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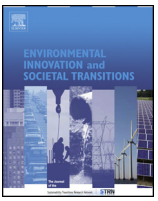

Analysis

Post carbon pathways: A meta-analysis of 18 large-scale post carbon economy transition strategies

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ABSTRACT

This article summarises findings from a review of eighteen large-scale post-carbon transition strategies, from government and non-government sources. It is informed by analysis of policies and reports identifying one or more integrated pathways for achieving dramatic greenhouse gas emissions reductions within national or supranational jurisdictions. For each strategy we considered assumptions and priorities regarding: targets, technology; economics and financing; equity; governance; and social and political change. We describe lessons from analysis of these attempts to articulate and stimulate integrated actions for post-carbon transitions and point to areas for further exploration. A crucial difference was identified between strategies advocating an incremental and evolutionary approach to emissions reductions and those advocating more rapid and transformational change. This highlights the challenging and urgent task of understanding how to bridge the gap between physical requirements of action to prevent runaway climate change and societal support for action at that speed and scale.

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1. Introduction

The concept and language of 'post-carbon futures' is being used in an increasingly broad range of settings (see, for example, European Commission, 2007; Heinberg and Lerch, 2010) to communicate and emphasise the importance of systemic transformations leading to 'a world in which we are no longer dependent on hydrocarbon fuels, and no longer emitting climate-changing levels of carbon into the atmosphere' (Post Carbon Institute, ND). Globally, an increasing number of detailed policy road maps and reports are being developed in response to the necessity and urgency of enacting a rapid transition to a just and sustainable post-carbon future. While they vary significantly in scope, levels of ambition, and methodologies, these documented strategies can contribute to a clearer understanding of the steps required and demonstrate what is possible in achieving post-carbon transitions.

Acknowledging this, a review of eighteen large-scale post-carbon transition strategies, from both government and non-government sources, was conducted, entitled 'Post Carbon Pathways'.[2] The review focused on identifying a set of the most ambitious strategies, at global, regional or national scales, for reducing emissions across the whole economy or, in some cases, only the energy sector. Nine of the selected post-carbon economy transition strategies were developed by governing institutions with the authority and intention to implement the strategy. The remaining nine are hypothetical strategies, in the form of detailed reports, books, or journal articles, developed by organisations or individuals, including university-based researchers, high profile advocates for climate change action, non-government organisations, and civil society alliances, unlikely to be in a position to ensure the strategy is implemented.

In order to understand the strengths and limitations of different examples of post-carbon transition planning, the 'Post Carbon Pathways' review compared the goals, assumptions and priorities of the selected post-carbon transition strategies using a meta-analytical framework. The framework included: emissions reduction and energy related targets and timelines; technology and innovation; economics and finance; social equity; governance; and social and political change. This article summarises findings from the review, in particular the key areas of commonality and variance between strategies, and areas identified as ripe for further analysis.

2. Conceptual and theoretical context

2.1. Understanding the scale and speed of actions required to avoid runaway climate change

The necessity and urgency of a unified, global response to climate change has been consistently identified within academic and policy literature (see, for example, Rockström et al., 2009; Rogelj et al., 2011; UN, 1992). The most prudent transition approaches emphasise the need to maintain the Earth's climate within the boundaries of the Holocene conditions that have sustained human life over the last 10,000 years (Hansen et al., 2008). This is likely to require a rapid reduction of atmospheric CO_2 concentrations to below 350 parts per million (ppm) (Ibid.). Recent comprehensive reviews of the actions needed to achieve the less ambitious – and therefore less prudent – 2 °C target, agreed by the United Nations Framework Convention on Climate Change (UNFCCC) conference in Cancun in 2010, reinforce the need for global CO_2 equivalent (CO_2e) emissions to peak before 2020 (Rogelj et al., 2011) (see also Höhne et al., 2011, 2012; UNEP, 2010b, 2011). Yet, analyses of existing climate change policies from national governments around the world continue to reflect a growing 'emissions gap' between the greenhouse gas emissions reductions currently committed to and the level scientifically correlated to stabilisation of the global climate, within the 'guard rail' of 2 °C (den Elzen et al., 2011; Höhne et al., 2012; Kartha and Erickson, 2011; Rogelj et al., 2011; UNEP, 2010b, 2011). Concern about the 'emissions gap' and a lack of progress made through formal international negotiations under the UNFCCC has led commentators to highlight the importance of leadership from national governments,

[2] The full report from this review, entitled Post Carbon Pathways: Reviewing post carbon economy transition strategies, can be downloaded from: http://www.sustainable.unimelb.edu.au/content/pages/post-carbon-pathways.