UKRAINE: FINANCING MECHANISMS FOR ENHANCING ENERGY EFFICIENCY IN BUILDINGS

State Agency on Energy Efficiency and Energy Saving of Ukraine
Main Priority: Reduction of Natural Gas Consumption

Dynamics of natural gas consumption in 2014-2017:

- 6 billion m³
  - € 1.2 billion saved in 2017
  - potential for reducing of annual consumption and substitution of natural gas from 2022

Achievements of 2014 - III quarter of 2018:

Invested in Ukrainian "clean" energy projects

\[ \sum \approx 1,6 \text{ billion euros} \]

In Renewable Energy:

- 2 000 MW of new heat capacities
  - Investments – 460 million €

- 958 MW of new renewable energy capacities
  - Investments – 910 million €, including:
    - 6 031 of families installed SPP with total capacity - 121 MW
      - Investments – 120 million €

In Energy Efficiency:

- 500 000 of families implemented energy efficiency measures via "warm" loans in the residential sector
  - Investments – 220 million €

- 204 ESCO-contracts are concluded in the public sector
  - Investments – 6,3 million €

* according to operational data of NISC "Naftogaz of Ukraine" and PJSC "Ukrtransgas" (without temporarily occupied territories)
Energy intensity in European countries (IEA, 2016)

<table>
<thead>
<tr>
<th>Country</th>
<th>Energy Intensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>0.09</td>
</tr>
<tr>
<td>Romania</td>
<td>0.08</td>
</tr>
<tr>
<td>Lithuania</td>
<td>0.09</td>
</tr>
<tr>
<td>Croatia</td>
<td>0.1</td>
</tr>
<tr>
<td>Hungary</td>
<td>0.11</td>
</tr>
<tr>
<td>Slovak Republic</td>
<td>0.1</td>
</tr>
<tr>
<td>Poland</td>
<td>0.1</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>0.15</td>
</tr>
<tr>
<td>Belarus</td>
<td>0.16</td>
</tr>
<tr>
<td>Ukraine</td>
<td>0.29</td>
</tr>
</tbody>
</table>

Households
- State and local programs of co-financing of energy efficiency
- Households stimulation on installation of wind and solar plants
- Energy labelling systems
- Full metering of energy consumption
- Stimulation of recipients of subsidies to save energy

Industry
- Stimulation through energy tax
- Energy Performance Contracts

Services, Public Entities and Agriculture
- Energy Performance Contracts
- The mechanism of energy management

Transport and Non-energy use
- Stimulation of liquid biofuels production
- Extension of electric vehicles usage
<table>
<thead>
<tr>
<th></th>
<th>Residential buildings</th>
<th>Public entities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Multi-Apartment</td>
<td>Private (Individual)</td>
</tr>
<tr>
<td>Number of Buildings</td>
<td>≈ 80 000</td>
<td>≈ 6.5 mln</td>
</tr>
<tr>
<td>Necessary Investment</td>
<td>≈ from 44 to 74 bln EURO*</td>
<td>≈ from 4 to 8 bln EURO*</td>
</tr>
<tr>
<td>Annual Saving Potential (in gas equivalent)</td>
<td>8 bln cubic meters</td>
<td>800 mln cubic meters</td>
</tr>
</tbody>
</table>

*depending on the thermal modernization level
STATE SUPPORT PROGRAM FOR HOUSEHOLDS ("WARM LOANS PROGRAM")

**Duration:** Active since Oct’2014

**Mechanism:**
Partial reimbursement of loans got by individual households & condominiums

**Financial intermediaries:**
Oschadbank, Privatbank, Ukreximbank, Ukrgasbank

<table>
<thead>
<tr>
<th>Year</th>
<th>Loans Issued, mln. UAH</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>28.0</td>
</tr>
<tr>
<td>2015</td>
<td>1,246.6</td>
</tr>
<tr>
<td>2016</td>
<td>1,458.9</td>
</tr>
<tr>
<td>2017</td>
<td>2,325.6</td>
</tr>
<tr>
<td>2018</td>
<td>1,014.7</td>
</tr>
</tbody>
</table>

**Support share:**
- 20% - for biomass boilers (35% for obtainers of housing subsidies)
- 35% - for energy efficiency measures for individual households
- 40% - for condominiums (70% for obtainers of housing subsidies)

