Ukraine space heating: Enabling Energy Savings and Increased Comfort
Many multi-apartment buildings in Ukraine are generally in poor condition, most (up to 80%) are energy inefficient.

Residential sector - mainly multi-apartment buildings, represent 20-30% of the country’s energy use.

Residential Energy sector (electricity, district heating, gas supply) used to be heavily subsidized, practically not metered, billed by “normative” consumption, not by what the consumers use.

Government started to eliminate subsidies to energy suppliers (by 2017), banks would like to expand residential lending, industry wants to create jobs, residents want to reduce energy bills and have nicer, more comfortable homes.

This situation presents enormous opportunity for energy savings, expansion of market for construction industry and for the financial sector.
Energy indicators

energy intensity of Ukrainian economy in kg o.e./US dollar

Specific energy consumption for heating by buildings

<table>
<thead>
<tr>
<th>Country</th>
<th>Range</th>
<th>kWh/m²/year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweden</td>
<td>30 - 60</td>
<td></td>
</tr>
<tr>
<td>Germany</td>
<td>50 - 100</td>
<td></td>
</tr>
<tr>
<td>Poland</td>
<td>90 - 120</td>
<td></td>
</tr>
<tr>
<td>Ukraine</td>
<td>210 – 260</td>
<td></td>
</tr>
</tbody>
</table>
HOUSING STOCK OF UKRAINE (source: Minregion 2013)

### Type of construction
- **Individual housing**
- **Multifamily**
- **TOTAL**

### Area (mln. m²)
- **Individual housing**: 622,0
- **Multifamily**: 464,0
- **TOTAL**: 1086,0

### Buildings (thousands)
- **Individual housing**: 6500
- **Multifamily**: 240 (incl. 82,5 - multistorey)
- **TOTAL**: 6740

### Population (thousands)
- **Individual housing**: 23913
- **Multifamily**: 21719
- **TOTAL**: 45632

Residents of multifamily buildings: 21719 thousand people

Residents of individual housing: 23913 thousand people

Private housing: 97.5%

State housing: 0.2%

Municipal housing: 2.3%

Individual housing: 622,0 mln. m²

Multifamily buildings: 464,0 mln. m²
### Break down of multifamily building Housing Stock of Ukraine by the period of construction

Source: Minregion

<table>
<thead>
<tr>
<th>Construction period</th>
<th>Area, millions sq.m.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before 1961</td>
<td>76,8</td>
<td>16</td>
</tr>
<tr>
<td>1961-1970</td>
<td>71,4</td>
<td>15</td>
</tr>
<tr>
<td>1970-1980</td>
<td>105,1</td>
<td>22</td>
</tr>
<tr>
<td>1981-1990</td>
<td>134,5</td>
<td>27</td>
</tr>
<tr>
<td>1991-2000</td>
<td>62,1</td>
<td>13</td>
</tr>
<tr>
<td>2001-2011</td>
<td>34,7</td>
<td>7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>484,6</strong></td>
<td><strong>100,0</strong></td>
</tr>
</tbody>
</table>
Decrease of gas consumption in 2014 compared to 2013 by 16%
EE potential of the housing sector of Ukraine

Gas consumption of the housing sector for heating

18 bln cubic m
Or about 45% of the total gas consumption in 2014*

Individual Houses

- 6.5 mln buildings with the total area 622 mln sqm
- 80% require thermal modernization
- Potential to decrease gas consumption – 8.0 bln. cubic m*
- Estimated EE financing needs 300 bln. UAH* ($14 bln.)

Multifamily buildings

- 255 000 buildings with the total area 464 mln sqm (17 000 HOA’s created)
- 80% require thermal modernization
- Potential to decrease gas consumption – 3.5 bln. cubic m.*
- Estimated EE financing needs 400 bln. UAH* ($18 bln.)

Source: SAEF/ *according to the estimate of McKinsey & Company
Implementation of EE measures at the end user is twice more effective than implementation of measure at other stages of heat supply system.

