



# PUBLIC SUPPORT FOR THE AERONAUTICS SECTOR

An efficient emergency aid, a transformation  
to speed up

Communication to the Senate Finance Committee

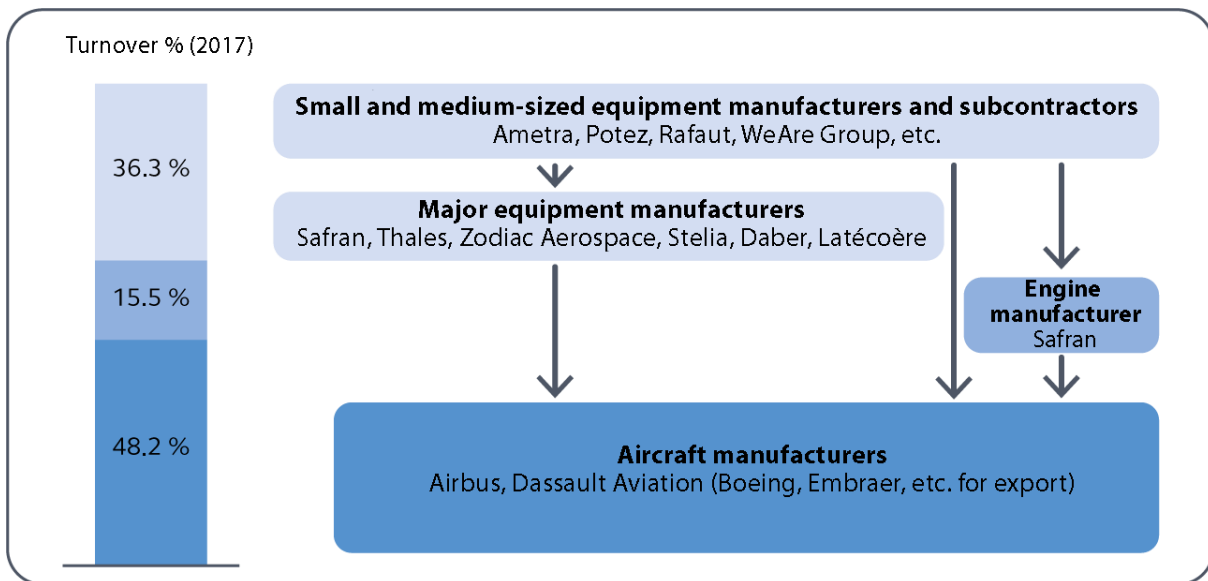
February 2022

# Executive summary

## A sector of excellence in French industry, growing before the covid crisis even though it was not free of weaknesses

France claims, like the United States, to be the cradle of aviation. This early vocation was reinforced and has become established. Our country is now the second largest aeronautical power in the world, behind the United States, and the first in Europe. The aeronautics industry is present in all market segments, with a complete supply sector: manufacturers of different types of aircraft (long, medium-haul and regional aircraft for commercial aviation, business aviation, helicopters, and combat aircraft), engine manufacturers, and equipment manufacturers capable of offering all the constituent components of an aircraft, in both the civil and military market segments. Alongside the specific qualities of its companies and their employees, the industry owes a great deal to the commitment of the Government and of the public stakeholders at its side, to the strength of the European and international alliances that it has been able to forge and to its organisation in a sector structured around its major companies and buyers.

### The stakeholders of the aeronautics sector in France, according to their share in the turnover of the sector (in 2017)



