

SAF-Roadmap

Strategy for the introduction of sustainable aviation fuels
in and from Austria – Summary



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Vienna, 2024

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1 Regulatory and strategic framework conditions

The necessity of greenifying air transport is addressed comprehensively at the national, European and international levels in strategic and legally binding documents. At the national level, the Mobility Masterplan 2030 and, in particular, the Aviation Strategy 2040+ and the RTI Strategy for Aviation are currently of utmost importance. At the European Union level, the European Green Deal and the Fit-for-55 package with the ReFuelEU Aviation Regulation form the regulatory basis. However, the European Emissions Trading System (EU ETS), the directives to promote the use of energy from renewable sources (RED) and the ECAC's recommendations for action, should also be mentioned. At the international level, the objectives and activities of the ICAO and the CORSIA instrument are particularly worthy of mention. Their implementation and effectiveness will be reviewed at the EU level in the coming years and further improved on this basis.

The ReFuelEU Aviation Regulation determines the proportion of SAF blended with conventional fossil fuels. The blending quota steadily increases over the years (see Table 1) as a means of reducing aviation CO₂ emissions.

Table 1 SAF blending quotas

Year	Blending target	PtL
From 2025	2 %	-
From 2030	6 %	-
2030–2031	-	1.2 % ¹
2032–2034	-	2.0 % ²
From 2035	20 %	5 %
From 2040	34 %	10 %
From 2045	42 %	15 %
From 2050	70 %	35 %

At the same time, the SAFs used must be certified in accordance with Art. 30 of RED II and, in the case of biofuels, meet sustainability criteria and GHG savings criteria in accordance with RED II, Art. 29. This results in a restriction of the raw materials that can

1 Average share of PtL fuels with a minimum share of 0.7 % per year

2 Average share of PtL fuels with a minimum share of 1.2 % per year in 2032 and 2033 and 2.0 % in 2034

potentially be used, also because these raw materials will also be in high demand from other sectors of the economy in the future. From today's perspective, it is primarily the availability of usable raw materials that poses a challenge for implementing the future framework conditions and will require measures to prioritise use in hard-to-abate areas, such as aviation.

The climate protection initiatives of the International Civil Aviation Organisation (ICAO) form the accompanying strategic and regulatory framework. At the last meeting in autumn 2022, a global target for net zero CO₂ emissions by 2050 was agreed for international aviation (LTAG: long-term aspirational goal agreement). Cleaner energies, particularly sustainable aviation fuels (SAF), will be key to achieving this LTAG target. The third ICAO Conference on Aviation and Alternative Fuels (CAAF/3) was held in Dubai in November 2023. At this conference, a "Global Framework" was agreed with a global target of 5 % CO₂ reduction by 2030 using SAF, LCAF or other "cleaner aviation energies".

2 Technologies and sustainability

SAFs must be certified according to certain specifications for use in commercial aviation. Nine technology paths are currently available, including Fischer-Tropsch (FT), hydro-processed esters and fatty acids (HEFA), synthesised iso-paraffins (SIP), alcohol-to-jet (AtJ), catalytic hydrothermolysis (CHJ), and some “sub-processes”. These paths are also approved for SAF production, with high admixture rates of up to 50 %. The only currently commercialised technology is HEFA with vegetable and animal oils and fats (e.g. used cooking oil) as feedstock. However, the existing HEFA plants mainly produce hydrogenated vegetable oil, which is used as a diesel substitute. The other technology paths are technically feasible but are currently still being developed with very low capacities, which is why production costs are still high. Scaling up these technology paths while simultaneously complying with the necessary sustainability criteria is a challenge for SAF production.

SAFs must fulfil sustainability criteria when selecting raw materials and a production pathway. This is where the European assessment regime according to RED II and the international regime CORSIA differ. A comparison of the two regimes shows a significantly higher level of ambition in the European system regarding the reduction of GHG emissions over the entire life cycle. The major challenge in sustainability is that a wide variety of project constellations with complicated value chains within and outside Europe must fulfil the requirements. Sustainability certification systems are used to monitor compliance with sustainability requirements by economic players along the SAF supply chain on a life cycle basis. This ensures a high level of overall sustainability of the fuel used.

