Environmental Innovation and Societal Transitions 14 (2015) 84–100

Contents lists available at ScienceDirect

Environmental Innovation and Societal Transitions

journal homepage: www.elsevier.com/locate/eist

Assessing and comparing German and UK transition policies for electric mobility

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ARTICLE INFO

Article history:
Available online 10 May 2014

Keywords:
Assessment approach
Automotive industry
Policy analysis
Transition pathways

ABSTRACT

This paper presents a novel policy assessment approach for sustainable transitions using insights from the multilevel perspective (MLP). An analysis of current German and UK policies for sustainable transport is conducted to illustrate its application. For both cases a potential transition pathway, that can satisfy environmental protection and industrial competitiveness goals, is derived from archetypal transition pathways. These are then put in relation to current policies, discussing whether these measures support these pathways. In the UK case, where emission reduction goals and industrial development are pursued together, current policies of promoting the diffusion of electric vehicles as well as industrial niches are supporting the emergence of a reconfiguration pathway. Replacing foreign suppliers, the local automotive industry shall become a significant part of the future regime. In contrast to that, Germany focuses on a careful transformation and conservation of its automotive industry where none of the current actors is left behind.

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http://dx.doi.org/10.1016/j.eist.2014.04.005

1. Introduction

The aim of this paper is to present a novel approach that allows policy makers to assess whether their policies are actually supporting transitions that satisfy their policy goals. While the case of electric cars has been chosen as an illustrative example, the approach can be utilized to discuss other cases of sustainable transitions as well.

The private car transport sector has been taken as example as it is currently in a transition towards electric cars, mainly driven by significant economic and environmental pressures (IEA, 2010; IPCC, 2007; WEC, 2011). Alike other sustainability transitions this will induce significant changes to the current structure of the (automotive) industry, making it for some national governments a question of industrial policy as well as of energy and environmental policy. These energy and environmental policy goals are largely similar across European countries, however, industrial policy goals can be expected to reflect the particular structure and strategy of national industries and therefore vary more significantly. This hypothesis is supported by the fact that recent policies aimed at promoting electrification of road transport have taken somewhat different forms in different European countries (Elzen and Wieczorek, 2005; Huétink et al., 2010; Santos et al., 2010; Stern, 2007; van den Hoed, 2007).

The question policy makers pose themselves is, what policies are most appropriate in order to reach their transition goals? The traditional way of answering the question would be by measuring the results that they have produced so far, in terms of both the uptake of electrified vehicles and of industrial competitiveness. However, given the policies were introduced only recently and vehicle uptake numbers are still low, such an assessment would be characterized by a high degree of uncertainty. Therefore we propose in this paper an alternative approach to assess policies for transitions that are intended to happen, or are at a very early stage. For that we use insights that are based upon recent research on transitions of socio-technical systems.

Whilst the role of innovation in driving economic growth and industrial competitiveness has been noted by economists since early in the 20th century, many early works (Schumpeter 1934) focused on technological innovation on its own. However, since then, and over some decades, innovation theory has evolved greatly, leading to the investigation of innovation processes from a system perspective. This has brought more complexity into innovation theory, suggesting that attention needs to be paid also to the societal and institutional system in which an innovation is happening and spreading, leading to research on transitions of socio-technical systems.

Looking at those aspects, a number of strands, including transition management (Rotmans et al., 2001), strategic niche management (Kemp et al., 1998), and the multi-level perspective (MLP) on socio-technical transitions (Geels, 2005b; Rip and Kemp, 1998) have been developed (among others) since the 1990s. The MLP is a framework that has significantly contributed towards the understanding of past transitions. Moreover, analysing historical transitions using the MLP, Geels and Schot (2007) have identified a set of stereotypic transition pathways that have been used to describe possible pathways for current sustainability transitions (Foxon et al., 2010; Van Bree et al., 2010; Verbong and Geels, 2010). Strategic niche management focuses on the management of transition experiments (on the niche level) to support niches in breaking existing regimes to initiate transitions. Transition management examines the policy process around the transition itself in a more general manner, including experiments and learning (Lachman, 2013; Markard et al., 2012).

Although these strands have provided many new insights into sustainable transitions, they are however not yet providing specific insights into what policies are appropriate to reach specific transition targets for the system. In the literature much focus is on the niche level. In particular, Markard et al. (2012) and Meadowcroft (2009) outline that these approaches do not provide insights on decisive policies such as the target-oriented allocation of scarce resources among various alternatives.

To address this, and to show the suitability of research on sustainable transitions for policy making, this paper proposes a novel approach that can be used to assess policy making for transitions, especially in the early stage of transitions. It is based upon the MLP approach, and especially a set of stereotypic transition pathways. The approach is applied to the case study of two European governments that have been introducing policies to support the electrification of vehicles: the UK and Germany. Previous work (Mazur et al., 2012) provided a brief comparison of road transport electrification policy making in the UK and Germany from a transition science and transition management point of view. However,