

# E-PROFIL

*Quartiersprofile für optimierte energietechnische Transformationsprozesse*  
“Neighbourhood Profiles for Energy-related Transformation Processes”

Towards a Consumer-Driven Energy System  
Understanding Human Behaviour

Experts' Group on R&D Priority Setting and Evaluation

## Project Report

13 October 2017, Technical University of Denmark

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## Project Goals

Necessity of the project

Global / European / Regional climate goals

- Reduction of heating demand
- Use of solar potentials
- Reshape of energy supply in neighbourhoods
- Reinforcement of resilient urban development
- Increased usage of renewables
- Reliability of supply
- Reinforcement of integrative urban development through neighbourhoods

# Energy Spatial Planning in Neighbourhoods

## Effectiveness in existing structures

### Key Indicators

reduction potential of heating demand through thermal rehabilitation

solar potential

urban, **socio-economic and legal situation**

Heterogeneous preconditions in neighbourhoods

→ Flexibility of transformation processes needed

## Efficiency of Processes

Neighbourhoods as intermediary level

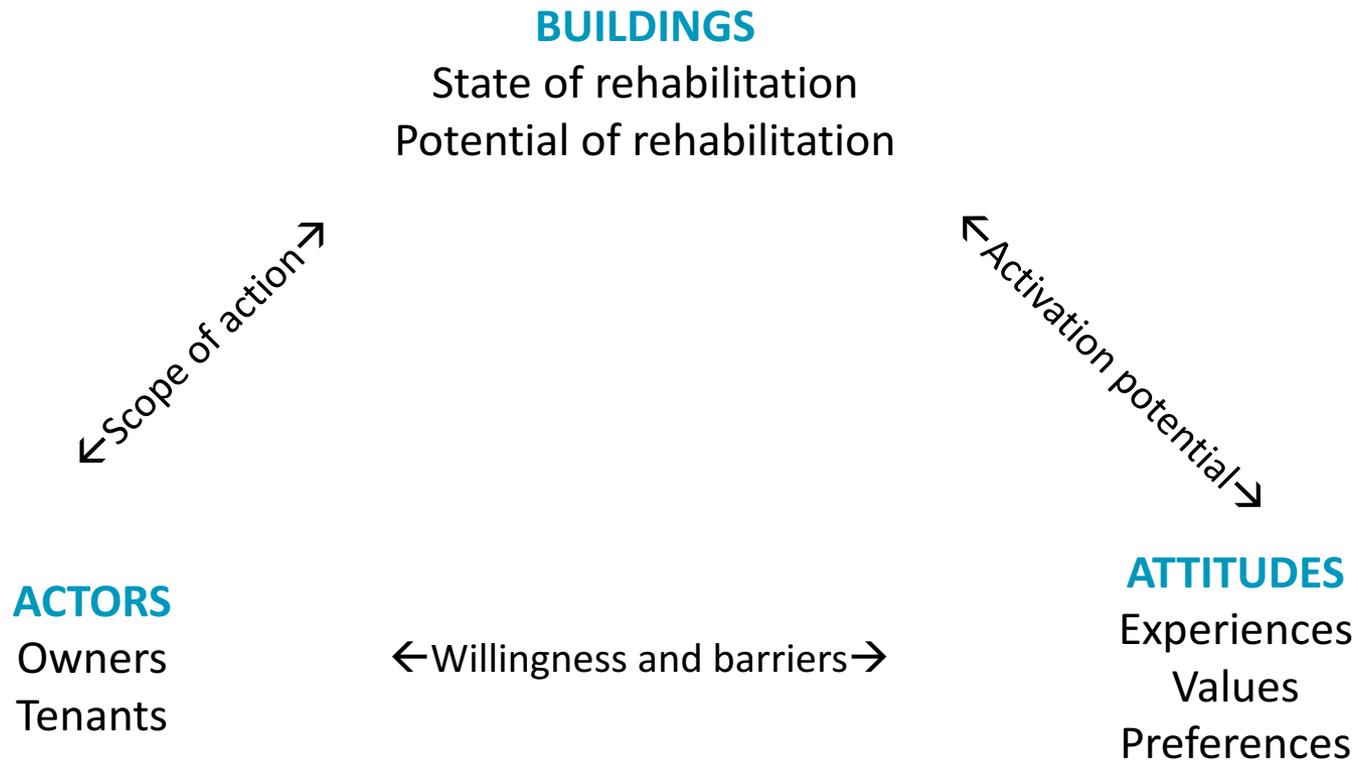
management of **different interests**

activation of **local potentials**

working out “optimal” goals

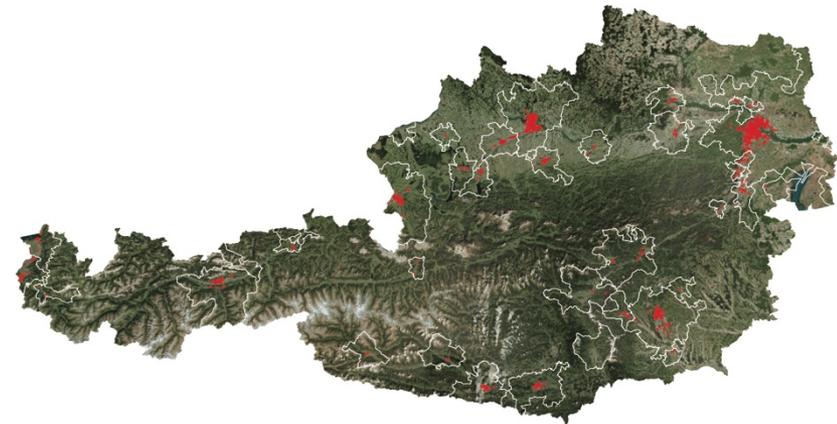
→ Transparency and participation needed

# Household Survey

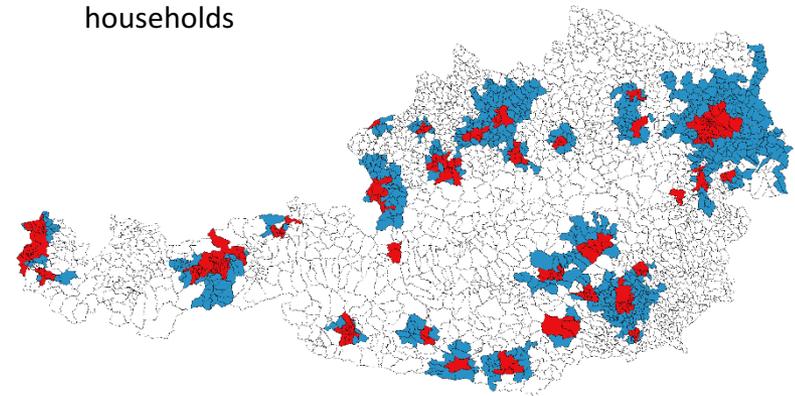


## Household Survey

- Knowledge on (energy-related) socio-economic conditions still unsatisfying
- → Household survey E\_PROFIL  
Including experiences and attitudes towards energetic neighbourhood transformation
- Representative for
  - Urban regions (*Statistics Austria*)
  - Urban region Linz
- 1.026 valid interviews
- Online Survey



