

Green Paper: A 2030 framework for climate and energy policies COM (2013)169



Climate-KIC response to the consultation

2 July 2013

Introduction

Climate-KIC is one of the first three Knowledge and Innovation Communities (KICs) supported by the European Institute of Innovation and Technology (EIT). Established in 2010, Climate-KIC is Europe's largest public-private innovation partnership dealing with climate issues, bringing together more than 170 organisations – large and small companies, leading university and research bodies, city and regional governments.

Our particular focus is on driving innovation through creative partnerships which support the transition to a low-carbon economy. We develop entrepreneurial and innovative talent; incubate new ideas and ventures; and assist in the development and adoption of new products and services to drive the systemic changes required in wider society. This is a broad model of innovation which goes beyond the narrow search for new technology to examine the wider innovations required for systemic change – new business and financial models, the role of end-users in shaping the demand, purchasing and procurement procedures.

The main points of our response to the Green Paper are as follows:

- **Climate and energy policies need to be much more effectively integrated with innovation policy**
- **Climate challenge-led innovation policy needs to be broadly based and involve a proactive role by public bodies in partnership with private actors**
- **Transformative innovation in systems of transport, housing, and energy networks needs a bigger role for regional and municipal authorities in Europe**
- **The EU Structural Funds should be harnessed as a central feature of the climate and energy policy framework for 2030**

General comments

It is five years since the 2020 framework for climate and energy was adopted by the European Union. This period has seen the recognition of a new context in which a 2030 framework needs to be considered. It highlights the interconnection of the policy spheres of climate & energy with those of innovation & the economy. Rather than implying a more cautious policy approach to the challenge of climate change it suggests just the opposite. Climate and sustainable energy need to be embedded more clearly within policies for innovation and economic growth

A series of European policy initiatives have begun to articulate a set of new policy principles which should inform the 2030 framework for climate and energy policies.

At the heart of these principles are two core ideas about climate and energy policies.

- They are part of a wider '**transition to a green and low carbon economy**'.
- The transition will require '**significant innovation**'. (COM 2011 571 p8)

The ambitious goal of a transition to a green and low carbon economy involves **a mix of far term vision and near term action**. This is expressed in the EU Road map for a low carbon economy as a 'long term policy plan' reaching out to 2050 with 5 year 'milestones' to ensure the 'EU is on course' (COM 2011 112)

The new policy concept of a transition also carries with it the role of **pervasive transformation covering many sectors and embracing both producers and consumers in systems innovation**. The Roadmap to a resource efficient Europe states: 'Our economy will require a fundamental transformation within a generation – in energy, industry, agriculture, fisheries and transport systems, and in producer and consumer behaviour.' (COM 2011 571)

The adoption of the transitions perspective with its commitment to transformative change gives a new significance to **broad-based challenge-led transformative innovation**. The Road map for a low carbon economy emphasises the importance of 'innovative solutions' in a wide range of sectors not just energy production, but also including 'more focus on energy efficiency policies'. (COM 2011 112) The road map for resource efficient Europe argues that 'in industrialized countries nutrition, housing and mobility are...key to addressing the challenges in energy and climate change'. (COM 2011 571 p17)

Overall it is recognised that setting climate and energy goals is part of a long term transition to a green economy and will only be achieved through transformational innovation. This highlights the need for far greater attention to appropriate **innovation support measures**. The Low Carbon Roadmap asks 'how EU funding can support instruments and investments that are necessary to promote the transition to a low carbon economy' (COM 2011 112 p15). The roadmap for a resource efficient Europe argues that 'Transformation will need a policy framework that creates a playing field, where innovation... [Is] rewarded, (COM 2011 571)

The increased attention to transition and transformative innovation in climate and energy policy complements the broad based approach to innovation policy which starts from a broad and inclusive definition of innovation:

'The successful production, assimilation and exploitation of novelty in the economic and social spheres (Green Paper on Innovation' 1995)

The European Union's recent 'Innovation Union' policy framework (COM(2010) 546) identifies three core principles which express Europe's 'distinctive approach to innovation'.

The first of these is that innovation must be **challenge-led**. The new focus on the need to address major societal challenges is a break with the over-reliance on

market based encouragement of technology driven innovation of recent decades. A reliance on indirect diffusion- oriented innovation policy is no longer seen as adequate to address the societal challenges such as climate change and emission reduction targets.

