ENERGOOD – A modelling framework for common well-being optimised energy systems and its use in energy policy design

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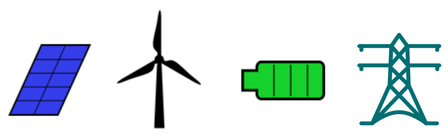
Common well-being assessment framework

Innovation: A novel **framework** for

- **Well-being optimisation and assessment** of energy system designs and investment decisions
- **Maps** with regional well-being effects from energy technologies
- **Policies discourse and design**, e.g. on sufficiency scenarios

Object of investigation: properties and choices of **energy technologies**

- Photovoltaics (rooftop, balcony, open area)
- Wind energy (onshore, offshore)
- Storage technologies (electricity, gases)
- 25 energy technologies in total



Quantified well-being indicators

Scenarios

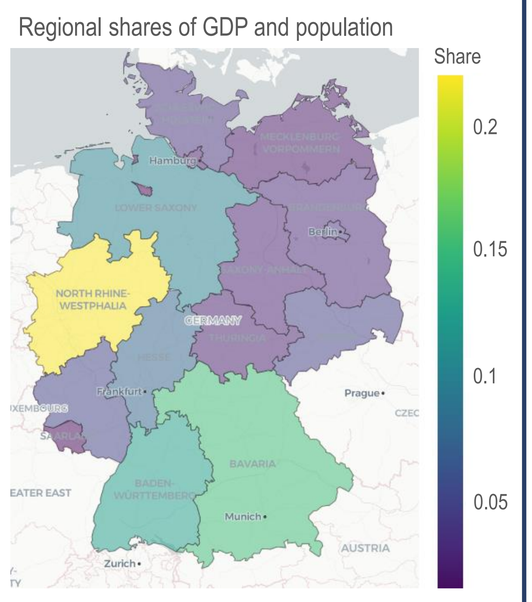
LENS

Energy demand scenarios

- Reference: Net-zero scenario until 2045 for Germany
- Sufficiency: „Contrast" scenario with energy demand reduction

Regionalisation

- Disaggregation of energy demand to identify regionally different well-being effects

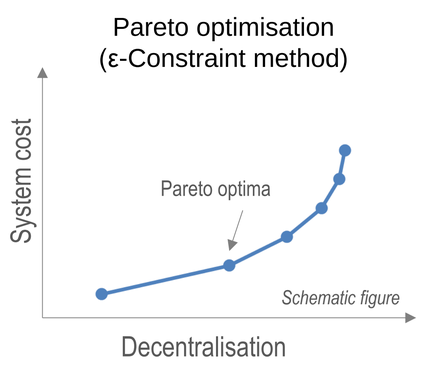


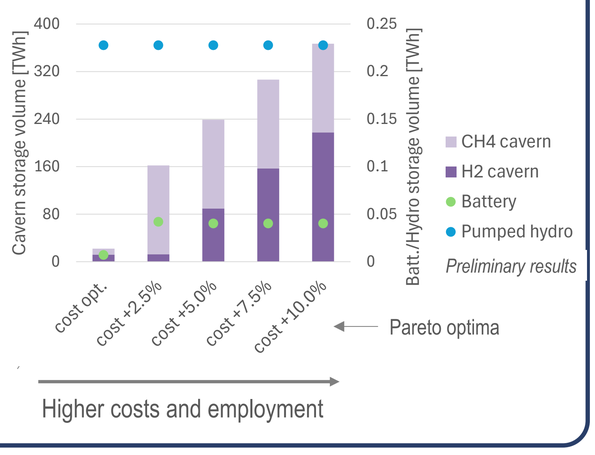
Energy system optimisation

REMix

First results (example):

- Optimisation of **employment effects** with up to 10% higher system costs



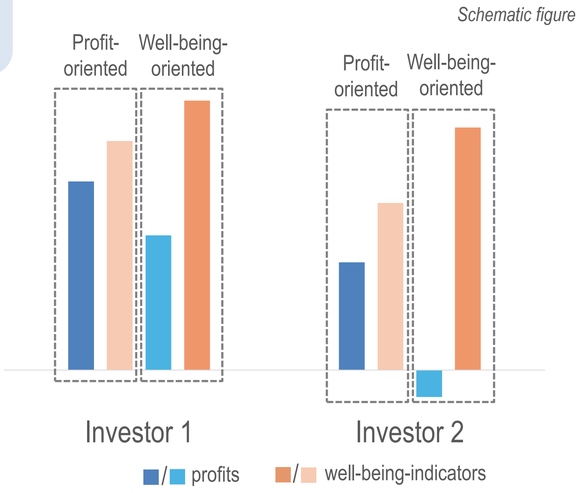


Actors perspective

AMIRIS

Technology options

Agent-based model
Investment decisions resulting in technology portfolios



Well-being benefits and **trade-offs** of **investments**

Objectives and preferences

Technology choice

Benefits and trade-offs

Energy policy design

1. **promote** energy system developments which yield a **maximum contribution to well-being**
2. **use remaining degrees of freedom** for common well-being contributions under given policies
3. indicate/quantify **co-benefits of sufficiency policies**
4. utilise the **framework** for **explorative and discursive processes** on
   a. **insights** in policy implications for common well-being
   b. **trade-offs** between well-being dimensions incl. costs

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