*source: Institute of Gas of the NAS of Ukraine*
Stakeholders

Government:

- Legislative changes needed for improved management of the housing stock has been very slow, but within the last year have improved
- Transition to full cost recovery tariffs, targeted need-based subsidies is complicated, painful as it involves social and political risks but it started

Home Owners:

- Often unwilling to assume the ownership and accept responsibility for proper operation and maintenance of their own building
- Lack of resources, economic incentive and often passive attitude.
- Strong influence of the past housing maintenance system
Stakeholders

**Donors:**
- Many donors/projects prefer working with public buildings, with a “single owner”, budget resources and simpler decision making process

**Banks:**
- Readily recognize large market potential offered by the residential sector.
- Mostly unwilling to share larger portion of the risks, viewing HOAs as risky borrowers
Stakeholders

Utilities:

• Gas, electricity, heat and water suppliers are very slow with implementing metering and billing by actual consumption
• Billing by “normative consumption” does not provide incentive for energy efficiency, and lacks transparency
• Lack of investment resources for investment in energy efficiency improvement
• Available resources used usually for emergency repair
• Very often complains of service quality
Support programs to invest in Housing Energy Efficiency in Ukraine

• State program to Support EE investments in Housing (started in 2014, second stage 2015) to be continued 2016)

• UREEFF Program by EBRD (expected to start 2016)
State Program to Support EE measures

**PROPOSITION**

The introduction of regional support – reimbursing parts of interest rates on loans (according to the experience of the Lviv region - 15%, 20%)

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**State Support for Energy Saving Measures**

1. **Condominium/population**
   - (1) applying for a credit
   - (4) Invoices, certificates of completion etc.
   - (3) payment for work

2. **SAEE**
   - (2) loans issue
   - (5) Invoices, certificates of completion etc.

3. **Bank**
   - (6) A consolidated register of borrowers + copies of documents that confirm targeted use of resources
   - (7) 20, 30, 40, 70% of the principal of the loan (for equipment + materials)

4. **Contractor**
   - (8) Reimbursing 20, 30, 40, 70% of the principal of the loan (for equipment + materials)

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**The term of payment - up to 1-2 months after implementation of measures**

*Since 27.08.2015 the amount of compensation for recipients of subsidies on utilities is increased up to 70%*
State Program to Support EE measures

Energy Efficiency State Support in 2015

Reimbursement for individual owner
(private house/ separate flat)
- 20% of the principal of loans for non-gas boilers purchase
  - not more than 12,000 UAH
- 30% of the principal of loans for energy-efficient equipment and materials
  - not more than 14,000 UAH

Reimbursement (multifamily house)
- 40% of the principal of loans for energy-efficient equipment and materials
  - not more than 14,000 UAH for 1 apartment

70% of the principal of the loan for household – recipient of subsidies on utilities*
- 47.6 million UAH
- 198.0 million UAH
- 97.9 million UAH

343.5 million UAH
the foreseen funding in 2015

The SAEE transferred to banks & provided compensation in the amount of 115.6 million UAH.

* Decree of the Cabinet of Ministers of Ukraine dated 12.08.2015 № 614
Initial results of the State Program to Support EE in residential sector:

Monthly dynamics of demand for State Program on support of EE measures by individual households and Homeowners Associations *

(replacement of gas boilers and purchase of EE equipment and materials)

* According to the data of participating banks, Source: SAEE State Agency for Energy Efficiency of Ukraine
Alternative Programs to Support EE measures:

Ukrainian Residential Energy Efficiency Finance Facility (UREEFF) Program by EBRD

- mln 75 Euro finance facility
- mln 15 Euro grant component
- LEME/LESI lists for selection of the best technologies and suppliers/installers
- Grant component:
  - 15%-20% for individuals
  - 25% - 35% for Home owners associations
- 100% verification (10% on site)
- Special support to building level projects
UREEFF Program by EBRD

• What UREEFF offers for individual sub-borrowers:

• Affordable access to sizable finance – up to **EUR 15’000** per a sub-loan

• Maximum investment incentive is **EUR 3’000** (about **UAH 75 000**) per borrower – UREEFF program incentive covers not only the cost of materials and equipment but also installation costs

• Structured approach to energy efficiency – LEME items are carefully selected for their above-average energy efficiency.
Two Things Needed for Implementing Energy Efficiency

**INCENTIVE**

Effort to save must be rewarded

✓ Pay for what you consume - metering of consumption
✓ Investment must have attractive return – no subsidies to energy suppliers

**MEANS**

Be able to control consumption

✓ ability to control energy use
✓ Enabling energy saving investment
✓ Enabling legal/regulatory environment – functioning HOA
✓ Government support programs
Thank you

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