The second is the pursuit of a **broad concept** of innovation. Building on earlier rethinking of European Union innovation policy (COM[2006]502), this new 'broad-based' approach recognises that successful innovation requires 'demand' pull from citizens and consumers as well as 'supply' push from universities and business. It declares that innovation takes 'many forms' such as novel advances in organizations, services and business models, and is not limited to new technologies alone. This 'broad-based' perspective is radically different to the traditional exclusive focus on knowledge transfer from science into practice.

The third principle is to involve **all actors and all regions** in the innovation cycle. It argues that the ability of society to develop new solutions needs a 'wide partnership' of social actors from 'not only the business sector, but also public authorities at national, regional and local level, civil society organizations, trade unions and consumers'. This is a much different and wider perspective than a selective focus with hi-tech regional clusters and suggests a mainstream concern with all regions.

The new broad-based challenge-led multi-actor model of innovation is expressed in the Part 3. Priority: 'Societal Challenges' in Horizon 2020 (COM (2011) 808). It emphasises a challenge-based approach, focusing on policy priorities without predetermining the precise choice of technologies or solutions. It also promotes more downstream engagement with a new focus on innovation related activities, such as piloting, demonstration, test-beds, support for public procurement, design, end-user driven innovation, social innovation. This indicates a wider remit for public innovation policy and the new European Institute of Innovation and Technology has been created to pursue this. EIT will 'strongly contribute to tackling societal challenges under Horizon 2020 and bring about systemic change'. This is also seen to require 'close co-operation with regional authorities'. (The Strategic Innovation Agenda of EIT (COM(2011) 822)

Within EIT 'Climate KIC' has been established. It recognises that 'Climate change mitigation and adaptation...require a global economic and societal transformation comparable to the industrial revolution. Existing markets will be radically altered and new ones created across a variety of sectors, the mission of the Knowledge and Innovation Community (Climate-KIC) is to accelerate and stimulate the innovation required for this transformation. The role of government is especially important for Climate-KIC because of the nature of the societal problems it aims to address... it has created a unique structure designed to cross boundaries — discipline, sector, geography — to enhance integration and to provide the platform for an innovation ecosystem across Europe... It brings together the three sides of the knowledge triangle and the three strands of the triple helix, thus involving education, research, business and public bodies to create...a unique European 'innovation pyramid'. Its governance, organization and activities create a genuine community for knowledge and innovation. (Ritter 2011)

Climate KIC has a regional network which aims for 'a leading role in the transformation of regional innovation policy and practice in Europe on climate change.' It argues that 'significant low-carbon innovations will be transitions in 'socio-technical systems' such as mobility and household living. The social actors best placed to promote this transition are municipal and regional organizations responsible for systems that are suited to local places, working in partnership with other key actors. A coordinated place-based approach for developing and testing new ideas that support the transition to a low-carbon economy. Each region brings together a cluster of significant regional development players, including key public sector agencies, innovative small businesses, leading universities, centres of excellence, research institutes and major companies, in a comprehensive, broad-based approach to innovation... the urgency of the transformation requires a change in the day-to-day practices of professionals with current responsibilities in business, government and research. The narrow specialization of these roles is unsuited to the demands of systemic innovation. Sector-specific managers need to become boundary-crossing low-carbon entrepreneurs.' (Ritter 2011)

Climate KIC is seen to open up a new space in innovation policy:

- focus on systemic innovation distinguishes it from most other public and private innovators
- climate innovation is driven by regions and cities which are experimenting with new approaches
- extends the knowledge triangle to the innovation pyramid
- context driven knowledge and practice based competence & learning... narrow specialisation unsuited to the demands of systemic innovation (Technopolis: Catalysing innovation in the knowledge triangle June 2012)

EU Structural Funds can play a bigger role in climate challenge led innovation policy

In October 2011, the Commission proposed a budget of €376 billion for the EU Structural Funds during 2014-2020.