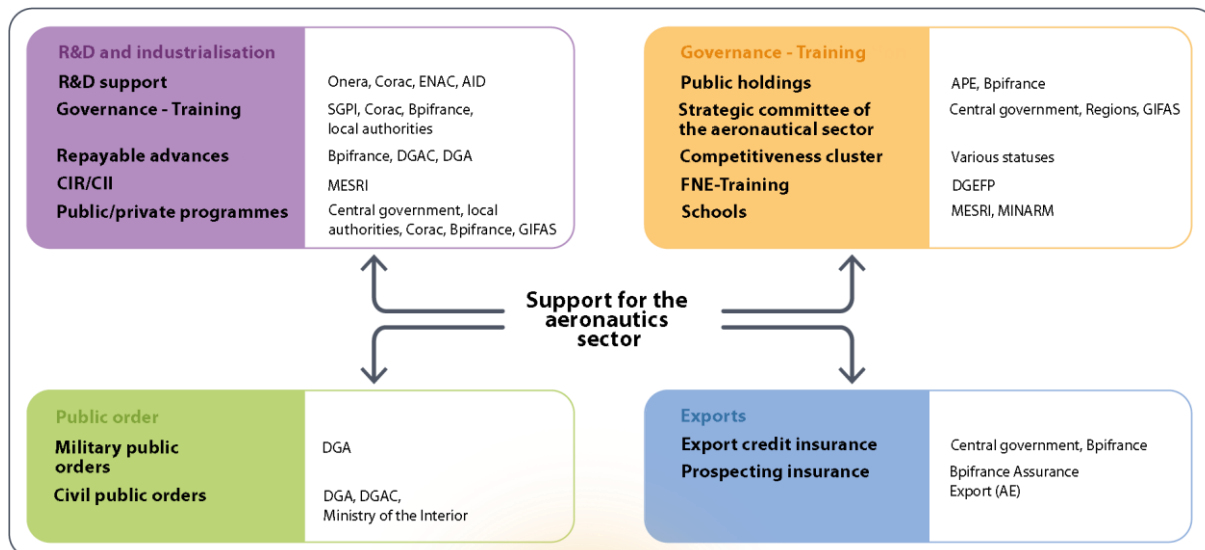
Source: Court of Accounts (Gifas data, annual report 2017-2018).

Note: The equipment supplier Zodiac Aerospace was acquired by Safran in 2018.

To help the emergence and development of an industry considered strategic, the Government mobilizes all the tools of industrial policy: Government shareholder through holdings in three of the four major buyers (Airbus, Safran, Thales), managed by the Government holdings agency (APE), and capital investments by Bpifrance, present today in 35 companies in the sector; aid for research and development (R&D), through horizontal measures such as the research tax credit (CIR) but also specific mechanisms involving the sector such as the Civil Aeronautics Research Council (Corac); financing and risk sharing of the development and industrialisation phase of major programmes, with a repayable advance mechanism; direct orders placed by the Ministry of Defence and homeland security operators; export support via Bpifrance export insurance and diplomatic support for major contracts; commitment to leading the sector with a sector strategic committee.

In addition to Government support, there is the intervention of local authorities, first and foremost regional councils, in favour of small, medium and intermediate-sized enterprises, competitiveness clusters and local productive systems, and skills development.

### The main levers of public action for the aeronautical industry



Source: Court of Accounts

Reading note: the left columns present the arrangements while the right columns present the controlling and committed stakeholders.

To facilitate the mobilisation of large amounts of investment and share the risks associated with the development of new programmes, French industry has set up alliances: European alliances, of which Airbus is the most successful example, from 1969 in the form of an Economic Interest Grouping (EIG) then, in 2000, a company in its own right; Franco-American alliance between General Electric and Safran for civil turbojets such as the CFM 56 and, more recently, the Leap engine.

Finally, the industry is organised in a sector structured around a professional federation, the grouping of French aeronautical and space industries (Gifas), which is the heir of a federation created in 1908. Gifas defends the interests of its 420 members and promotes the aeronautics industry by organizing the Paris-Le-Bourget air show every two years. It works in a hierarchical manner around the four major buyers who have developed a demanding relationship with their subcontractors of successive ranks.

### Key data on aerospace construction before the crisis

	Added value	Employment	Exports	Imports	R&D expenses
€	€19.4 billion (in 2019)	159,000 jobs (in 2018)	€64.3 billion (in 2019)	€33.1 billion	€3.7 billion (in 2019)
%	1.6 % Share in the value added to the commercial sector in 2019	0.9 % Share of commercial sector employment 2018	12.9 % Share of French exports in 2019	5.8 % Share of French imports in 2019	11.5 % Share of companies' internal business expenditure on R&D in 2019

Source: Court of Accounts, Eurostat data, detailed annual industry statistics (value added in 2019); Insee, tables of the French economy (employment in 2018); Directorate General of the Treasury (imports and exports in 2019), Mesri (R&D data). The data mainly uses the Insee definition of the "core" of the sector.

