

# ENERGY EFFICIENCY POLICIES AND INVESTMENT PROJECT DEVELOPMENT IN UKRAINE



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## MAJOR ENERGY EFFICIENCY POLICIES IN UKRAINE(1)

- **1994 – Law on Energy Conservation**
- **1995 – State Committee on Energy Conservation**
- **1997 – National Energy Saving Program**
- **1998 – Wind Energy Program**
- **1999 – EBRD/UkrESCO I**
- **2002 - National Energy Saving Program (updated)**
- **2003 – Law on Alternative Energy Sources**
- **2004 – Law on Cogeneration**
- **2005 – National Energy Efficiency Agency**

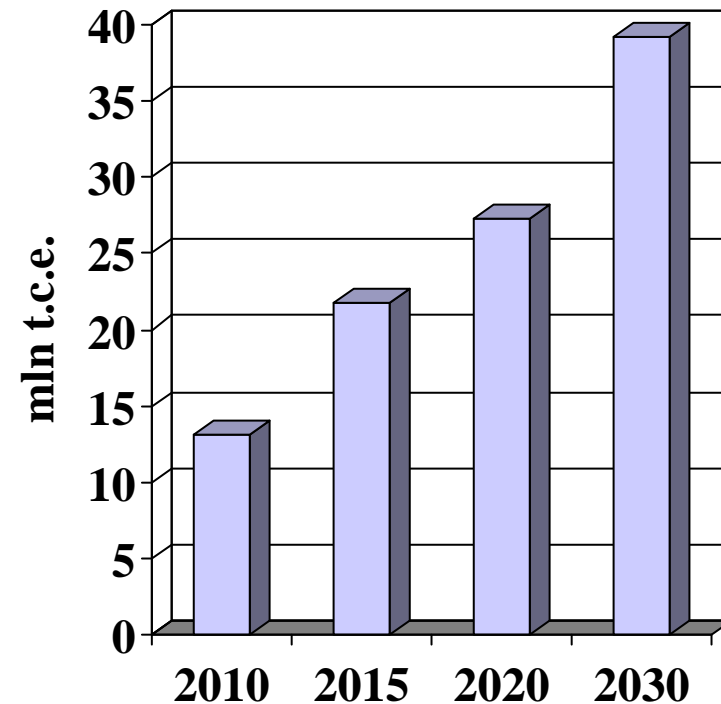
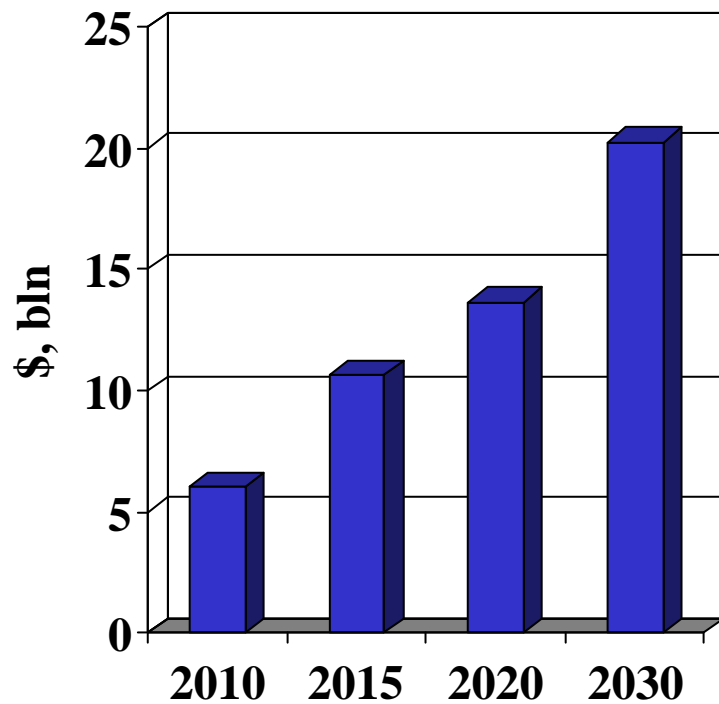
## **MAJOR ENERGY EFFICIENCY POLICIES IN UKRAINE(2)**

- **2006 – National Energy Strategy till 2030**
- **2006 – EBRD/UkrESCO II**
- **2006 – Program on Diesel Bio-fuel Development**
- **2007, Mar – Amendment to the Law on Energy Conservation**
- **2007, Mar – Amendment to the Laws on Profit Taxation and Customs Tariffs**
- **2007, Mar – Governmental Resolution on Partial Compensation of Interest Rates for Credits Used for Energy Efficiency Improvements in Power Sector;**
- **2007, Apr – Governmental Resolution on Subventions from State Budget to Local Budgets for Energy Efficiency Measures;**
- **2007, Apr – National Environmental Investments Agency**

## NATIONAL ENERGY STRATEGY TILL 2030: MAIN GOALS

YEAR	GDP ENERGY INTENSITY,%	ENERGY IMPORT,%
2005	100	55
2030	48	12

## ENERGY STRATEGY OF UKRAINE TILL 2030: Investments And Energy Savings



## LAW ON ALTERNATIVE ENERGY SOURCES (2003)

- Obligations for power and heat generation utilities and distribution networks to buy electricity and heat from alternative energy sources;
- Introduction of “green” tariff.

## LAW ON COGENERATION (2004)

- Obligations for power generation utilities and distribution networks to buy electricity from CHPs;
- Some tariff incentives.

## AMENDMENT TO THE LAW ON ENERGY CONSERVATION (2007, MAR )

### CREATION OF STATE FUND FOR ENERGY CONSERVATION

#### Sources for Fund formation:

- State Fund for Environmental Protection
- Payments for fuel and energy use;
- Penalties for violations of legislation on energy conservation.

