



SASHA

Skies and Seas Hydrogen-fuels
Accelerator Coalition



SASHA Coalition: addressing aviation's 'green hydrogen gap'

SAF Cafe
18 April 2024



At a glance – what is the SASHA Coalition?

The **Skies and Seas Hydrogen-fuels Accelerator Coalition (SASHA Coalition)** is a group of aviation and shipping companies advocating for policies to support the use of green hydrogen (and, where needed, direct air capture) to decarbonise these sectors.

What does this mean in practice?

Current policy is driving both sectors to “solutions” that are damaging: biofuels and LNG. SASHA is changing this by calling for the EU and UK to ensure that 1) **regulations prioritise fuels with the greatest emission reduction potential** – i.e., green hydrogen derived – over other alternatives, and 2) limited supplies of green hydrogen and carbon dioxide from direct air capture (DAC) are **targeted towards the sectors – such as shipping and aviation – that have few alternatives to decarbonise.**



Our progress to date

- Launched the coalition at our webinar ‘Fuelling the future: How green hydrogen and direct air capture will decarbonise aviation and shipping’ with speakers including Lord Deben, then Chair of the Climate Change Committee and Laurent Donceel from Airlines for Europe.
- Published our report ‘The Green Hydrogen Gap’ with supporting research by Arup, which found that all pathways to truly sustainable fuels for shipping and aviation require green hydrogen.
- Published a series of **SASHA Coalition factsheets**, which explain the technical and policy landscape for decarbonising aviation and shipping using green hydrogen. Our **regulation roadmaps** further chart the policy path for advancing green fuels in shipping and aviation.
- Announced our coalition membership