In a general context of deindustrialisation and deterioration of the French trade balance, aeronautics was, in 2019, the leading export sector, with more than €64 billion in sales abroad, an annual increase of 5.3% in average between 2006 and 2019. The trade surplus of €31 billion has more than doubled in 10 years. Benefiting from the growth in global air traffic and in particular from the success of Airbus, the core of the sector saw an average annual increase in the number of jobs in France of 1.7% between 2007 and 2019 while, during the same period, industrial employment fell by 1% per year. In total, the core of the sector employed, at the end of 2019, nearly 155,000 employees. In a broader estimate, taking into account the stakeholders contributing a direct or indirect part of their activity to the construction of aircraft, the sector could claim nearly 300,000 employees.

These successes were accompanied, before the health crisis, by tensions. While the medium-haul market was dynamic, other production segments were in a less good situation, such as civil helicopters. In 2019, Boeing suppliers suffered from the American manufacturer's difficulties linked to the B737 Max accidents. The sector was on the whole too dispersed to meet the demands of competitiveness arising from the intense competition between civil and military aircraft manufacturers, or engine manufacturers. Some suppliers, caught between the rise in production rates with the need for additional investment and pressure on prices from buyers, were experiencing strained financial positions. Finally, as in the rest of the industry, some companies were having problems recruiting and adapting skills.

The crisis would reveal these weaknesses even more strongly.

### **A strong and sudden crisis, followed by the rapid establishment of public support**

The health crisis led to a sudden halt in air transport, which for the whole of 2020 was reduced to a level comparable to that of 2003. In September 2021, despite a recovery in Asia and North America, the number of commercial flights remained 16% below its September 2019 level. The impact on the aeronautics industry was immediate: interruption of maintenance and repair activities (which, for a group like Safran, represents nearly 44% of turnover in a "normal" year), cancellation of orders and lack of new orders (in 2020, Airbus received 268 net orders for aircraft compared to 768 in 2019, i.e. a drop of 65%), requests for postponement of deliveries. Activity in the military sector held up better: thus, the turnover of Gifas members fell by 3% in this segment, compared to 36.3% in the civilian segment. However, in total, in 2020, the sector's turnover fell by 29%, compared to 6.7% during the previous economic crisis in 2010.

The shock was more marked for SMEs, less present in the military sector (15% against 27% for all members of Gifas), which suffered the sometimes sudden adjustments of companies located downstream of production. In 2020, they reduced their workforce by nearly 12% compared to 2.7% for large companies.

Faced with this sudden shock, public stakeholders and the sector (within the framework of Gifas) very quickly mobilized to enable companies to overcome the risks of cash flow drying up and limit the consequences of the cessation of activities for employment as much as possible.

## Cross-sectoral and targeted public aid schemes that can be mobilized by companies in the aeronautics sector

Support & cash	Assistance in maintaining employment and activity	Support for outlets	Consolidation and transformation of the sector
Loans guaranteed by the central government (PGE) Bpifrance	Partial activity DGEFP	Debt holiday Bpifrance / DG Treasury	Ace Aéro Fund Partners SME / Intermediate size enterprises APE / Bpifrance / DGE
Reimbursable advances and loans at subsidised rates SME / Intermediate size enterprises CODEFI / DGFIP	Solidarity Fund DGFIP	Favourable export conditions Bpifrance / DG Treasury	Fund for the modernisation, diversification and greening of processes in the BPI / DGE sector
DGFIP/URSSAF charge reports	Reduction in DGFIP production taxes	Early and earmarked public order (military) DGA	CORAC / DGAC R&D funding
Central government guaranteed loan Aero Bpifrance	Training systems (FNE-training) DGEFP		<div style="border: 1px solid black; padding: 5px;"> <p>Key</p> <p><span style="background-color: #4a86e8; color: white; padding: 2px 5px; border-radius: 5px;">Cross-sectoral measures to cope with the crisis</span></p> <p><span style="background-color: #f1c40f; color: black; padding: 2px 5px; border-radius: 5px;">Measures targeted at the aeronautics sector</span></p> </div>
Acceleration of DGA invoice payments	Aid for the recruitment of young people and work-study DGEFP		

Source: Court of Accounts. Reading note: the measures in blue represent the cross-sectoral measures to cope with the crisis. The measures in yellow represent the measures targeted at the aeronautical sector.

