

## NET ZERO INDUSTRY ACT (NZIA): AN INDUSTRIAL PLAN FOR SUSTAINABLE FUELS FOR EUROPEAN AVIATION

A4E welcomes the **Net Zero Industry Act** initiative under the European Green Deal industrial plan to support the production, deployment and supply of net-zero technologies like the sustainable alternative fuels defined under the **ReFuel EU** legislation.

However, by excluding support for the production and use of sustainable aviation fuels (SAF) and synthetic fuels on an equal level with other net-zero technologies such as wind and solar power, the proposal represents a missed opportunity for the EU to lead in the fight against climate change and promote sustainable growth in aviation. By withholding the advantages granted to these other strategic technologies, the initiative falls short of boosting sustainable fuels production and uptake. This will hamper the large-scale availability of SAF at an economic cost<sup>1</sup> and undermine the 2030 GHG emissions reduction target.

With the US and China strongly supporting the competitiveness of their domestic SAF markets, Europe risks losing out on an opportunity to build a competitive SAF industry at home. To deliver on the ambition of being the world's leading market for green technologies, **a stronger financial and administrative incentivisation for SAF is necessary**, beginning with (1) an inclusion of SAF in the annex list of strategic net-zero technologies, and (2) a serious consideration of subsidisation schemes. While the provisions on state aid in the Act are commendable, a pure focus on national incentivisation risks further fragmentation of the internal SAF market.

### Key asks

- Categorise alternative fuels technologies such as SAF and liquid hydrogen as Strategic Net Zero technology.

---

<sup>1</sup> More on A4E position paper on Production and Deployment of SAFs in Europe – ReFuelEU Aviation, July 2021, [link](#)

---

Launched in 2016, Airlines for Europe (A4E) is Europe's largest airline association, based in Brussels. The organisation advocates on behalf of its members to help shape European aviation policy to the benefit of consumers, ensuring a continued safe and competitive air transport market. A4E is one of the initiators of European aviation's [Destination 2050](#) decarbonisation roadmap, with a pledge to reach net zero CO<sub>2</sub> emissions from all flights within and departing Europe by 2050. In 2019, A4E members carried more than 720 million passengers via a modern fleet of over 3,000 aircraft – accounting for more than 70 per cent of the continent's journeys. Members with air cargo and mail activities transport more than 5 million tons of goods each year to more than 360 destinations either by freighters or passenger aircraft. Follow us on Twitter [@A4Europe](#).

- Consider Carbon Capture and Utilisation (CCU) technologies – along with CCS – in the list of strategic net-zero technologies.

## Introduction

Europe's airlines have committed to decarbonising air transport and accelerate their efforts to make Europe the world's first carbon-neutral continent by 2050 through the reduction of CO<sub>2</sub> emissions in absolute terms, and through CO<sub>2</sub> mitigation<sup>2</sup>.

The key technologies needed to achieve these goals are **Sustainable Aviation Fuel (SAF) and synthetic fuels**, as recognised by the EU's own efforts in creating ambitious blending targets within the proposed ReFuel EU legislation. SAF refers to the three categories of liquid fuels: Renewable Energy Directive II (RED), Annex IX Part B biofuels, advanced biofuels (Annex IX Part A biofuels) and renewable fuels of non-biological origin (RFNBOs) – mainly synthetic fuels, within the meaning of the RED. As drop-in fuels, they can be blended with conventional kerosene to reduce CO<sub>2</sub> emissions in meaningful ways.

SAF production in Europe is still negligible and the supply of SAF is currently limited. This is partly because SAFs are considerably more expensive than kerosene, due to their high production costs. The demand for SAF is lagging because individual airlines cannot afford this price difference in the highly competitive international aviation market<sup>3</sup>.

Meanwhile, the U.S. has become the most advantageous area in the world to produce and use SAF by offering generous loan guarantees, multiple billions of USD in grants, tax support for Carbon Capture and Storage (CCS), as well as green bond investments. Combined with a similar challenge posed by China and other global players, the EU's sustainable fuels ambitions are under pressure as the EU is already competing for access to feedstock, investment and competition from airlines outside the EU. To match the challenge posed by other global players and to promote a leading position for Europe, the EU must seriously consider a sizeable financial incentivisation scheme for SAF production, deployment, and usage.

