

Federal Department of the Environment, Transport, Energy and Communications DETEC

Federal Office of Civil Aviation FOCA Aviation Policy & Strategy

# **Funding strategy**Aviation and Climate funding programme

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#### Summary

The strategy of the Aviation and Climate funding programme focuses on the following aspects.

- 1. How will the programme seek to position itself within the existing funding landscape?
  - Funding will be provided for projects that cannot be supported effectively by existing funding programmes. The funding programme will therefore occupy a complementary position in the funding landscape. This increases the impact of funding and creates clarity for applicants as to which form of funding is suitable. (See chapter 3)
- 2. Which fields will be prioritised for funding of possible climate protection measures?
  - In principle, funding is available for all projects that reduce the climate impact of aviation. Sustainable aviation fuels (SAF) and synthetic SAF in particular will receive special attention in accordance with the Federal Council report *Carbon neutral flying by 2050* and the CO<sub>2</sub> Act. (See section 4.1)
- 3. What readiness level must a technology have in order to receive funding?
  - The focus is on projects that have a technology readiness level (TRL) of between 4 and 8 at the start of the project. There are already various funding programmes for applied research with lower technology readiness levels. (See section 4.2)
- 4. Can projects abroad also receive funding?
  - Funding for projects abroad can be awarded under certain conditions. The decisive factor is whether a project generates a large part of its added value in Switzerland and whether the emission reductions achieved are credited to Switzerland to an appropriate extent. (See section 4.3)
- 5. Will proposals for funding cooperations be accepted?
  - Funding cooperations can be efficient and reduce the risk for the federal government. Limited funding in this format can be awarded as long as Switzerland can determine how its funds are used. (See section 4.4)
- 6. Which forms of funding will be provided for which technology readiness levels?
  - The focus is on state guarantees and interest-free loans, as these enable the greatest leverage
    effect and the lowest risk for the federal government. Non-repayable contributions are intended
    for projects that cannot be financed with state guarantees or interest-free loans. (see chapter 5)
- 7. How will the total available funds be allocated among the various areas and forms of funding?
  - The funding can be used for all areas and forms of funding defined here. One financial focus is the development and production of synthetic SAF. If requests exceed the available funds, the FOCA will prioritise applications. The FOCA can also carry out calls for proposals on specific topics in order to steer the funding programme strategically. (see chapter 6)

- 8. How does the application process work?
  - There are two application windows per year. The process first involves a preliminary assessment followed by a detailed review. An additional due diligence check is carried out for loans and guarantees. (see chapter 7)

# 1 Background

The Federal Office of Civil Aviation (FOCA) is implementing key requirements of the revised CO<sub>2</sub> Act to reduce greenhouse gas emissions in aviation through the Aviation and Climate funding programme. This document describes the strategy underpinning the funding programme.

In accordance with Art. 3 of the Climate and Innovation Act (CIA), anthropogenic greenhouse gas emissions in Switzerland are to be reduced to zero by 2050 (net-zero target). This goal also applies to Swiss aviation. In its 2024 report *Carbon neutral flying by 2050* the Federal Council sets out the measures required to achieve this goal. In addition to improved aircraft technology and operational improvements, the use of sustainable aviation fuels (SAFs) as drop-in fuels is the most important technical measure for reducing fossil  $CO_2$  emissions in aviation.

At international level, the International Civil Aviation Organization (ICAO, a specialised agency of the United Nations) has also set a net-zero target for CO<sub>2</sub> emissions from international aviation by 2050. The feasibility of this target was examined in the ICAO Report on the Feasibility of a Long-term Aspirational Goal. Analogous studies have been carried out by the aviation industry, for example in the Net Zero roadmaps of the International Air Transport Association (IATA) or in the Destination 2050 report by European aviation associations.

The promotion of SAF in Switzerland is based on two pillars. Firstly, clear long-term framework conditions are required to support demand for SAF, which is ensured by the blending obligation in accordance with Art. 28f-g of the  $CO_2$  Act. This means that from 2026, Switzerland will have the same SAF quotas as the EU (see the ReFuelEU Aviation Regulation): initially 2%, increasing to 70% by 2050. A sub-quota of 1.2% will apply to synthetic SAFs from 2030, with an increase to 35% planned by 2050. The second pillar comprises the development and production of SAF (and synthetic SAF in particular) as well as additional measures to reduce greenhouse gas emissions in aviation.

Both pillars are essential if aviation is to take further credible steps towards net-zero targets. SAF and other approaches entail large investments. Overall, the ICAO anticipates an annual global requirement of around USD 120 billion between 2020 and 2050. Based on its share of air traffic, this would mean around CHF 600 million per year for Switzerland. The Aviation and Climate funding programme will provide an average of CHF 65 million per year between 2025 and 2030 in accordance with the guarantee credit. It can therefore only provide start-up financing, which is nevertheless of great strategic importance for Swiss aviation due to the new market in this area.

