

IEE ECOLISH

Energy Exploitation and Performance Contracting for Low Income and Social Housing

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The problems we face in social housing in EU

- Energy use in residential buildings in EU is 9500 PJ = 23% of total use
- Measures on existing residential buildings will make major contribution in energy and CO₂ reduction
- But large number of barriers:
 - Technologies are available (but more based on new buildings)
 - Financial, social, and organisational constraints

And, more over:

- Social housing and (extreme) low incomes
 - Often high energy consumption (due to poor thermal and building physical quality, building services)
 - In combination with poor IAQ and Thermal Comfort
 - Increasing energy prices (>> inflation rates), leading to fuel poverty
- Very problematic for privately owned houses or spread ownership
 - how to organise
 - who is interested/responsible for this group of occupants?
- Allocation and risk of revenues of investments
 - Investors do often not have repays of investments
 - Repays: reliability in practice, how to allocate both risks as benefits?

Objectives of the IEE ECOLISH project

Objective: Investigate and demonstrate the feasibility and the potential of instruments like Energy Exploitation and Performance Contracting

Target group: Occupants with (extreme) low income, but house owners

Means: organising dedicated ESCO's , involving occupants and other concerned parties in the process

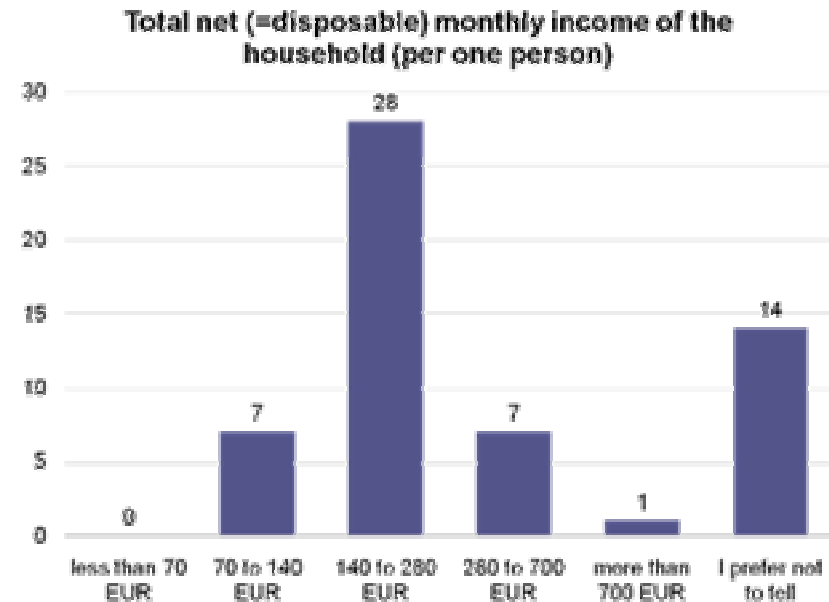
Typical in ECOLISH is that all of the pilots are 'hopeless cases' (no housing companies, no other organisations that own the problem, no financial means, no occupants organisation),

.....so starting from 0...