Fortunately, the EU has started to change the narrative on industrial policy and initiated the **Alliance for Zero Emission Aviation (AZE)** and **Renewable and Low-Carbon Fuels Value Chain Industrial Alliance (RLCFA)**, both of which A4E strongly supports. However,

---

<sup>2</sup> Source: Destination2050 Report, NLR/SEO, February 2021 ([link](#))

<sup>3</sup> According to Destination 2050 The Price of Net Zero Report, investment needed to meet the demand until 2050 would reach EUR 441 bn. Source: The Price of Net Zero Report, NLR/SEO, March 2023 ([link](#)).

a level playing field is currently absent. Equal access by all member states to funds that support key industries in their decarbonisation efforts is crucial to maintaining European competitiveness, preserving the single market and meeting the Union's climate targets. This is why a mere relaxation of state aid rules may not be sufficient to incentivise SAF production, as a lack of European incentives could fragment the nascent internal market for SAF. In this context, A4E welcomes the European Commission's analysis and its cooperation with industry to assess the impact of the Inflation Reduction Act (IRA) on the production and uplift of SAF.

## Possible SAF incentives

To date, from the EU side, the only element of incentivisation that appears comparable to the U.S. IRA measures is the principle of **SAF allowances** provided for in the revision of the aviation Emissions Trading System (ETS), aimed at covering part of the price difference between SAF and kerosene from 2024. However, its scope is likely to be **limited** and not comparable in its amount to the IRA provisions. It is also important to remember that these SAF allowances partially counterbalance the EU ETS, a carbon tax mechanism specific to the EU and which does not exist in the US. **There is no such aviation carbon pricing in North America.**

The absence of earmarking of parts of the ETS revenues, notably in the ETS Innovation fund, for the aviation sector, combined with reduced funding for the Clean Aviation Joint Undertaking, will hinder mirroring the specific grant program provided for in the US IRA.

Consider the pricing below:

- US mechanism: 1,25 USD/gal = 412 USD/ton of SAF and 1,75 USD/gal = 577 USD/ton of SAF (No restriction of the flights).
- US kerosene tax = 0.244 USD/gal x 330 = 80 USD/ton of fuel (only on domestic US). One ton of SAF is 330 USD/gal.
- EU ETS cost = 100 EUR per ton of CO<sub>2</sub> → 316 EUR/ton of kerosene (only intra EU/EEA flights). (Ratio CO<sub>2</sub>/fuel burnt = 3,16).
- SAF allowance under the EU ETS = 50% of the price gap (2500 – 1000 – 316) x 50% = 1020 EUR/ton of SAF in tax credit (Only intra EU/EEA flights)

As a result, investments in SAF production are expected to be (re-) directed to the US, resulting in a possible growing SAF shortage in the EU (Any inaction of the Union on the incentivisation of SAF could thus endanger the fulfilment of the Union's own SAF

blending mandate and **could contribute to possible dependencies on non-EU countries for SAF imports**, thereby creating the type of dependencies NZIA seeks to address). This underlines that the EU must recognise the importance of SAF under its climate legislation – including NZIA – if it desires to maintain Europe as a leader in the aviation sector’s decarbonisation.

The EU risks then losing out on an opportunity to build a competitive industry at home, with high value industrial jobs and increased energy security as additional social value creation. It is key for the EU to have SAF produced in the EU – otherwise the EU will lose out on the investment, jobs and Gross Value Add (GVA) that will be associated with new SAF production<sup>4</sup>.

Whilst the **ReFuel EU Regulation**<sup>5</sup> proposal provides a significant amount of market certainty to investors by reducing market/policy risk for a SAF refinery, the European regulatory framework will not help reduce first mover risk, which investors still see in this nascent market.

As representatives of the European aviation industry, we therefore believe that the **Net Zero Industry Act presents a key opportunity** to learn from past dependencies in other sectors and fully commit to a thriving SAF industry. A first step would therefore be to signal this commitment by **including SAF in the annex list of strategic net-zero technologies**. In further steps, the EU would send a strong message to investors, carriers, and citizens alike by adopting effective mechanisms for the first 5-10 years, indeed like the IRA, to help the sector grow. More price gap support and grants for first of its kind plants to scale up new technologies would mitigate the price impact and ensure a European leadership role on SAF, hydrogen and decarbonisation technologies for the aviation sector.

---

<sup>4</sup> A recent study estimated up to 14 million jobs could be created or sustained by the shift to SAF, creating new energy industries around the world. Where 90% of fossil fuel oil comes from just 22 countries today, this new SAF path could open opportunities in almost every country. In the EU, it is estimated that the development of advanced fuels – those produced via wastes and residues – have the potential to provide up to €15 billion of additional revenues into the rural economy annually and up to 300,000 additional jobs would be created by 2030 (Source: ATAG Study Waypoint 2050 Waypoint 2050: Aviation: Benefits Beyond Borders ([aviationbenefits.org](http://aviationbenefits.org)))

<sup>5</sup> Proposal for a Regulation of the European Parliament and of the Council on ensuring a level playing field for sustainable air transport, COM/2021/561 final.