The Aviation and Climate funding programme is supported primarily using the proceeds of the emissions trading system for aircraft operators, penalties for failure to meet the blending obligation and the mineral oil tax on domestic aviation (see Art. 28g and 37a of the  $CO_2$  Act and Art. 103b of the Aviation Act). This means that it is largely levies from the aviation industry itself that are being used to reduce greenhouse gas emissions in the sector. The revised  $CO_2$  Ordinance, which came into force on 1 May 2025, contains the implementing provisions in Art. 127a-g. The Federal Office of Civil Aviation is responsible for implementing the new Aviation and Climate funding programme.

Funding is provided on the basis of the relevant federal subsidy regulations.<sup>1</sup>

<sup>&</sup>lt;sup>1</sup> See the Subsidies Act (SubA), the Swiss Federal Audit Office's <u>Notes on how to work with subsidies</u> (de, fr) and its 2024 report <u>Subsidies: Summary report of past audits</u> (en: summary only; full report in de, fr).

The following chapter explains the objectives of the funding strategy and summarises strategic issues. Chapter 3 discusses the strategic positioning of the funding programme in the funding landscape. Chapters 4 and 5 explain funding areas and forms. The allocation of funds is presented in chapter 6. Chapter 7 outlines the planned application procedures. Finally, a brief outlook is given.

# 2 Objectives

The aim of this funding strategy is to set out the implementation of the funding programme in the medium term on the basis of the applicable legal provisions. It thus forms the basis for managing and focusing the available funding as well as for efficient and effective implementation of the programme.

The funding strategy also provides potential applicants with guidance on funding opportunities. The guidelines for the Aviation and Climate funding programme set out the basic framework for submitting applications and funding decisions.

# 3 Strategic positioning of the funding instrument in the funding landscape

# Background

There are various funding programmes in Switzerland and Europe that are relevant for climate protection measures in aviation in general and for SAF in particular. The <u>SFOE</u> website provides an informative overview of the Swiss funding landscape for research and development projects in the energy sector.

In Switzerland, the following funding programmes are particularly relevant to aviation and climate:

- The FOCA's <u>special financing of aviation</u> (de, fr, it) supports projects in the areas of environment, security and safety. Numerous projects in the climate sector, including projects on SAF, have been funded in the past. From 2025, this will be managed within the new Aviation and Climate funding programme.
- The SFOE's <u>research and development programmes</u> promote a broad spectrum of applied energy research, using thematic calls for proposals or by accepting direct applications for funding. These programmes have supported projects on topics such as solar fuels.
- The SFOE's <u>Pilot and Demonstration programme</u> aims to increase the readiness level of new energy technologies so that they can ultimately be brought onto the market. Projects in the SAF area are eligible for funding. However, the programme has been suspended as part of relief package 27.
- The SFOE's <u>SWEET programme</u> supports interdisciplinary and transdisciplinary consortia that address key issues relating to Switzerland's Energy Strategy 2050 and long-term climate strategy. Thematic invitations to tender are regularly launched for this purpose. One example is the Sustainable Fuels call, in which the consortium <u>refuel.ch</u> was awarded funding. Invitations to tender for the SWEETER funding instrument will replace those for SWEET from 2025.
- The FOEN and SFOE are active in <u>promoting innovative technologies and processes</u> for decarbonisation in accordance with the Climate and Innovation Act. This can be done on the basis of direct applications or by means of thematic calls for proposals, for example on the topic of carbon capture and storage, including sector coupling.
- InnoSuisse is the Swiss Innovation Agency. It supports SMEs, start-ups, research institutions and other Swiss organisations in their research and development activities.

The <u>Technology Fund</u> of the FOEN: Innovative companies in the field of climate protection can obtain state guarantees for bank loans of up to CHF 3 million. To date, no projects in the field of aviation have been supported.

There are various funding programmes in Europe in this area, most notably:

- Horizon Europe
- EU Innovation Fund
- Alternative Fuels Infrastructure Facility
- <u>EU-Breakthrough Energy Catalyst Partnership</u>
- Clean Aviation

## Strategy

The Aviation and Climate funding programme occupies a complementary position within the Swiss and European funding landscape. This strengthens the impact of the funding and provides clarity for applicants as to which funding instrument is suitable for a particular project.