Non-CO₂ emissions are also crucial when assessing aviation’s climate impact. Condensation trails and the resulting contrail cirrus have the most significant influence here. According to initial research results, the use of SAFs can also make a valuable contribution here. However, even the use of SAFs cannot eliminate the non-CO₂ effects.

3 Demand for SAF in Austria

The future mandatory blending quotas for SAF in the EU are set out in the ReFuel EU Aviation Regulation. Given the expected increase in air traffic by 2050 and the annual increase in SAF blending quotas, there is an enormous need for SAF, including in Austria.

The volume of air traffic and, thus, aviation-related CO₂ emissions experienced strong growth worldwide until 2019. Almost 0.95 million tonnes of aviation fuel were sold in Austria in that year. The pandemic resulted in a historic slump in this development. In the years that followed, traffic volumes recovered significantly and in 2023, air traffic volumes at Vienna International Airport were around 93 % of the pre-pandemic level.

A scenario calculation on the development of air traffic volumes in Europe concludes that volumes are expected to be between 96 % and 116 % of the 2019 level by 2028. The scenario analysis for the period between 2029 and 2050 was based on an average annual growth of 0 % (zero growth) or 1.8 %. This allows us to estimate future aviation fuel sales in Austria in 2050 of between 0.67 million tonnes – the decline compared to 2019 is primarily due to technological efficiency gains – and 1.2 million tonnes.

Considering the SAF blending quota of the ReFuelEU Aviation Regulation, this results in future demand for synthetic SAF of at least 6,800 tonnes in 2030, 100,000 tonnes in 2040 and 349,000 tonnes in 2050. The demand for biogenic SAF amounts to 18,000 tonnes in 2025, 51,000 tonnes in 2030, 240,000 tonnes in 2040 and 349,000 tonnes in 2050. Even under moderate assumptions, demand for biogenic and synthetic SAF of almost 699,000 tonnes can be estimated for Austria in 2050.

These enormous fuel volumes require large quantities of raw materials and a rapid ramp-up of SAF production in Austria, Europe and the rest of the world. The availability of the required raw materials, which must also fulfil the specified sustainability criteria, poses a particular challenge.

