

Call for Abstracts: „Energy sufficiency. Modelling and scenarios for less energy consumption“

TATuP-special topic in issue 2/2022

Deadline for submitting your abstract: 30 September 2021

Energy sufficiency is currently becoming an important subject in science, politics and society (Creutzig et al. 2021) and calls for increasing attention from the perspectives of technology assessment. While there is still no conceptual consensus in the literature, definitions of energy sufficiency increasingly converge towards the idea that it is the strategy of achieving absolute reductions of the amount of energy-based services consumed, notably through promoting intrinsically low-energy activities, to reach a level of ‘enoughness’ that ensures sustainability. Energy sufficiency is to be achieved by the reduction of energy demand, by the introduction of energy efficient techniques and by the dimensioning of technologies in view of the demand (Thomas et al. 2015). Socio-technical innovations might also contribute to sufficiency under effective incentive environment, such as smart metering and progressive tariffs.

Reaching the goals of the Paris Agreement without energy sufficiency is hardly possible (Kuhnenn et al. 2020). In the literature, a level of final energy use of ~27 GJ/cap can be globally rendered ecologically ‘sustainable’ (compatible with avoiding 1.5 °C of global warming without relying on negative emissions technologies) with deep transformations of energy systems (Grubler et al. 2018; IPCC 2018). Energy sufficiency is often either explicitly or implicitly part of 1.5°C scenarios. Behavior derived from or guiding towards energy sufficiency does not just happen but is dependent on political, cultural and infrastructural conditions. Current policies, conditions and incentives affect energy consumption, too, and in some cases drive increasing energy consumption and create rebound effects. Energy consumption is not a goal in itself, but a means to achieve quality of life and satisfaction of needs. This relationship is mediated by numerous provisioning factors, which is a new topic for further research. Fundamental issues need to be considered, since the required changes to satisfy human needs at low energy use run contrary to the dominant political-economic regime and a broader transformation of the economic system may be required (Vogel et al. 2021).

Sufficiency research is highly differentiated and offers links to diverse scientific communities like (energy) system analysis, technological impact assessment or political ecology. Of relevance are, for example, research on lifestyle changes in models and scenarios (van den Berg et al. 2019), practice and democracy theoretical research on sufficiency (Kalt and Lage 2019), comparative analyses between sufficiency strategies and other strategies as well as between different countries or regions (Vogel et al. 2021), analyses on digitalization and rebound effects (Santarius et al. 2020) as well as real-world

laboratories oriented towards the implementation on the level of cities and neighborhoods (Best 2020).

Submissions can be guided or inspired by the following questions but are not limited with regard to topics or disciplines:

Sufficiency in energy / climate scenarios and energy models

- How can sufficiency and its effects be tested and quantified in demand and supply-side models?
- Which role does sufficiency play in energy systems with 100% renewables?
- How can sufficiency be represented, including socio-cultural factors and values – the harms and benefits, physical and non-physical, and what are barriers of energy models for integrating sufficiency?
- Which multiple effects and co-benefits can be described (either quantitatively or qualitatively) for energy sufficiency measures?
- What can be learned about energy sufficiency from different cultural contexts?
- What is the relationship between energy consumption, provisioning factors and quality of life in different countries?

Energy sufficiency policies and measures

- Which specific strategies and policy-mixes addressing sufficiency in different sectors and areas to achieve the goals of the Paris Agreement can be analyzed?
- To what extent are there conflicts or synergies between sufficiency and energy policy goals (reliability, environmental sustainability and affordability)?
- What are the synergies and trade-offs between energy demand reduction, justice and the quality of life? How do different names, frames and concepts impact the support for sufficiency? How can target groups for sufficiency policies be best activated?
- What are good examples for sufficiency policy instruments and policy mixes and what can be learned from analyzing them?
- What are global ramifications of energy sufficiency policies, in particular with a view to the Global South?

Further perspectives of the sufficiency discussion

- Which sufficiency potentials lie within digitalization and how can it be designed such that rebound effects can be avoided and autonomy promoted?
- (How) can socio-technical innovations and low-energy activities converge?
- How can sufficiency be implemented in spatial development, what are sufficiency-oriented cities and villages?
- Does sufficiency bear emancipatory and participatory potentials? What are problematic connections between sufficiency and intersectional dimensions of discrimination?
- How do consumption corridors take shape in different fields of demand and how can they be negotiated at the science-policy interface, eg. employing participatory and transdisciplinary research?

Guest editors of this TATuP special topic

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Submissions

- Send your abstract by email to redaktion@tatup.de by **30 September 2021** at the very latest;
- Length of the abstract: max. 1.5 pages;
- State full names, email addresses and institutional affiliations of all co-authors of the abstract;
- The editorial office will correspond only with the author submitting the abstract.#

Editorial Process

30 September 2021: deadline for submitting your abstract

October 2021: Special Topic Editors' decision on inviting authors to submit a full manuscript

January 2022: deadline for submitting your full manuscript, followed by non-blind review

Mid-March 2022: feedback from the reviewers, followed by authors' revisions by mid-April

April 2022: feedback on revisions

Mid-May 2022: editorial deadline (end of revision period)

July 2022: publication (print and online)

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