CHAPTER TEN

TRANSITION MANAGEMENT AND INSTITUTIONAL REFORM: THE CASE OF A TRANSITION TO HYDROGEN AS A MOTOR FUEL IN THE NETHERLANDS

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Abstract: This chapter explores whether the Dutch government has so far been able to ensure the institutional reforms necessary for the success of technical changes inherent in an energy transition. Special attention is paid in this respect to transition theory and transition management. The former addresses technical innovation processes within their wider societal context and stresses the importance of institutional change in socio-technical transitions. The latter transforms the theory’s insights into practical policy and has been adopted by the Dutch government as the official transition governance framework. Considering a prominent pathway towards an infrastructure for the use of hydrogen as a motor fuel in the Netherlands by 2050, this piece investigates what the achievements of transition management have been so far in regard to institutional reforms in general and for hydrogen in particular. The chapter concludes that transition management has so far ignored institutional reforms and seems to have neglected valuable lessons of transition theory regarding the coevolution of institutions and technologies.

Keywords: Transition, Hydrogen, Institutions

1. Introduction

Increasing fossil fuel scarcity and deteriorating environmental conditions make transition to a more sustainable energy system urgent. However, behind this simple notion lies a very complex reality: such change does not only involve technical and economic aspects but also institutional reforms. On the one hand, moving to a new energy system will be a daunting task because it will disassemble and reassemble the whole infrastructure from sources and production facilities to transmission, distribution, storage means and end-use applications. Moreover, these technical changes strongly affect vested economic interests. On the other hand, as many scholars have already noted, to be effective
with certain new technologies, “a nation requires a set of institutions compatible with and supportive of them. “The ones suitable for an earlier set of fundamental technologies may be quite inappropriate for the new” (Nelson 1994: 58). Indeed, history is full of examples where existing institutional structures posed obstacles to the success of new technologies and complementary industries which “require institutional reform if they are to develop effectively” (Nelson 1994: 58). The question arises how one can achieve such a ‘societal transformation process’ in which an energy system would change structurally over an extended period of time (Rotmans et al. 2001), especially with regard to aligning institutional changes to the technical ones inherent in an energy transition.

A promising approach to address this complexity is transition management. Based on transition theory, it addresses technological innovation processes within their wider societal context, claiming that changes in one without the other will remain fruitless over the long run. It poses a step forward from the energy policies of the 1990s based on bottom-up, market-oriented policies in that it not only looks at techno-economic aspects, but also tries to create a framework wherein government policy makers, industry stakeholders, non-governmental organizations (NGOs), and scientific institutes actively pursue accompanying institutional changes to ensure the emergence of a new energy system. Realizing its potential, the Dutch government has embraced transition management as the official governance framework for a transition towards a more sustainable energy system in 2000 (Fourth National Environmental Policy Plan (NMP4)). Since then, it has been further developed by the Dutch Ministry of Economic Affairs (EZ), which has taken on the role of ‘transition manager’ (EZ 2004).

Considering transition management’s novelty as a policy perspective, it has yet to prove itself in practice. As such, it needs to be investigated whether transition management has so far been able to ensure that institutions align to the technical changes of the energy transition. This chapter hence aims to provide an in-depth look at Dutch transition policy to the present day with an eye to institutional reform. To do so, it will take a closer look at the transition to the use of hydrogen as an ‘alternative motor fuel’, one of the possibilities identified by the Dutch government as part of creating a more sustainable energy system (EZ 2004: 22).

The chapter is structured as follows. The first part starts by elaborating transition theory in order to understand the complexity of socio-