## AMENDMENTS TO THE LAWS ON PROFIT TAXATION AND CUSTOMS TARIFFS ( 2007, MAR)

**Tax and customs fee credits and incentives for  
manufacturers and service providers of:**

- Energy saving equipment and materials;
- Equipment for production of renewable and alternative energy and fuels;
- Energy metering and control devices and systems;

## **GOVERNMENTAL RESOLUTION (2007, Apr) ON SUBVENTIONS FROM STATE BUDGET TO LOCAL BUDGETS FOR ENERGY EFFICIENCY MEASURES:**

- installation of heat and water metering and controls for multifamily residential buildings - \$60mln;
- upgrade of existing and installation of new energy efficient boilers, heat substations and heat distribution networks -\$60 mln;

**GOVERNMENTAL RESOLUTION (2007, Mar) ON PARTIAL  
COMPENSATION OF INTEREST RATES FOR CREDITS USED  
FOR NEW CONSTRUCTION AND ENERGY EFFICIENCY  
UPGRADE OF:**

- fossil fuel power plants;
- hydro and hydro accumulation power plants;
- power substations and networks.

## EBRD/UKEEP - ENERGY EFFICIENCY PROGRAMME FOR BANKS IN UKRAINE

Status: Board approved

Total project cost: EUR 100 million from EBRD.

Sub-projects:

- UKEEP - State Export Import Bank of Ukraine (UkrExim)
- UKEEP – Kreditprombank
- UKEEP – Bank FORUM

The project would result in:

- i) demonstration of the benefits of rational energy usage
- ii) building expertise (among the participating banks (PBs) and sub-borrowers)
- iii) increased financial intermediation targeted at rational energy utilization which will also improve operating efficiency.

The client: Ukrainian PBs which will on-lend the funds to sub-borrowers planning to undertake energy efficiency investments and renewable energy projects in the private sector.

## **EBRD PROJECT - UKRESCO II (2006)**

Status: Signed

The client: Ukrainian UkrEsco, a state owned joint stock company

Total project cost: US\$ 20 million

Project objective:

Enabling UkrEsco to continue its energy saving activities in Ukraine by financing energy saving investments which are repaid on the basis of future energy savings.

## JI PROJECTS PORTFOLIO IN UKRAINE (as for October 2007)

- Number of projects obtained LoE/LoA – 74
- Number of projects obtained LoA – 11
- Number of submitted projects – 81
- Cost range: \$2-800 million
- Total expected emission reduction for 2008-2012 – 85.5 million t CO<sub>2</sub> eqv.
- Total expected investments for 2008-2012 - \$5billion

## PROJECTS OBTAINED LOE/LOA BY SECTORS OF ECONOMY (as for end of 2007)

Technology improvements	17
Landfill gas utilization	16
CHP installation	10
Coal mine methane utilization	10
District heating rehabilitation	8
Energy efficiency / waste energy use	7
Natural gas transportation and distribution	3
Biomass utilization	1
Non-traditional and renewable sources of energy	1
Processing of liquid wastes	1
Total number of projects	74

## **PRIORITIES FOR ENERGY EFFICIENCY IN UKRAINE: DISDRICT HEATING**

Over 360 DH companies operate in Ukraine (4800 boiler houses, 17000 boilers)

Annual consumption:

- Fuel – 8.7-10.4 mln. tce
- Electricity– 1.4 -1.7 bn. KW\*h

Fuel and energy resources loss:

- Boiler houses – 15-20%
- DH networks – 20-25%
- Consumers – 15-27%

Fuel usage efficiency -  $\leq 50\%$

Annual GHG emissions – 15-18 Mt CO<sub>2</sub>e

## **SELECTED SUCCESSFUL PROJECTS IDENTIFIED AND DEVELOPED IN UKRAINE WITH UN ECE SUPPORT**

### **Kharkiv District Heating and Building Energy Efficiency Upgrade**

Total project cost – EUR160mln

First phase cost – EUR15mln

Investors – EBRD, WB, Municipality, Utility

### **Ivano-Frankivsk Cogeneration Project**

Total project cost – EUR 4mln

First phase cost – EUR1mln

Investors – Municipality, Utility, Local Banks

### **Rivne ESCO Project**

Total project cost – EUR 6mln

First phase cost – EUR1.5mln

Investors – GEF, Ukrainian Government, Municipality

## PRIORITIES FOR ENERGY EFFICIENCY IN UKRAINE: NATURAL GAS TRANSPORTATION AND DISTRIBUTION

	Measures	Required investments, \$ million	Annual gas savings, billion m <sup>3</sup>	Annual reduction in emission, million tonnes of CO <sub>2</sub> -equivalent	CO <sub>2</sub> reduction costs, \$/tCO <sub>2</sub>
1.	Energy efficiency improvement of compressor stations at main gas pipelines providing gas transit to the Western Europe	420.0	0.8	1.5	11.2
2.	Implementing cogeneration technologies in gas transmission system of Ukraine	980.0	5.0	9.2	4.3
3.	Losses reduction at gas distribution networks	1,140.0	0.8	11.9	3.8

## **BENEFITS FOR ENERGY EFFICIENCY AND CARBON INVESTORS IN UKRAINE**

- The potential for energy efficiency and carbon emission reduction projects is large due to energy intensive economy, obsolete equipment, limited financing availability
- There are possibilities to find significant amount of medium and large scale projects and thus reduce transaction costs
- Good prospects for quick JI projects approval
- Existing wide infrastructure of research and design organisations can facilitate high quality projects development



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