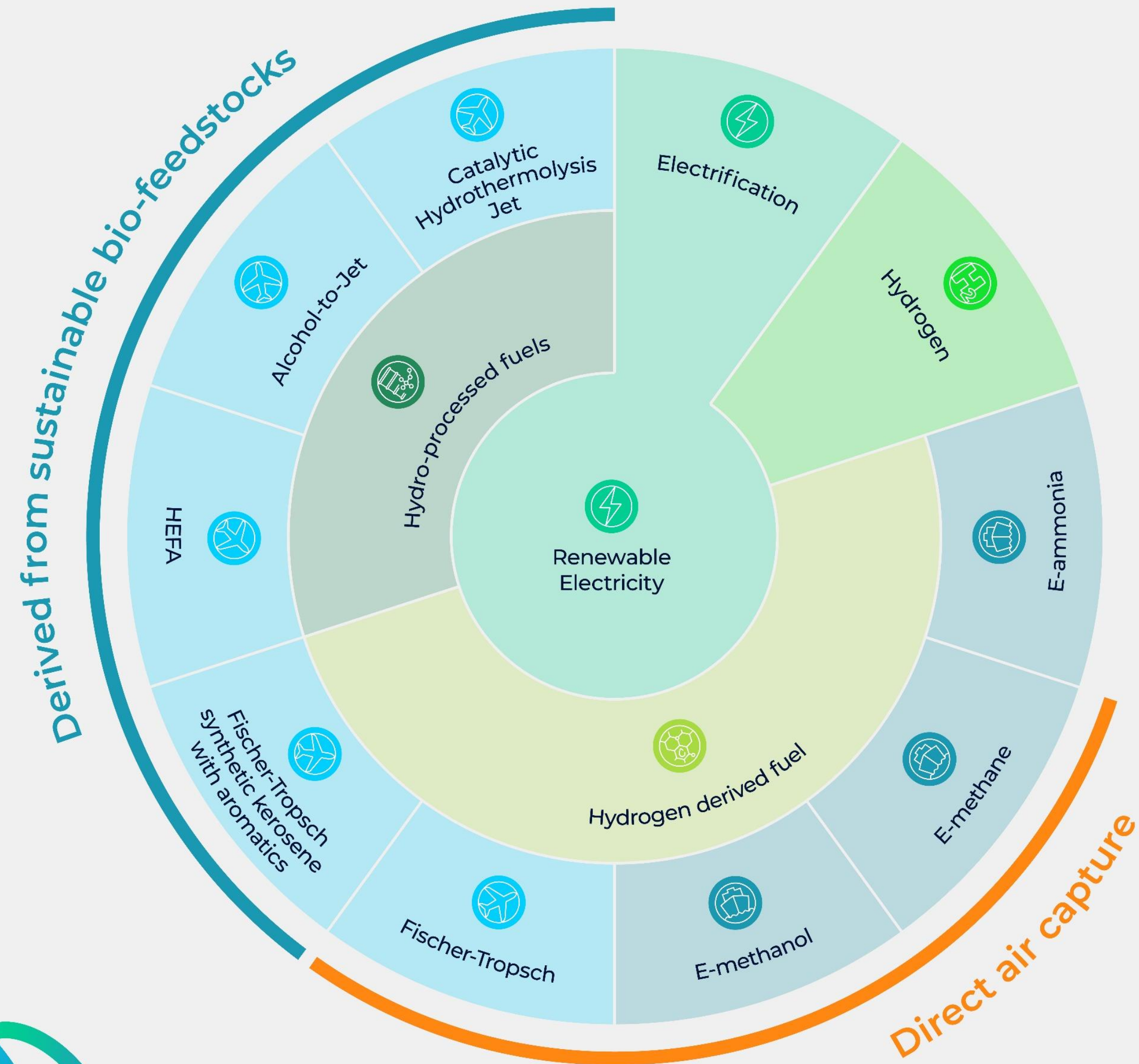
Our members




oneiros
aerospace



Sustainable Fuels



-  Sustainable Aviation Fuels
-  Sustainable Shipping Fuels

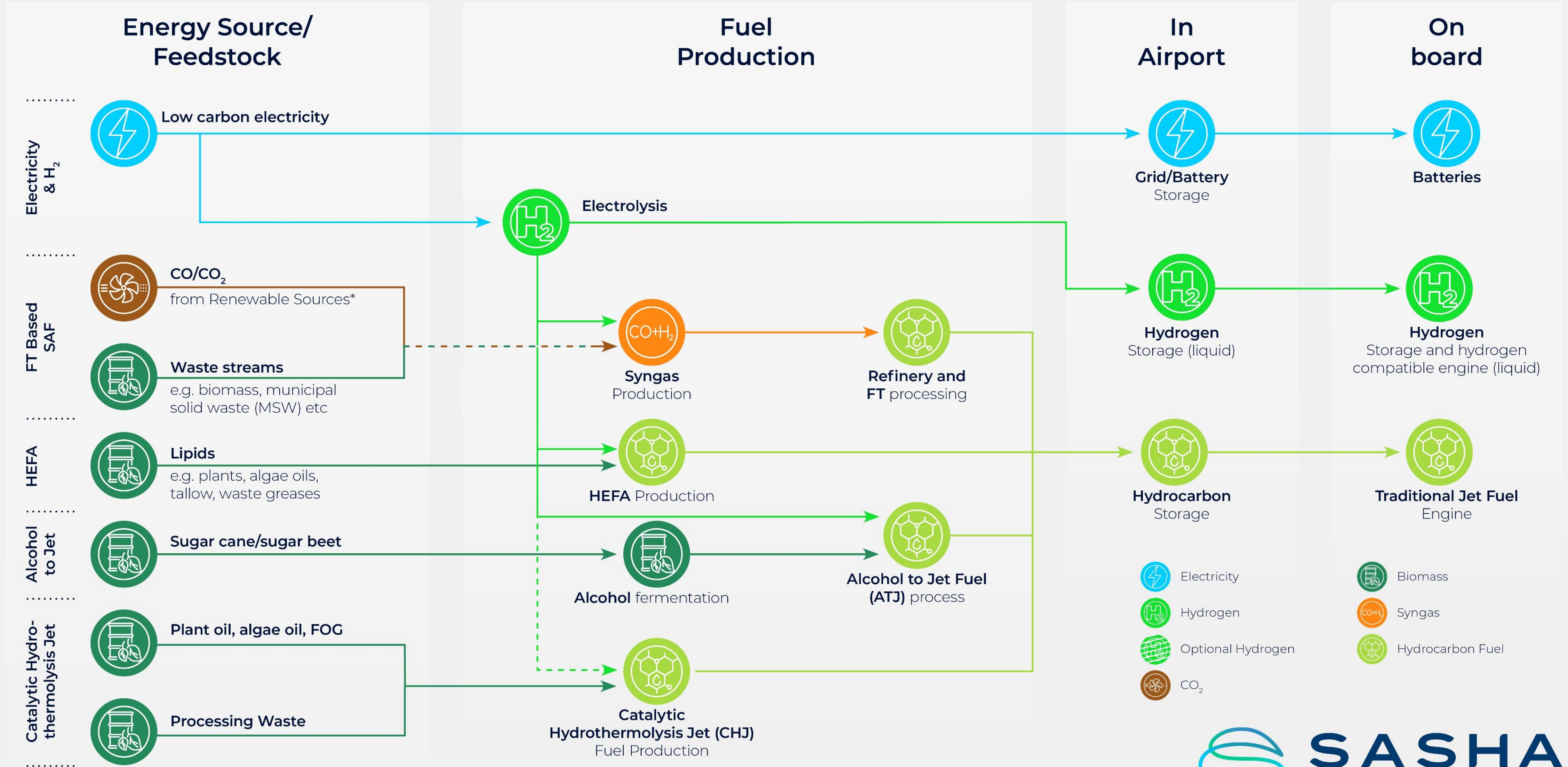


For both aviation and shipping, all pathways to truly sustainable fuels require green hydrogen (produced from renewables), with some of them also requiring carbon dioxide from a sustainable source such as direct air capture (DAC)



Sustainable aviation fuel production pathways

hydrogen as a feedstock in all pathways except direct electrification



* For fuels to be carbon-neutral over their lifecycle, carbon dioxide/monoxide used in their production should be taken from a sustainable source. These sources include, direct air capture (DAC), sustainable biomass production or captured from industry. This report focuses on carbon dioxide from DAC.

But not all options are made equal

We know that **green hydrogen plays a role in all pathways to producing alternative fuels for aviation** (other than direct electrification).

But not all alternatives offer the potential to provide a secure supply of low-emission fuel for the sector

Direct electrification

- **Most efficient alternative** available to the aviation industry as electricity is not being used to produce alternative fuels (an inherently inefficient process).
- **CO2 emissions be lowered** and there would also be an impact on the **non-CO2 effects** of aviation.
- A significant amount of research still needs to be done to develop this technology.

Hydrogen propulsion

- The combustion of hydrogen **doesn't produce CO2**, but more research needs to be done to assess its impact on the non-CO2 impacts of flying.
- As well as challenges associated with scaling green hydrogen supply, the technology itself is in its infancy. It's expected that – at least initially – hydrogen-powered aircraft will be **best suited to short and medium-range flights**.



But not all options are made equal (cont.)

Now for the big one, sustainable aviation fuels (SAFs)... A name that encompasses a wide variety of fuels with varying potential to lower emissions.

Biofuels

- First generation crop-based biofuels and used cooking oils and animal fats are **available in such limited quantities** that they don't present a long-term, viable option.
- Crop-based fuels also come with additional **land use impacts**, while used oils and fats have **competition from existing uses**.

E-fuels

- For e-fuels produced using **green hydrogen and carbon captured via direct air capture (DAC)**, as long as a renewable source of electricity is used they are close to carbon neutral.
- E-fuels are inefficient to produce, and producing e-fuels in the quantities needed will require **significant amounts of renewable electricity**.