Fuel and SAF demand until 2050

SAF blending quotas according to REFuelEU Aviation Regulation

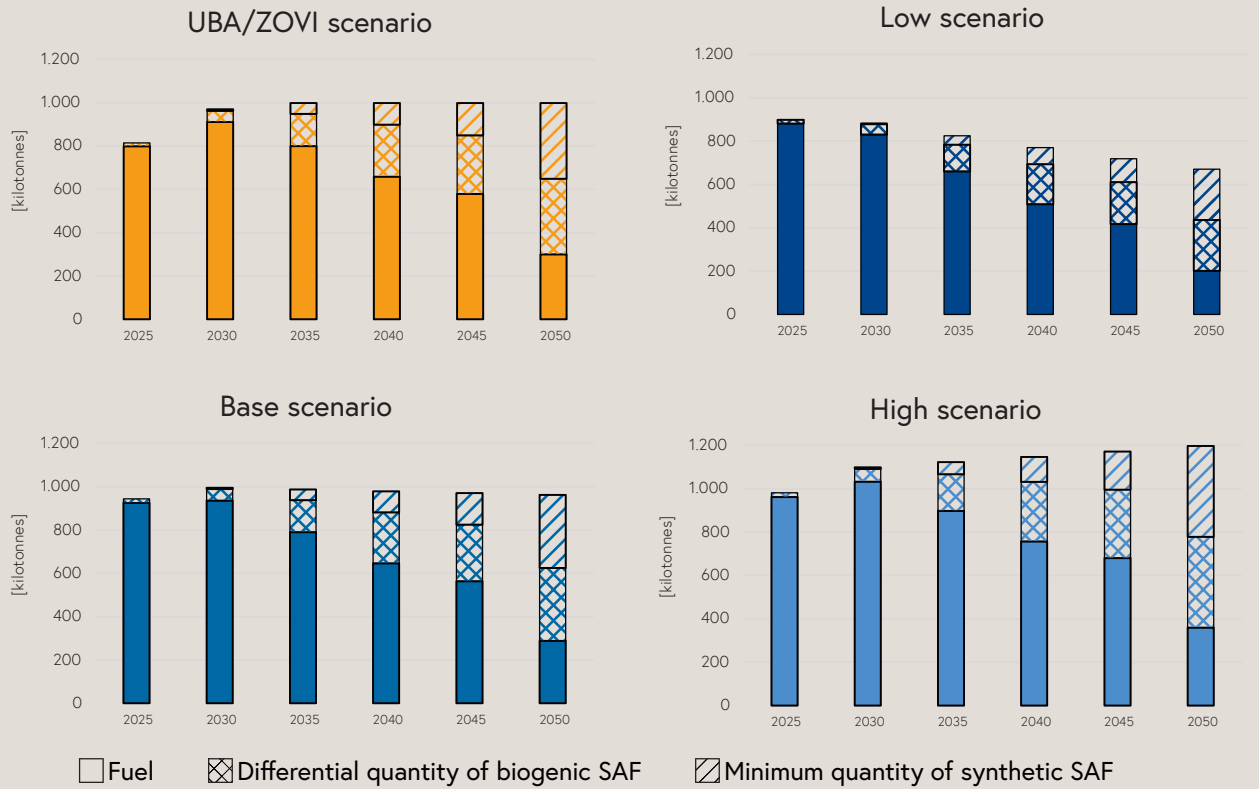


Figure 1
Results of scenarios on absolute fuel and SAF demand in Austria, 2025–2050, own calculations

4 Economic potential

The current SAF supply is still low, at less than 0.05 % of total aviation fuel consumption in the EU. This is due to industrial and commercial challenges, in particular high production costs, competing demand for raw materials and renewable electricity, and risky investments to expand production. Considering the expected development of air traffic volumes, a demand for SAF of just under 699,000 tonnes is expected for Austria in 2050. A fuel volume that offers opportunities for the domestic economy, but also requires international partnerships to ensure sustainable security of supply.

The quantity of SAF that can be produced in Austria depends on both the availability of the required raw materials and the capacities of the production facilities that can be used. Due to the high competition for use with other economic sectors, the demand for usable raw materials from Austria is practically unmet, both in terms of biomass and “green” hydrogen. In addition, production capacities in Austria are currently limited, which is why the demand for both synthetic SAF and biogenic SAF will have to be covered mainly by imports. Using the example of the separation of CO₂ from the atmosphere as a necessary raw material for the production of synthetic SAF, it can be assumed that this will not take place on an industrial scale in Austria for many years.

Concerning possible SAF imports, it should be noted that the data and information on the production of SAFs that fulfil the European sustainability criteria is still relatively unclear at this early stage. A concrete import strategy cannot yet be determined based on this information. This makes continuous monitoring all the more critical, especially in the European production landscape, so that sufficient availability of SAF for market placement at Austrian airports can be ensured in the medium term.

Synthetic SAF in particular, but also biogenic SAF, are currently still significantly more expensive than fossil fuels mainly due to the low production volumes. The estimated production costs are still reported in broad ranges. It is generally assumed that the costs for SAF will fall significantly in the future due to market development and the resulting learning and economies of scale. However, synthetic SAF will only be economically competitive in the long term if a comparatively high CO₂ price is added to fossil fuels. If the sustainability targets can also be achieved separately from the physical flow of goods (book-and-claim mechanism), this will further reduce the costs for the production and utilisation of SAF.

In the initial phase of SAF production in Austria, 1,500 tonnes of SAF were produced at the OMV refinery in Schwechat in 2022 – using regionally collected used cooking oil – and sold at Vienna International Airport in Schwechat (OMV, 2022a); in 2023, the figure was 3,800 tonnes of SAF. According to OMV’s 2030 corporate strategy, the Group wants to become the leading SAF supplier in the region and will invest in new plants as well as the conversion of facilities in Romania, Austria and Germany to achieve this.

The medium-term Group target is to scale Group-wide SAF production to 700,000 tonnes in 2030 (OMV, 2022b). Only a proportion of this fuel volume will be produced in Austria.

The food and industrial goods group AGRANA also has plans for SAF production in Austria at its site in Pischelsdorf, Lower Austria, where up to 28,000 tonnes of biogenic SAF could be produced from concentrated CO₂ from the biorefinery via alcohol synthesis (AtJ) (AGRANA, 2022).