Locations of surveyed households

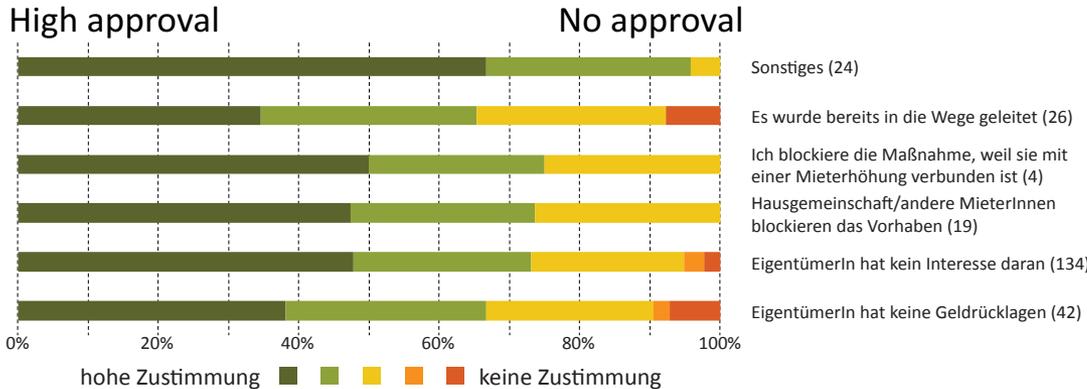


Urban regions by  
*Statistics Austria*

## Household Survey

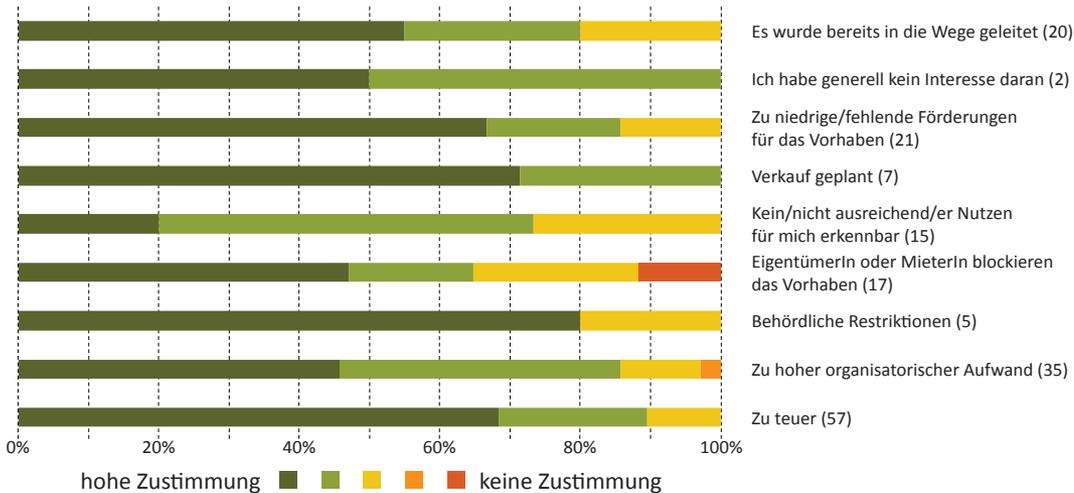
- Socio-economic basic information
  - Persons, household situations
  - Income, education
- Information on constructional and energy-technological conditions of buildings
  - Age, heating system, retrofitting, measures, heated storeys, etc.
  - Energy costs
- Attitudes towards climate-friendly energy projects
  - Risk behaviour, investment types, participation types, etc.
  - Identification with own neighbourhood
- Knowledge of
  - Neighbourhood scale energy projects
  - Funding opportunities (e.g. for renewables)

# Household Survey



- Owner is not interested
- Owner does not have financial reserves

## Rehabilitation / Tenants – valuation of barriers



- Too expensive, lack of subsidies
- Too much organisational effort

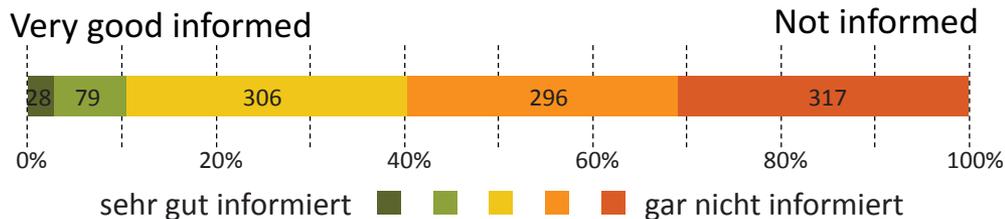
➔ Funding

➔ Process efficiency

## Rehabilitation / Owners – valuation of barriers

## Household Survey

- 62% of interviewees prefer a shared PV system rather than a singular solution.
- Clear preference (84%) towards Projects with low risk over riskier invests with high profit expectations
- Preference towards anonymous participation over public presence (84% and 16%, resp.)



