

P6.1-2 Transition Governance for a Low Carbon Society

Derk Loorbach

Dutch Research Institute For Transitions, Erasmus University Rotterdam, The Netherlands

Introduction

The current energy system is deeply embedded in our economy, consumption patterns, regulations and infrastructure. I take as a starting point that transitions in the energy domain are inevitable due to emerging alternatives combined with increasing landscape pressures. The uncertainties about these future transitions are high, which is one of the reasons why different actors make different assessments regarding the urgency of the problem and the desired direction. It is uncertain when they will take place, in what form and at what speed, where they will lead us, and what their impact will be. The basic idea underlying transition governance is that while it is impossible to predict or direct transitions, it should be possible to influence ongoing transition dynamics in terms of speed and direction. In other words, analyses in terms of transitions could help to identify dynamics (e.g. emerging innovations, niche-clustering, increasing landscape pressures, regime crises, lock-in or modulation) that could be influenced.

This general idea has been taken up by researchers and policy-makers alike from around 2000, when a national research network and national energy transition programme started in the Netherlands to influence the developments in the energy domain in the direction of a sustainable energy supply. This marked the beginning of a quickly expanding network of practitioners and researchers that further developed the idea of actually influencing transitions in various domains, regions and cities. All these efforts start from the framing of ongoing complex societal change in terms of transitions and *approaching the transition to sustainable energy in essence as a governance problem of transforming a complex societal system*. The governance challenge is twofold: the existing forms of governance are intimately linked to the existing fragmented, specialised and fossil-fuel based

system and the alternative or sustainable future is uncertain and cannot be planned. This implies a transition in governance itself as well as the actual governance of the transition(s) in the energy domain.

Persistence of the energy problem and the inevitability of transition

From a governance perspective, dealing with a locked-in system moving towards a (possible) take-off has been labeled as 'persistent problem' (Rotmans et al, 2001). The argument is that the mere acknowledgement of the possibility of systemic failure combined with the desire for more sustainable performance of the system and the impossibility of centrally governing this process pose an enormous long-term challenge to policy and governance. Persistent problems are complex because they are deeply embedded in our societal structures, uncertain due to the hardly reducible structural uncertainty they include, difficult to manage with a variety of actors with diverse interests involved and hard to grasp in the sense that they are difficult to interpret and ill-structured.

Persistent problems are related to the system structures that have evolved over decades and which, contrary to market failures, cannot be corrected by the market or current policies. System failures are locked-in flaws in our societal structures, such as technological fixation, weak networks or dominant networks, institutional barriers and path dependencies. From a complex adaptive systems perspective, the mentioned lock-in combined with the increasing landscape- and niche- pressures is inevitably leading to a non-linear and relatively rapid fundamental systemic change or transitions.

As energy systems move closer to take-off, this might open up the pathway towards a full reform into another dynamic equilibrium, for example one based on decentralised and renewable energy. However, other pathways are far from unlikely: a lock-in into

* www.ksinetwork.org

** www.energytransition.nl

suboptimal pathways could for example be a shift to a fossil/nuclear based system with CO₂ storage (implying another transition to be necessary in a few decades). Or a backlash or even system breakdown in which the dependence on outside provision is not dealt with and energy systems start facing shortage or even power failures (Van der Brugge, 2009).

This argument states the need for developing governance strategies that deal with the energy system as a whole: the ongoing dynamics from a transition perspective are moving towards either one of the pathways. From the perspective of sustainability, the question is not so much how specific solutions can be promoted or how specific barriers can be removed, but rather how the dynamic process of energy transition as a whole can be guided in a desired direction as rapidly as possible (Loorbach, 2007). As said before, it is unlikely that systemic solutions will be developed from within existing regimes as the primary focus is on dealing with incidents, incrementally improving the existing situation and only integrating innovations when they fit within the dominant regime. Regarding dominant policy, the fundamental uncertainties, unpredictability and ambiguities involved in future transition pathways furthermore require a fundamentally different way of thinking about and implementing strategy well beyond traditional planning, innovation policy or process management. They call for transition governance strategies.

Governance principles for energy transition governance

To be able to develop governance strategies that do justice to the characteristics of the problem, transition management theory offers the theoretical principles from which to develop these strategies (Rotmans and Loorbach, 2010, Loorbach et al, 2008). These principles are both derived from scientific work in various disciplines on innovation, planning, governance and complex systems, as from various operational approaches to governing (social) innovation (like strategic niche management, strategic planning, innovation policy, back-casting and so on):

Approach the energy system as a complex adaptive system in its environment. Complex adaptive systems approaches enable integrated analyses of the energy system. They offer a framework to think through interrelations between existing structures, actors,

perceived problems and possible solutions. In terms of management, the systems approach implies integrated strategies that take into account formal and informal forms of governance, include a variety of relevant societal domains and involve different strategies at different levels, thereby focusing on influencing and utilising complex system dynamics.

Deal with uncertainty. Some forms of uncertainty can be reduced by doing research (such as integrated systems analysis), some aspects are inherently uncertain (for instance, what we will learn in the future, or system responses after thresholds crossing).

Approach the transition as a multi-actor problem solving process. Transitions are defined as broad societal processes of transformation and result from the actions of numerous actors. Policy is only one factor influencing transitions, as public debate, scientific knowledge, entrepreneurial activities, inventions, crises and so on play an important role as well.

Stimulate new combinations. New combinations of knowledge (e.g. multi-disciplinary knowledge), stakeholders, technologies, policy instruments, etc. might trigger innovation and set of new dynamics.

Be reflexive in the management approach. Every intervention is based upon an incomplete model of the world. Each intervention will also produce unintended side effects and adverse boomerang effects that can partially be anticipated, and partially need to be responded to.