The sector has benefited greatly from the horizontal emergency measures implemented by the Government from the end of March 2020: Government-guaranteed loans (PGE) and new partial activity (AP) and long-term partial activity (APLD) schemes, deferrals of social-security and tax levies. As of 31 May 2021, 314 companies in the aeronautics sector<sup>1</sup> had benefited from a Government guaranteed loan, i.e. nearly three out of four companies for a total amount of €694 million. For partial activity, the peak was in April 2020: nearly half of aircraft manufacturers and two-thirds of repair and maintenance companies used this system, compared to an average of 35% for companies in the industrial sector. At the end of August 2021, €316 million in compensation had been paid in this respect to companies in the core sector.

In this unprecedented time, in close collaboration with the public authorities, Gifas monitored the sector with the direct involvement of the managers of the four main contractors and representatives of equipment manufacturers and SMEs. This monitoring committee was supported by a task force led by the former director of the Airbus A350 programme, which initially undertook to draw up and disseminate the health protocols made necessary by the epidemic crisis, to negotiate a charter of reciprocal commitments between clients and suppliers, as requested by the Government, and to prepare, with the Government, a specific support plan for the sector<sup>2</sup>.

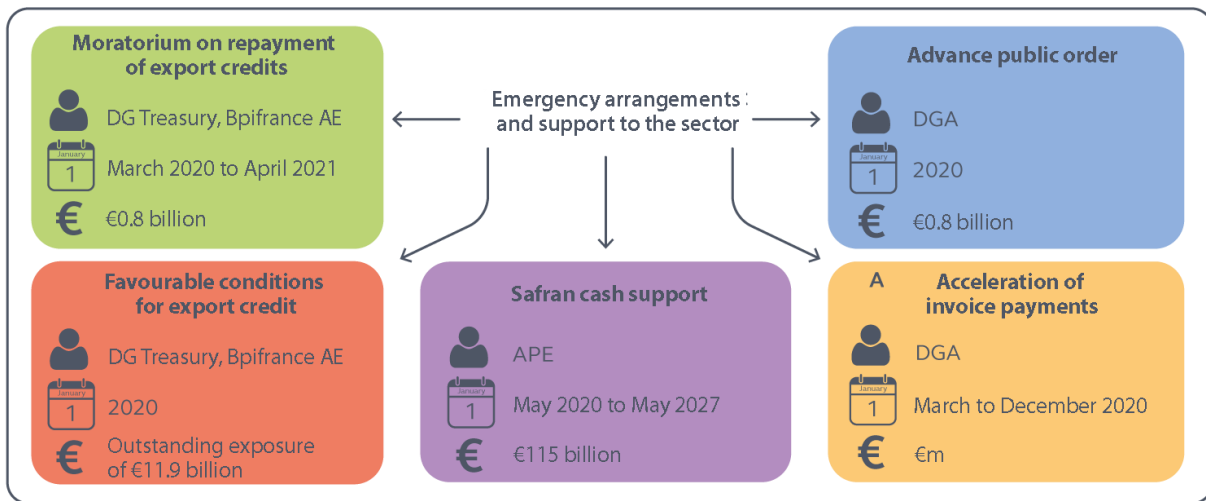
This one was made public on 9 June 2020. It included temporary support measures, for an estimated amount of €5.3 billion, and support for the transformation of the sector for €2.8 billion. The aeronautical industry part displayed at €8.1 billion<sup>3</sup> was supplemented by support for Air France of €7 billion.

