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Future governance of individual energy consumption behavior change—A framework for reflexive designs

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ABSTRACT

With this paper, we set out to advance the understanding of governance that addresses the challenge of changing individual energy-related consumption behavior. We do so by disentangling the complexity of this challenge and paving the way to systematically approach it in terms of a governance design framework. The framework contains basic categories and reflections that, from a governance design perspective, are crucial for refining, shaping and creating governance arrangements, which aim at changing individual energy behavior. The framework not only serves analytical purposes but can also inform practitioners in designing real-world governance arrangements. Given the involved complexities, it points to the need to consider governance design as a reflexive undertaking.

1. Introduction: background and goals

Issues such as climate change, the Fukushima nuclear accident, changes in the geo-strategic, economic, and technological landscapes as well as transformative ideas such as sustainable development have induced changes in the energy systems of many countries [1,2]. In some countries, these dynamics have been taken up in rather comprehensive and future-oriented energy transition strategies that envisage fundamental reconfigurations of the respective energy systems. These range from transformations of techno-economic infrastructures on the supply side to changes of energy consumption patterns on the demand side [3–5].

Because technical energy efficiency improvements alone have their limitations when it comes to realizing absolute cuts in energy demand [6], energy research and policy is increasingly prompted to consider individual energy consumption behavior (IECB) and the changes thereof (change of individual energy consumption behavior (CIECB)) as essential cornerstones of future-oriented energy transitions [7]. Even though many existing energy transition strategies seem to focus their attention on technological solutions, while efforts to bring about behavior change are being absent or even downplayed (cf. e.g. [8]), there are indications that CIECB does begin to play a more important role in energy transition strategies (see e.g. [11–13]). In view of a more general rise of governance of individual behavior [9,10], CIECB can be expected to become an ever more important playing field for future energy governance.

Yet, likewise the recent emerging behavioral orientation in policy and governance the interest in (C)IECB is not without precedent. In fact, governmental and administrative policymakers as well as other committed actors, such as NGOs, corporations, etc., have been trying for years to deliberately influence individual energy consumption behavior patterns. Based on a growing knowledge base generated by scholars from various disciplines, many policy measures have been introduced, at different levels and scales, addressing multiple barriers of behavior change, such as incentive structures, routines, and heuristics as well as biases, lack of knowledge, opposing attitudes, norms, or values regarding comfort or hedonism, and rebound effects. However, the effects of these efforts have been limited and hardly long-lasting, both at the level of impacts (i.e., the lasting change of individual energy behavior) and the level of outcomes (i.e., energy consumption reductions on an aggregate level¹) [15]. Despite extensive experience and an ever-increasing knowledge base, understanding and actually bringing about CIECB remains a challenge for current and future energy transitions. Assuming that CIECB is (and will become even more) significant for transforming energy systems, the pressing question is how this challenge can be approached in the future.

One possible answer to this question is: by improved policy or governance design. This solution is possible or even likely because design thinking is currently in vogue in theory and practice. Both scholars and policymakers are increasingly promoting design approaches to tackle complex challenges, such as sustainability issues [16–18]. With reference to deliberate attempts at tailoring, shaping,

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E-mail addresses: basil.bornemann@unibas.ch (B. Bornemann), annika.sohre@unibas.ch (A. Sohre), paul.burger@unibas.ch (P. Burger).¹ In Switzerland, for example, there has been only a marginal reduction of the overall household end energy consumption (by minus 1.6% in 2015 compared to 2000) [14].<https://doi.org/10.1016/j.erss.2017.10.040>Received 2 March 2017; Received in revised form 15 October 2017; Accepted 20 October 2017
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and creating policy interventions based on theoretical and empirical insights, a design perspective seems to be of particular relevance when considering “the future of energy governance” (i.e., one of the sub-themes of this special issue), especially in the context of deliberate, comprehensive, and long-term-oriented energy transition strategies [19]. Yet, as we will argue in more detail in Section 2, governance design thinking with regard to CIECB is still in its infancy.

This paper seeks to link these two discussions—CIECB on the one hand and governance design on the other—to further inform both of them. Putting on hold the choir of critical voices for a moment, we assume that a design perspective may well be promising for tackling complex issues, such as governing CIECB; however, we argue that a design perspective needs to be systematically developed and applied in order to grasp the complexities that come with it. The goal of this paper is therefore to systematically disentangle and explore the notion of CIECB-oriented governance design. We do so by outlining a conceptual framework that sorts out the issues raised by a CIECB-oriented governance design perspective. To develop the framework, we adopt a governance design perspective ourselves and ask, “Based on what reflections can governance arrangements addressing CIECB be systematically designed?”

