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BOOK REVIEW

Governing the Energy Transition: Reality, Illusion or Necessity?, 2012, edited by Geert Verbong and Derk Loorbach. *Routledge Studies in Sustainability Transitions*

This book is part of the series 'Routledge Studies in Sustainability Transitions' which is an output of the Dutch Knowledge Network for System Innovations and Transitions (KSI). Over the past decade or so the KSI has been the focal point for the burgeoning community of Dutch researchers who have pioneered the development of the transitions approach, incorporating theories, frameworks and methodological approaches with which readers of this journal will be familiar. Similar to previous titles in the series the book tackles the crucial question of how the systems of production and consumption which underpin our everyday lives, such as transport, water services and food, can be made more sustainable. Perhaps due to the pervasiveness of the climate change issue, energy has become the most developed area of transitions research.

The introduction and chapter 2 set the scene by outlining the many challenges facing societies which have become increasingly dependent on reliable and relatively inexpensive sources of energy. These include threats to supply security, increasingly volatile fossil fuel process, rising worldwide demand and climate change. The authors argue that in order to address these challenges in a coherent and comprehensive manner, one dimensional and short-term solutions will not suffice. Rather there needs to be a fundamental shift to a new type of socio-technical alignment, enabling energy

services can be delivered in a more sustainable way. In order to achieve this, a systems approach is required which takes complexity as a starting point and can account for the coevolutionary processes and multi-actor dynamics which make up our energy systems and shape in the delivery of this essential societal service. Close engagement with policy makers and the policy process is also called for and the books' ability to situate itself in the nexus of theoretical debate and practical policy relevance is perhaps its greatest attribute. A quick look at the author biographies will illustrate a more diverse range of backgrounds than is generally the case, showing that this approach is not only appealing to academics, but policy makers and consultants alike.

From the outset the multi-level perspective (MLP) is put forward as an overall meta-framework for the collection as a whole. With its framing of landscape, regimes and niches, and focus on the challenges of niche level innovation and the transformation of incumbent regimes, it generally proves to be a useful organising framework which enables communication between those interested in innovation studies, policy studies and STS, and between academics and practitioners.

The ensuing chapters explore variations on these central themes and see the application of various aspects of transitions theory and the MLP to a number of technology and policy domains. Two chapters, one by Rob Raven on sustainable energy niches in Europe, and another by Roald Suurs and Marko Hekkert on the innovation systems perspective, will provide the reader with an excellent overview of research on how radical innovations can be protected and nurtured in niches, and move into the mainstream - one of the central themes of transitions research to date.

Another core topic, the science–policy interface and the application of Transition Management (TM) in Dutch energy policy, is covered in a number of chapters: Frans van der Loo, a staff member of Dutch Ministry of Economic Affairs, Agriculture and Innovation, co-authors a chapter with Derk Loorbach from DRIFT which provides an insider account of the practical implementation of TM in the Netherlands. Despite some stumbling blocks, the Energy Transition Project has become increasingly central over the past ten years - however, it has yet to deliver substantial mainstream changes, largely due to the fact that ‘the national government is both embedded in and an integral part of the existing unsustainable regime’ (p.243). Florian Kern discusses the transferability of transitions thinking to different national contexts and compares the Dutch experience to that of the UK. In the UK a discourse coalition concerned with competitiveness and business interests have shaped policy, and in contrast to the Dutch case, the science-policy interface has not been so prominent.

The issue of policy complexity is also addressed by Måns Nilsson who questions to what extent EU governance is enabling the low carbon transition. Nilsson highlights multiple competing agendas which are shaping the governance landscape, including market liberalisation, energy security, innovation and competitiveness, climate change and renewables deployment. Pointing to areas which warrant more attention in the transitions literature, he argues for an overarching governance framework which facilitates a closer alignment between the national and international levels, and calls for a greater understanding of EU institutions and policy processes.

As it is the core theoretical framing of the book most of the chapters make reference to MLP, and this at times results in some unnecessary repetition and may lead the reader

to question whether there are alternative ways of framing the issues. However, in saying that, some of the highlights of the book emerge from the authors' own interrogation and particular interpretation of the MLP. For example, Elizabeth Shove takes a social practices perspective and opens up our understanding of regimes as more fluid and flexible entities. Our use of air-conditioning should be seen in terms of the alignment between regime elements such as our expectations about comfort, social norms about body odour, along with room temperature and building standards. The analysis encompasses multiple scales, from the individual, to the building to the global, and emphasises how different regime geometries emerge and influence socio-technical transitions.

Another interesting application of the MLP comes from Philip Vergragt who focuses on carbon capture and storage (CCS) technology. CCS presents an interesting case because, quoting Vergragt, 'CCS is an anomaly. Most energy transitions pursue a shift towards a more energy-efficient system – preferably based on renewable energy sources...But CCS would in fact be instrumental in accomplishing the opposite' (p.103). Vergragt cites the danger of 'reinforced fossil fuel lock-in' and uses the MLP to help explore alternative transition pathways based on different variations of CCS technology. He charts a pathway for the long term development of Bio Energy CCS based on sustainably sourced biomass, which holds the promise of achieving negative CO₂ emissions.

The role of a hitherto neglected actor group in transitions studies, civil society, is explored by Adrian Smith from SPRU in Sussex. Again, taking the MLP as a starting point, Smith draws from Social Movement Theory to discuss how non-state and non-market forms of organisation such as NGOs, trade union, mutual societies and

professional associations can play multiple roles in transitions. This includes destabilising or unsettling existing regimes through environmental activism, but also acting as a potentially valuable source of radical innovation and creativity. He cites examples of this including energy cooperatives, the alternative technology movement and 'environmentalists-turned-entrepreneurs' who were influential in the nascent wind industry in the UK.

In the concluding chapter, the editors offer a thoughtful reflection on both the contributions and limitations of the book. They recognise its bias towards the 'Dutch Model' and that 'different socio-political and transition contexts require different models' (p.318), drawing lessons for what they term *Transitions 2.0*. Here they argue that 'more is needed than room for frontrunners and experiments' and call for more attention to be paid to structures, multiple pathways and discourses.

To conclude, the book highlights the valuable contribution of the transitions community to this vital debate in the area of sustainability. A systems perspective is no doubt required to address the multiple energy challenges facing societies and the book provides a suite of useful theories and concepts to take forward. The emphasis on policy relevance and interdisciplinarity is particularly welcome.

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