The European Regional Development Fund (ERDF) has priorities in areas of **energy efficiency and renewables, innovation and SME support & sustainable urban development.**

Across the whole of Europe there is a groundswell of interest and concern over the issues of climate change and a willingness to tackle it. In cities and regions in each Member State there are hundreds of imaginative and innovative low carbon projects underway. The list of investment priorities listed in the Commission guidelines will see a further flow of such projects after 2014. However, on its own this will be insufficient. They will not bring about the low carbon transition that is required. **The real danger is that these projects will remain as isolated initiatives, unrelated to each other, lacking in strategic coherence and with no agreed perspective on how to generalise and scale-up best practice. Currently the whole of this low carbon endeavour amounts to far less than the sum of its parts.**

This situation needs to change. We suggest that a clear transitions perspective is brought to the Structural Funds 'Green' agenda. From 2014-2020 the majority of

ERDF spending will be on small to medium capital projects, renovation and refurbishment schemes and revenue initiatives rather than major capital infrastructure projects such as motorways and airports. **The multiplicity of low carbon projects in each city and region will need to be placed in a clear strategic framework**

Response to Consultation Questions

Q4.1. General: Which lessons from the 2020 framework...are most important when designing policies for 2030?

The Green Paper observes that the EU Emissions Trading Scheme 'has not succeeded in being a major driver towards low carbon investments'. This suggests that the claims that this particular 'market based instrument' approach is the best way to facilitate low carbon innovation have been overstated. It implies that serious attention needs to be given to alternative and complementary policy approaches. The 2030 policy should give increased recognition to the broad programme of low-carbon innovation across Europe already being led by a range of actors, notably at regional and local levels.

The Green Paper also notes that the 2020 energy saving targets 'will not be met...with current policies'. The International Energy Agency's World Energy Outlook 2012 argues that there are considerable opportunities for energy efficiency, particularly in buildings and transport, and argues that 'much stronger policies could realise the full potential of energy efficiency and deliver significant economic, environmental and energy security gains'. This implies that more consideration should be given to significant new policy initiatives for energy saving innovation in key areas of greenhouse gas emissions.

Q4.2 Targets: Which targets for 2030 would be most effective...and at what level should they apply?

The challenge-led approach of specific future targets for greenhouse gas emission reductions is an essential policy for framing innovation strategies to address goals at 10 year intervals en route to the 2050 targets of the EU Roadmap to a low carbon economy. As well as targets at the European and national level, there is a strong case for encouraging the setting of regional and city targets for GHG emission reductions by local administrative authorities throughout the European Union. This would translate targets into clearer and more relevant terms for innovation in real systems of transport and households than is often possible at a national level. It would reflect the growing interests and activity of city and regional players throughout the EU expressed through the Covenant of Mayors, and ICLEI, for example. It also provides a direct link with EU Regional Policy and the commitment to ensure that a significant proportion of structural funds are effectively used on climate action. It is important to note that the forthcoming IPCC assessment report from Working Group 3 on mitigation will give far greater attention to urban innovation than previously.

Q4.3 Instruments: How can EU research and innovation policies best support the achievement of the 2030 framework

The proposal for Horizon 2020 (COM (2011) 808) introduces a specific priority (PART III.) for innovation to address 'societal challenges'. This is seen as a challenge-based approach, focusing on policy priorities without predetermining the precise choice of technologies or solutions, a new focus on innovation related activities, such as piloting, demonstration, test-beds, support for public procurement, design, end-user driven innovation, social innovation. This broad model of social and technological change needs will need new innovation players in which a key role will be played by cities and regions.

This needs climate and energy policies which are much more effectively linked to regional policy. DG Regio expresses this new mode of innovation very effectively (Connecting smart & sustainable growth Nov 2012). It involves 'system eco-innovation' which requires 'transformative innovation – far beyond the boundaries of one company or organisation'. Regional and local authorities are in a good position to promote transformative eco-innovations and systemic change. The 2030 policy should give them a central role.

Q 4.4 Competitiveness and security of supply: Which elements of the framework...could be strengthened to better promote job creation, growth and competitiveness

A new focus on system innovation at the local level addressing building retrofit programmes, local energy networks, and integrated transport systems has the potential to make a major contribution to the mitigation of climate change in the period to 2030. This focus also has the greatest potential for extensive job creation across Europe. The OECD report Cities and Green Growth (2011) identified the need for new multilevel governance policy linkages to enable this. The 2030 framework needs to offer some new policy approaches in line with this.

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