The production of synthetic SAF has been tested on a pilot basis by AVL List in a demonstration plant for high-temperature electrolysis at the site in Graz since the beginning of 2023. In the first year, an output of 100,000 litres or 80 tonnes of synthetic liquid fuel, of which around 32 % is SAF, is planned (AVL, 2021). An expansion of this plant to twenty times the fuel output is already being considered.

5 Focus areas and measures

The scenario analysis on the development of air transport volumes in Austria (chapter 3) shows an enormous future demand for SAF. This demand requires large quantities of raw materials and a rapid ramp-up of SAF production in Austria, Europe and the rest of the world.

Due to the high competition for use with other economic sectors, the demand for usable raw materials from Austria is practically unmet, both in terms of biomass and “green” hydrogen. From today’s perspective, the availability of the required raw materials, which must also fulfil the specified sustainability criteria, will pose a particular challenge. This requires measures to control the available material flows or to prioritise the use of raw materials in areas of application that are difficult to substitute, such as air transport.

Production capacities in Austria are also currently limited, so the demand for synthetic and biogenic SAF will largely have to be covered by imports. Due to the confusing data and information situation currently prevailing, defining a corresponding import strategy is only possible to a limited extent. It is, therefore, essential to continuously monitor the development of European production capacities for SAF.

Ultimately, it is necessary to support the ramp-up of production and use of both biogenic and synthetic SAF from an ecological and economic perspective to achieve cost parity with other conventional fuels and ensure the desired sustainability of these fuels. The biggest challenges that need to be addressed for a market ramp-up relate to the high investments in production facilities and ensuring the availability of the required sustainable raw materials and the SAFs. Accordingly, five overarching focus areas with 15 detailed measures are identified and delineated for introducing sustainable fuels in air transport in and from Austria.

Table 2: Overview of focus areas and measures

Focus area		Measures	
No.	Title	No.	Description
1	Incentives and impetus for the SAF ramp-up in Austria	1.1	Supporting research and development
		1.2	Promoting the domestic recycling of used cooking oil
		1.3	Examining the incentivisation of SAF production in Austria
2	Ensuring the availability and safeguarding of import capacities	2.1	Prioritising PtL fuels for use in the non-road and off-road sectors
		2.2	Continuous monitoring of implemented and planned international production capacities for SAF
		2.3	Establishing and expanding strategic partnerships at European and international level
		2.4	Establishing and expanding the infrastructure for SAF transport to and in Austria
3	Ensuring sustainability	3.1	Introducing (electronic) sustainability certificates for SAF
		3.2	Advocacy at the European level for the establishment of a monitoring, reporting and verification system for non-CO ₂ emissions in aviation
4	Cost transparency and competitiveness in aviation	4.1	Advocating for fair fuel taxation in the EU and at the global level
		4.2	Examining the inclusion of SAF use in relevant legislation
		4.3	Ensuring that distortions of competition are avoided
5	(Political) dialogue and stakeholder participation	5.1	Establishing a SAF Competence Circle in and for Austria
		5.2	Continued participation in relevant international expert committees
		5.3	Communicating and raising awareness

5.1 Focus area 1: Incentives and impetus for the SAF ramp-up in Austria

The necessary integrated energy and mobility transition for all modes of transport is characterised by the use of sustainable alternative technologies and fuels, which in many cases also offer high value-creation potential for Austria as a business location. SAFs are also already being produced in small quantities in initial pilot plants in Austria and used in air transport. Maximising the production and value creation potential of the Austrian research and industrial landscape should ensure a minimum degree of import independence and is the core task of the measures in focus area 1.

Measure 1.1: Supporting research and development

According to the RTI Strategy for Aviation 2040+, sustainability, efficiency and safety are central to research and technology development activities in aviation. Research and technology development activities in the field of SAF can make a particularly valuable contribution here. The aim is to develop further and optimise existing SAF production paths. This concerns both research into possible ways of increasing efficiency along the technically established HEFA pathway and the optimisation and scaling of the production of synthetic SAF. To achieve sustainable results, research and development in the field of SAF should be given sufficient support.