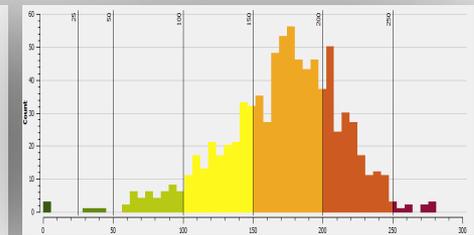
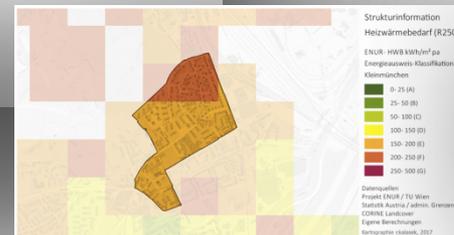
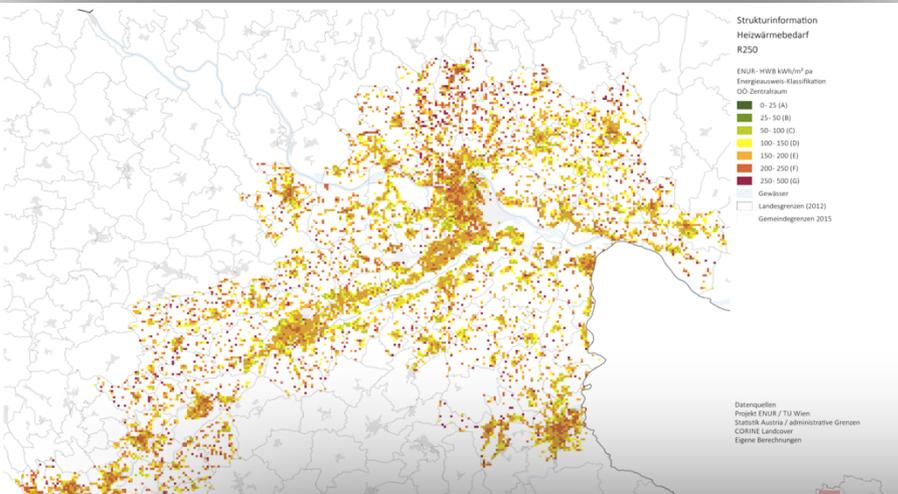
Knowledge on energy subsidies – self evaluation

→ Collaborative projects

## Lessons Learnt by Household Survey

- Survey
  - Willingness to participate in surveys
  - Experience of households in energy topics
  - Willingness regarding geo-tagging
  - Heterogeneous stakeholders (contradictory interests: especially cost-benefit paradigm)
  
- Complexity of transformation processes
  - Integration of different information types and modelling efforts
  - Heterogeneous stakeholders
  - Accurate communication strategy necessary (easy-to-use, easy-to-understand)

# Transparency Through Modelling Methods – GIS



# Transparency Through Visualisation Methods – »Dashboard«

Frackviertel

Kleinmünchen



Jahresbedarf je m² Bruttogeschossfläche (inkl. Wände und innerer Erschließung)



Jahresbedarf je m² Bruttogeschossfläche (inkl. Wände und innerer Erschließung)

