Support for Industrial Low-carbon Innovation

To achieve the long-term EU ambitious objective in GHG emission reductions, industry would have to substantially reduce emissions by 2050 compared to current levels. This industrial transformation needs to address the whole value and supply chain of industrial production. It includes (radical) product, business model and process innovations.

The Green Growth Platform[i] brings together European Ministers from Belgium, Denmark, Estonia, Finland, France, Germany, Ireland, Italy, Luxemburg, the Netherlands, Norway, Portugal, Slovenia, Spain, Sweden, the United Kingdom with business and parliamentarians to catalyse and champion a European policy and economic framework that supports the delivery of an orderly low carbon transition. The Green Growth Platform and its four Advisory Councils were established and are managed by the Cambridge Institute for Sustainability Leadership[ii] and the Prince of Wales's Corporate Leaders Group[iii].

An enabling Framework for promoting Industrial Investment in Europe

However, achieving these deep emission reductions across the EU would require both the enabling framework for promoting investments in Europe, and the development and demonstration of process and product technology breakthroughs that seek to bridge the valley of death between invention and commercialisation. Moreover, all these options would have to be commercially available within the next 15 years.

The current EU climate policy framework is not fully set up to enable these important process technology changes. In particular, the EU ETS as the single most important policy tool for greenhouse gas mitigation in industrial sectors does not, on its own, create the right de-risked incentive base for the development and demonstration of breakthrough low-carbon technologies as important steps to commercialisation.

The New Entrants Reserve 300 (NER 300) system as introduced in 2008 offers an innovative support system for energy breakthrough technologies (e.g. CCS and innovative renewables). However, the current NER 300 concept might not be fully compatible with the specific situation and needs of energy intensive industries to develop and demonstrate low-carbon breakthrough technologies. The European Council on 23 October 2014 concluded that the NER 300 system will continue post 2020 (under the form of NER 400) and will have an expanded support base by referencing industrial (process) innovation.

However, the envisaged support for low-carbon process innovation support does not tackle the demand side or the broader value chain. The creation of this demand side or new markets through smart regulation (e.g. eco-design) can create a domestic competitive advantage for European companies. These tools could, if well-designed, reward product innovation by European companies.

GREEN GROWTH PLATFORM

Policy solutions

With post 2020 innovation funding for industrial breakthrough technologies now agreed in principle, the rules for its implementation have to be developed over the next few years. These rules will be part of the legal reform of the EU ETS and the implementation provisions. It is important that these rules are fine-tuned to meet the specific requirements related to industrial low-carbon innovation. European energy intensive sectors face specific conditions that would require the above-mentioned fine-tuning.

These include:

- Some energy intensive companies have weak balance sheets, preventing access to capital and risk taking;
- Most energy intensive sectors have a low R&D intensity, a handicap when it comes to intense product and process innovation;
- The overall investment climate in the EU in energy intensive process plants is not favourable for capital and risk intensive investments.

Beyond the above-mentioned points, the following elements could be considered when reviewing the innovation framework for industrial sectors:

- Introduce new financial instruments (next to the grant-based approach) to facilitate de-risking of low-carbon investments. The EIB's Innovfin can be seen as a good example to further develop these tools;
- Offer specific guidance to industrial project developers, to facilitate the project design and co- financing (at national level and through other EU funding streams). In particular, better guidance on the relation and coordination between national co-financing of NER 300 or other similar support systems and State Aid rules would be helpful;
- Consider (partial) upfront financing of capital-intensive demonstration plants;
- Include low-carbon product innovation in the granting mechanism, as product innovation can be a driver for process innovation;
- Include industrial process co-benefits in the assessment of projects;
- Visualise the co-benefits such as cost-savings and increased productivity, linked to the reduction of CO2 emissions, to increase the chances of management buy-in into the development of breakthrough process technologies;
- Encourage the development of demand side policies (e.g. smart regulation) that create new markets in the EU for low-carbon products and hence reward (European) industrial producers that innovate to enter these new markets.

Last but not least, EU-wide public support for low-carbon breakthrough technologies should not be limited to funding through the EU ETS' NER. Other sources in the EU budget (e.g. Horizon 2020) and at Member State level should be mobilized to support energy intensive industries to research, develop, pilot, demonstrate and commercialize low-carbon breakthrough process and product technologies.

Benefits of policy solutions

An energy intensive sector tailored approach under a forthcoming NER 400 accompanied by some of the above instruments and process solutions could significantly enhance the chance that these industries commercialise the necessary low-carbon process and product innovations that allow for the sectors to dramatically reduce greenhouse gas emissions as from 2030. These will in turn facilitate the EU wide goal of –80% to –95% emission reductions by 2050.

The impact of this approach would be strengthened if demand side policies that touch upon the broader value chain are introduced. Product innovation is an important facilitator for the upstream process innovation. As stated before, these policies will reward companies that innovate to capture the new markets that are created through these demand side policies.

Practical short-term actions to be considered by policy makers

- **Acknowledge the need for energy intensive sector specific tailoring of industrial low-carbon demonstration process support.**
- **Analyse the specific technological, financial and investment barriers in Europe's energy intensive sectors for the development and demonstration of low-carbon breakthrough technologies.**
- **Ensure proper coordination between EU and national funding, and necessary state aid approval procedures allowing a stable and secure investment framework.**
- **Enhance the cooperation with the European Investment Bank to develop new financing tools that can assist the implementation of a forthcoming NER 400.**
- **Investigate demand side policies (e.g. smart regulation) that reward innovation in European industrial sectors and companies.**

Sources:

[i] Green Growth Platform - http://www.cisl.cam.ac.uk/business-action/low-carbon-transformation/green-growth- platform

[ii] Cambridge Institute for Sustainability Leadership - http://www.cisl.cam.ac.uk

[iii] Corporate Leaders Group - http://www.cisl.cam.ac.uk/business-action/low-carbon-transformation/clg

Disclaimer:

The consultation process undertaken by the Green Growth Platform Advisory Council on Industrial Sectors does not constitute full endorsement of this paper from the organisations represented and only reflects the views of those representatives consulted.

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