The programme seeks to provide funding for deserving projects that cannot secure adequate funding from other funding programmes within an appropriate timeframe. The FOCA's thematic calls for proposals are coordinated with those of other federal offices in order to avoid duplication. Complementarity is taken into account in terms of technology readiness in the sense that the focus is on pilot, demonstration and commercial first-of-a-kind systems (see below).

The FOCA's special financing of aviation (based on Art. 87b of the Federal Constitution, MinOA and MinATO) in the area of climate will be integrated into the Aviation and Climate funding programme from 2025. This means that funds from the mineral oil tax and surcharges will be redirected to the Aviation and Climate funding programme (see chapter 6 and the Dispatch on the revision of the  $CO_2$  Act for the period after 2024). From 2025 onwards, funding applications in the field of aviation and climate can only be submitted within the framework of the Aviation and Climate funding programme. They will be evaluated on the basis of relevant criteria and processes. This does not impact financial assistance that has already been approved or applications relating to environmental aspects other than climate.

# 4 Funding areas

# 4.1 Climate protection measures

#### **Background**

The Aviation and Climate funding programme aims to promote the implementation of climate protection measures in aviation.

Measures to reduce CO<sub>2</sub> emissions in aviation can in principle be divided into the following areas:<sup>2</sup>

- 1. Technological improvements to aircraft to increase their efficiency
- 2. Operational improvements to increase efficiency
- 3. Use of SAF
- 4. Use of alternative propulsion systems, e.g. based on hydrogen or batteries as energy storage systems

In addition, scientific and political discussion surrounding the climate impact of non-CO<sub>2</sub> emissions such as water vapour, nitrogen oxides, sulphur dioxide and soot is becoming increasingly important. At high altitudes, these create additional effects that can have a warming or cooling effect.<sup>3</sup>

In this context, it is important that this strategy clarify the areas in which climate measures should be promoted. In addition to projects aiming to reduce greenhouse gas emissions, projects to reduce non-CO<sub>2</sub> emissions can also be relevant. As the value chain in the SAF sector consists of many elements (generation of renewable electricity, hydrogen and methanol, carbon capture, etc.), decisions must be made about which combination of elements the Aviation and Climate funding programme will promote. These topics are addressed below.

The legal provisions define the funding objects of the new funding programme as follows:

- I. CO<sub>2</sub> Act, Art. 37*a* para. 1b: "measures to reduce greenhouse gas emissions in aviation, and in particular to develop and produce renewable synthetic aviation fuels"
- II. Aviation Act, Art. 103*b* para. 2: "measures to reduce greenhouse gas emissions in aviation, and in particular to develop and produce renewable synthetic aviation fuels"
- III. Art. 127a para. 2 of the CO<sub>2</sub> Ordinance lists the following four areas:
  - a. developing and increasing the production of renewable aviation fuels in Switzerland and abroad
  - b. developing and applying technologies to increase the energy efficiency of aircraft
  - c. developing and applying procedures to increase the energy efficiency of flight operations
  - d. transferring knowledge between science, business and society with respect to reducing greenhouse gas emissions in aviation

The Aviation and Climate funding programme envisages the possibility of funding for the above measures in all areas of aviation, including general aviation.

<sup>&</sup>lt;sup>2</sup> Federal Council (2024), Carbon neutral flying by 2050; ICAO (2022), Report on the feasibility of a long-term aspirational goal (LTAG) for international civil aviation CO<sub>2</sub> emission reductions; Ecoplan (2021), Swiss Road Map Sustainable Aviation

<sup>&</sup>lt;sup>3</sup> For further information, see CO<sub>2</sub> and non-CO<sub>2</sub> emissions produced by aviation and the explanatory report on Art. 32 of the CIA.

In accordance with Art. 127c of the CO<sub>2</sub> Ordinance, the degree of fulfilment of the following criteria is used to determine funding eligibility:

- a. high potential for reducing greenhouse gas emissions;
- b. cost efficiency with respect to climate impact;
- c. low overall negative environmental impact;
- d. high market opportunities;
- e. high probability of success;
- f. high added value in Switzerland;
- g. creditability of emission reductions in favour of Switzerland;
- h. identification of partners along the entire value chain;
- i. contribution to the preservation and expansion of knowledge.

The explanatory notes to the CO<sub>2</sub> Ordinance and the guidelines for this funding programme contain additional information on these criteria. The criteria for technologies and processes are assessed, including future scaling.

# Strategy

# Measures to reduce CO<sub>2</sub> emissions

In principle, funding is possible for all measures to reduce the climate impact of aviation that fulfil the criteria defined in the  $CO_2$  Ordinance. The measures are assessed according to the above criteria. Funding is open to all technologies that can make a contribution (no technology bias).

