

What is SAF and how is it made?- animation script

Decarbonisation of the aviation industry is a huge challenge, and we need new innovative solutions such as Sustainable Aviation Fuel or 'SAF' to succeed.

How is our fuel sustainable? We turn non-recyclable waste materials which would otherwise go to landfill into ready to use 'drop-in' jet fuel, which is already being used to power flights and reduce greenhouse gas emissions.

To tackle climate change the UK government has committed to reach Net Zero by 2050, meaning we need to remove the same amount of emissions as we collectively create. SAF is the jet fuel to get us there!

Our Lighthouse Green Fuels facility in Teesside will be a world-leader in producing advanced second generation SAF.

Using gasification and Fischer- Tropsch technologies, we will convert waste-biomass and other waste into a synthetic gas or "syngas" to produce liquid hydrocarbon fuel.

How do we do it?

First, we process waste or waste-biomass to remove recyclable materials. The remaining waste is then dried and converted into a high-carbon feedstock.

Heating this feedstock produces a raw syngas made up of carbon monoxide, hydrogen, carbon dioxide and contaminants.

Next, the syngas is scrubbed to remove contaminants and carbon dioxide, leaving an ultra-clean syngas. We then adjust the composition of the syngas to ensure the correct hydrogen to carbon ratio.

Clean syngas is converted into hydrocarbon waxes and refined into the final SAF and green naphtha.

SAF has the potential to remove lifecycle carbon emissions by up to 80% compared with conventional fossil-derived jet fuel. Lighthouse Green Fuels will produce advanced second generation SAF, which - using carbon capture and storage technology - has the potential to reduce lifecycle greenhouse gas emissions by 80% – 200%. So as well as reducing greenhouse gas emissions we can prevent carbon from entering the atmosphere altogether and produce a negative-emission fuel.

Finally, the SAF will be blended with conventional jet fuel, distributed to UK airports and used to power flights around the world.

To stay updated with the project, or to find out more, please get in touch.

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