<sup>1</sup> Defined from three codes French business classification (Naf) core of the sector from the national institute of statistics and economic studies (Insee): codes 3030Z "aeronautical and space manufacturers", 3316Z "repair and maintenance companies of aircraft and spacecraft", 2651A "companies manufacturing aids to navigation" and the SME members of Gifas.

<sup>2</sup> Since then, the task force has set up a sector risk observatory, which monitors critical suppliers of major buyers.

<sup>3</sup> This overall amount adds arrangements with a direct impact on the public deficit (subsidies for example), cash flow measures (anticipation of orders) and guarantees given without effect on public expenditure, if they are not called.

## Emergency and support arrangements specific to the aeronautical sector put in place in 2020

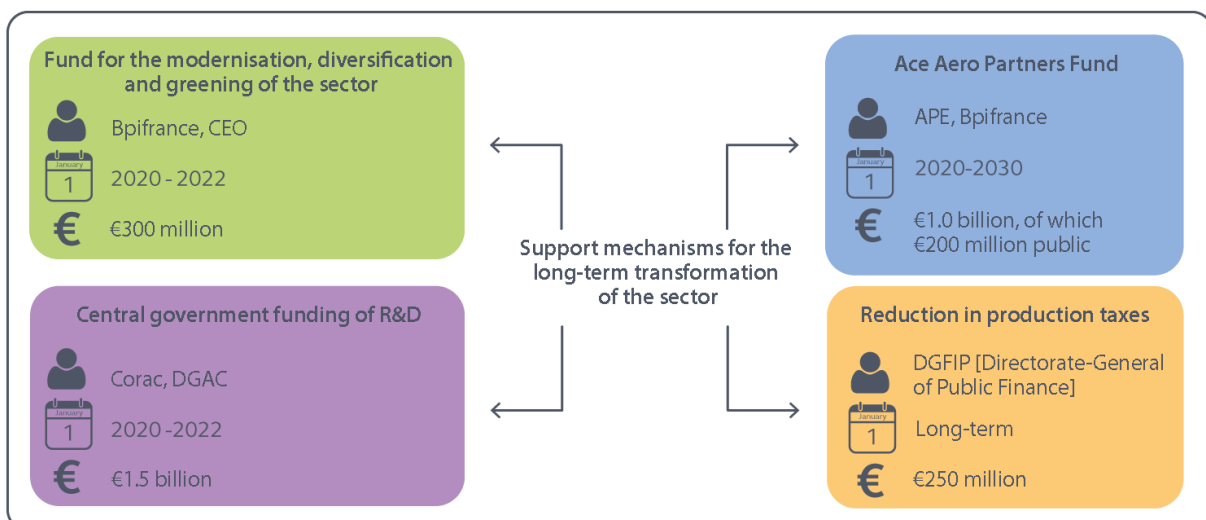


Source: Court of Accounts

The measures targeted at the sector included increased support for exports via Bpifrance, with, firstly, payment facilities granted to customers to allow the conclusion of new commercial contracts despite the crisis and, secondly, a temporary moratorium to avoid defaulting airlines that have taken out buyer credit and are unable to repay. In total, the export credit guaranteed by Government, which only intervened at the margin in support of Airbus and ATR before the crisis, has regained a place in aircraft deliveries, with a coverage of 10% sales for Airbus in 2020, compared to 2% in 2019 and 23% of sales for ATR after no activation in 2019. Bpifrance's civil aeronautics guarantees ultimately amounted to €3.6 billion between the start of the crisis and December 2021.

The public procurement lever was also used with acceleration of orders for military helicopters or helicopters intended for the gendarmerie and civil security, tanker and reconnaissance aircraft and drones, for a total amount of €827 million.

## Public measures aimed at transforming the aeronautics sector



Source: Court of Accounts

These demand support measures were supplemented by support for the structural transformation of the sector:

- increase in research aid for low-carbon aviation projects within the framework of the Civil Aeronautics Research Council (Corac), brought to €1.5 billion over the 2020-2022 period, i.e. an average amount of €500 million per year, compared to €135 million before the crisis,
- setting up of a consolidation fund, with a subscription target of €1 billion, including €200 million of public subscription by the Government holdings agency (APE) and Bpifrance,
- creation of a modernisation and diversification fund of up to €300 million.