The legal bases focus on the development and scaling of the production of SAFs. They thus fulfil the strategic principles (see Federal Council report on *carbon neutral flying by 2050* and the FOCA report<sup>4</sup>), which identify SAFs as a key lever for reducing CO<sub>2</sub> emissions by 2050. A particular focus of the funding is on synthetic SAFs. As the market ramp-up is still in its infancy, meeting the blending quotas for these fuels starting in 2030 will be a major challenge. The Aviation and Climate funding programme aims to make a targeted contribution to overcoming this difficulty. Moreover, synthetic SAFs are expected to have greater potential and greater scalability in the longer term than biogenic SAFs, as well as a lower negative environmental impact, particularly in terms of land requirements and competition with food or animal feed production.

Projects to increase the efficiency of aircraft and the operation of aircraft, i.e. to reduce fuel consumption per transport service, can also be funded. The same applies to measures relating to the development of alternative propulsion systems and aircraft. The assessment of such projects will be based in particular on the market potential of the measure in conjunction with its climate impact. The market potential describes the realistic medium-term potential for reducing  $CO_2$  emissions as well as the costs and risks involved.

Measures that do not reduce the climate impact of aviation are not eligible for funding. This includes compensation measures that are clearly excluded under the provisions of the CO<sub>2</sub> Act and Art. 103b of the Aviation Act. Measures in the field of negative emission technologies are not eligible for funding either, unless they physically involve emissions from aircraft or their engines. Furthermore, measures in

 $<sup>^4</sup>$  FOCA (2022), FOCA report on fostering the development and uptake of sustainable aviation fuels

the field of energy supply (including heating) that do not directly serve to supply aircraft will not be supported. The same generally applies to measures in the area of buildings and ground mobility. Funding instruments are already available at national, cantonal or communal level for all of these areas.

#### Non-CO<sub>2</sub> emissions

The reduction of non-CO $_2$  emissions from aviation can be supported by funding projects to that effect, provided that they reduce the climate impact of aviation in accordance with the net-zero target. This is in line with Switzerland's long-term climate strategy, which aims to reduce net climate-impacting emissions from aviation in Switzerland to as close to zero as possible by 2050. This means that no more net fossil  $CO_2$  emissions are generated from aviation fuels and the climate impact of further aviation emissions (i.e. non- $CO_2$  emissions) is reduced or must be offset by other measures.

#### SAF value chain

Projects must be directly related to aviation in order to receive funding. In the field of SAF, this means that the value chain must be represented, including SAF production. Projects that relate exclusively to upstream areas of the SAF production value chain (e.g. the production of green hydrogen or green methanol, as well as carbon capture) are not supported by the Aviation and Climate funding programme. Various national and international funding programmes already exist for these technologies. In Switzerland it is possible to receive funding via the SFOE or FOEN programmes, for example. Because the statutory mandate has a clear reference to aviation, these technologies are not additionally funded in the Aviation and Climate funding programme. The same applies to SAF production paths that do not fulfil the criteria set out in Art. 35*d* of the Environmental Protection Act or the Ordinance on the Placing on the Market of Renewable and Low-Emission Thermal and Motor Fuels (RFO).<sup>5</sup>

# 4.2 Technology readiness level

#### **Background**

The technology readiness level (TRL) is a measure of the level of development of new technologies. It is evaluated on the basis of a systematic analysis.

Generally, a scale of 1 to 9 is used, as shown here on the EU's Horizon Europe scale: 6

- TRL 1 Basic principles observed and reported
- TRL 2 Technology concept or application formulated
- TRL 3 Experimental proof of concept
- TRL 4 Technology validated in a lab
- TRL 5 Technology validated in a relevant environment
- TRL 6 Prototype demonstrated/validated in a relevant environment
- TRL 7 Prototype demonstrated in an operational environment
- TRL 8 System complete and qualified through test and demonstration
- TRL 9 Actual system proven in an operational environment

<sup>&</sup>lt;sup>5</sup> SR 814.01 and 814.311.1

<sup>&</sup>lt;sup>6</sup> See e.g. European Commission (2025), Horizon Europe Work Programme (2025) - Annexes

# Strategy

The focus of the funding programme is on projects that are at a TRL of between 4 and 8 at the time the application is submitted. The focus is therefore generally not on basic or applied research, but rather on scaling. Various funding programmes are already available for basic and applied research in the energy sector. In view of the intended complementary strategic positioning of the Aviation and Climate funding programme, the focus is to be placed on higher TRLs.

Different forms of funding are used depending on the TRL. Further explanations are provided in the next section.

