Summary – Sustainable jet fuel for aviation

Nordic perspectives on the use of advanced sustainable jet fuel for aviation

The study

A study has been performed by the consultancy company NIRAS and their partners Gaia Oy, ÅF and Sintef. It has been published as a Tema Nord Report; TN 2016:538.

The study assesses to what extent the production and use of advanced sustainable jet fuel may contribute to GHG reduction and mitigation, and identifies the commercial potential for initiating and scaling up advanced sustainable jet fuel production at a Nordic level. The report also explores how to most efficiently use the available Nordic know-how, feedstock and production facilities. The report draws on the latest available reports and statistics, as well as interviews with stakeholders and experts across the Nordic countries, and concludes by identifying the most matured technologies, the Nordic opportunities and challenges, and ideas to mitigate the barriers within the Nordic private and public sectors.

The study was launched at the "Seminar on sustainable jet fuels for aviation", Sept. 1, Oslo.

The seminar had more than 50 participants from different stakeholders such as the aviation industry, the sustainable fuel industry, and representatives from authorities.

NER concludes that the results of the report and the seminar indicates that a **number** of challenges lies ahead, their complexity should not be overseen. At the same time, here's obviously a good opportunity for Nordic energy cooperation to make a difference.

NER summarises the discussions at the seminar into the following 10 statements:

10 Messages from the seminar

1. The drive and need are there:

There is a need for strong reduction of CO_2 emissions in transport. With climate change as the driver, there is a need for more action in the EU, in Norway, in Sweden, in Denmark, in Iceland and in Finland.

The feedstocks are in abundance in the Nordic countries, yet very little is happening in the individual countries. This means that there is still a possibility to create a joint Nordic action on establishing the necessary economic incentives.

2. Market:

The market is there: The airlines see that their long term survival relies on sustainable aviation and engage in this issue.

3. Technology:

The Nordic region has the technology, knows how to produce the sustainable fuel and has shown that it is possible.

4. Crops:

Since the most promising pathways for sustainable jet fuel all included biomass as feedstock, sustainable crops were a major issue. Many stakeholders were of the opinion that sustainable feedstock is abundant in the Nordic countries and adequate for years to come and can be produced in a sustainable way without threatening food production. However, concerns about sustainability were also expressed.

5. Price:

The largest barrier in the next 10-20 years will be economic feasibility and the price gap between fossil jet fuel and sustainable jet fuel. Currently there is a gap of 3-9 times the price difference. However, sustainable jet fuels might, given the right conditions, follow the price curve of falling prices that all technologies in their infancy experience, like wind and solar have experienced the last decade. The costs of feedstock could still be a barrier, though.

There is a need for stronger policy incentive framework: To assist the industry to develop the necessary scale up of production, come up in production level and as a result to come down the learning curve and making it competitive earlier.

This could be done with blending commitments, taxation incentives and financing support.

6. Socio-economic benefits:

The whole range of impact on economy and businesses needs to be addressed. How will a strong Nordic position in sustainable jet fuel for aviation impact the agriculture and forestry industry, subsiding industries and local employment?

7. Why Nordic:

Why should the Nordic countries be the first? There is support in the population, we have capacity in the refineries and an existing knowledge in sustainable fuels. The industry has taken interest, with SAS, FinnAir, Oslo Airport and NESTE as some examples. And Nordic refineries, like Gothenburg are working on it.

A joint Nordic effort could also help speed up EU-processes and open up a European market for a future Nordic industry.

8. Good timing for initiatives:

As EU directives regarding renewable energy and fuel quality are currently being under preparation it is a good timing for a Nordic initiave about sustainable jet fuel.

9. Financing:

A fund or other de-risking financing-facilitations for sustainable fuels for aviation should be considered in order to relieve investors from volatile feedstock prices and to support businesses. Alternatively other measures that close the price gap could also be considered.

10. Sustainability criteria:

There is a need to develop a globally recognized sustainability criteria for feedstock.

Future development

In addtion to the 10 messages, the representatives for the aviation business sector suggested that the results should be presented to the Nordic Ministers of Energy and Transportation.

The representatives also propose to establish a forum with representatives from the whole commercial value chain, as well as from the authorities. They envisaged that such a Forum could contribute to a constructive dialogue between the aviation stakeholders and the responsible Ministers and facilitate the development of the sustainable aviation transports in the Nordic countries.

NEF will report and suggest this to the Nordic Committee of Senior Officials for Energy Policy (EK-E) preparing for the Nordic Ministrial meeting, November 2016 in Helsinki.

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