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THE ETS INNOVATION FUND: LIGHTHOUSE PROJECTS FOR A LOW-CARBON ECONOMY

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The ETS Innovation Fund is being established at a time of greater political commitment than ever to reduce emissions in order to tackle climate change. The EU ratified the Paris Agreement, and EU Member States have agreed on emission reduction targets under the EU 2030 Climate and Energy Framework. The decarbonisation of energy intensive industries is essential for meeting both the EU objectives and the Paris agreement. It is clear that the ETS Innovation Fund will have to accelerate the delivery of emission reductions and become quickly operational, given the long investment cycles for large industrial processes.

A major hurdle with the necessary decarbonisation of Europe's industries is that companies face global competition and large, risky investments. The new Innovation Fund will therefore play an important role in reducing the risk of investing in low-carbon technology in energy intensive industries in Europe. It needs to contribute to modernization and higher efficiency. Increased productivity and a specialisation on sustainable products with a high added value will be key to securing jobs in Europe.

Now, synergetic and powerful support for European industry and research is necessary to overcome the technological and commercial valley of death by demonstrating the ability of advanced CO₂-reducing technologies to be an economic and ecologically viable pathway into the future. Different industrial sectors such as steel, oil, chemical & bio-based, paper & pulp, cement & lime and glass & ceramics as well as companies integrating renewable energies into their industrial processes are all facing similar challenges under the global production and trade system. By supporting the demonstration of low-emission technologies through bold lighthouse projects, the ETS Innovation Fund has the potential to make a difference beyond the individual projects.

We believe the ETS Innovation Fund should focus on a small number of large-scale industrial demonstration projects that can deliver significant emission reductions within 5-10 years. These lighthouse projects should both showcase the implementation of innovative technologies and demonstrate that there is a business case to operate such low carbon industrial processes in the long-run. In our view, industrial innovation in low-carbon technologies and processes in energy intensive sectors such as steel or cement offer the highest potential to deliver deep emission cuts. In addition to these light house projects, the fund should also support smaller projects in order to have a broad impact across the EU.

Fraunhofer has always been a strong partner of industrial companies on the way towards a low-carbon and more efficient economy. To make the ETS innovation fund a success, we believe that the design of the fund should follow five key principles:

1 Prioritise technological pathways that avoid emissions

In the last years, new technological pathways with high emission reduction potential were developed – each proven to be a viable possibility to achieve the Green House Gas (GHG) targets for European energy intensive industries. A pre-defined “one-fits-all-approach” does not reflect the boundary conditions of the different target industries in a dynamically changing global environment. The ETS Innovation fund should therefore be open to different technologies but **naturally always prioritise I.) the avoidance of CO₂ emissions over II.) the utilization of unavoidable CO₂ and III.) the permanent storage of CO₂.** In general, projects should deliver a net reduction of emissions.

2 Create bold lighthouse projects to demonstrate the long-term benefit

The ETS innovation fund should prioritise large-scale demonstration plants with a TRL 8-9. This would enable to create lighthouse projects that demonstrate the long-term benefits of emission reduction and inspire companies across Europe. **It will be important that projects under the Innovation Fund have sufficient scale to make a difference. We therefore recommend allowing the possibility to fund promising lighthouse projects with the foreseen maximum of 15% of the total budget.** In order to maximize impact and

leverage, the projects should exceed the average size of projects funded under the EU's framework programme for Research and Innovation. We recommend 10 million euros should be set as a minimum for smaller scale projects.

3 Focus on a maximum of impact by reducing expenditure risks

The main target of the ETS innovation fund should be to have maximum impact on the reduction of emissions in industrial processes. In order to achieve this, projects funded through the innovation fund need to reduce investment risks as well as operational risks.

The ETS innovation fund should therefore directly address the main barriers – CAPEX (capital expenditure) and OPEX (operational expenditure) risk – that hinder a rapid adoption of processes to reduce emissions. High capital expenditures for investments in risky technological innovations are the biggest obstacle for the large-scale demonstration and adoption of sustainable emission reducing technologies in industrial production. Milestone based funding before the operational phase will allow taking the necessary capital expenditure risk and develop highly innovation solutions – also with the support of academia. We recommend making full use of the proposed 40% for funding depending on milestones. We believe stages of the technological development or construction phases are most appropriate to define the milestones

Operational expenditures will significantly rise in the short and medium term for companies adopting low carbon technologies. The ETS Innovation Fund should include a reasonable compensation to reduce financial risks for early adopters in the different industries. Operators have to develop the capabilities and business models to use and operate their facilities beyond this transition phase.

4 Create a dedicated support and monitoring mechanism

A dedicated monitoring and support mechanism should **systematically monitor the achievement of the projects and provide specific project development assistance.**

The mechanism should monitor: 1) milestones, 2) GHG emission reduction achieved and 3) potential of each project (likelihood of achieving the GHG reduction targets in the future).

The monitoring mechanism should also provide a project support and development assistance facility. In many cases, goods produced with low-emission technologies will be more expensive than traditional energy intensive products. An ETS Innovation Fund Support Mechanism could provide consulting services for the funded projects such as feasibility studies and capacity building. This could include studies towards new business models, product labelling based on lifecycle analyses and the acceptance of certain technologies.

Such a dedicated monitoring and support mechanism would also offer the possibility to create and stimulate necessary synergies between the Innovation Fund and the upcoming 9th Framework Programme for Research and Innovation.

5 Select innovative projects with fair and transparent procedures

The selection and evaluation of projects should be based on a **two-stage process**. For the first stage a collection of projects at Member State level should be accompanied by a **transparent peer-review evaluation procedure at European level**. The evaluation by experts from academia and industry shall guarantee the independent selection of projects with the highest possible impact. In our view the most important criteria should be: 1) decarbonisation potential (validity of projected emission reductions), 2) scalability and 3) expected performance and technological innovativeness. Calculations should cover short, mid and long term reduction targets equally. Operators have to illustrate the capabilities and motivation to use and operate facilities beyond the funding period in a plausible way. A more in-depth peer-review should take place for the second stage.

At the first stage, a short project outline should be sufficient. At the second stage, however, the application should already include a feasibility study that also gives a clear indication of the acceptance of the technology. During this second stage, only a small number of projects should be retained. The Commission and the Member States should ensure that the success rate for proposals at the second stage is not lower than 30%.