The BMK, therefore, already has several funding programmes for SAF and hydrogen. As part of Take Off, the BMK's RTI funding programme for aviation, the following three transformation strands in particular are supported:

- New aircraft geometries and new aircraft models, including recycling and re-utilisation (aircraft integration)
- Research into the fuel itself, its production and upscaling, as well as CO₂ and non-CO₂ effects
- Impacts and changes to the infrastructure systems of aviation, energy and hydrogen, including the associated logistical challenges

Take Off alone has already facilitated EUR 9 million in investments in research activities in SAF and sustainable aviation. This support must be intensified and expanded.

Austria's participation in EU research and development activities in the field of SAF and exchanges with international experts, e.g. as part of IEA research collaborations, should also be stepped up. In this regard, the knowledge gained about the climate impact of non-CO₂ emissions should also be taken into account. Among other things, the measure aims to strengthen Austria as an RTI location and to expand the research and technology infrastructure.

Measure 1.2:

Promoting the domestic recycling of used cooking oil

One of the biggest challenges in the HEFA production pathway is the availability of raw materials and their sustainability. The availability of domestic used cooking oil is also limited because large quantities of used cooking oil or products made from used cooking oil are exported from Austria.

The amendment to the National Fuel Regulation (“Kraftstoffverordnung”, or KVO) has indirectly led to a significant increase in the monetary value of used cooking oil in Austria. The coming months and years will show whether this has already had a curbing effect on the export of biofuels produced from used cooking oil. In Germany and other countries, however, the value of used cooking oil already exceeds that of fresh cooking oil, which is problematic from a sustainability perspective. Parallel to the effect of the current amendment to the KVO, possible instruments (including tax law) that directly or indirectly promote the domestic use of domestic cooking oil are therefore being examined. A collection and use analysis of domestic used cooking oil can further optimise the material flows.

Measure 1.3:

Examining the incentivisation of SAF production in Austria

A range of options for incentivising SAF production in Austria is being examined to support the ramp-up of SAF production in Austria, to secure future value creation potential in Austria and for Austrian companies and to ensure a minimum level of import independence. For example, the following can be examined:

- Creating incentives for operators of SAF production plants in Austria; currently, HEFA is the only commercialised technology for the production of SAF..
- Granting financial aid (guarantees, etc.) for the conversion of existing or the construction of new demonstration or large-scale plants, which are often associated with high investment costs.
- The necessity or potential effectiveness of “contracts for difference”; these serve to guarantee investment security by purchasing SAF from fuel producers at fixed prices. The public sector would bear the cost difference.
- The usability of existing national (FFG basic programme, energy research of the Climate and Energy Fund, etc.) and European (Horizon Europe, Eureka, NextGenerationEU, etc.) funding programmes, and the support of Austrian companies in submitting corresponding funding applications. The need to set up new funding resources and programmes is also important.

The specific incentivisation requirements are discussed and identified together with all relevant stakeholders. The national SAF Competence Circle (see measure 5.1) can serve as a platform.

5.2 Focus area 2: Ensuring the availability and safeguarding of import capacities

Work carried out as part of the SAF roadmap has shown that the high demand for bio-genic and synthetic SAF cannot be fully met in the medium and long term by Austrian raw materials or national production capacities. Therefore, the core task of the measures in focus area 2 is to intensify activities in the public sector's area of responsibility that can contribute to securing the necessary import capacities. This is to be done against the background of supporting the availability of sufficient quantities of SAF (also to fulfil legal requirements) in Austria.

Measure 2.1: Prioritising PtL fuels for use in the non-road and off-road sectors

Synthetic liquid fuels, known as “e-fuels” or power-to-liquid fuels, require five to ten times more renewable primary energy than direct electricity generation, for example, in an electric motor.

Electricity from renewable energy sources will be in high demand from all sectors of the economy in the coming years and decades. This requires the most efficient use of this energy. Where technical alternatives have already been developed and established – for example, battery-powered electric drives in road transport – the use of PtL fuels should be reduced to an absolute minimum. This will ensure that PtL fuels are mainly used where there is no alternative for various reasons, such as energy density or peak load requirements. This includes the non-road and off-road sectors in particular, especially air transport.

Potential legal or market-based instruments are being examined that could shift the focus on using PtL fuels, at least from national production and especially in the market ramp-up phase, in the non-road and off-road sector in general, and in air transport in particular.