In answering this question, our intention is not to come up with a specific governance design for CIECB. Such an endeavor would neither be feasible, considering the empirical state of the art, nor would it be possible on a level that abstracts from specific political contexts. Rather, we develop a framework that will enlighten governance design approaches by defining basic categories and highlighting reflections that derive from such a perspective. In disentangling the complexity of CIECB-oriented governance design, the framework serves two specific purposes. First, it will provide an analytical basis for critical empirical inquiries of real-world governance arrangements in the field of CIECB from a governance design perspective. Second, it provides orientation for designing CIECB-oriented governance arrangements in practice. It does so, however, not in terms of a checklist of what to do but rather in terms of a reflection tool that highlights critical aspects and questions that must be considered in the design of CIECB-oriented governance arrangements. The burden of proof for its analytical and practical utility, however, must remain postponed to future work.

Overall, the contributions of this paper are twofold. On the one hand, it adds to the intensifying discussion about policy and governance design by systematically applying a governance design perspective to a particular subject area, namely CIECB. On the other hand, it contributes to the discussion about CIECB (as well as the rising discussion about the governance of individual behavior more generally) by exploring the implications of a governance design perspective for tackling CIECB (representing a particular case of behavioral governance). It contributes to this special issue’s theme, “the future of energy,” in two respects: by reflecting on a particular objective of future energy transitions, namely CIECB (“governance for the future”), from a future-oriented governance design perspective (“governance in the future”).

We answer the overall question and develop the framework according to the following six steps. In Section 2, we provide a brief overview of two strands of discussions dealing with the challenge of governance of CIECB and point to a gap between them, which we will address from a governance design perspective. In Section 3, we seek to attain a more differentiated understanding of the governance object in question by disentangling multiple types and factors of CIECB. Thereby, we will discern fundamental features of CIECB that need to be considered by related governance design efforts. In Section 4, we derive from these basic features of CIECB a set of five functional requirements for the governance of CIECB. These requirements prescribe certain functions to be fulfilled by CIECB-oriented governance arrangements. In Section 5, we reflect and further elaborate on the five requirements from a governance design perspective. Drawing on a three-dimensional governance concept, we sort out the implications of the five requirements for policy, politics, and polity considerations. The resulting

framework highlights a total of 15 categories containing diverse reflections concerning the design of CIECB-oriented governance arrangements. In Section 6, we discuss the framework and reflect on its applicability in research and its implications for understanding governance design practice as a reflexive endeavor. We summarize our main points in the last section and point to future perspectives for research and practice.

2. The challenge of CIECB governance—a brief review

A growing body of mostly scientific but also practice-based literature seeks to contribute to understanding the challenge of governing CIECB. We identify two broad, loosely connected strands emanating from different points of view and pointing to particular gaps.

The first strand of literature addressing the challenge of governing CIECB starts from a governance or policy perspective. Scholars in this area, particularly political scientists and (macro-)economists, predominantly focus on the collective level of action for the purpose of understanding, explaining, and improving the formation and implementation of energy policies. Following a general “instrumental bias” in policy analysis, policy instruments have been regarded as the main channel for steering and influencing the behavior of actors [20,21]. Consequently, energy policy has been primarily seen as a matter of choosing and designing the “right” (effective and efficient) policy instruments [22,23]. Accordingly, the gist of this literature deals with the choice and design of effective and efficient energy policy instruments in different sub-domains of energy policy. More recently, however, a conceptual broadening of energy policy literature can be observed. Following a more fundamental surge of governance perspectives in politics and political analysis [24,25] as well as re-orientation toward energy system transitions [26,27], it is increasingly acknowledged that energy policy goes beyond the right choice and design of policy instruments. The governance of energy system transitions involves multiple types of interventions by different types of actors operating within different arenas at multiple levels [28–31]. While this governance perspective has generally illuminated the complexity of collective action in energy policy, it has, however, not yet fully embraced the challenge of CIECB. In fact, the main focus of the newer energy governance research lies on comprehensive and large-scale energy systems emphasizing the supply side, i.e., the provision and development of infrastructure and technologies [27,32–34]. Studies focusing on the demand side mainly look at governance approaches directed at corporate actors, such as large industries, e.g., demand-side-management, white certificates; however, options for changing energy consumption at the individual behavior level are largely disregarded [27,35]. The few existing accounts that do focus on the governance of CIECB tend to treat individuals in rather abstract ways as average consumers who maximize utility [36,37]. Comprehensive and differentiated conceptualizations of energy governance that are based on differentiated understandings of CIECB are largely missing.

While the first strand concentrates on the steering of CIECB at the level of collective action, the second strand of literature is engaged with conceptualizing and explaining CIECB itself. Involving a broad and quite diverse range of disciplinary perspectives and theoretical approaches [38,39], the common focus of this strand is on understanding how energy-related behavior patterns come about and how they change (see also [40]). Psychological approaches, for example, explain behavior in terms of norms, attitudes, emotions, and belief structures [36,41,42]. Microeconomic approaches are predominantly informed by rational choice models and therefore highlight price signals and income as the main drivers of individual behavior and behavioral change [43]. Behavioral economics, on the other hand, refer to bounded rationality and emphasize heuristics and biases as explanatory factors of energy consumption behavior [44]. A broad and diverse range of sociological accounts focus on structural and social factors, such as symbolic meanings and identity of consumption, milieu specific practices, habits

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