc.)



Thank you!