

## WP4 METHODS: ASSESSING POTENTIAL RISKS TO LIFESTYLE CHANGES AT THE HOUSEHOLD LEVEL

Rebound effects and other side effects present a significant challenge in transitioning to sustainable lifestyles aligned with the Paris Agreement's 1.5°C target. These effects can undermine the anticipated environmental benefits of technological and behavioural shifts. Our research in WP4 explored these challenges through an extensive literature review, revealing a strong focus on quantitative studies of rebound effects but limited qualitative research on individuals' lived experiences and the adverse side effects of lifestyle changes, including rebound. To address this gap, we conducted co-creation workshops, using causal-loop diagrams to map systemic interactions and feedback loops. A central focus of these workshops was engaging with "pioneers"—individuals who have successfully adopted low-carbon lifestyles while minimising rebound effects. Their insights provided valuable empirical evidence on the barriers and enablers of sustainable living. While existing studies primarily measure rebound effects in terms of efficiency losses, our approach integrates a broader perspective that captures the systemic and behavioural dimensions of lifestyle changes.

### LITERATURE REVIEW DESIGN AND METHODOLOGY

The literature review synthesised existing knowledge on rebound effects, their mechanisms, and potential mitigation strategies. Following an established systematic review approach, we conducted a database search in Scopus using search strings related to "rebound effects," "sustainable lifestyles," and "household consumption." Our final sample included 131 studies coded using NVivo 12 to identify patterns related to consumption domains, rebound types, and mitigation measures. Please see Richter et al. (2024) and Lehner et al. (2024) for more information on the methodology.

### WORKSHOP DESIGN AND METHODOLOGY

#### RECRUITMENT OF PARTICIPANTS:

We engaged "pioneers"—individuals who had already adopted low-carbon lifestyles—to explore rebound effects in real-life settings.

#### PRE-SURVEY:

Participants completed a questionnaire capturing their motivations, perceived challenges, and anticipated consequences of lifestyle changes.

#### WORKSHOP SESSIONS:

**Individual Reflections:** Participants shared their experiences of unintended consequences.

**Causal Loop Diagram (CLD) Exercises:** Facilitators guided participants in mapping cause-and-effect relationships. To better understand the dynamic interrelations of rebound effects, we developed CLDs based on workshop discussions and literature insights. These diagrams visualise feedback loops that drive both positive and negative spillover effects.

**Focus Groups:** Discussions explored mitigation strategies and structural enablers needed for sustainable lifestyle shifts.

#### DATA COLLECTION AND ANALYSIS:

The workshops rely on a mix of **written documentation, audio recordings, and visual materials** (such as diagrams). The collected qualitative data is analyzed using **NVIVO software**, guided by themes from prior literature and project findings.



## LIMITATIONS

The results are not statistically generalizable as the approach was qualitative, but they offer transferable insights that can guide future studies and policy-making. The co-creation workshop approach ensures that scientific models align with real-life experiences, making the findings helpful in addressing rebound and side effects in sustainable living.

## CITED WORKS

- Lehner, Matthias, Jessika Luth Richter, Halliki Kreinin, Pia Mamut, Edina Vadovics, Josefine Henman, Oksana Mont, and Doris Fuchs. 2024. 'Living Smaller: Acceptance, Effects and Structural Factors in the EU'. *Buildings & Cities* 5 (1). <https://doi.org/10.5334/bc.438>.
- Richter, Jessika Luth, Matthias Lehner, Anna Elfström, Josefine Henman, Edina Vadovics, Janis Brizga, Andrius Plepys, and Oksana Mont. 2024. '1.5° Lifestyle Changes: Exploring Consequences for Individuals and Households'. *Sustainable Production and Consumption* 50 (October):511-25. <https://doi.org/10.1016/j.spc.2024.07.018>.