**Funding:**
- EUR 190 million (≈6.1 billion UAH) has been distributed to ≈500,000 households
- EUR 72 million (≈2.3 billion UAH) – reimbursed by the Government (during 2014 - 2018)
- + 166 regional programs functioning in 2018 for extra reimbursement of «warm» loans

**Effect:** Estimated annual savings of resources in natural gas equivalent is 242 mln m³.

**Amounts of reimbursement:**
- in 2014 - 2.4 million UAH
- in 2015 - 302 million UAH
- in 2016 - 861 million UAH
- in 2017 - 818 million UAH
- in 2018 - 500 million UAH
Demand on WARM LOANS for HOAs has the highest dynamics – only in 2018 HOAs attracted as much loans as in 2014-2017 in total.
SUCCESSFUL CASES: LUTSK
("WARM LOANS PROGRAM")

Heat insulation
Individual heating unit
Modernization of engineering systems
Modernization of lighting
Installation of metering units

Total cost – 1,6 UAH million, incl.: 

Insulation:
Total cost – 1,3 UAH million
State reimbursement – 0,5 UAH million
+ local reimbursement program

Other measures:
Total cost – 339 thousand UAH
State reimbursement – 165 thousand UAH
+ local reimbursement program

In the framework of 70/30 program – roof insulation (without state and local programs)

Heating costs:

Before heat insulation (heating season 2017-2018)

34 UAH / m²

After heat insulation

10 UAH / m²

SAVING – 70,6%
The appropriate laws and regulations developed with support of EBRD have been adopted. That gives the guarantee for investments return in the framework of state budgetary commitments.
ESCO (EPC) - TENDERS IN UKRAINE

EPC plans 2018:
≥ 370 contracts

2016: 20 EPC contracts worth 18 million UAH were concluded

2017-2018: 184 EPC agreements worth 186.5 million UAH were concluded

EPC Tenders:

609 - EPC tenders

256 - Completed auctions via EPC proposals

184 - Concluded EPC contracts

14 - Nearest auctions

60 - Open tenders for EPC proposals

279 - Cancelled and unsuccessful tenders*

43 - Cities where tenders are announced

* - no tenders (of 1 or <participants)

Implementation Directive 2010/31/EU is a commitment of Ukraine to the Energy Community.

DYNAMICS OF ENERGY AUDITORS AND EXPERTS CERTIFICATION

- Number of issued certificates in the direction "Engineering Systems Examination"
- Number of issued certificates in the direction "Certification of buildings energy efficiency"

As of:
- 30.07.2018: 5
- 06.08.2018: 8
- 20.08.2018: 8
- 03.09.2018: 8
- 10.09.2018: 13
- 17.09.2018: 13
- 24.09.2018: 5
- 01.10.2018: 5
- 12.10.2018: 19
- 16.10.2018: 15
- 19.10.2018: 15
- 31.10.2018: 65
- 12.11.2018: 75

Total: 123 certificates
GREEN BONDS AS AN INSTRUMENT FOR ATTRACTION OF FUNDS FOR RETROFITING BUILDINGS

SAEE has prepared draft legislation for green bonds introduction in Ukraine

### The concept of green bonds

**debt instrument**

the funds from the sale of which are sent exclusively for financing the "green" projects (both new and existing)

### Funds use compliance

- **energy efficiency projects**
- **increasing thermal insulation of residential buildings**
- **development of alternative energy sources**
- waste management
- effective use of land resources
- conservation of flora and fauna, water resources,
- increasing ecological compatibility for transportation of people and goods

### Main buyers

**European Institutional Investors**

for which financing of environmental projects is a demonstration of their socially responsible investment policy

### Key world issuers

- **EBRD**
- **World Bank**
- **EIB**
- **IFC**

**Other**: government, municipalities, commercial banks, companies
GREEN BONDS WORLD MARKET INDICATORS

By OECD estimate

$ billion


Corporations 25%
Banks 17%
States and municipalities 8%
International Financial Institutions 49%
Bonds guaranteed by IFIs and states 1%

~190 times

By Climate Bonds Initiative

Energy
Buildings and Industries
Transportation
Waste Management
Agriculture and Forestry
Conservation of water resources
Adaptation to Climate Change

* according to Climate Bonds Initiative
INVEST in UKRAINE!
State Agency on Energy Efficiency and Energy Saving of Ukraine
Phone: +38 (044) 590 59 64
E-mail: office.saee1@gmail.com