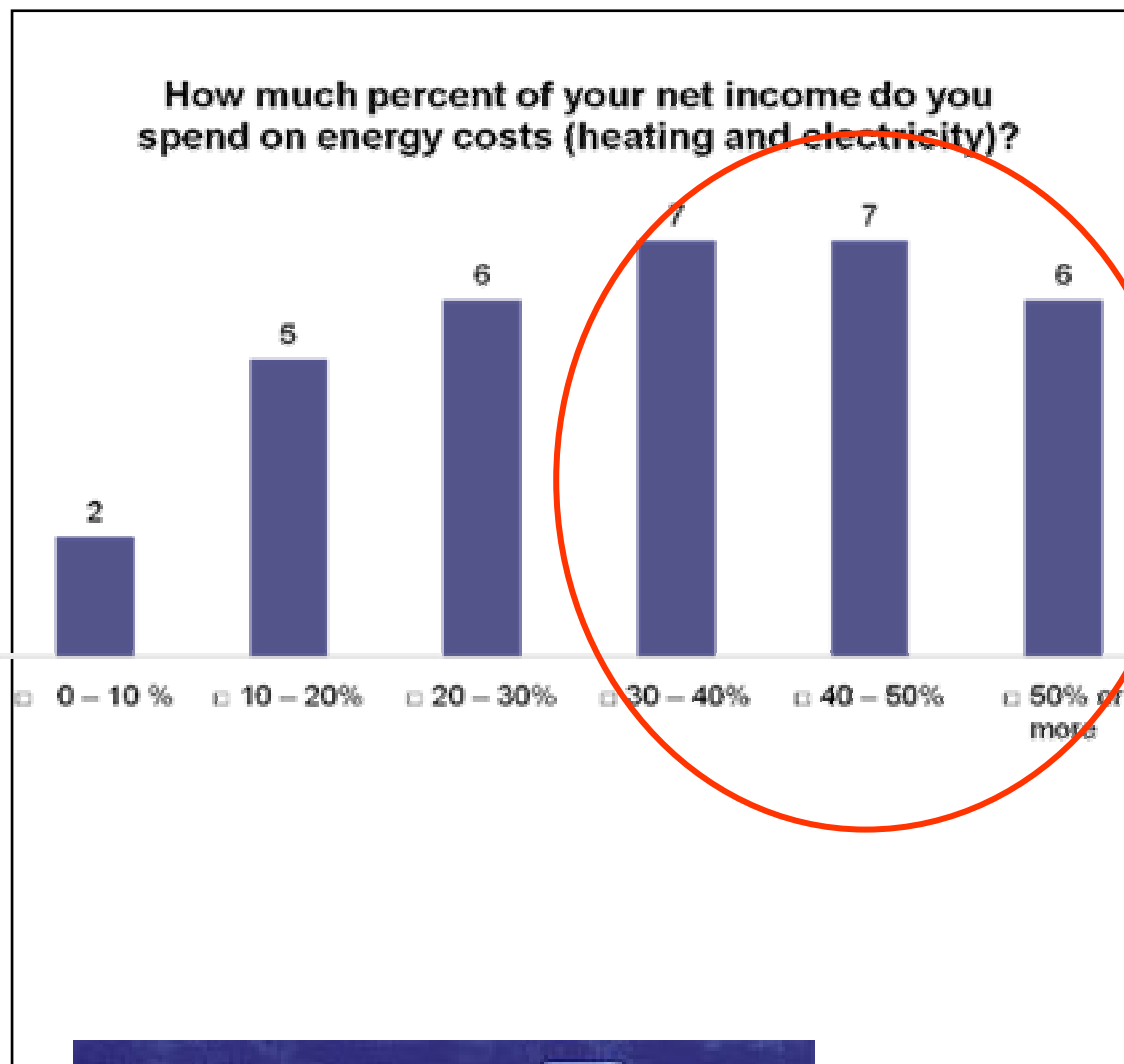


Typical social problems: example Ogre, Latvia

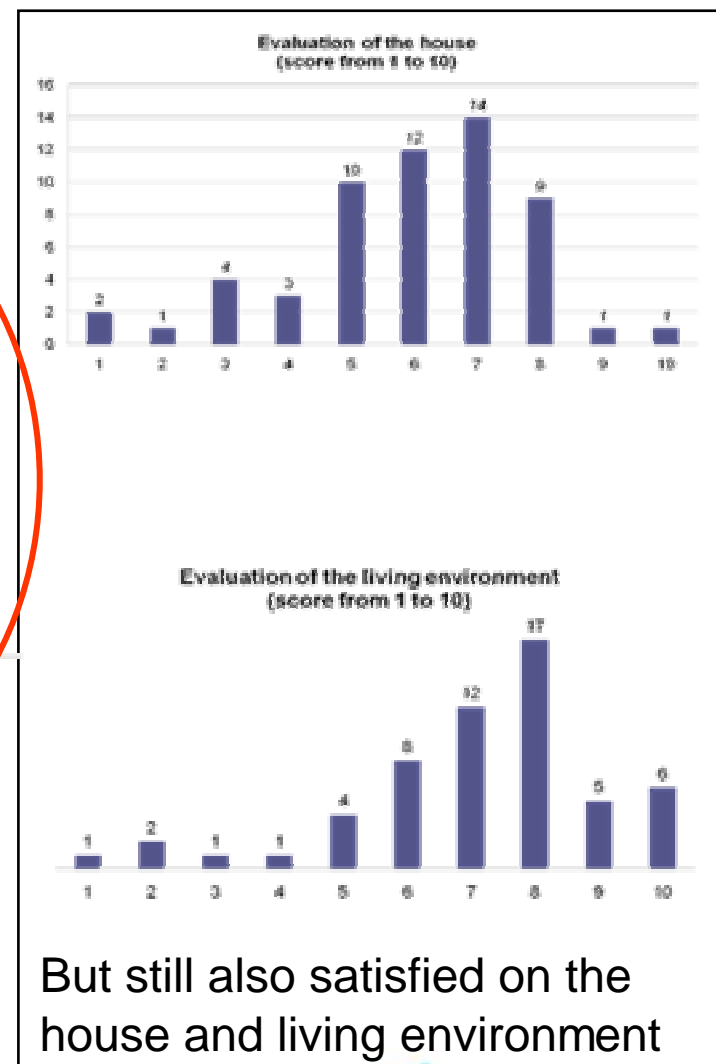
- Problems connected to social and political change and transition taking place in Latvia
- **Lack of income and lack of free time;**
- Individual problems economic and social, lack of self-esteem and self-reliance, young people prefer to move to Riga and work abroad. Lack of interest in municipal politics and public issues is also a problem at the individual level
- Specific heating consumption of the buildings exceeds **2- 4 times EC standards;**
- Lack of extension and knowledge in home economics and especially in house management;
- ***FUEL POVERTY!***



