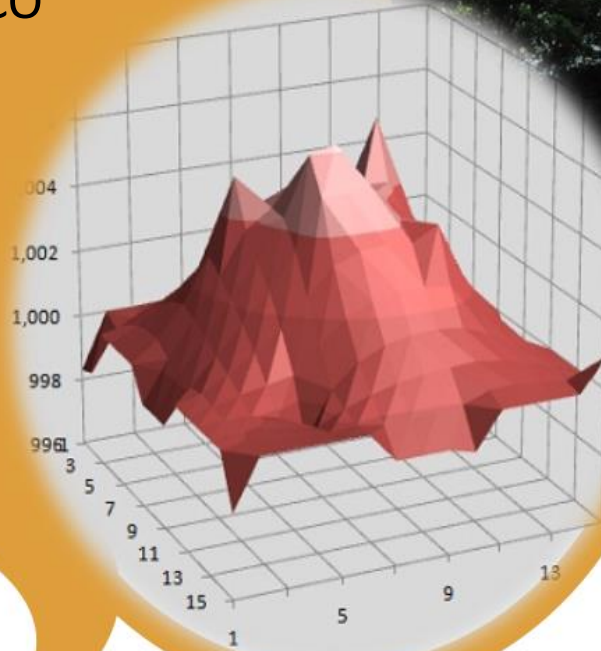


RenEsco

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

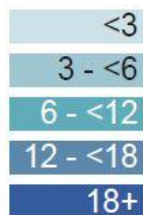
Topics

1. Why and how we renovate buildings
2. Business model for renovation
3. Requirements for realistic and bankable renovation projects

