Energy and Behaviour: A multi-faceted perspective towards a low carbon future

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INTRODUCTION

- **People are at the core of the energy system**
- Transition to a low carbon energy system asks for **people increased involvement**
- Research has been mostly **focused on the residential sector**
- The way people use energy has **social and technical dimensions** that shouldn't be separated

"... reducing fossil fuel consumption will require the integration of thinking from many social science disciplines, of the social and natural sciences, and of science and practice

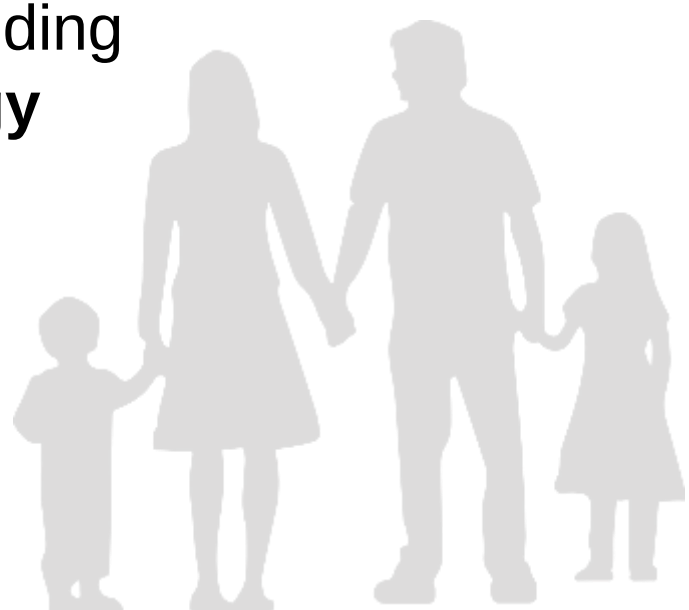
PAUL STERN

APPROACH

Energy and behaviour *is broadly understood as the role of people, organisations, and technology in energy use*

People *may be individuals, groups, or society*

Multi-faceted approach to understanding and engaging **people in the energy system**

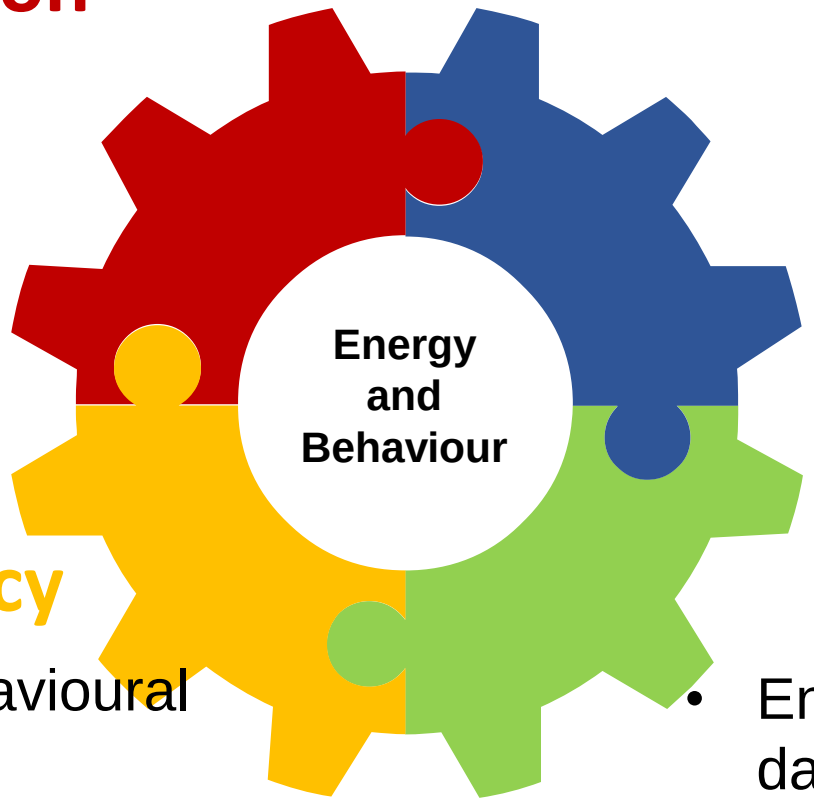


APPROACH

Multidisciplinary vision

- Economy
- Engineering
- Psychology
- Sociology

and other



Sectoral perspectives

- Residential
- Non-residential / Services
- Industry
- Transports
- Energy communities
- Cities

