

Socio-technical design in the next generation of thermal energy systems

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**Project E: Modelling Lab for smart grids,
smart policies and smart entrepreneurship**

Project purpose and expected outcomes

To support the **transition** from natural gas-based to **natural gas-free heat supply** of neighbourhoods in the Netherlands while addressing **energy poverty** and **consumer vulnerability** .

Modelling lab
to understand and shape the emergence of the next generation of thermal energy systems in the built environment.

Overview of institutions needed
to steer the emergence of the next generation of thermal energy systems in the built environment.

Smart
grids

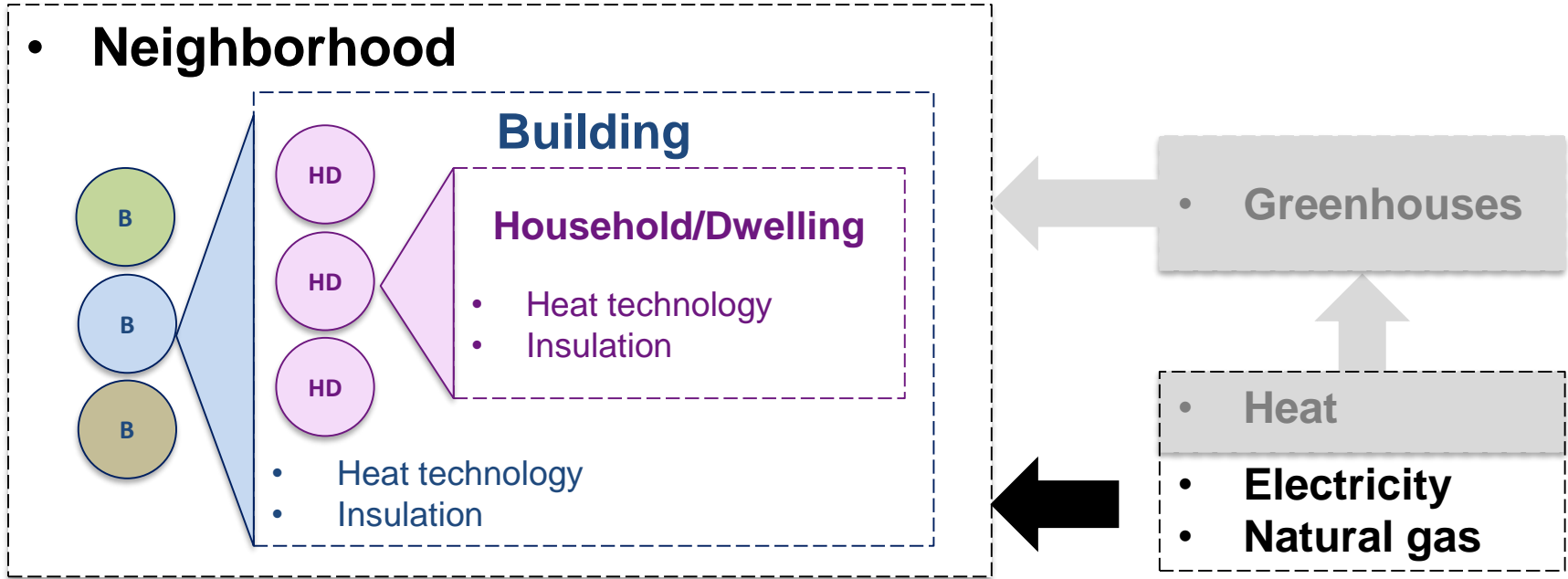
Heating

District
heating

Energy
poverty

Consumer
vulnerability

Conceptualization



Scope of current work

Agent-based modelling
of a neighborhood's
energy transition
towards gas-free heating

Focus on
households'
investment
decisions

Account for
decentralized and
small heat
technologies

Assume fixed
demand and
standard
operation

Assume fixed
decision rules of
households

Conclusions and next steps

- Model serves as a tool to discuss problem and research.
- First iteration of the model will be presented at a workshop.
- We observe how differences in households characteristics and external factors influences the neighborhood's transition.
- Starting application of the model through work with partners.
- Planning expansion of the model.

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