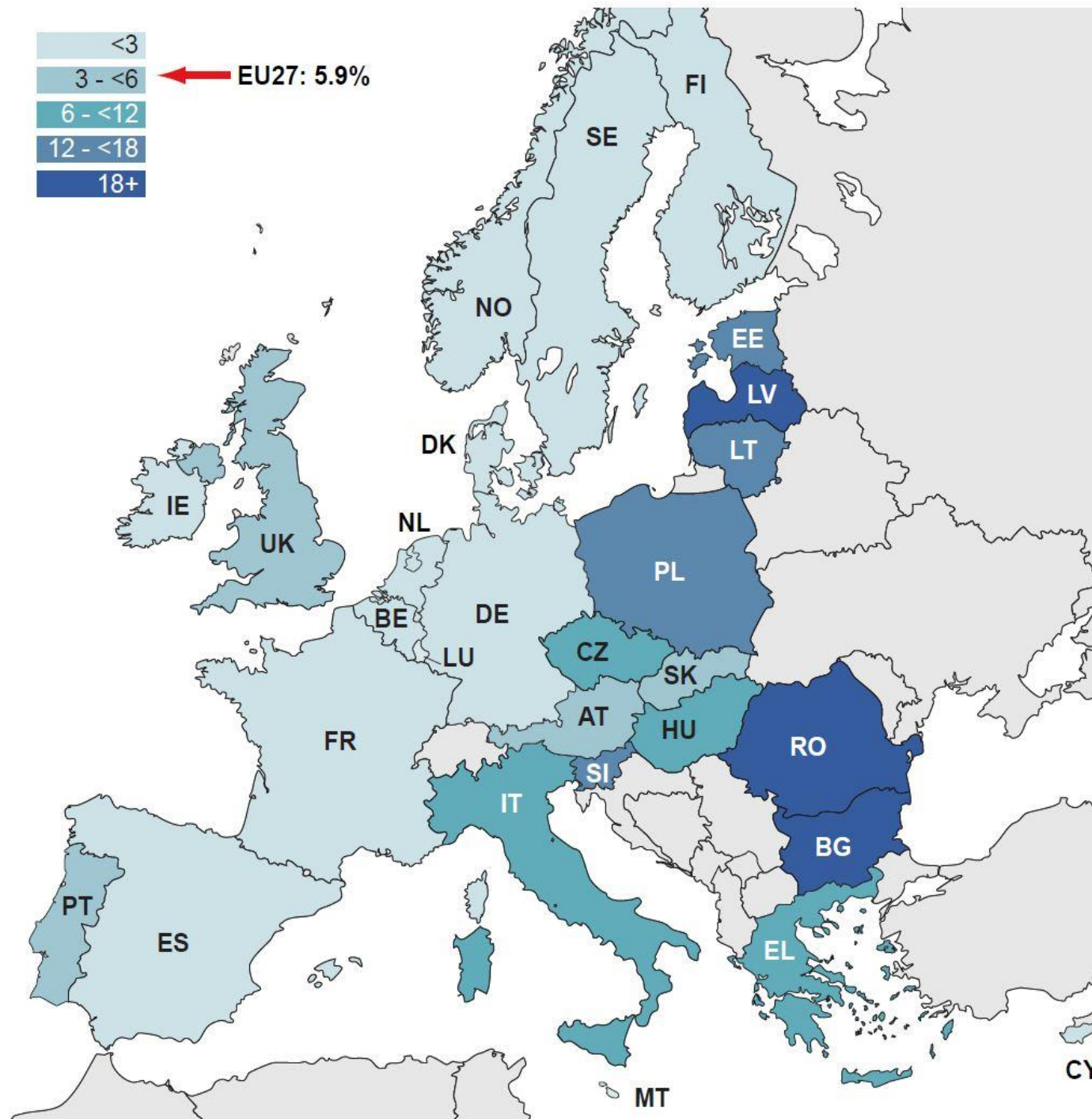


Figure 1:

Severe housing deprivation
rate across the EU, 2009



← EU27: 5.9%



Source:

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

Notes:

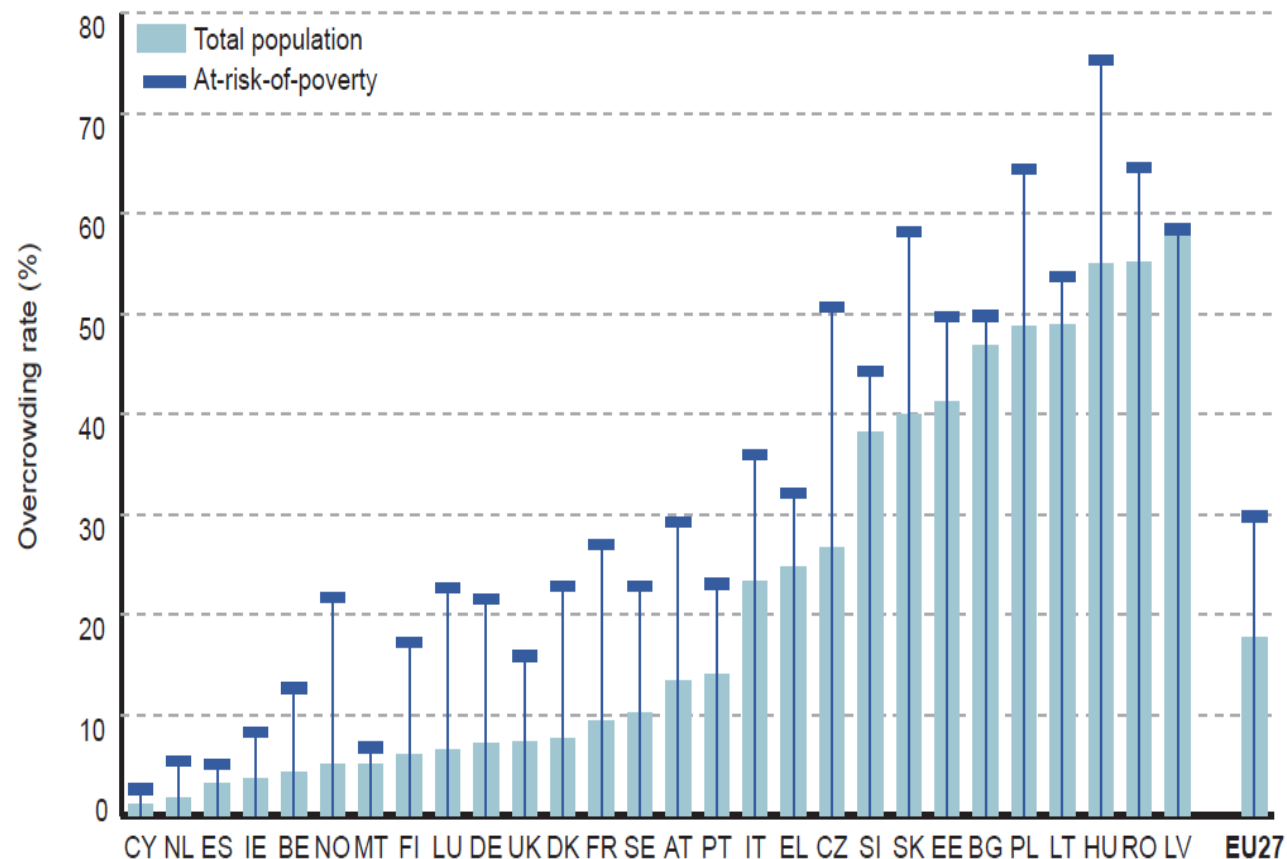
Severe housing deprivation refers
to the percentage of the population
in a dwelling which is considered as
overcrowded and exposed to at least
one of the following three housing
deprivation measures: (1) a leaking
roof or damp walls, floors, founda-
tions or rot in window frames
or floor; (2) neither 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.