# 4.3 Project locations and relation to Switzerland

#### **Background**

As part of this funding programme, it is necessary for funded measures to have a nexus to Switzerland, given that it is an instrument of Swiss climate policy with extensive federal funding. Accordingly, it is important to ensure appropriate added value in Switzerland and creditability towards Swiss climate targets. At the same time, Art. 1 para. 1 of the Subsidies Act states that federal financial assistance must achieve its purpose in an economical and effective manner. This can lead to a conflict of objectives, given that higher added value abroad can make a measure more economical. One example of this is the location of an SAF industrial production facility. There are often various opportunities for such facilities abroad, which allow for more economical production than locations in Switzerland (see FOCA strategy<sup>9</sup>). Art. 103*b* para. 2 of the Aviation Act also states that measures and projects in Switzerland and abroad can be subsidised. To ensure an appropriate nexus to Switzerland in all cases, the CO<sub>2</sub> Ordinance specifies the conditions as follows:

- In accordance with Art. 127a para. 2 let. a, the funds can be used, inter alia, to develop and increase the production of renewable aviation fuels in Switzerland and abroad.
- In accordance with Art. 127c para. 1, measures are assessed according to the degree of fulfilment of the criteria including the following: (a) high added value in Switzerland; (b) creditability of emission reductions in favour of Switzerland.
- In accordance with Art. 127e para. 3, only loans from lenders domiciled in Switzerland are guaranteed.

The issue of promoting projects abroad is of particular relevance in the context of SAF. This is because, due to economic factors, only a relatively small proportion of Switzerland's SAF requirements for meeting the blending obligation can be covered by domestic production in the long term. <sup>10</sup> The main factors can be summarised as follows:

 Cost and availability of electricity: Alongside CO<sub>2</sub>, hydrogen from renewable energies is the key input for synthetic SAF. The electricity generation costs of renewable energies are therefore the key factor for the economically competitive production of synthetic SAF. Swiss electricity market

<sup>&</sup>lt;sup>7</sup> Basic research = research without a real exploitation aspect, applied research = research with a view to concrete application possibilities. The aim of research is in principle to generate or expand knowledge, while the aim of development is to manufacture new products or processes.
§ OR 24.2.4

<sup>&</sup>lt;sup>9</sup> FOCA (2022), FOCA report on fostering the development and uptake of sustainable aviation fuels

<sup>&</sup>lt;sup>10</sup> See Federal Council (2024), <u>Carbon neutral flying by 2050</u> and <u>FOCA (2022)</u>, <u>FOCA report on promoting the development and use of sustainable aviation fuels</u>, in particular section 3.5

prices are already among the highest in Europe. This situation will become increasingly pronounced in future owing to the increasing electrification of road transport and heat generation, even if renewable energies are expanded in Switzerland. The potential for cost-effective domestic hydrogen production is therefore limited. Internationally, there are regions with geographical conditions that allow them to produce hydrogen – and thus synthetic SAF – much more economically (and overall more sustainably).

- Limited availability of biogenic resources for the production of biogenic SAF: The availability of biogenic waste materials is not sufficient for a significant scaling of domestic production of biogenic SAF, even taking potential future technologies into account. The potential for biogenic SAF based on used cooking oil (HEFA technology) is also very limited in Switzerland.
- Transportability of SAF: Aviation fuels are liquid at room temperature and can therefore be transported easily and cheaply. Nearly the entire demand for (fossil) aviation fuels is already being imported, so the required infrastructure exists and can also be used for SAF. Accordingly, favourable conditions for domestic and foreign production must be taken into account in order to ensure an economical supply of SAF to Switzerland.

In contrast to the actual production of SAF, research and development is an area in which Switzerland can make an important contribution to upscaling, which would benefit the country economically. Various Swiss research institutions and companies are actively developing and upscaling innovative processes, particularly for synthetic SAF but also biogenic SAF. The innovative technologies are generally validated in pilot plants (TRL5–6) following successful completion of laboratory tests (TRL4). This is followed by further scaling in demonstration plants (TRL6–7) before commercial plants are built (TRL8–9).

# Strategy

Projects abroad may also be eligible for funding if they have a sufficiently strong connection to Switzerland. In particular, they must generate significant added value for Switzerland. This will generally imply that the subsidy recipient has a head office, branch office or permanent establishment in Switzerland. In addition, it must be ensured that emission reductions are proportionately creditable in favour of Switzerland.

Various aspects are taken into account when assessing the criterion of added value in Switzerland, in particular the following:

- A high proportion of the technologies used are supplied by Swiss companies.
- The intellectual property rights to the technologies used abroad are largely held in Switzerland.
- A significant proportion of the human resources earmarked for the project to be funded are based in Switzerland.
- The profit from the project to be funded is largely generated in Switzerland.
- The company to receive the funding is based in Switzerland.