Problem of fuel poverty: example Ogre



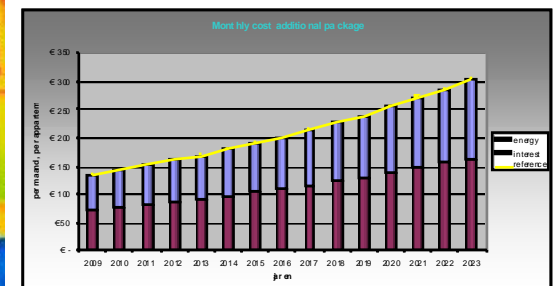
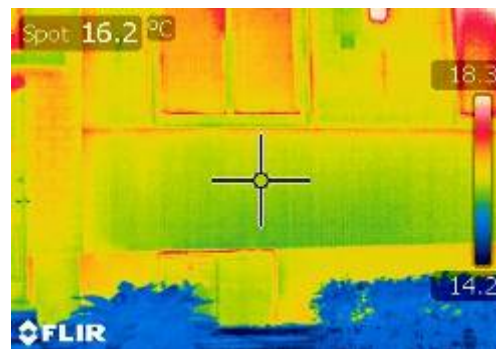
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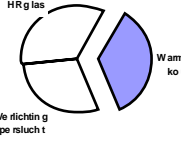



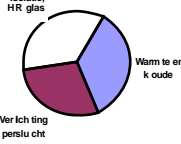
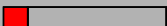


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Methods and approach

- Organising occupants (occupants organisations, associations of owners, building co-operatives)
- Intensive communication and meetings with occupants
- Technical and social analyses of the buildings
- Proposing measures to improve energy efficiency, thermal comfort and IAQ
- Financing schemes and involving ESCOs
- Legal support for occupants in contracts with ESCOs
- Evaluation of benefits
- Monitoring the total process



Role of ESCOs in ECOLISH

<u>Concepts</u>		penetration rate	business scale	
			Energy volume	Applications
1. Supply Contracting			+	+
2. EPC basic			+++	+
3. EPC plus			+++	++
4. Integrated EPC			++	+++

Models for funding and financing

- Financial Lease
 - Not suitable for investment in the building envelope
 - Interest 11%
 - No deduction of tax
- Mortgage
 - Total funding from Association of Owners
 - Interest 5%
 - Value of the house as deposit
 - Reducible from tax
- Revolving fund
 - Cooperation with municipal government
 - Interest 2%



Conclusions

- Fuel poverty is becoming a serious problem for (social) housing due to current trends in energy cost development
- In social housing energy costs are high in combination with poor thermal comfort and indoor air quality
- Saving potential and benefits are high, can be allocated to investments
- Specific problem is individual and spread ownership: to be solved by organising occupants and forming legal entities; very important to achieve any results and commitment
- Important to provide a balanced set of energy saving measures, measures to improve IAQ and thermal comfort, in combination with ways how to finance this for these groups of housings that normally don't have possibilities for this. However, comfort standards and expectations differ from country to country
- Technical solutions are not so much the problem but rather the relation between the quality and expected lifetime of buildings, and the lack of vision of strategic housing and strategic maintenance and financing.
- Many buildings are at the end of their technical and economical lifetime
- Risk allocation in energy savings and exploitation is still a big problem

Recommendations

- In most project public bodies were involved in different phases of the social houses life cycle, nevertheless no one was responsible on organizing and supporting the occupants. However a multi-level bottom up approach could solve the problems faced; occupants welcome support, as soon as it is well-intentioned and recognized
- Role of municipalities can be important (for example for establishing revolving funds and organising occupants), however, political lifespan (4 years) and different political interest can be a threat
- ESCOs could play a new and important role. Residential sector can be a new and interesting business area, also individual house owners. Several financing constructions are possible but constructions with mortgage and revolving funds are favorable
- *We started with pilots, considered as 'hopeless cases', but these cases appeared to be not so hopeless after all...*

See also: www.ecolish.com



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Promotion of energy efficiency in the existing low income and social housing faces a large number of barriers. At the same time this stock is characterised by high energy use, due to poor energy efficiency of heating installations and poor thermal insulation, poor thermal comfort and indoor air quality. Major barrier is the lack of financial means as well as with owners as housing corporations. Private organised Energy Exploitation and Energy Performance Contracting are potential solutions for this problem. In ECOLISH a European pilot for energy exploitation and performance contracting is organised, elaborated and evaluated on 4 locations:

- Heerlen - the Netherlands
- Ogre - Latvia
- Pieria - Greece
- Pécsvárad - Hungary

The pilots include tailor-made finance schemes, energy and building technical boundary conditions, juridical, financial and social aspects. General guidelines and conditions will be given how to come to Energy Exploitation companies with occupants and concerned parties as shareholder and energy performance contracting including a template for a contract.

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