INVESCO

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.

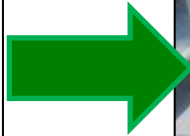


Before... and after



Before...

and after



Staircase and entrance repair



Windows and Doors

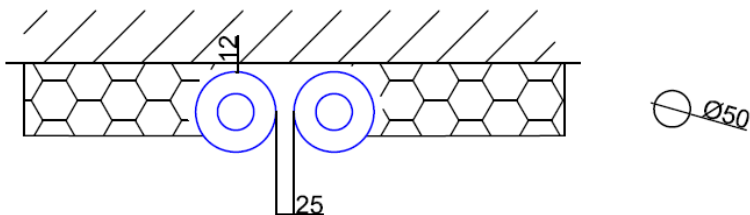


Repair of balconies & loggias

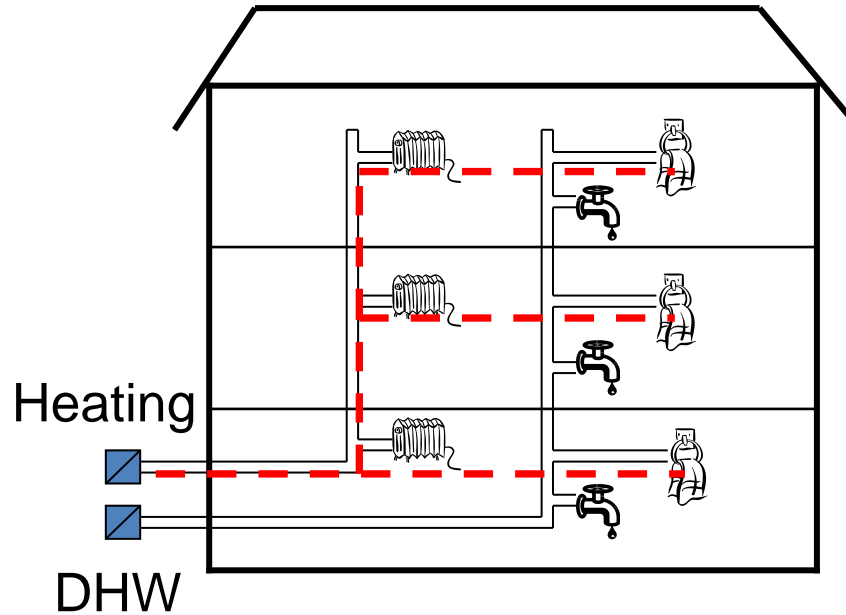


Heat distribution system

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



Domestic hot water system

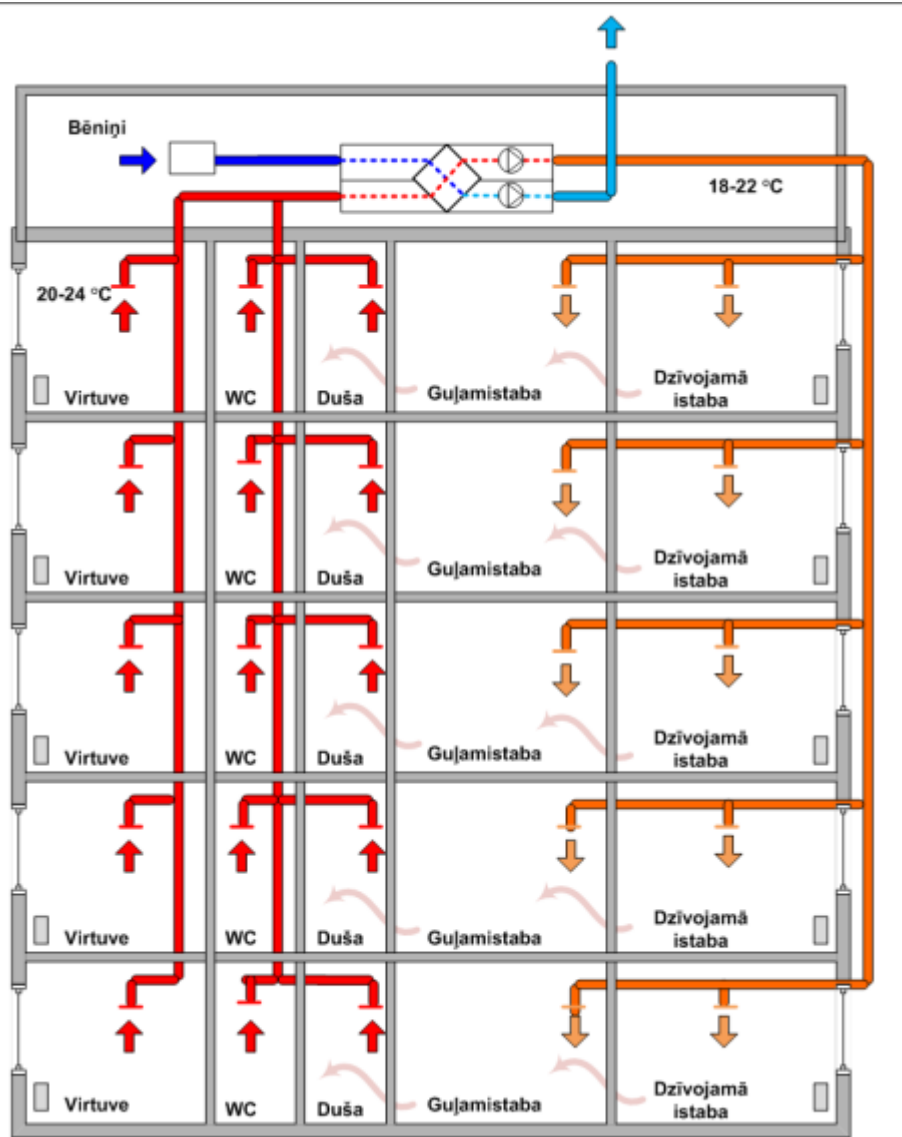


----- If new DHW system installed

- 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



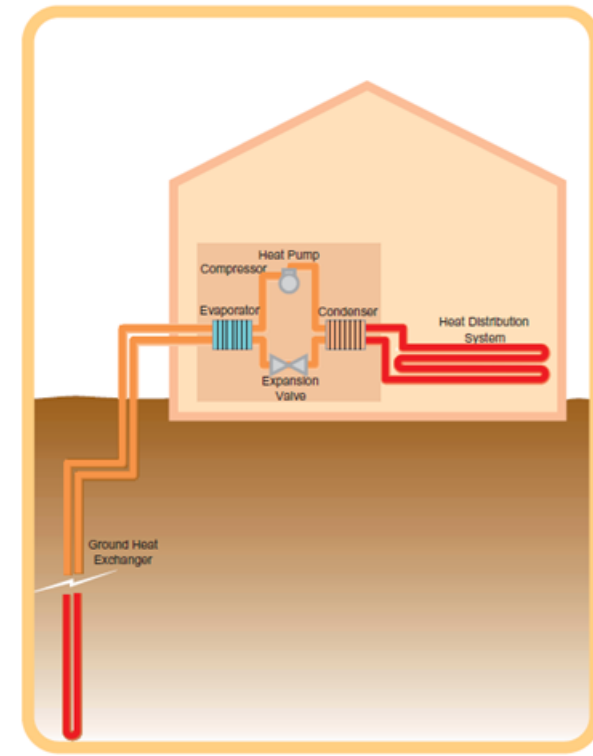
Mechanical ventilation system with heat recovery (**deep retrofit**)

