



Renewable liquid fuels ensure a fossil free transport sector

Renewable liquid fuels are important for sustainable transport

To reach our European and national climate goals we urgently need to phase out fossil-based fuels in the transport sector. Renewable liquid fuels are a viable alternative and of uttermost importance for road transport, shipping and aviation. All biofuels must fulfil the greenhouse gas emissions saving criteria in the relevant EU-legislation (renewable energy directive).

European legislation should encourage production of sustainable renewable liquid fuels and state aid rules must not hinder this development.

Public transport runs on biofuels

In Sweden, the public transport authorities decided as early as the beginning of the 2000s that public transport should be fossil-free. Today more than 90 percent of public transport vehicles run on some type of renewable biofuel. A prerequisite for this success is the Swedish tax exemption on highly blended biofuels such as HVO100 and B100.

At present, Sweden has a tax exemption approved by the European Commission for highly blended biofuels, but this exemption ends 31 December 2021. Should these fuels be taxed, the cost of Swedish public transport will increase by just over 0,8 billion Euro, something public transport cannot afford. Especially not in view of the pandemic and its impact on travel and the economy.

Electrification of road transport is a viable and very energy-efficient alternative especially in urban areas. But the reality is that most heavy vehicles, both buses and trucks, are equipped with a diesel engine and these vehicles will be operational for a long time to come.

Key facts about liquid biofuels in road transport:

- Biofuels are available and needed for Sweden to achieve its 2030 goal for transport. 2030, greenhouse gas emissions from domestic transport are set to be at least 70 percent lower compared to 2010.
- 96,5 percent of all trucks sold in Europe 2020 were diesel-powered (ACEA). Expected lifespan for a new truck is between 10-15 years.
- 72,9 percent of all the buses sold in Europe 2020 were diesel-powered (ACEA). Expected lifespan for a new bus is between 12–15 years.

Biodiesel from rapeseed (RME)



Rapeseed can be grown in most parts of central, eastern and northern Europe. Rapeseed oil is used both for food and for technical purposes such as oleochemical industry and for biodiesel production. Biodiesel can also be made from many other oil crops grown in Europe, like sunflower. In the production process, biobased methanol can be used for the methanization.

When biodiesel is produced from rapeseed, about 40 percent of the seed is extracted as oil and the rest becomes a protein-rich feed for animals. This protein feed is used instead of soy protein, a product mainly imported from Latin America. To reduce this import reduces the risk of deforestation and increases European self-reliance on feed.

Bioethanol from crops



Over 99 percent of the ethanol currently used in transport comes from crops such as corn, wheat, sugar beet and sugar cane. In the coming years, ethanol may also be made from cellulosic feedstock like woody residues and straw.

When ethanol is produced from grain, about half of the grains end up as ethanol and almost as much as protein-rich feed for animals. The protein feed is used instead of soy protein, a product mainly imported from Latin America. To reduce this import reduces the risk of deforestation and increases European self-reliance on feed.

Furthermore, biogenic carbon dioxide can be recovered from the fermentation process. It can be used in industry, e.g., in soft drinks, and substitute carbon dioxide made from fossil gas. It can also be captured for bio-CCS and long-term stored. The cost is much lower than for bio-CCS from flue gases.

HVO diesel

HVO diesel can be produced from many different feedstocks, mainly waste oils and fats; but vegetable oils from crops can also be used. HVO is produced by hydrotreatment, where the product is very similar to conventional fossil diesel, and can be used either as pure HVO100, or for blending up to higher blends than with RME. The name HVO (hydrogenated vegetable oil) is somewhat misleading, as also animal fats can be used.

The greenhouse gas reduction with HVO is very high, around or above 90 percent compared to fossil fuels. Production of HVO can promote the recovery of waste oils globally, like cooking oils from restaurants and households. Amended regulation in EU and Sweden has reduced the use of palm oil.

Greenhouse gas reduction

All biofuels must fulfil the GHG savings criteria in RED (the renewable energy directive). The producers are constantly working to improve their climate performance. The average GHG reduction from European ethanol compared to fossil fuels increased from 52.2 percent in 2009 to 72.2 percent in 2019. The emissions from ethanol in 2019 was 23.1 gCO₂/MJ. The fossil fuel emissions comparator was increased from 83.8 gCO₂/MJ in 2020 to 94.0 gCO₂/MJ to better reflect the life cycle emissions from fossil fuels

like diesel and petrol.

The best ethanol factories in Europe have even higher reduction rates, using renewable energy for their processes and sourcing from cultivation with low carbon footprint.

For production of biodiesel, the GHG balance is also constantly improving, e.g., by using renewable methanol at the methanization to RME and using feedstock from farming with low carbon footprint.

Availability of land for cultivation

During the last decades, EU has had surplus food production and applied policies to reduce this surplus. Several million hectares in EU are lying uncultivated (fallow) or being cultivated with low productivity. Farmland has also been abandoned, not least in central and eastern Europe. It could be as much as 30 – 50 million hectares. Rising yields and low population growth reduce EU farmland acreage with about 3 percent every year. These resources in agriculture could be used to produce energy crops for biofuels and provide vital in rural areas.



About us:

The Swedish Confederation of Transport Enterprises is an umbrella organisation for associations and companies in the transportation sector. We represent 9 200 companies with around 205 000 employees.

We work locally as well as internationally to support our members and to meet their varying requirements especially in the field of collective agreements and labour law. The Swedish Confederation of Transport Enterprises is a part of the Confederation of Swedish Enterprise.

The Swedish Confederation of Transport Enterprises (in Swedish Transportföretagen)
Storgatan 19, P.O. Box 5384, SE-102 49 Stockholm, Sweden
info@transportforetagen.se, +46 8 7627100

June 2021

TRANSPORTFÖRETAGEN