Interventions and Policy

- Interventions to induce behavioural change
- Energy policies to promote behavioural change

Modelling

- Energy consumption patterns and data mining
- Buildings performance simulation
- Agent-based modelling
- Preference elicitation

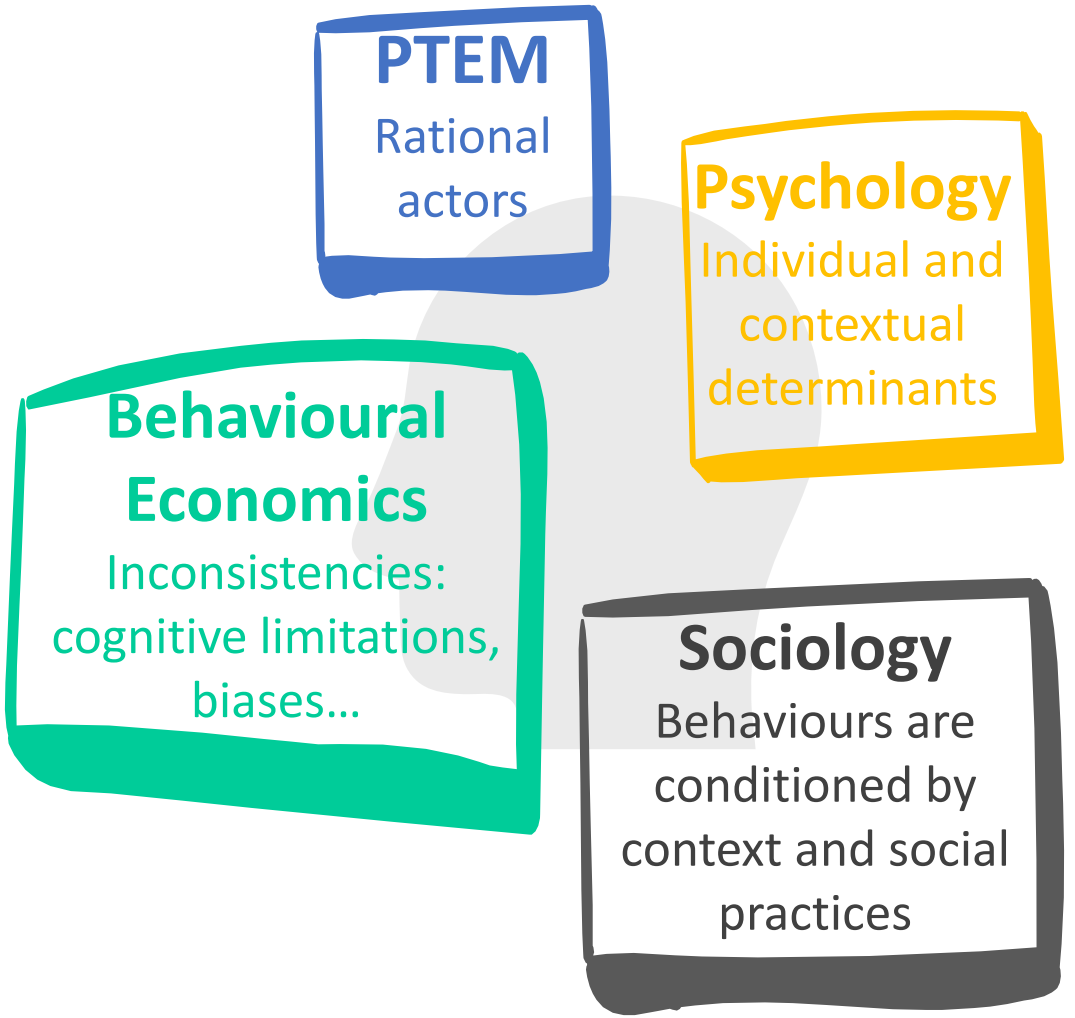
The authors

MAIN FINDINGS

Energy behaviours can be influenced at both the **individual and societal levels**

Different disciplinary fields have different perspectives:

- Engineering and classical economics: people make economically rational decisions, adopting the most efficient technologies
- Economics and psychology share a common focus on individual choices
- Social sciences (e.g. sociology, anthropology): energy demand is not a consequence of individual decisions but a reflection of the social organisation in which rules, practices and routines are embedded



The approach to energy behaviours **depends on the perspective and the purpose of the analysis**

