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The need for policy coherence to trigger a transition to biogas production



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ABSTRACT

Transitions towards more sustainable societies involve policy changes cutting across multiple sectors. Ideally, policies targeting different sectors create a coherent push for the adoption of more sustainable solutions. Sustainability transition studies have, however, paid little attention to the role of policy interaction across different policy domains. By focusing on biogas production in Finland and by further developing the technological innovation systems functions in connection to policy coherence, this paper examines how policy coherence is related to triggering transition from the perspective of biogas actors. The results demonstrate how supportive policies in one sector are made inefficient by unsupportive policies, instruments and practices in others. However, the lack of policy coherence, especially at the local level, may also have innovation-triggering influence when it forces actors to consider unconventional solutions. Thus the innovation effects of policy coherence are difficult to foresee and require an actor-focused perspective for analysis.

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1. Introduction

Recently it has been acknowledged that transitions towards more sustainable societies involve policy changes cutting across multiple sectors and taking on a more systemic perspective (Markard

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et al., 2012; Weber and Rohracher, 2012; Kivimaa and Virkamäki, 2014). This systemic perspective links to the concept of ‘policy coherence’ that has recently evolved as a key term in the analysis of policy mixes and policy interaction in the context of environmental change (Nilsson et al., 2012). Simultaneously, the role of actors in transitions has received increasing focus in transitions literature (e.g. Shove and Walker, 2010; Wirth et al., 2013), while it is a missing perspective in policy coherence studies.

New policies are rarely designed in a vacuum but, rather, layered on pre-existing policies, making changes, introducing new instruments and aligning instruments to better fit to new goals (Kern and Howlett, 2009). Even when focused on a single sector, this layering of policies contains a high risk for incoherent policy mixes, if the whole policy context is not fully reviewed. These policy mixes can be inefficient in triggering transitions, for example due to old instruments undermining new goals, or the prevalence of old policy discourses (Kern and Howlett, 2009; Smith et al., 2010; Kern, 2011). When the perspective is widened to comprise cross-sectoral matters, there is a strong likelihood of the emerging coherence issues being even wider, for example by making rebound effects visible (see van den Bergh, 2013). The policy coordination failure has been recognised as a central problem in governing for innovations in sustainability transitions (Weber and Rohracher, 2012). Not all policies can be coherent, nor is it desirable due to competing interests (Jordan and Halpin, 2006; Carbone, 2008). Yet the key question is how to recognise and avoid unnecessary coherence problems to efficiently promote sustainability. This paper aims to initiate discussion on how policy coherence influences sustainability transitions and create an initial understanding of it by examining a particular case: the adoption of biogas technologies in Finland.

Here, policy coherence is understood as the consistency of expressed policy goals, instruments and other policy-related signals from the perspective of actors affected by the policies (May et al., 2006; Mickwitz et al., 2009) including implementation. Thus, actors are at the centre of policy coherence analysis, indicating the role of policy coherence in inhibiting or promoting sustainability transition. To assess the influence of policy coherence on biogas innovation, we adopt the Technological Innovation Systems (TIS) functions, similarly to Kivimaa and Virkamäki (2014), but extend them by cross-sectoral and actor-based dimensions.

Biogas production in anaerobic co-digestion systems is a boundary-crossing innovation (cf. Raven and Verbong, 2009) between several socio-technical regimes: energy production, waste management, agriculture and transport being the most obvious ones (see e.g. Lantz et al., 2007; Negro et al., 2007; Wilkinson, 2011; Lybaek et al., 2012). Innovations crossing the boundaries of multiple regimes are particularly fruitful for transition experiments (Raven and Verbong, 2009). Furthermore, biogas production deals with both system improvements and system innovations that have been identified as the key points in addressing lock-in (Kemp and Rotmans, 2005). From the perspective of biogas systems, policies targeting multiple sectors have been important in guiding the development of biogas technologies (Negro et al., 2007; Wilkinson, 2011; Lybaek et al., 2012). However, the role of policy coherence for biogas innovation has not previously been studied. Therefore, this paper examines: (1) how local actors experience policy coherence related to biogas production; and (2) how their experiences on policy coherence influence innovation processes that potentially lead to wider transition.

The paper is structured as follows: next, the sustainability transitions approach via Technological Innovation Systems and the analysis of policy coherence are contextualised. Section 3 presents the case study and methods. The results are presented in Sections 4 and 5, followed by discussion and conclusions in Sections 6 and 7.

2. Policy coherence and sustainability transitions

2.1. Policy coherence

Broadly, policy coherence means that policy goals, instruments and other policy-related signals (for example, communication on future changes to policies) are consistent with each other (May et al., 2006; Mickwitz et al., 2009) and that this compatibility occurs across substantive policy domains (e.g.

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