

Spatial Agent-Based Modelling and Simulation to Evaluate on Public Policies for Energy Transition

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Introduction

- Our energy system is undergoing rapid change
- Demand for climate-friendly heat supply
 - Modernization of the building stock
 - Sustainable orientation of new buildings
 - Conversion of the heat supply to renewable energy sources
- Essential: social dimension of the energy transition
 - Behavior and decision-making patterns of the main stakeholders
 - Politics, planners, households, ...

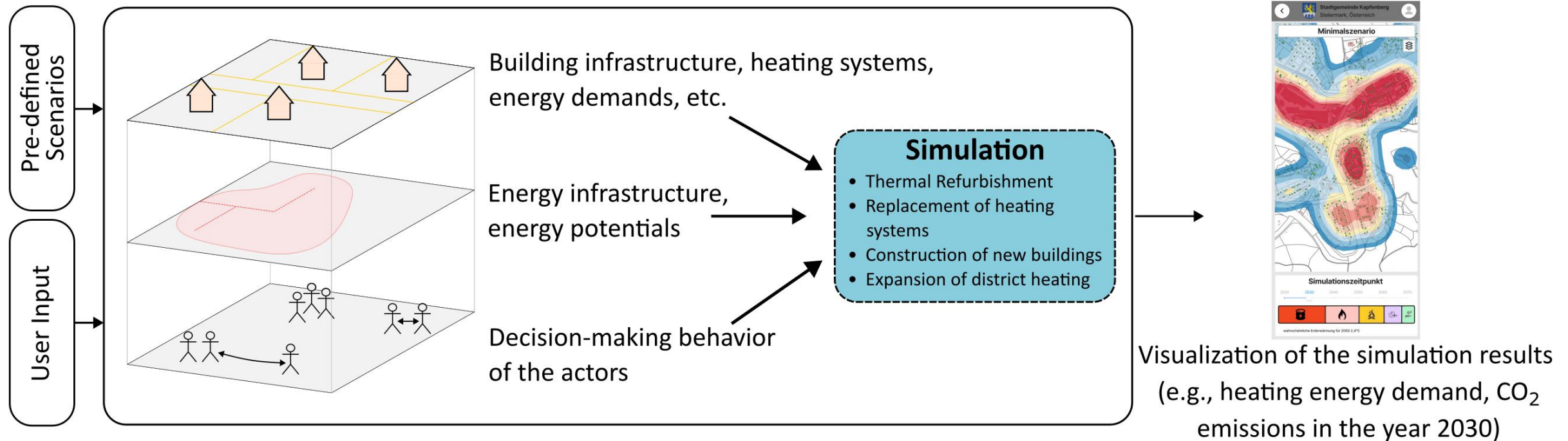
Introduction

- In classical modelling: only techno-economic aspects
- Social factors are rarely taken into account
- Complex interactions are neglected
- Solution: Agent-based Modeling (ABM)
 - Agents interact with each other and with their environment
 - Differentiated decision-making behavior
 - Possibility of simulating complex interactions

Objectives

- Analysis and evaluation of transformation paths for the regional heating and energy transition
 - Simulating the changes in heating energy demand and CO₂e emissions
 - Impact assessment of public policies on the achievement of climate and energy goals
- Web application with a map display of the building and energy infrastructure including a dashboard
- For experts (e.g. city planners, energy analysts), but also citizens

Methodology



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