## The key role of synthetic fuels / Renewable Fuels of Non-Biological Origins (RFNBOs)

Based on current supply and demand analysis, a global SAF supply gap is expected around 2030. This is also the decade when the EU is introducing a sub-mandate for synthetic fuels or Renewable Fuels of Non-Biological Origins (RFNBOs) and is planning a radical increase of overall SAF blends. Synthetic fuels represent a technological route which has fewer constraints on politically acceptable feedstocks. Synthetic fuels are also a technological route which supports most of the other pillars in the EU's RePower EU plan, including renewable power production, hydrogen and carbon capture and utilisation (CCU). Synthetic fuels also provide an extra benefit as energy storage for intermittent renewable energy production from wind and solar. As such, synthetic fuels can provide an energy system service, supplementing batteries that is more applicable at smaller scale. Peak production from major energy islands planned in the North Sea can be stored in liquid fuels and distributed to existing aviation fuelling infrastructure.

To reach the 35% e-fuel blend in 2050, Europe must unleash the major scaling potential of this technology. Synthetic fuels are also more costly to produce. As the first-of-kind full scale factories are yet to be built, there is also higher financial risks associated with it. **Inclusion of synthetic fuels and related technologies in the NZIA** would help bridge this, removing part of the first mover disadvantage while also laying the foundations for a new industry in Europe which complements the already identified areas for targeted support in the NZIA.

### Recommendations

- The **Net Zero Industry Act** should **clearly identify SAF and synfuels as strategic net-zero technologies** that could lead to “Net Zero supply chain projects of strategic interest” – ensuring that the full value chain is covered: research & development, production, transport, storage and uptake, as well as use (Article 3).
- Inclusion of RFNBOs and SAF (“Sustainable Alternative Fuels” to include further industries, too) in the Annex to achieve parity with other strategic technologies, as well as a reference to REDIII in both footnote 66 and 67.
- Critical SAF technologies should be included under the Annex, alongside other innovative thermochemical or biochemical technologies:

- Gasifier (syngas production equipment)
  - Fisher-Tropsch reactors
  - Gas-to-water conversion reactor
  - Carbon capture and utilisation facilities
  - High power electrolyzers
- Inclusion of CCU in addition to CCS in Annex I. All technologies relevant to Carbon Capture should be covered by the Act, in particular Direct Air Carbon Capture (DACC)<sup>6</sup>.

#### Other recommendations for a SAF industrial strategy

- The Green Deal Industrial Plan, either through the **Net Zero Industry Act** or the **EU Sovereignty Fund**, should develop a **sizeable financial SAF incentivisation scheme** that can match the US IRA and similar legislation abroad. This would provide the much needed financial “carrot” to the “stick” that is the ambitious blending mandates of the ReFuel EU Aviation legislation that would ensure that Europe is not once more falling behind on a key net-zero technology.
- SAF market developments should be labelled as **Important Projects of Common European Interest (IPCEI)** – to strengthen coordination between Member States in research and development. IPCEIs in the field of hydrogen should continue and be further facilitated.
- The **ETS Innovation Fund** should facilitate the establishment of a price stability mechanism for SAF as the market matures with a specific focus on investment in SAF production benefits the decarbonisation of operators complying to the ETS.
- The **SAF Allowances** mechanism should reflect the evolving state of the SAF market and costs. A4E welcomes the review clause in 2028 which allows for the increase in the amount of SAF allowances and/or to extend the distribution period based on the amount of SAF uplifted, if proven necessary. It is estimated that only around 15% of the revenues from allowances will be allocated to these SAF mechanisms. Such a decision could be taken in the short term in the context of the reform of the ETS for aviation Directive, by increasing the volume of allowances.

---

<sup>6</sup> Carbon capture will play a key role in achieving net-zero CO<sub>2</sub> emissions in 2050 as it allows both the production of Power to Liquid SAF (an alternative to biomass-based SAF) through Carbon Capture Usage (CCU) and carbon offsetting through Carbon Capture Storage (CCS).

- **Energy Taxation Directive:** The proposed review of the Energy Taxation Directive (ETD- as part of the July 2021 Fit for 55 package, would consider the totality of the impact to the US IRA. The ETD reform would implement a tax on all aviation fuels including biogenic SAF (HEFA), which could increase the price of SAF and reduce its attractiveness.

By taking these measures, Europe can position itself as a leader in sustainable aviation and promote a more sustainable future for the aviation industry.

The current NZIA proposal is in danger of becoming a missed opportunity for economic growth, job creation and sustainable development, as well as a failure to meet climate change targets. It is, therefore, imperative that policymakers act swiftly and decisively to include measures to support the production and use of SAF in the legislative proposal.