- 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 therefor 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.**



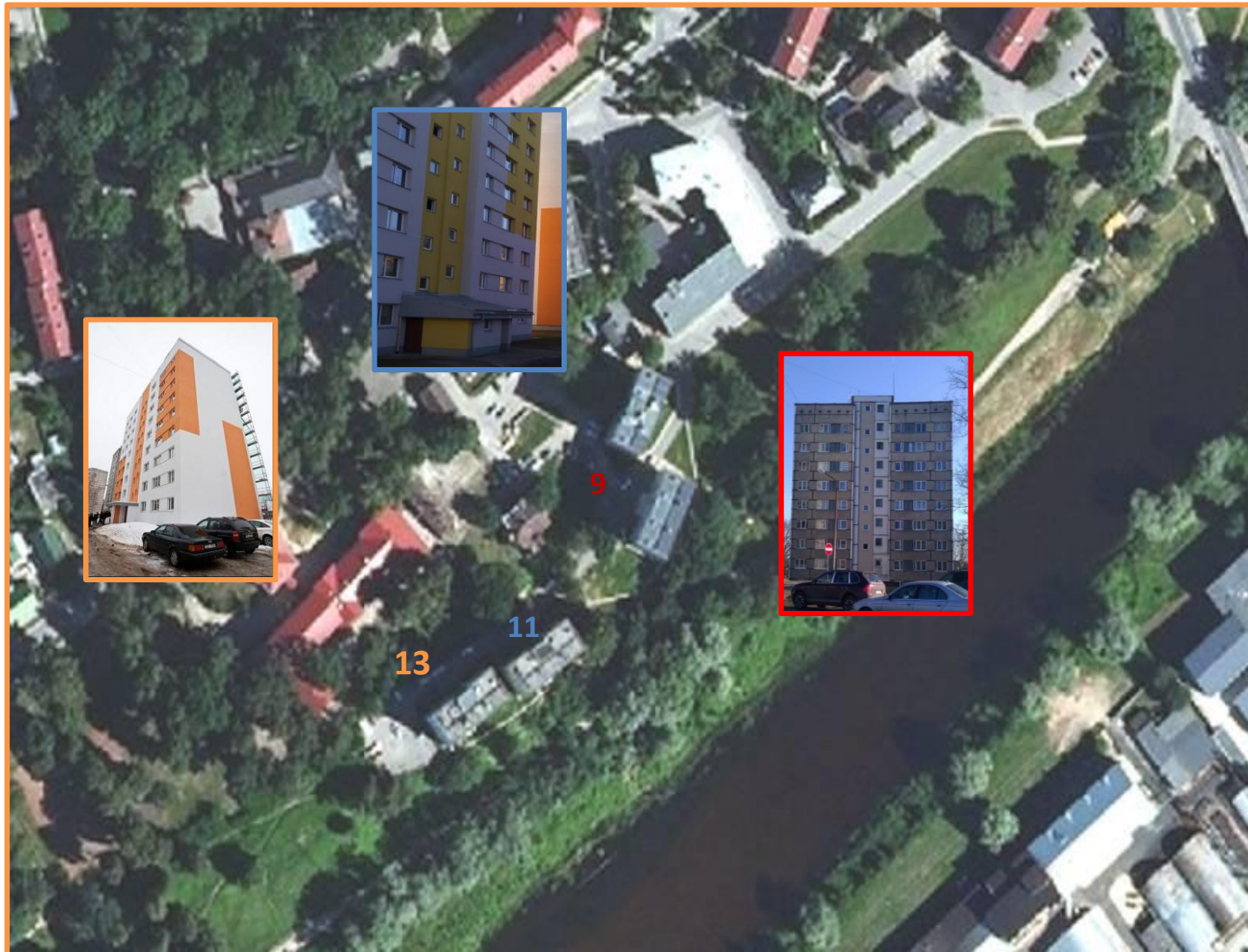
Using the “Ukrainian model” what has this Latvian residential ESCO done so far?



