The role of energy sufficiency in the energy transition and in society
TEAM – Interdisciplinary collaboration

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OBJECTIVES OF THE JUNIOR RESEARCH GROUP
IPCC 2018: Sufficiency is required

Breakdown of contributions to global net CO₂ emissions in four illustrative model pathways

- Fossil fuel and industry
- AFOLU
- BECCS

Social innovations
Reduction of demand
Technical measures
Negative emissions

Reference: IPCC 2018, Special Report: Global Warming of 1.5 degree - Summary for Policy Makers, Figure SPM3P
OBJECTIVES OF THE JUNIOR RESEARCH GROUP

Integrating sufficiency into modelling

Presenting sufficiency policy measures
RESEARCH PROGRAM - Overview

WP1 Inter- and transdisciplinary research design

WP2 Scenarios

WP3 Societal change

WP4 Chains of effects

WP5 Energy needs

WP6 Space of possibilities

WP7 SYNTHESIS

Qualitative and quantitative effects

Sufficiency policy

Energy system model

Emissions

Costs

Technology mix

Participatory process

Framework data

Sufficiency module

Energy demand

Energy needs

Sufficiency policy

Societal change

Chains of effects

Qualitative and quantitative effects

WP3

WP4

WP5

WP6

WP7
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5
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RESEARCH PROGRAM

Sufficiency in the energy system model

Methods
- Simulation: extreme scenarios
- Optimisation
- Backcasting
- Meta study scenarios

Space of possibilities

Energy demand

Interface to sufficiency module

Energy model

behavioural measures

Technological measures

Emissions

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  - Sufficiency policy

WP4 WP4
  - WP4

WP5 WP5
  - Energy needs
  - Sufficiency module
  - Participatory process

WP6 WP6
  - Space of possibilities
  - Energy system model
  - Framework data
  - WP6

WP7 SYNTHESIS
  - Energy needs
  - Emissions
  - Costs
  - Technology mix

WP7 SYNTHESIS

7
ENERGY SYSTEM MODELLING 3.0

VER 1.0
Black box models

VER 2.0
Open models

VER 3.0
Shared development and scenario building

Image from Kenneth Karlsson with contributions from Berit Müller 2019
TRANSDISCIPLINARY COLLABORATION

- Workshops
- Scenario process
- Interviews
- Case studies
- Multipliers
- Usage of open source model
- Implementation of measures
Interested in our research?

Suggestions which Energy System Model to use?

Experience in sufficiency modelling?

Quantitative data about sufficiency measures and their impact?

We would be happy to hear from you!

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