Objectives should be flexible and adjustable at the system level. The complexity of the system is at odds with the formulation of fixed objectives. With flexible evolving objectives one is in a better position to react to changes from inside and outside the system.

Managing a complex, adaptive system means using disequilibria rather than equilibria. In the long term equilibrium will lead to stagnation and will in fact hinder innovation. Non-equilibrium (period in between multiple equilibria) means instability and chaos, which forms an important impetus for fundamental change.

Creating space for agents to build up alternative regimes is crucial for innovation. Stimulating emergence and divergence is crucial for innovation. A diversity of emerging niche agents at a certain distance from the regime can effectively create a new regime in a protected environment.

Transition governance – a framework

Taking these basic principles and the notion of meta-governance, transition governance should be able to identify which actors influence ongoing transitions, and in what way. In transition management literature, four different types of governance activities are identified that are relevant to societal transitions: strategic, tactical, operational, and reflexive (Loorbach 2007). These types of governance take place without any interventions from a transition perspective (both in terms of improving the regime as in terms of developing an alternative system), but can offer a starting point for transition governance.

Strategic

As strategic activities we identify processes of vision development, strategic discussions, long-term goal formulation, collective goal and norm setting, and long-term anticipation. In essence, all activities and developments that deal primarily with the ‘culture’ of a societal (sub-) system as a whole: debates on norms and values, identity, ethics, sustainability and functional and relative importance for society.

Tactical

As tactical activities, we identify steering activities that are interest-driven and relate to the dominant structures (regime) of a societal (sub-) system. This includes all established patterns and structures such as rules and regulations, institutions, organisations and networks, infrastructure and routines. This includes all actors that are dealing on a daily basis with developing programmes, financial and institutional regulation and frameworks, organising networks and coalitions, and in general, representing certain interests.

Operational

As operational activities, experiments and actions are identified that have a short-term horizon and are often carried out in the context of innovation projects and programmes, in business and industry, in politics or in civil society, and are generally referred to as ‘innovation.’ In the context of transition management it is important to emphasise the inclusive definition of innovation as including all societal, technological, institutional and behavioural practices that introduce or operationalise new structures, culture, routines or actors.

Reflexive

Reflexive activities relate to monitoring, assessments and evaluation of ongoing policies, as well as ongoing societal change. In part, they are located within existing institutions established to monitor and evaluate, but in part they are also socially embedded: the media and internet for example have an important role in influencing public opinions and judging the effectiveness of policies and political agendas.

To influence, coordinate, structure and guide these types of processes, a number of ‘systemic instruments’ have been developed, such as transition pathways, transition experiments and reflexive monitoring. One of the key instruments is the transition arena, basically a shadow-network of specifically selected frontrunners that develops a new perspective on and discourse for a transition as the basis for a widening innovation network increasingly including all sorts of ongoing sustainability-oriented activities. Based on 10 years of theoretical development and practical experiences, the so far developed transition management instruments have proven to effectively develop an alternative agenda and network to the mainstream or regime. One of the major challenges for the coming years is to develop strategies for up-scaling or regime transformation building upon these alternative agendas and networks.

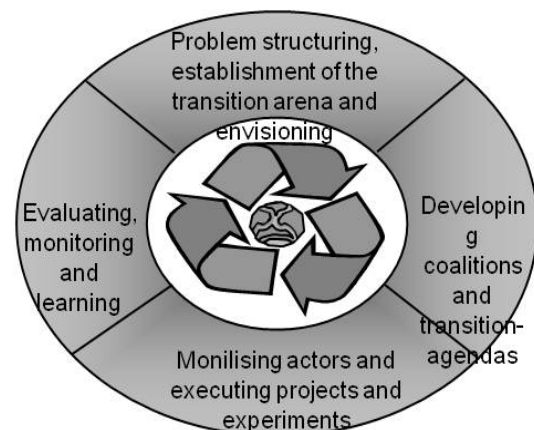


Figure 1: The transition management cycle

*** Some examples in the Netherlands and Belgium are: www.energytransition.nl, www.plan-c.eu, www.tplz.nl, www.duwobo.be

Global perspective on transition management

Transition management offers an analytical lens, basic governance principles and a set of governance instruments that can be applied to deal with major complex issues and highly uncertain, non-linear change. Sustainability issues such as the challenge of a low-carbon society are global, regional, national and local. While we could reflect upon the general problem and global patterns, it manifests itself in different ways at different levels of scale. Accordingly, the transition approach is based on the idea that while the basis should be principles that correspond to the characteristics of the problem, its application should be adapted to the specific context. In general, transition management for a global low-carbon society implies all sorts of transition oriented processes and activities at all sorts of levels that are coordinated by similar concepts, language, principles and orientation. Concretely a mix of bottom-up and top-down efforts that seek to provide space for fundamental change in light of looming crises at all levels.

The social, political and ecological instability in the transitions perspective might be a blessing in disguise: no transition or fundamental change to an inherently more sustainable state would be able to emerge without instability, chaos, rapidly increasing uncertainties and resistance. However, these societal dynamics pose a major challenge to governance: they are ambiguous processes, full of uncertainties, surrounded by conflict and dissent about future orientation and solutions. In terms of transition management, this line of argument brings us to start thinking in terms of new modes of governance and new types of governance instruments. While we might need global transitions to be 'managed' in some way or another, this can never be achieved by some sort of top-down and blueprint planning approach: the complexity of social (and ecological) systems is just too big for that. Instead, transition management argues to use the understanding of complexity to influencing the emerging changes in the various societal dimensions so as to increase the possibilities for sustainable transitions to a low-carbon society and the speed with which they unfold.

Literature

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