

# **Creative destruction or mere niche creation in policy mixes for low energy innovation? Empirical insights from Finland and the UK**

Paula Kivimaa<sup>1</sup>, Florian Kern<sup>2</sup>,

<sup>1</sup>Finnish Environment Institute (SYKE), Helsinki, Finland, paula.kivimaa@ymparisto.fi, <sup>2</sup>University of Sussex, Brighton, UK

Recently, there has been increasing interest in the innovation studies literature in questions surrounding policy mixes. While it has for long been acknowledged that the stimulation of innovation through policies includes a number of different types of policy instruments, the issue of how such instruments might interact and form (in)coherent policy mixes has only relatively recently been discovered as being of interest to this community. We argue that an area in which coherent policy mixes are particularly important is the emerging field of sustainability transitions. This literature has received increasing interest in the context of innovation studies but goes beyond mere innovations, examining change at the level of socio-technical systems from the perspective of improvements in environmental sustainability. Transitions in the form of systemic changes in current structures for consumption and production are viewed as of paramount importance to reduce the overall environmental impacts of human activities. Transitions imply not only the development of disruptive innovations but also of policies and policy frameworks aiming for systemic change. In practice, this kind of redesign of policies is challenging, because it presents a contradictory ideology to that of traditional innovation policy focused on economic growth. Thus, ideally innovation policy mixes for transitions might include elements of 'creative destruction' aiding sustainability niches to gain ground by simultaneous processes inducing the destabilisation of existing unsustainable socio-technical regimes. Therefore, we propose that policy mixes favourable to sustainability transitions need to involve both policies aiming for the 'creation' of new and for 'destroying' the old, with the latter creating 'windows' for competence-destroying innovations. This paper conceptualises innovation policy mixes for fostering sustainability transitions and applies this conceptualisation to study low energy innovation policy mixes in Finland and the UK. We define low-energy innovations as innovations which reduce the demand for energy and/or increase energy efficiency. We explore 1) whether in general, such fundamentally different policy goals and instruments can be combined into a coherent policy mix able of fostering transitions; and 2) whether present public sector activities aimed at stimulating low energy innovations in Finland and the UK add up to a coherent innovation policy mix suitable for fostering transitions towards low energy systems? The paper provides a mapping exercise of current policies influencing energy use and efficiency across sectors to identify significant gaps and incoherences in the policy mixes from the perspective of transitions. It creates a novel analytical framework describing elements that policy mixes should ideally address to facilitate competence-destroying innovations for sustainability.