Measure 2.2: Continuous monitoring of implemented and planned international production capacities for SAF

The data and information regarding the production of SAF are still relatively unclear. Some organisations that reported planned production capacities just a few months ago no longer exist. On the other hand, new companies are constantly announcing planned SAF production. In addition, only those companies whose SAFs also fulfil the European sustainability criteria can be considered as contractual partners for use in Europe.

At the same time, the import of SAF is unavoidable from today's perspective to ensure the security of supply of SAF to Austrian airports, at least in the specified blending quota per the ReFuelEU Aviation Regulation. Although the book-and-claim mechanism

would provide an opportunity to decouple from physical flows of goods, even in this case, the chargeability of certain SAF quantities must be ensured at the very least.

For this reason, continuous monitoring of SAF's realised or planned international production capacities will be carried out or continued to enable prompt reaction to changes in the international production landscape and support Austria's security of supply. This will be done primarily on the basis of the data that the ICAO regularly updates and makes available on its website, supplemented where necessary by activities to check the plausibility of this information.

Measure 2.3: Establishing and expanding strategic partnerships at European and international level

Regardless of currently available production capacities, large quantities of SAF are already traded today through "purchase agreements". On the one hand, this reduces the investment risk for SAF producers and, on the other, secures the necessary fuel quantities, at least on paper, for those companies that will be obliged to add SAF in the future.

Austria and the companies operating in Austria that are directly or indirectly obliged to sell or place SAF on the market in the future should also establish strategic partnerships in due course, depending on the necessary fuel quantities – both regarding the provision of suitable raw materials for national SAF production and regarding the import of SAF itself. Particular attention should be paid to synthetic SAF, the production of which is still very low worldwide compared to biogenic SAF.

The development of strategic partnerships should build on existing partnerships (e.g., on green hydrogen), and could be based on monitoring the international SAF production landscape (see measure 2.1) and contrasting against the background of the estimated fuel volumes. The measure focuses on synthetic SAF, with a national demand of around 6,800 tonnes in 2030, around 100,000 tonnes in 2040 and around 349,000 tonnes in 2050 from a current perspective. The import of climate-neutral hydrogen will play a key role here, as the required quantities are also unlikely to be covered by production capacities in Austria alone. The import target for climate-neutral hydrogen is discussed in detail in the 'hydrogen strategy' (BMK, 2022a).

From today's perspective, it is still unclear which regions will require a reliable and affordable supply of SAF imports to the domestic market. In any case, the development of import relationships should focus on those countries that prove to be potential net exporters of SAF. Particular attention should be paid to compatibility with international climate targets, the decarbonisation efforts of the respective partner countries, long-term, sustainable security of supply, import costs and possible cost-efficient transport corridors.

It is noted that this measure can also cover strategic political partnerships. The economic partners are responsible for the actual trading of specific fuel quantities and the conclusion of contracts in this regard.

**Measure 2.4:
Establishing and expanding the infrastructure for SAF transport to
and in Austria**

Subject to the physical use of SAF in Austria, i.e. excluding the possibility of using a book-and-claim mechanism, up to 699,000 tonnes of SAF-suitable raw materials or SAF itself could be transported to or in Austria in 2050, in addition to a greatly reduced quantity of fossil fuel.

Although the type and quantity of raw materials for national production, as well as the actual physical SAF quantity, are still uncertain at this early stage of the SAF ramp-up in Europe and worldwide, the future transport of these raw materials and fuel quantities already requires a comprehensive build-up of knowledge so that we can react adequately and promptly to the resulting requirements.

It will be analysed to what extent the existing infrastructure for the transport of aviation fuels, in particular via pipelines, will meet future requirements and whether steps need to be taken to enable and secure the future transport of raw materials and fuels to and in Austria, and, if so, which measures – especially against the background of the strategic goals at the European (EK, 2021d) and national level (BMK, 2021a), such as stabilising the volume of freight transport on the road, and shifting large parts of future freight transport performance to more climate-friendly and energy-efficient modes of transport such as rail or shipping.

If necessary, a study can be rendered to illuminate the aforementioned issues and, where applicable, serve as the basis for the development of a roadmap for establishing or expanding the necessary infrastructure, and thus, concrete implementation steps.

