

# Finance for innovation: Towards the ETS Innovation Fund



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## Executive Summary

“When you’re doing innovation, the first question is not ‘Is this going to work?’ but rather, ‘If it works, would it matter?’” Quote from Eric Toone, vice provost and director of the Duke Innovation & Entrepreneurship Initiative and former principal deputy director of the US Department of Energy’s Advanced Research Projects Agency.

Energy-intensive industries and the energy sector need to continue to contribute in the next decade and beyond to meet Europe’s climate and energy targets. In order to reach these long term decarbonisation goals, innovation must play a key role and introduce new low-carbon technologies into the market. To help the industry and the power sectors meet these innovation and investment challenges, the Commission proposal for revision of the EU Emission Trading System (EU ETS) post-2020 puts forward an Innovation Fund (“IF”), which will support innovative demonstration projects in energy intensive industries, renewable energy, energy storage and carbon capture, storage and use. The design of the Fund, including eligible technologies and financial modalities, will need to address the specific market needs and demand for low-carbon innovation, while ensuring effective use of the funds available.

In January 2017, DG CLIMA launched a consultation process with representatives of the energy intensive industries, energy sector and finance sector starting with a high-level conference and followed by five expert roundtables over the following three months and concluded with a final public event in June 2017. These sectorial roundtables consulted key expert representatives of the energy intensive industries, renewable energy, energy storage, carbon capture and storage (“CCS”) and finance sectors. The objective of the workshops was to collect expert views on potential pathways for low-carbon innovations and on how the proposed Innovation Fund could be designed to mobilise the required investments. The following energy intensive industrial and energy sectors participated: ferrous metals, non-ferrous metals, pulp & paper, oil refining, chemicals & bio-based industries, cement & lime, glass & ceramics, renewable energy, energy storage and CCS. Workshop moderators, selected for their expertise in the field, were asked to develop session feedback, which formed the basis for this summary report and its recommendations.

*Authors and moderators note that this report summarises the key findings from this process and reflects a consensus view of the stakeholders, not the single view of any one stakeholder nor of the authors nor moderators, and clearly does not represent the position of the European Commission.*

Each workshop began with a “positioning statement” that described the overall sector context with some information about existing studies and sectorial technology developments. In addition, each sector collectively contributed to a debate around the business drivers for low-carbon innovation and the risks inherent in making corporate investments in this area.

Taking as inputs the healthy debate by experts on the definition of “innovation”, the context for the low-carbon challenge in each sector in its own words and the lessons learned of the NER 300 Programme, the findings from the expert workshops can be summarised as follows:

- There is no shortage of low-carbon technology ideas. Together the sectors have identified over 80 known specific technologies or technology groups (detailed in Chapter 2) for development that when grouped together can lead to various possible decarbonisation pathways. In addition, each sector has identified sector-specific incremental and breakthrough technology needs. Many of the production sectors can also benefit from cross-cutting low-carbon technology solutions such as Carbon Capture and Storage/Use, Green Hydrogen use, Intelligent Energy Management systems, integration of Renewables and Energy Storage.
- Sector experts identified several key business drivers for low-carbon innovation, which include:
  1. Cost Savings and Competitiveness;
  2. Carbon Price;
  3. Developing Robust Inter-Industrial Collaboration Models;
  4. Reduced Environmental Externalities (delivering Improved Corporate Sustainability Reputation); and
  5. International Competition for low-carbon products.
- Experts also discussed the various barriers and risks to decarbonisation, noting that many **barriers and risks** cannot be addressed by the Innovation Fund with a particular focus on:
  1. The need to improve, strengthen, or identify the business case for long-term and deep decarbonisation beyond incremental and short-payback measures;

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2. The developing or often changing regulatory framework, for mature and less mature technologies (e.g. second generation renewables, energy storage, self-generation, demand response, CCU and hydrogen infrastructure);
  3. Issues around permitting, licensing and technical quality approvals for new technologies and low-carbon products; and
  4. The overall immaturity of “collaborative solutions” and their frameworks.
- Sectorial innovation financing needs were identified (in Chapter 3) through a discussion on a series of focus questions which included innovation funding needs, relevant funding instruments, the potential design features of the IF and its application processes.
  - This, in term, gave rise to a series of specific recommendations (detailed in Chapter 4) on the structure, and the approach to the design, of the IF, which can be summarised as:
    1. Transparent and clear criteria for project selection;
    2. Clear list of finance products on offer, with investment grants having a major role;
    3. Simple, two-stage application process with multiple competitive calls leading to agile decision making processes supported by adequate resources for IF implementation;
    4. Aligning the timing of support with funding needs (through milestones-based disbursement);
    5. Ensure complementarity between the Innovation Fund and other EU and national funds;
    6. Enable and incentivize cross-sector collaboration by supporting consortia with cross-sector technologies.