Sectors using green hydrogen to decarbonise

Little/no viable alternative
Hydrogen needed





 Existing hydrogen uses


 Shipping*


 Long-haul aviation*

 High temperature Industrial heat


 Shorter haul aviation


 Heavy long distance land vehicles (HGVs, coaches , Rural Trains)

 Domestic heating

 Commercial heat

Other viable alternatives
Hydrogen limited to certain circumstances

 Light road transport (Cars, vans)

 Power system balancing

* In the form of hydrogen derived fuels
Source: Arup analysis Liberich associates, Bloomberg

Where do current regulations leave us?

SAF mandate

Government have committed to introduce a **SAF mandate** – meaning that at least 10% of jet fuel needs to be made from sustainable sources by 2030.

When the final mandate is published this spring it will include a target for Power-to-liquid fuels as well as a cap on HEFA fuels.

Revenue certainty mechanism

The government has committed to introduce a revenue certainty mechanism to support sustainable aviation fuel (SAF) production in the UK.

We're expecting a consultation to be launched any day on policy development of revenue certainty options.

What do we want from this regulation?


We want to see –

- a high PtL sub-mandate
- Buy-out prices that incentivise the use of sustainable fuels
- 0% HEFA cap

We welcome the introduction of a revenue mechanism, and want to see –

- It be industry funded
- It be targeted at the production of power-to-liquid fuels
- That it does not lock-in investment towards fuels that long-term won't provide a sustainable supply.

And what needs to change?

- Underpinning all actions is the need for **cross-departmental coordination** on aviation and shipping decarbonisation – ensuring that transport stakeholders are involved in decision making on future uses of green hydrogen (and DAC).
 - **Stronger regulations** to incentivise the use of fuels with the greatest emission reduction potential – i.e., **green hydrogen fuels** – over those that will reduce emissions by less.
 - Hydrogen strategies should make clear that **green hydrogen should only be used in these sectors that don't have alternatives** – and regulate to ensure it is not taken forward as a major decarbonisation strategy for those sectors that do have alternatives, such as home heating and road transport.
 - Alignment of aviation decarbonisation policy with **levelling-up strategies**, making the transition away from fossil fuels boost green growth across the UK.
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Our Vision:

1

An entrenched and holistic approach to government policymaking that reduces inefficiencies and harmonises energy, transport, green and industrial policies.

2

Government regulations stimulate green hydrogen-derived fuels demand.

3

Green hydrogen-derived fuels production increases, creating a new market into which small organisations grow, equitably distributing the economic gains of green industry across diverse areas of the country with inevitable knock-on socio-economic benefits in job-creation and investment.

4

A large but regulated green hydrogen market emerges that is limited to hard-to-electrify sectors including the aviation and shipping sectors, avoiding the inefficient misuse of green hydrogen in electrifiable sectors.

5

The gradual transition from fossil fuels to green hydrogen-derived e-fuels in the shipping and aviation sectors sets the country on course for its long-term decarbonisation targets.

What's next for the SASHA Coalition?

Political outreach

- Since publishing our factsheets, we have been reaching out to politicians and political groups in the UK and EU in an effort to get our factsheets in front of decision makers.
- We will build on this in the coming year, and hope to create a number of 'champions' for the SASHA Coalition who will promote our message in parliament.

Webinars

- We are holding two webinars – one UK focussed, one EU – to build on our factsheets and engage policymakers and politicians to demonstrate the climate benefits and green growth opportunities of developing green hydrogen for shipping and aviation.
- The first of these will be the UK webinar on 7th May.

Coalition activities

- We'll continue to identify and approach new potential members and meet with our existing members quarterly to get their input on our activities. If you're interested in joining, please get in touch.
- We'll proactively identify opportunities to intervene in policy processes – e.g. upcoming UK government consultation on a SAF revenue certainty mechanism.





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Any questions?

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Scan here to find out more about our
webinar “How decarbonising shipping
and aviation will boost UK green growth”

Tuesday 7 May 14:00 – 15:00 BST

