



# Creating change through pilot and demonstration projects: Towards a valuation policy approach



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## ABSTRACT

Beyond R&D and competitiveness theories of innovation, various conceptual broadenings have recently been proposed to tackle the complex, multidimensional and multi-level dynamics of innovation at stake in the transformation of the economy and society towards new sustainable development regimes. This paper proposes a reading of these conceptual broadenings as a matter of 'valuation'. In line with pragmatic theories of socio-economic value and market construction, it is argued that value creation is not the result or byproduct of innovation. In contrast to traditional regulation and R&D policies, which confine themselves to framing innovation, valuation policies are endogenous triggers of the transformation of a value regime. Value creation is about inquiring into new values in society, translating them into social and technological solutions and making them valuable in markets. In this perspective, pilot and demonstration (P&D) projects in current transition policies can be interpreted as fundamental inceptions of new values that are not predetermined by innovation but actuated through complex processes of value co-creation in society and markets, and which engage policies as agents of change. By focusing on the purpose behind the sustainability transition rather than the factors that contribute to it, a valuation policy approach offers new insights for future research and policy.

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## 1. Introduction

Clean energy is the new 'space race'. In his 2011 State of the Union address, Barack Obama recalled the American economic and technological competitiveness of the post-war era to justify an ambitious recovery plan in response to the threatening recession caused by the 2008–2009 economic crisis. In alluding to the strategic public funding that had been provided for space-based research and development – when the 'science wasn't even there yet' – and which had lain the seeds for 'new industries and millions of new jobs', [President Obama](#) added credibility to a foreseen yet abstract future.

This historical metaphor actualizes a policy interpretation of the new challenges that today's regions and nations face in regard to their future economic development. Not only does it motivate a 'Green New Deal' meant to stimulate employment and economic

growth through public spending on eco-energy, it also views the competitive renewal of industrialized countries within the frame of a new global race for scientific discovery and cutting-edge technologies. More generally, this narrative is emblematic of current science, technology and innovation (STI) policies, which usually support research and development (R&D) through strategic public procurement, fundamental research funding and technology transfer at the nexus of science and industry.

In the past few years, conventional STI policies have been subjected to various critiques. It has been argued, for instance, that the 'Grand Challenges' posed by a transition to new sustainable ways of producing, consuming and living reach far beyond a 'space race' approach to innovation ([Kuhlmann and Rip, 2014](#); [Kallerud et al., 2013](#)). At the crossroads of innovation and transition studies, various conceptual broadenings have been proposed to tackle the complex, multi-dimensional and multi-level dynamics of innovation at stake in the transformation of the economy and society towards new socio-technical regimes of sustainable development.

This paper argues that the question of innovation generally structures the question of sustainability transition policies today. New conceptual broadenings have proposed alternatives to con-

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ventional R&D policies, but, while it is widely recognized that the concept of innovation must be redefined, the concept itself is nonetheless accepted as an appropriate frame of interpretation.

The first part of this paper proposes a reading of current debates and research avenues at the crossroads of innovation and transition studies through the conceptual frame of valuation instead of innovation. While the question of innovation primarily involves the governance of socio-technical change in the economy and society, the question of valuation involves the governance of value creation and change.

In line with pragmatic theories of socio-economic value and market constructions, the second part of this paper argues that value creation is not the result or byproduct of innovation. Value creation is about inquiring into new values in society, translating them into social and technological solutions and making them valuable in markets. The sustainability transition is thus about valuation in society, in socio-technical change, in markets and in policy. In contrast to traditional regulation and R&D policies, which confine themselves to framing innovation, valuation policies are endogenous triggers of the transformation of a value regime.

In this perspective, pilot and demonstration (P&D) projects in current transition policy cannot be reduced to innovation tools meant to incubate new niche solutions and diffuse exemplary practices. They are fundamental inceptions of new values that are not predetermined by innovation, but actuated through complex processes of value co-creation in society and markets, and which engage policies as agents of change. The third part of the paper examines how recent P&D projects funded by the Swiss federal policy for clean technologies can contribute to a transition to clean energy. Originally conceived and justified as proto-market instruments, their actual role in transition is more to promote a general valuation policy than a conventional STI policy. Finally, the concept of valuation policy is discussed in line with this case study, and further research avenues for transition and innovation studies are proposed.