There are various ways to fulfil the criterion regarding emission reductions in Switzerland's favour, in particular the following:

- In the production of SAF: Use within the scope of the blending obligation in accordance with Art. 28f of the CO<sub>2</sub> Act. In this case, the flexibility mechanism provided for in Art. 15 of the ReFuelEU Aviation Regulation may be applied if necessary.
- Use of the measure to be funded for flights originating from Swiss airports (including EuroAirport Basel–Mulhouse), thereby reducing the sale of fossil aviation fuels in Switzerland.

- Reduction of the obligations of Swiss participants in the Swiss Emissions Trading Scheme or CORSIA.
- Use of book-and-claim systems in favour of Swiss participants.

# 4.4 Funding cooperations

# **Background**

Air transport and the measures taken to make it sustainable both have a distinctly international character. Consideration must therefore be given to opportunities for co-operation between various internationally active funding instruments. Cooperations can make an important contribution to the efficiency of funding and reduce the risk for the federal government through diversification.

One example of this is the ICAO's *Assistance, Capacity-building and Training for Sustainable Aviation Fuels* (ACT-SAF). The ICAO launched ACT-SAF in 2022. Programme objectives include providing support to countries at various stages of SAF development and deployment, facilitating partnerships and collaboration on SAF initiatives under ICAO coordination, and serving as a platform to facilitate knowledge sharing among SAF initiatives around the globe. For example, SAF country feasibility studies and economic implementation studies for SAF projects are carried out, providing an important basis for the development of SAF projects. Ultimately, this also contributes to increasing the availability of SAF in Switzerland.

Furthermore, existing federal instruments may also be of use for measures in the area of aviation and climate. For example, Swiss Export Risk Insurance (SERV) can insure the risks of Swiss technology suppliers for SAF projects abroad. However, such projects may involve risks that SERV cannot cover on its own – in which case, a funding cooperation could be used to provide collateral for SERV.

In the European context, models known as revenue-certainty mechanisms, which are intended to directly reduce the risk of producers, are also being considered. These can include double auctions for the purchase and sale of SAF. Such auctions are being organised as a service on behalf of various governments, including Germany and the Netherlands, by organisations such as <u>H2Global</u> and <u>Hintco</u>.

# Strategy

The Aviation and Climate funding programme also uses the potential of funding cooperation to increase the programme's effectiveness and efficiency. It is essential that Switzerland is always in a position to decide on how funds are used to promote activities.

Possible starting points for cooperation with SERV were already evaluated during the conceptual work on setting up the funding programme. It became apparent that the potential is rather limited in the short term, as the scaling of Swiss SAF technologies is still in the development stage. Currently the focus is not on cooperation with SERV or possible participation in H2Global's double-auction scheme for SAF; these will be re-evaluated at a later date.

# 5 Forms of funding

# **Background**

In Swiss funding practice, **non-repayable contributions** are the primary form of funding used. Under the existing special financing for aviation under BV87b, only non-repayable contributions are made.

In some cases, state **guarantees** are also used in various forms, such as SECO's SME guarantees, the FOEN's Technology Fund, the promotion of Swiss maritime navigation by the FONES or as part of the COVID programme. Federal guarantees provide partial or full security for bank loans, thereby reducing or eliminating the bank's credit default risk. This can be what enables lending in the first place (loan facilitation), or it can make interest conditions more attractive (loan subsidisation). This reduces the risks of the project (de-risking), which can lead to an increase in private investment (crowding-in).

Government **loans** are granted to railway companies, for example. For the purposes of promotion, these loans are granted with low interest rates or interest-free, which reduces the borrower's financing costs significantly.

Art. 127*b* of the CO<sub>2</sub> Ordinance provides for all three forms of funding<sup>11</sup>: non-repayable contributions, loans and guarantees.

The maximum funding in relation to the eligible costs of a project is limited to 60% (70% in exceptional cases). This is because Art. 37a para. 5 of the  $CO_2$  Act stipulates a minimum own contribution of 40% (30% in exceptional cases), which is intended to reduce possible deadweight effects.

# Strategy

In principle, all available forms of funding should be used, depending on the technological readiness level of the project to be supported.

For projects with a high TRL, using guarantees to achieve the funding objective should be considered first. Loans should only be used if the funding objective cannot be achieved with guarantees. Non-repayable contributions make sense in cases where a project will not generate sufficient income during the funding period and therefore cannot be categorised as financially viable from a banking perspective. This is the case, for example, for research and development projects at universities as well as pilot and demonstration projects where economic benefits are expected only in the medium to long term.