5.3 Focus area 3: Ensuring sustainability

Sustainability in European and international air transport is the main reason for promoting and mandating SAF. The consideration of corresponding criteria in the binding legal acts of the European Union is being intensively promoted, and harmonisation or alignment of ambition levels is currently being carried out. Therefore, critical aspects of the sustainability of the aviation fuels used will be specified to the member states of the European Union in the coming months and years. In addition, the two measures listed below will be implemented under national responsibility.

Measure 3.1:

Introducing (electronic) sustainability certificates for SAF

Reviewing the raw materials and production processes is essential to ensuring the actual sustainability of the SAF used in the future. This could be done analogously to the example of biofuels used in Austrian road transport within the framework of the so-called electronic sustainability certificate (eINa), but also concerning proof of quantity.

This measure is intended to support the integration of national SAF production and the placing of SAF on the market in an electronic verification system modelled on the eINa system for road transport. The developments of the Union Database (UDB), which is currently being ramped up, must be considered. The aim is to achieve clarity and transparency regarding the certification of SAFs produced nationally or placed on the market in Austria. The usefulness or necessity of linking any national fuel certification with the so-called “Eco-Label” of the European Union Aviation Safety Agency (EASA) is being examined.

Measure 3.2:

Advocacy at the EU level for the establishment of a monitoring, reporting and verification system for non-CO₂ emissions in aviation

Emissions other than carbon dioxide account for two-thirds of aviation’s impact on the climate. Contrails and the resulting contrail cirrus have the most significant impact. Quantifying the non-CO₂ effects is complex, as they influence each other, and their impact depends heavily on location, time of day and weather conditions.

The use of SAFs can significantly contribute to mitigating these so-called non-CO₂ effects. At the same time, SAFs cannot wholly eliminate the non-CO₂ effects. In view of the importance of these non-CO₂ emissions for sustainable and more climate-friendly aviation that is in line with the Paris Agreement, the need for a monitoring, reporting and verification system for non-CO₂ emissions from aviation under Directive 2003/87/EC (Art. 14) is clear.

The BMK has successfully campaigned to establish such a system at the EU level.

5.4 Focus area 4: Cost transparency and competitiveness

In addition to the legally enshrined blending obligations, economic efficiency and cost parity compared with fossil fuel are the main drivers for a rapid ramp-up of SAF production and the main success factors for the widespread use of SAF in air transport beyond the foreseeable EU legal obligations. In this context, the measures in focus area 4 aim to sustainably promote and consolidate cost transparency and competitiveness in air transport.

Measure 4.1:

Advocating for fair fuel taxation in the EU and at the global level

One decisive factor in ramping up SAF production is the economic competitiveness of these fuels compared to fossil fuels. Due to the high production costs of PtL fuels, this will not materialise even with large-scale industrial production without accompanying measures. This effect is exacerbated by counter-productive tax systems, such as general tax exemptions, which do not consider CO₂ intensity or other climate-relevant factors and, therefore, put SAF at a competitive disadvantage in the long term. In the context of air transport, the mineral oil tax exemption on aviation fuel for commercial aviation can be mentioned (WIFO, 2022). The commitment to fair taxation throughout the EU with benefits for SAF is therefore essential for the further ramp-up of SAF.

The Ministry of Finance is responsible for corresponding tax matters. Austria supports the implementation of EU-wide fuel taxation in accordance with the Government Programme 2020–2024. As part of the Fit-for-55 package, a proposal to revise the European Energy Tax Directive was submitted (EC, 2021b), which is currently being discussed in the ECOFIN Council. According to the proposal by the European Commission, the taxation of conventional intra-European passenger flights will be introduced in stages over ten years until the minimum fuel rates are reached. On the other hand, a minimum rate of zero is to apply for ten years to alternative fuels. The introduction of such a tax must be standardised at the European level to counteract distortions of competition within Europe. Accompanying measures are also required at the European level to prevent “environmental flights” and a price-induced shift to third-country suppliers. An equalisation at the global level should be sought. The use of proceeds from an EU fuel tax to finance the market ramp-up of SAF is supported.

In this context, the tightening of the EU Emissions Trading Scheme for aviation at the beginning of 2023 should be viewed positively. Among other things, the free allocation of allowances will be phased out by 2026. With regard to SAF, a support mechanism will be introduced, according to which free certificates amounting to 20 million tonnes will be available to aircraft operators to compensate for the price difference between SAF and fossil fuel.