## 2. Sustainability transition policies as a matter of innovation

How does a transition towards a new economy and society in tune with the values of sustainable development occur? While this question is not new, it has become especially salient as a result of the recent rise of a post-crisis grammar pushed by new ecological priorities (Van den Bergh et al., 2011; Markard et al., 2012). Viewed as a contemporary 'Grand Challenge' for policymakers (Kuhlmann and Rip, 2014; Kallerud et al., 2013), this transition does not involve a shift from one established regime of production and consumption to another already established regime, as was the case with the transition from a planned to a market economy in the former communist countries. Instead, it involves the uncertain transformation of the dominant system of social and economic development into a new, aspirational, and therefore still abstract and open-ended, system (Meadowcroft, 2007; Geels, 2010).

In recent decades, this uncertain transformation has mainly been addressed as a matter of science, technology and innovation in both public discourse and academic debates. In various ways, the emphasis has been placed on innovation in order to justify and operationalize various policy measures meant to stimulate, enhance and frame a 'sustainably transition' shaped by new technological trajectories and market arrangements (Kemp, 1994; Smith et al., 2010). More recent scholarly literature has expanded this restrictive conception of innovation in order to emphasize that transition policies must also deal with the ways in which innovations shape a new regime of development (Schot and Geels, 2008; Voß et al., 2009).

This section first emphasizes the dominant policy 'referential'<sup>1</sup> (Muller, 2014), based on STI and competitiveness, currently employed to justify public intervention in the transition to sustainability. It then highlights the conceptual broadening of this referential in recent academic debates. We argue that this broadening continues to focus on innovation as the key to the transition. The issue of value creation and value change as the actual purpose of a sustainability transition is most often eluded or implicitly addressed as a byproduct of innovation. Finally, we propose a valuation perspective that can integrate current policy challenges and academic debates into a broader conceptual framework.

### 2.1. STI policies and competitiveness as a dominant referential of transition policies

Since the 1990s, a crucial challenge in sustainability transition policy has been how to deal with the uncertainty resulting from the creative destruction of the existing system of production and consumption and the radical technological and market changes this transition entails. On the one hand, new production and market regulations are conceived and set up as particular 'stick and carrot' measures that spur firms to innovate in new green technologies and products (Flanagan et al., 2011; Hamdouch and Depret, 2010; Van den Bergh et al., 2011; OECD, 2011a). On the other hand, proactive support for up-front R&D and disruptive entrepreneurship are provided through green-oriented STI policies (Suurs, 2009).

Through strategic research funding, R&D missions, innovation parks, startup incubators and science-industry networks, STI policies have usually had two aims – to trigger transition through the development of new sustainable technologies and products, and to stimulate the growth of export-based industries.

This operationalization of a socio-economic justification for STI policies is emblematic of policy rationales based on a technoproductive and competitiveness understanding of innovation. Innovation is assumed to be the primary driver of competitive growth (Porter, 1998). Economic value created from innovation is then implicitly conceived as a generator of social value as a result of (material) improvements in the quality of life and well-being (Fig. 1).

In this view, analytical and conceptual focuses mainly investigate how innovation can arise and create economic value by opening new technological trajectories and producing new commodities. The policy focus is mainly on measures that will facilitate knowledge spillovers between science and industry and that will overcome the sunk costs and market-failure barriers to radical technological innovation.

This policy rationale has become even more important in the current post-crisis context. With the aim of re-stimulating their economies, many countries have launched ambitious recovery plans to promote both the sustainability transition and competitive innovation. Touted as the key to a 'Green New Deal', innovation has been used as a 'policy referential' (Muller, 2014) to justify new regulations, incentives and public spending (OECD, 2009a; OECD, 2010; UNEP, 2011; Lipietz, 2012; Jackson, 2009).

### 2.2. A conceptual broadening of innovation to address 'Grand Transition' policy challenges

The R&D and competitiveness approach to innovation policy is not only a dominant policy referential; it has also become a

<sup>1</sup> The concept of 'referential' here is borrowed from Muller (2014) and designates the dominant cognitive schemes, rationales and operating principles used to define, elaborate, justify and implement public policy during a particular historical period of the economy and society.

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