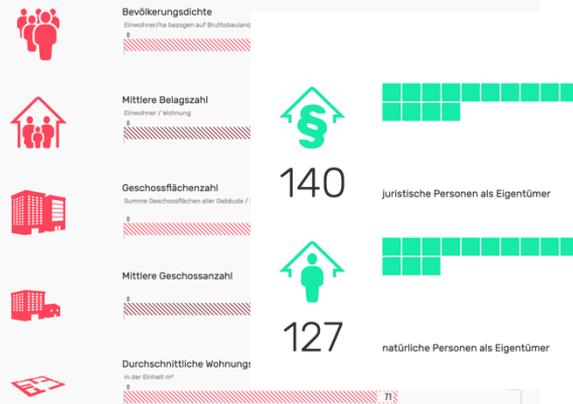
Monatlicher Heizwärmebedarf



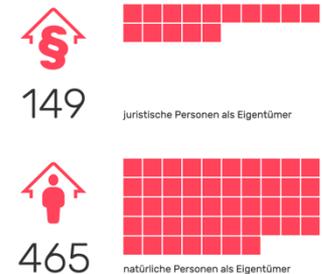
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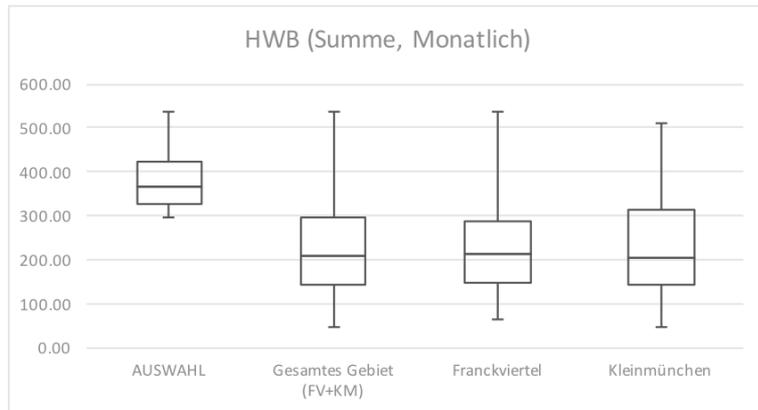
DEMOGRAPHIE & BEBAUUNGSSTRUKTUR



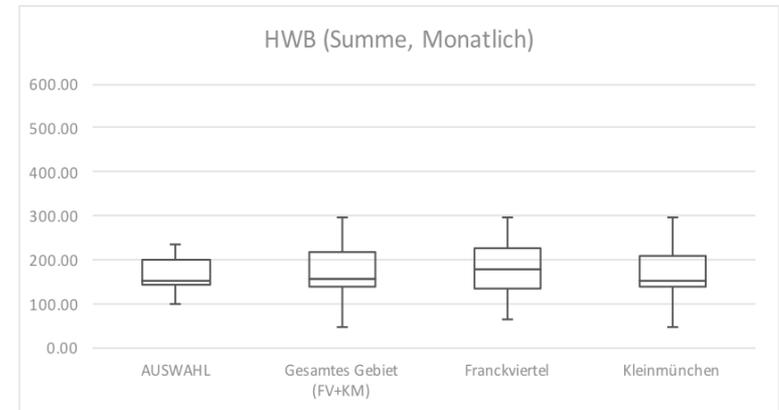
SIEDLUNGSSTRUKTUR



## Transparency Through Analysis Methods – Excel-Tool



Status quo heating demand  
[kWh/m<sup>2</sup>.a]



Heating demand after renovation (best available)  
[kWh/m<sup>2</sup>.a]

- What-If-Analysis
  - Including cost and economic effectivity estimation

## Documentation and Contact Information

- Scientific Report, »Dashboard«, Excel-Tool, Guideline soon online (German only)
- Project website at bmvit (Federal Ministry for Transport, Innovation and Technology):  
[www.nachhaltigwirtschaften.at/de/sdz/projekte/e-profil-quartiersprofile-fuer-optimierte-energietechnische-transformationsprozesse.php](http://www.nachhaltigwirtschaften.at/de/sdz/projekte/e-profil-quartiersprofile-fuer-optimierte-energietechnische-transformationsprozesse.php)
- [www.eprofil.at](http://www.eprofil.at)
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**Thank you for your attention!**