Karlsruher Institut für Technologie

Deutsch-Französisches Institut für Umweltforschung

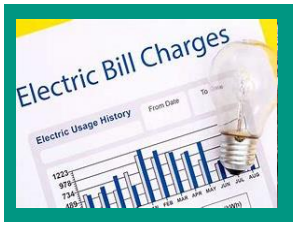
Institut für Industriebetriebslehre und Industrielle Produktion
Lehrstuhl für Energiewirtschaft

Bachelor/Master Thesis

Energy savings potential from non-monetary interventions

Background

The optimal choice of incentive is one main way to manage energy consumption, as it can incentivize demand flexibility in the form of shifts, reduction or substitutions. While demand for energy is considered to be already flexible, we need to understand how to stir this flexibility to make load management more efficient. Electricity tariffs can provide financial incentives that make off-peak consumption more attractive. In addition, non-pecuniary incentives have shown to incentivize important shifts in behaviour (Cialdini et al.). Thus, we need to gain a better understanding on what type of incentive can be effective in steering energy behaviour. Moreover, it would be useful for policy makers and energy providers alike to shed light on the likely percentage savings that can be attributed to each tool in the incentive mix and how they interact.



Objectives of the thesis

The goal of this project is to conduct a systematic literature review that can provide an estimate for the likely percentage savings for the different non-pecuniary intervention types. Specifically, by pooling upon the findings from existing studies, each incentive type embedded in a given context is to be evaluated. The effects of a particular incentive type can also vary across different user groups depending on socio-economic characteristics and lifestyles. Thus, the contingency between context and incentive needs to be established in order to draw conclusions on its effectiveness.

In a first step, you will analyse the existing literature in order to identify different incentive mechanisms for energy consumption. This list will then be used to establish a classification according to incentives' characteristics. Next, the different social and behavioural contexts will be taken into account in order to identify the advantages and disadvantages of incentive types in each context as well as the magnitude of effects. If possible, interaction effects with financial incentives can be highlighted.

Requirements

- Interest in social science topics (regulation, user behavior) and energy (e.g. load management)
- Willingness to work independently
- Ideally existing skills synthesizing literature and using citation tools (e.g. Endnote)
- Ideally first experiences with statistical analysis

Start date/duration/language

Thesis can start immediately / 3-6 months / English required

Contact person

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