Measure 4.2:

Examining the inclusion of SAF use in relevant legislation

The positive consideration of the use of SAF in relevant legislation (also beyond the aviation sector) will be examined and, if necessary, implemented if this can increase or incentivise the use of SAF. For example, this could be the case if airport charges are considered. Incentivising positive measures in the environmental area (such as high SAF use) in official decisions could also be considered.

Measure 4.3: Ensuring that distortions of competition are avoided

The ReFuelEU Aviation Regulation must be implemented in all European Union member states and the airports located therein in the future. If no additional compensation measures are taken for non-European flights, this may result in distortions of competition. This can become apparent, for example, in the form of so-called fuel tankering, where airlines carry more fuel than necessary to have to refuel with smaller quantities of the comparatively more expensive European SAF.

The BMK favours installing compensation mechanisms at the European level to counteract the fuel tankering described above. This could, for example, take the form of introducing mandatory CO₂ certificates for non-European airlines or special CO₂ border adjustment mechanisms, and it should be examined in detail at a later stage. In addition, the BMK supports introducing comparable SAF blending quotas at the international level, or including corresponding environmental provisions in future aviation agreements to counteract distortions of competition between European and global aviation.

5.5 Focus field 5: (Political) dialogue and stakeholder participation

A joint approach and the pooling of all forces from research, industry, administration, and politics are basic prerequisites for the successful national implementation of European legal requirements and the optimisation of Austria's associated ecological and economic potential. The measures in the final focus area 5 are intended to support the effective cooperation of all organisations involved.

Measure 5.1:

Establishing a SAF Competence Circle in and for Austria

Austrian companies have extensive expertise in SAF production. The production based on used cooking oil at the Schwechat refinery or the pilot use of high-temperature electrolysis to produce synthetic SAF are impressive examples of the realisation of this expertise. In addition, Austria has extensive expertise in constructing and operating production plants for renewable electricity and a broad research landscape.

Pooling these competencies can significantly contribute to effectively and efficiently overcoming the various challenges associated with the ramp-up of production and the use of SAF. Therefore, the formation of a national SAF Competence Circle is being initiated. This working group will consist of representatives from all Austrian organisations involved in providing raw materials, producing SAF itself, researching and developing relevant technologies and processes, and creating strategic and political framework conditions in Austria and Europe.

The BMK will set up the SAF Competence Circle, which will meet at regular intervals to be determined. It will serve to exchange knowledge and to secure and continue the technical and political dialogue between all stakeholders concerned.

Measure 5.2:

Continued participation in relevant international expert committees

The ICAO Assistance, Capacity-building and Training for Sustainable Aviation Fuels programme (ACT-SAF) aims to provide tailored support to countries at various stages of SAF development and implementation, facilitate partnerships and collaboration on SAF initiatives under the coordination of the ICAO, and serve as a platform to facilitate the exchange of knowledge and recognition of all SAF initiatives worldwide. Austria joined the ACT-SAF programme in 2023. Austria has also provided EUR 40,000 in voluntary financial support to the ICAO for the global market ramp-up as part of this programme.

The International Aviation Climate Ambition Coalition (IACAC) was launched at the COP26 climate summit in Glasgow in November 2021. In its declaration, the coalition commits to working together to support the achievement of an ambitious global target for CO₂ emissions from international aviation by the International Civil Aviation Organisation (ICAO). In doing so, it undertakes to implement specific measures to reduce aviation emissions, such as introducing sustainable aviation fuels.

The BMK is examining opportunities for active participation in the aforementioned and, where appropriate, other relevant international bodies and working groups. This is done with the primary aim of bringing Austrian interests into these bodies and, in particular, addressing the issue of possible distortions of competition in international air transport.

Measure 5.3: Communication and raising awareness

Measures 1.1 to 5.2 describe an extensive and far-reaching field of activity related to the production and use of SAF in Austria. These measures are being implemented by various cooperation partners from administration, industry and research and coordinated by the BMK.

Measure 5.3 aims to communicate those activities and developments of this overall process that are relevant and interesting for the public in Austria via suitable channels of the BMK and selected cooperation partners. This should help to make the efforts of all stakeholders involved in green air transport, particularly through the use of SAF, visible, and thus contribute to the necessary awareness-raising for more climate-friendly air transport.