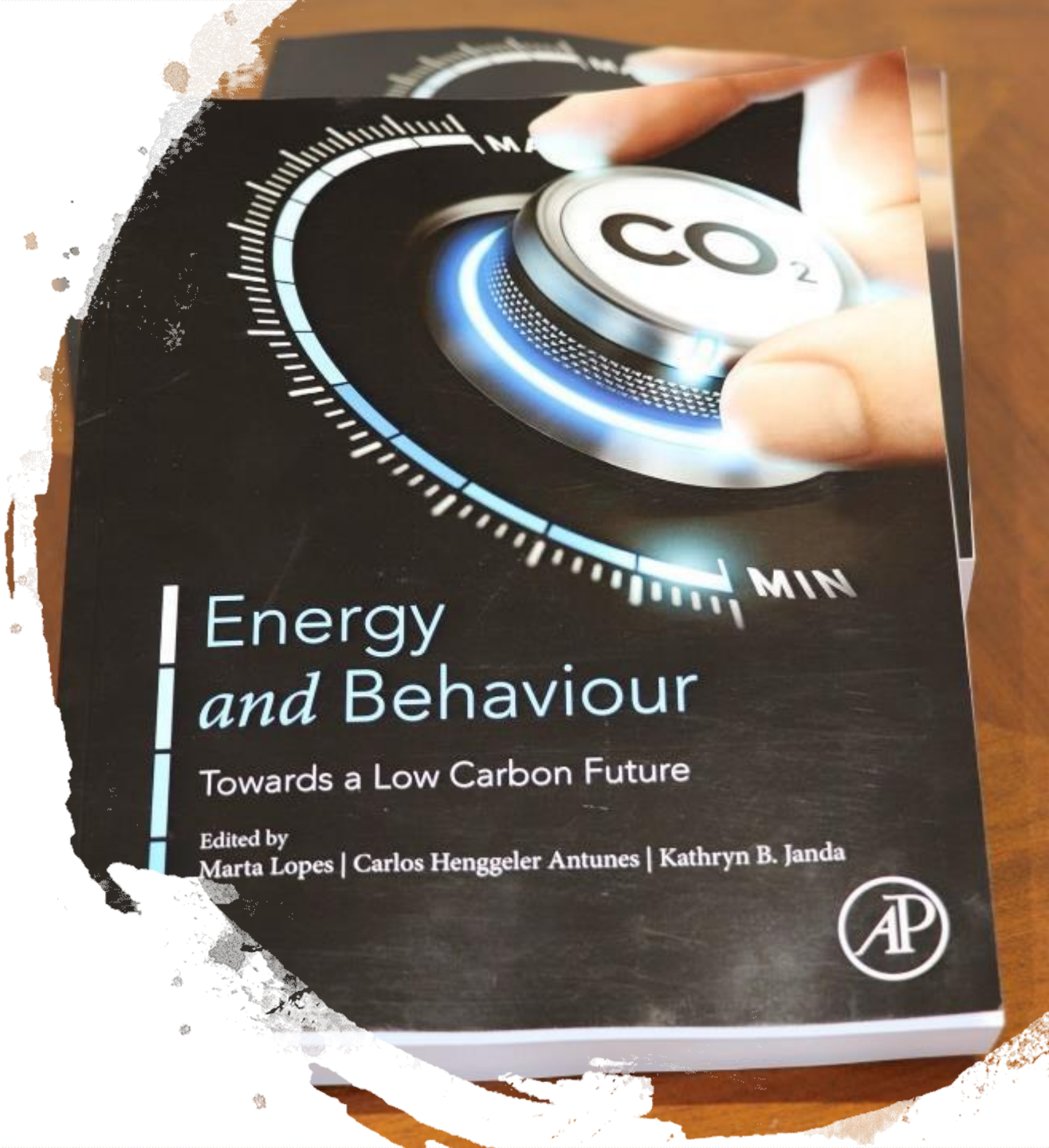
Main findings

- **Policy strategies for promoting energy efficiency and reducing energy demand** have focused on technology development, regulation, financial incentives and information provision, which are strongly influenced by an individual perspective

- **Most promising actions** are those having higher impacts when considering both **technical potential** (i.e., the amount of reduction) and **behavioural plasticity** (i.e., capability of delivering effective behaviour change)

MAIN CONCLUSIONS

- The need to consider **the energy system as a whole**, moving beyond the usual perspective of re-designing individual technologies or expecting to change people's behaviours
- The importance of **interdisciplinary work,** close cooperation between **all stakeholders** in real-world practice and using **modelling** tools to gain insights
- The opportunity for **leveraging energy policies** by maximising co-benefits to society and citizen participation



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Thank you for your attention

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