Advanced biofuels drive sustainable change in transport

Practical recommendations to encourage the commercialisation and take-up of advanced biofuels will help Europe’s transport sector to decarbonise and achieve sustainability.

In Europe, the term ‘advanced biofuels’ refers to biofuels produced from specific feedstocks, such as certain residues and wastes from agriculture and forestry.

These fuels, which typically do not compete with resources used for food and feed production, can also be blended with, or replace, liquid fossil fuels, thus helping to reduce carbon emissions in sectors such as transport.

“This is particularly important for modes of transport that are difficult to electrify, such as aviation, the shipping sector and heavy-duty vehicles,” says ADVANCEFUEL project coordinator Kristin Sternberg from the Agency for Renewable Resources in Germany.

High costs and uncertainty however remain critical barriers to the use of advanced
Encouraging take-up

“We began by monitoring the current status and future perspectives of renewable fuels in Europe, to better understand how to overcome market roll-out barriers,” explains Sternberg. “We then examined the challenges of biomass availability, and how to improve supply chains and develop new integrated conversion technologies.”

The project found that while advanced biofuels can bring economic and environmental benefits, further policy support is needed. A range of policy-related recommendations was then put forward, focusing on mobilising biomass feedstocks, improving conversion technologies and encouraging end-use take-up. These recommendations are targeted at policymakers and stakeholders covering the advanced biofuel value chain.

“On mobilising biomass feedstocks for example, we saw that rural land-use planning should be combined with incentives to produce biomass suitable for advanced biofuel production,” adds Sternberg. “Financial support measures should consider the logistics related to waste and residue collection.”

Policy measures should also take account of the cost of developing innovative energy conversion technologies. Existing funding schemes should be increased to cover renewable energy production, while capacity building and public-private partnerships can help to tackle some existing barriers.

While road transport is likely to see the first increases in renewable alternative fuel use, ensuring that the maritime and aviation sectors are ready will be critical if Europe is to succeed in reducing its CO2 emissions.

“Without tailored targets for these sectors, this shift may be difficult to manage,” adds
Sternberg. The sustainability of advanced biofuels will also need to be monitored and verified all the way along the value chain, from feedstock to end use.

**Clarity and confidence**

These recommendations can be found in the project’s final publication. A decision support tool and end-use analyser tool have also been developed, to give stakeholders more clarity and confidence when it comes to advanced biofuels.

“This project has delivered detailed insights into what challenges still need to be tackled to enable an economically viable marked roll-out of advanced liquid biofuels,” explains Birger Kerckow, head of EU and international cooperation at the Agency for Renewable Resources.

“It is clear that Europe’s ambitious carbon emission reduction targets to 2030 and beyond will require the use of advanced liquid biofuels. These fuels can easily use existing fossil fuel infrastructure and can be applied in conventional combustion engines requiring only minor modifications.”

**Keywords**

ADVANCEFUEL, biofuels, decarbonise, sustainability, energy, emission, carbon, biomass, feedstocks

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