Using the cascade funding structure described above makes sense for the following reasons:

- 1. In principle, government funding should be subsidiary to private-sector activities in order to avoid crowding them out.
- 2. Furthermore, guarantees and loans have an advantage over non-repayable contributions in that the funds are released again on maturity and can be used for further funding. This increases the impact of the utilisation of funds in the sense of a leverage effect of given (federal) funds. A further advantage is external due diligence, which reduces the risk for the federal government. In general, however, it should be noted that the use of guarantees and loans is limited to projects that have a certain degree of commercial viability.

<sup>11</sup> The terms 'forms of funding' and 'funding instruments' are used interchangeably in the CO<sub>2</sub> Ordinance.

The following table illustrates the possible use of the various forms of funding depending on the technology readiness level.

Projects with TRL 7 or below at project start  - Laboratory - Pilot plant - Demonstration plant	Funding is generally provided in the form of non-repayable contributions. Loans and guarantees are not considered appropriate, but may be used upon request.
Projects with TRL 8 or above at project start  - Concept  - Preliminary project (until investment decision)	Funding via guarantees will be given priority. If this proves to be unsuitable, loans are also possible. If loans are also shown to be unsuitable, a non-repayable contribution is also possible to a limited extent.
Projects with TRL 8 or above at project start - Implementation following investment decision	Funding via guarantees will be given priority. If this proves to be unsuitable, loans are also possible.

It is important to note that guarantees are to be understood as an alternative to non-repayable contributions or loans. In this sense, guarantees can be accepted. Every guarantee that is redeemed saves federal funding. In cases where the expected probability of default is greater than 50%, government loans are preferable to guarantees for administrative reasons, as certain provisions must be made for guarantees in such cases. Default probabilities of over 50% may seem high, but with non-repayable contributions there is no potential for return at all. The probability of default is not to be equated with the probability that a project will not achieve its objectives. Funding is generally only granted if the probability of success is sufficiently high.

The following special provisions apply to **non-repayable contributions**:

• The maximum amount for non-repayable contributions is generally set at CHF 15 million per project. The minimum contribution is generally CHF 100,000. Exceptions are determined by the federal government's particular interests and the cost–benefit ratio. The maximum contribution is intended to ensure that funds can be used in a diversified manner. The minimum contribution is intended to limit the administrative burden in relation to the benefits of the projects.

The following special provisions apply to loans:

- The maximum term of loans is generally limited to five years. Exceptions are determined by the federal government's particular interests and the cost–benefit ratio.
- The maximum loan amount is generally CHF 20 million, and the minimum CHF 3 million. Exceptions are determined by the federal government's particular interests and the cost–benefit ratio.
- This form of funding focuses on conditionally repayable loans.
- The loans are granted as interest-free loans in accordance with Art. 127*b* para. 1 of the CO<sub>2</sub> Ordinance.

The following special provisions apply to state guarantees:

- In accordance with Art. 127e para. 2, the maximum term of guarantees is limited to ten years.
- The CO<sub>2</sub> Ordinance (Art. 127e) provides for a maximum guarantee level of 100%. However, the aim should be a maximum guarantee level of 80% so that the lender bears part of the credit default risk. This risk sharing creates incentives for lenders to carry out careful risk assessments and appropriate credit monitoring. If this makes it impossible for a loan to be obtained in a specific case, a higher guarantee level of up to 100% is also possible.
- In order to diversify the funding programme's risk, the maximum guarantee amount should generally not exceed CHF 20 million per project. The minimum guarantee amount is generally set at CHF 3 million. As a rule, a maximum of CHF 50 million in guarantees should be outstanding per beneficiary at any given time. This amount is usually sufficient to guarantee bank loans for financing the project development costs of larger (commercial) SAF plants (in the order of CHF 30 million). Exceptions are determined by the federal government's particular interests and the cost–benefit ratio.

# 6 Origin and allocation of funds

# **Background**

A guarantee credit of CHF 390 million is available for the Aviation and Climate funding programme for the period 2025–2030, i.e. an average of CHF 65 million per year. A decision will be made on the availability of funds after 2030 in connection with the revision of the CO<sub>2</sub> Act for the period after 2030.

The revenues of the Aviation and Climate funding programme are based on the following sources (see Art. 127a para. 1 of the CO<sub>2</sub> Ordinance):

- 1. Proceeds from the auctioning of emission rights for aviation as part of the emissions trading system in accordance with the CO<sub>2</sub> Act
- 2. Proceeds from penalties relating to the SAF blending obligation
- 3. Mineral oil tax including surcharges on aviation fuels
- 4. General federal funds

Funds from the various sources are used in a cascade as described above. Proceeds from the emissions trading system are used first. The second priority is proceeds from penalties for the blending obligation (exclusively for measures in the area of SAF). Third priority is given to funds from the mineral oil tax, including surcharges, totalling CHF 5–10 million per year. Finally, general federal funds can also be used to a limited extent. However, unlike other funding, they cannot be carried over to subsequent years.

