RenEsco
A residential private ESCO
and social enterprise

Financing housing modernization through energy conservation
Financing housing renovation in Latvia, based on a model developed in Ukraine

Topics
1. Why and how we renovate buildings
2. Business model for renovation
3. Requirements for realistic and bankable renovation projects
Figure 1: Severe housing deprivation rate across the EU, 2009

Source: Own calculations based on EU-SILC 2009 – revision 1 of August 2011.

Notes: Severe housing deprivation refers to the percentage of the population in a dwelling which is considered as overcrowded and exposed to at least one of the following three housing deprivation measures: (1) a leaking roof or damp walls, floors, foundations or rot in window frames or floor; (2) neither a bath, nor a shower, nor an indoor flushing; or (3) too dark.
Figure 4:
Overcrowding rate, comparing total population and those at-risk-of-poverty, 2009

Source:
Own calculations based on EU-SILC 2009 – revision 1 of August 2011.

Notes:
A person is considered as living in an overcrowded dwelling if the household does not have at its disposal a minimum number of rooms equal to: one room for the household; one room per couple in the household; one room for each single person aged 18 or older; one room per pair of single people of the same gender between 12 and 17 years of age; one room for each single person between 12 and 17 years of age and not included in the previous category; one room per pair of children under 12 years of age. EU27: population-weighted average of national indicators.
External parts are corroding due to the effects of weather

Crushed panel joints

Collapsing structures
Internal parts are poorly designed and rotting away

- Damaged roofs
- Obsolete engineering networks
The question in Central/Eastern Europe is not how to save energy!

The questions is; how to save Eastern Europe’s housing stock?

Energy saving is the answer.
Before... and after
Before... and after
Staircase and entrance repair
Windows and Doors
Repair of balconies & loggias
Heat distribution system

- Optimal thermo-insulation
- Thermo-limiters on radiators
- Dynamic balancing valves on risers
- Professional energy management (including monitoring)
Domestic hot water system

- MIN number of risers
- Thermal insulation
- MIN pipe Ø
- DHW meters in staircases
- Reduction of circulation losses by 90+%
New ventilation system

mechanized ventilation

- Fixed hourly air refresh independent of season or weather
- Healthy indoor climate in all seasons and all parts of the apartments
- Recovery of up to 90% of ventilated heat energy
- If geothermal heat pump is installed > free cooling in summer
Mechanical ventilation system with heat recovery (deep retrofit)

- Fixed hourly air refresh independent of season or weather
- Healthy indoor climate
- High efficient heat recovery
Use of renewables and heat generation on site

- Ground source heat pumps with vertical probes:
  - No distribution losses
  - Nothing is burned
RenEsco’s business model in Latvia

*Originally developed and implemented in Ukraine!*

- Energy Performance Contracts (EPC’s) are signed with buildings guaranteeing RenEsco to receive the energy savings during 20 years. The saving are typically 50% or more.

- Using a combination of grants and loan guarantees, RenEsco fully pays for all renovation and modernization costs, increasing the comfort and value of the building and extending the lifetime by 40 to ……? years.

- After the renovation, apartment owners pay for the same quantity of energy as before the renovation.

- RenEsco gives 20 year guarantee on everything it has improved and changed.

- RenEsco pays and decides about the measures, technologies and quality of materials. Because of the business model, RenEsco invests much more than flat owners would do themselves.
Benefits for residents

• Conservation and modernization of their apartment

• The sales’ value of their apartment increases by about 20-40% right after renovation

• More comfortable and nicer looking house to live in (currently many apartments are severely under-heated).

• Flat owners receive 25% profit share of Renesco’s net result

• 20 year guaranty on all construction works and therefore less worries and cost for maintenance during the contract period

• After 20 years apartment owners get all the benefits from energy savings (expected 50-80%)

• Flat owners do not assume any risk, or contribute in any form, except by agreeing that the energy savings will go to Renesco during the EPC period (20 years). This allows Renesco to take all investment decisions and innovate and learn.
Using the “Ukrainian model” what has this Latvian residential ESCO done so far?

• In 5 years Renesco 100% financed and performed deep renovations of 15 typical soviet-era apartment buildings using Energy Performance Contracts (EPC’s). It is a good start, but could have been many more if better policies had been in place.

• Financing was provided by local banks (60%) in combination with guaranteed foreign loans (40%) based on the EPC, no other collateral. Apartment owners have not, and will not, pay anything, nor assume any risks. Their monthly costs are a bit less than before.

• All investments are covered by future energy savings (20 years) and support from national renovation program (ERDF ~40%).

• Measures: full building envelope, new hot water networks, new heating network, new ventilation recovery systems, cosmetic repairs, switching to renewables (geo-thermal).
Case Study – Gaujas Street
Valmiera
Comparison of three identical buildings

<table>
<thead>
<tr>
<th>MWh/year</th>
<th>Gaujas 9</th>
<th>Gaujas 11</th>
<th>Gaujas 13</th>
</tr>
</thead>
<tbody>
<tr>
<td>space heating</td>
<td>366</td>
<td>247</td>
<td>185</td>
</tr>
<tr>
<td>circulation losses</td>
<td>259</td>
<td>142</td>
<td>132</td>
</tr>
<tr>
<td>hot water</td>
<td>42</td>
<td>35</td>
<td>48</td>
</tr>
<tr>
<td>hot water</td>
<td>65</td>
<td>70</td>
<td>5</td>
</tr>
</tbody>
</table>

No renovation

- €224,610 Renovation paid by flat owners
- €169,781 Renovation paid by ESCO
Conditions required for financing renovations (Ukraine is far from meeting these)

1. Rule-of-law (contracts are enforceable)
2. Long-term policies and programs are put in place and stay in place because building capacity to organize large scale renovation requires time and stability. Governments cannot start-stop-start-stop programs.
3. Clear and significant pricing of energy (at least €50 per MWh)
4. Availability affordable long term financing (20-30 years)

For instance; 20 year Euro loans at 5%, heating at €60 per MWh and 40% investment subsidy. An additional and complicated component of energy saving finance is the expectation and pricing of energy price inflation.
Residents payment discipline has been extraordinary!

- While going through the roughest of crisis with unemployment skyrocketing, RENESCO has received 97% of payments on time, and 0% non-payment during its six years of existence.
- All banks that we have spoken to in the region confirm extremely low default rates (if any) for renovated apartment buildings.
- This can be explained by the explicit and unbreakable connection between apartment ownership and the heating and maintenance bills. There is no virtually no rental stock in Eastern Europe. 97% is owner-occupied. Though many owners are poor, nobody wants to lose their nicely renovated flat because of some utility bill. This is typical post-Soviet legacy.
Thank you!

RENESCO Ltd.
45-47 Elizabetes Street
(6th floor)
Riga, LV-1010
Latvia

Phone:
+371 6702 7427
+371 6750 6010
+371 6750 6012

Fax:
+371 2937 1545
e-mail:
eric@berman.nl
info@renesco.lv
www.renesco.lv