



EU Innovation Fund

Member State workshop, Finland

15 January 2020, Helsinki

Minutes

Opening

Mr Riku Huttunen, Director General for Energy, highlighted the important and topical role of the EU Innovation Fund in achieving the climate and competitiveness objectives. Europe needs to deploy a wide range of low-carbon solutions in various sectors to achieve the climate neutrality objective by 2050. The Finnish Government is working towards the goal that Finland will become carbon neutral already by 2035 and carbon negative soon after that. In accordance with the Government Programme, sector-specific low-carbon roadmaps will be drawn up by summer 2020 in cooperation with companies and organisations in the relevant sectors. Several industrial sectors, such as the chemical, technology, forest and energy industries, have already started preparing their sector-specific low-carbon roadmaps. The roadmaps will contain an analysis of the technological solutions and investments needed to achieve the climate neutrality objectives. The aim of the event is to raise awareness of the Innovation Fund as well as to showcase potential projects in Finland.

Presentation by Mr Roman Doubrava, European Commission, DG Climate Action

Roman Doubrava presented the concept of the EU Innovation Fund. The fund is expected to finance the deployment of low-carbon investments by at least EUR 10 billion between 2020 and 2030. The first call is expected to be opened in summer 2020. It will focus on projects with CapEx amounting to EUR 7.5 million or more. The fund will finance up to 60% of the additional costs.

Project presentations

Flexens: The Smart Energy Åland full society scale system-level demonstration is supported by multi-year research projects focusing on system integration including innovative market models, new digital concepts and sector coupling. To demonstrate the system as a whole, it is necessary to invest in flexibility resources and technology demonstrations. The demo will consist of over 30 subprojects with budgets ranging between EUR 0.1 and 120 million each. Funding the total demonstration plan by means of a comprehensive framework agreement would be preferred to separate applications for the individual subprojects.

Fortum, Bio2X: Fortum Bio2X, together with its partners, is developing biomass fractionation technologies and technologies to produce high-value products from fractions. Bio2X materials have very low LCA – they can replace several fossil materials and/or otherwise non-sustainable technologies. The project is moving into the

commercial phase, with actions having started around partnering, site planning and funding. The technology is scalable according to the availability of raw materials. At the same time, the concept can be tailored for local raw materials and products that are needed.

Fortum, Espoo clean heat program: Espoo Clean Heat will decarbonize the district heating system in the 2020s in Espoo, the second largest city in Finland. This requires large investments in new non-burning capacity (heat pumps, geothermal) and in new low-temperature networks. Besides the new carbon-neutral production methods, we are developing new kinds of block-level areal heating and cooling networks. These innovations are based on system-level optimization and demand-side management that bring efficiency and can drop primary energy demand drastically. These concepts are efficient not only in the Nordic countries but also worldwide, where simultaneous heating and cooling needs exist and new residential areas are being built.

Helen: The presentation introduced Helsinki City Refinery, a collaborative project between Helen, L&T and VTT. The project relates to gasification-based synthesis technology being able to utilize different waste and residual streams in society as raw material for different end products such as renewable fuels, plastics and chemicals. The companies are currently planning to build a demonstration-scale plant that can be used as a platform to test the technologies with the best potential for the future on a scale that is industrially relevant.

Metsä Group: Metsä Group is an industrial company that uses sustainable Northern wood as its main raw material. Metsä Group could provide several projects that could collaborate with the new Innovation Fund. In the workshop, Metsä Group presented, as an example, an RDI project that aims to commercialize a new technology for producing wood-based textile fibres. The R&D work started in 2009 as a part of a national joint research programme. Pilot trials commenced in 2016, co-financed by BBI JU, and now Metsä Group, together with the Japanese company Itochu Corp., is building a demo plant in Äänekoski, Finland. The budget for the high-risk demo project is EUR 40 million. If the demo project is a success, Metsä Group will consider building a first-of-its-kind industrial factory. The Life Cycle Assessment that was carried out for the new concept shows significant improvement in, for example, 'Global Warming Potential', compared to commercial wood-based fibres and especially compared to cotton fibres.

ST1: A global transition to fully electric mobility is not possible in the near future and therefore synthetic fuels are needed. The presentation outlined the project of St1 and its partners, with a target of having a pilot plant for industrial-scale production of methanol (27 000 tons/year) in operation in 2023 in Lappeenranta (eastern part of Finland). Before setting up the investment project, a detailed feasibility study of the plant, including budgetary offers and preliminary contracts, will be carried out under two projects: one public project led by LUT and one development project led by St1. Companies are waiting for clear and well-defined legislation, including sustainability criteria and LCA methodology to make investments in synthetic fuel production.

UPM: UPM, one of the largest forest industry companies in the world, set up a biorefinery in 2015 that produces advanced biofuels in Finland. It produces 130 000 tons of renewable diesel and renewable naphtha annually. Advanced biofuels for heavy duty transport, maritime transport and aviation transport purposes are essential in the EU's efforts to reduce emissions in the transport sector. UPM is considering a potential

new investment, a biorefinery capable of producing 500 000 tons per annum that uses multiple sustainable feedstock. The new biorefinery would combine several novel technologies and feedstock, and would reduce CO₂ emissions by over 1.7 MtCO₂eqv yearly.

Other funding sources

Information about national funding sources as well as EU R&I funding were presented by the representatives of the Ministry of Economic Affairs and Employment of Finland and Business Finland. National EU funding experts (NCPs) were present at the event.