### How Do Political Instruments Have to Be Improved to Tap Homeowners Refurbishment Potentials?

#### **Research Project ENEF-Haus**



ISEE 2010 Oldenburg, 25.08.10 Elisa Dunkelberg IÖW – Institute for Ecological Economy Research, Berlin

|i|ö|w

### Why?

- Private households are a large energy consumer:
  - In the EU: 40% of final energy use and 36% of CO<sub>2</sub>-emissions are induced by buildings.
  - The residential building stock is responsible for 30% of final energy use in the EU.
  - Heavily important are at least in Germany single-family and semi detached houses (high number of houses, high specific heating requirements per square meter and year).



#### What?

- Imbedded in research project ENEF-HAUS (<u>www.enef-haus.de</u>)
- Investigation of the specific economic and social situation of private home owners, their knowledge base, their attitudes towards energy, environment, and technology as well as the specific technical conditions of their homes

→ recommendations for the designing of policy instruments and specific communication and consulting strategies which meet the needs of different target groups.



#### What?

#### Potential analysis

- Calculation of energy saving potentials (database 2000 buildings)
- Questionaire of 1000 home owners

#### Study on political instruments

- Analysis of the exisisting political instruments
- Analysis of alternative instruments (e.g. from other countries)
- Recommendation for improvements



#### Study on energy saving potentials – main results:

- Insulation of facade wall, roofs or upper-storey ceilings and the use of renewable energy heating systems are responsible for the highest reduction of primary energy requirement.
- Old buildings show the highest energy saving potentials built before 1978.
- The actual rate of all energy-related modernisation and refurbishment measures is roughly half that expected based upon the theoretical refurbishment cycles.







#### Study on energy saving potentials – main results:

- Insulation of facade wall, roofs or upper-storey ceilings and the use of renewable energy heating systems are resonsible for the highest reduction of primary energy requirement.
- Old buildings show the highest energy saving potentials built before 1978.
- The actual rate of all energy-related modernisation and refurbishment measures is roughly half that expected based upon the theoretical refurbishment cycles.
- Many different barriers as lack of profitability, building related and psychological barriers (fears, aversion of borrowing) can hinder energy-efficient refurbishments.



	Regulatory law	funding programmes
Lack of involvement / interest	Х	
Aversion to take out a loan	Х	(x)
Insufficient financial resources		Х
Tangible fears and concerns	Х	
Lack of long-term homeowners perspective	Х	(x)

 $|i|\ddot{o}|w$ 

- EnEV (Energieeinsparverordnung, Energy Conservation Act)
- EEWärmeG (Erneuerbare Energien Wärmegesetz, Renewable Energies Heating Act)



#### – EnEV

- Sets ambitious Standards for the primary energy requirement for new buildings.
- For existing buildings:
  - Only in the case of modifications standards for thermal coefficients for exterior structural elements must be met.
  - In the case of transfer of ownership additional low-cost measures as the insulation of hot-water distribution pipes and the upper-storey floor are required – low energy saving potentials.



#### – EEWärmeG

- EEWärmeG has existed only since January 2009.
- The law calls for a specific share of renewable energy deployment for new building constructions.
- Use requirements for existing buildings may be stipulated at the regional level (only in Baden-Württemberg).
- Because of the low rate of new construction the law leads only to a minimal effect.



#### - Recommendations:

- Better utilisation of refurbishment occasions in particular, at the time of transfer of ownership:
  - obligatory energy consulting
  - additional specific energy saving measures with high potentials
- heating system standards, especially renewable energies, in existing structures (EEWärmeG)
- But a strengthening of regulatory law leads to difficulties of social vulnerable groups.



#### Funding programmes

- KfW bank: Low interest loans and subsidies for refurbishment measures
- MAP (Marktanreizprogramm, Market incentive Program): subsidies for renewable energies heating systems

### Funding programme (KfW)

- has influenced the most highly motivated refurbishment group (probably a not-so-small free-rider effect),
- and has not focussed on buildings and measures with high energy saving potentials.

#### – Recommendations:

- Focus on buildings and measures with high energy saving potentials (-> high cost efficiency).
- For an expansion of modernisation activities among lowincome home owners there is a need for a programme supporting measures meeting lower standards combined with social standards.



#### Additional instruments

- energy efficiency funds: additional subsidies
- home ownership pensions act: alternative means of financing
- energy contracting: addresses other barriers as tangible fears and concerns because of the provision of services and risk assumption

- There are ways to better address and exploit energy savings measures with high energy-saving potentials.
- And it is possible to better address the main barriers of home owners.
- It is a political decision to priorise the refurbishment and to provide more money for subsidies or to sharpen the regulatory instruments.

# Thank you for your attention.

#### Elisa Dunkelberg

IÖW – Institute for Ecological Economy Research, Berlin elisa.dunkelberg@ioew.de

25.08.2010

 $|i|\ddot{o}|w$ 