- 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).

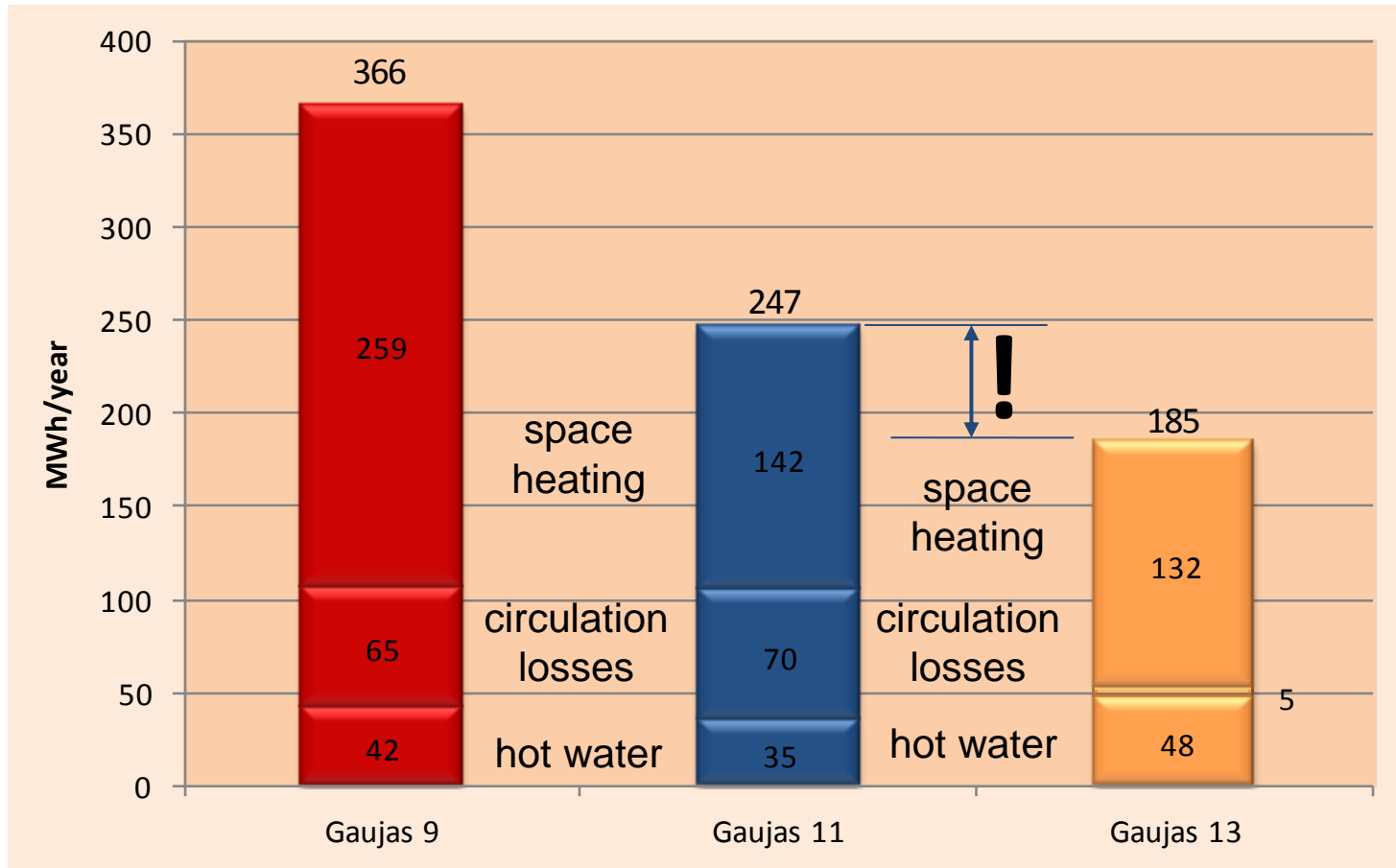


Case Study – Gaujas Street Valmiera





Comparison of three identical buildings



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 sky-rocketing, 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!

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