The annual expenditure arising from funding decisions must be covered by corresponding revenue, which is strongly influenced by various factors:

- Auction proceeds from emission allowances depend not only on the quantities auctioned but also on market prices. Due to inherent market price fluctuations, these are subject to considerable uncertainty.
- Uncertainty regarding penalty proceeds from the SAF blending obligation. It can be assumed that no penalty income will be generated in the immediate future.
- The availability of federal funds is subject to the budget decision of Parliament.

This means that the use of funds is also subject to annual fluctuations, which must be taken into account when allocating funds. In addition, uncertainties arise from possible changes to relevant legislation, particularly in the context of the 2027 relief package (RP27). In general, expenditures will be possible after 2030 in connection with funding decisions that will be issued by the end of 2030. With respect to strategy, the question arises as to how the available funds should be allocated to the various funding areas (climate protection measures, forms of funding, etc.).

# Strategy

Fund allocation is strategically managed using three approaches: determining the funds available each year, prioritising applications if requests exceed the available funds and carrying out thematic calls for proposals.

The funds available each year should be used in full for financial assistance, provided there are sufficient eligible applications. If eligible applications exceed the available funds, they will be prioritised in accordance with Art. 127*d* para. 2 of the CO<sub>2</sub> Ordinance. Applications are ranked according to their average degree of compliance and, starting with the highest-ranking applications, as many of them are approved

as the financial framework allows. For projects that are not given consideration, a final application can be submitted directly in the following application cycles.

The strategic allocation of funds comprises the following priorities:

- 1. In terms of technology openness, all relevant climate protection measures are eligible for funding (see section 4.1). In this spirit, funding is available for all areas and in all forms defined in sections 4.1 and 4.2.
- 2. The relevant legislation (see section 4.1) stipulates that the development and production of synthetic SAF in particular should be promoted. Accordingly, this area forms the financial focus of the Aviation and Climate funding programme.
- 3. No quantitative targets are set for the various funding areas. The FOCA uses thematic calls for proposals to strategically manage the funding areas. This involves reserving a defined amount of funding for a specific topic.

The majority of the financial resources are to be used for guarantees and loans. If the project is successful, guarantees and loans do not place any net burden on federal finances. The general federal funds earmarked for this instrument are only intended to secure guarantees and loans.

# 7 Application procedure

# **Background**

Art. 127b of the CO<sub>2</sub> Ordinance stipulates that funding applications can be submitted as direct applications or as part of calls for proposals issued by the FOCA.

# Strategy

The procedure for submitting and reviewing applications is detailed in the Aviation and Climate funding programme guidelines. An initial assessment of the mandatory preliminary application focuses on basic eligibility; this is followed by a detailed review of the final application and, for loans and guarantees, an additional due diligence review. The FOCA charges fees for the detailed and additional reviews (see Art. 127b para. 5), which covers part of the costs it incurs. The preliminary assessment is free of charge.

Over the funding period from 2025 to 2030, the FOCA will issue various calls for proposals on set topics and issues. These will be coordinated with other federal offices as necessary to ensure the desired complementarity with other funding programmes (see also 'Strategic positioning in the funding land-scape').

Thematic calls for proposals make it possible to strategically align funded projects and influence demand from applicants. In addition, proposals are bundled competitively to ensure that funded projects are of a high standard.

Direct applications may also be submitted. These increase the diversity of funded projects and enable a comprehensive orientation towards the funding needs of the Swiss economy. Deadlines for direct applications are set twice a year. This facilitates planning for applicants, allows for appropriate work planning by the implementing bodies and enables sensible allocation of funds. The FOCA publishes the application deadlines on its website.

# 8 Outlook

This strategy forms the basis for the first application cycles of the Aviation and Climate funding programme from 2025 to 2030. It may be necessary to update the strategy before 2030 due to the highly dynamic nature of the international SAF market and possible adjustments to the relevant regulatory framework (RP27, CO<sub>2</sub> Act after 2030).

A concept will be drawn up in the near future detailing criteria and reporting for an evaluation of the benefits of the Aviation and Climate funding programme. Existing climate policy funding programmes such as the FOEN's Technology Fund can serve as valuable sources of experience here. In this context, consideration will also be given to the conditions under which the funding programme can be allowed to expire or when it is no longer necessary or mandated.

The FOCA is arranging for an external office to provide support with administrative and operational tasks from 2026.