Urgently and given the scale of the crisis, the Government reacted quickly and massively. In total, out of the €8.1 billion posted in June 2020, approximately €7.2 billion will have been committed by the end of 2021, knowing that these commitments cover, as indicated above, different realities between subsidies, cash advances and guarantees, the direct aid portion amounting to €2 billion.

To the mobilisation of the Government were added the interventions of the aeronautical regions, specific support measures or arrangements intended for companies regardless of the sector, which the Court estimates at around €110 million<sup>4</sup>. This estimate is difficult, insofar as certain regions covered by this survey of financial jurisdictions have chosen not to carry out sectoral targeting in their interventions in favour of companies.

## **A socially-contained crisis, thanks to emergency measures**

Although the decline in activity and turnover in 2020 was around 30% for the sector, the measures taken by companies and public authorities have made it possible to contain the repercussions on employment.

At the end of 2020, the Central Agency for Social Security Bodies (Acoss) estimated the decline in employment at 3.1 %, Gifas at 4.1 % excluding temporary work for its members. Temporary employment was much more affected, with a drop of 49 % over this last period. Companies have used all the mechanisms at their disposal to make these adjustments, in particular job protection plans – thirty-two in the core of the sector – which resulted in 6,745 terminations of contract; collective performance agreements and collective terminations of contract by mutual agreement. Recruitment, for its part, has fallen significantly: Gifas estimates that 6,700 recruitments were made in 2020 compared to 19,000 in 2019. With strong inertia, the fall in aeronautical employment continued in 2021: in June, it stood at 91.7 % of its June 2019 level. Temporary employment was particularly affected (54.3 %) compared to permanent employees (96.7 %).

Public action, in its speed of implementation, its scope and its diversity, largely met the expectations of the sector, with some companies benefiting from both cross-sectoral mechanisms (Government guaranteed loan, partial activity) and specific measures (“Corac”, subsidies under the modernization fund, aid from local authorities and in particular from the regions). Jobs were essentially preserved in France, while in internationalized companies, layoffs were significantly more numerous abroad<sup>5</sup>.

However, the crisis has weakened the sector. In 2021, the recovery has been slower than in the rest of the industry. The situation is very mixed according to the market positioning of companies. The deterioration of the health situation is creating uncertainty about the timing of a real resumption of air traffic and further weakening the airlines. However, defence aeronautics will benefit from Dassault's export successes, in particular the contract signed in

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<sup>4</sup> These interventions are described in the regional documents attached to this national report and which group together the work relating to the regions Ile-de-France, Occitanie, Pays de la Loire and Nouvelle Aquitaine.

<sup>5</sup> For example, Figeac Aéro cut 740 jobs in its subsidiaries abroad for 220 terminations of contract in France, Latécoère 1000 for 246.



December 2021 with the United Arab Emirates, and helicopter orders. Airbus has announced an increase in production rates for its medium-haul aircraft in the medium term, which could return to its pre-crisis level as early as 2023 and exceed it. The successes announced at the end of 2021 with Qantas, KLM and Transavia lend credibility to these prospects. Conversely, the long-haul segment will remain permanently affected while Boeing's prospects for a return to normal remain uncertain. Tension between the Government guaranteed loan repayment schedule and the investments and recruitment necessary to respond to the increase in production rates could weigh on the less sound companies, from mid-2022 according to Gifas. As the emergency measures are gradually being phased out, they will be replaced by measures under general law, which are more demanding in their allocation.

## Structural transformation imperatives

The French aeronautical industry is facing a challenge: to meet the demands of structural transformation of the sector while it has not yet emerged from the most serious crisis encountered in peacetime.

The challenges relate to competitiveness, the attractiveness of the sector in terms of jobs and skills and the response to climate requirements.

### *The challenge of competitiveness*

Competitive pressure is increasing for civil aviation, with the prospect of the rise of a Chinese aircraft manufacturer massively supported by its Government and which will have privileged, if not almost exclusive, access to a domestic market which could exceed the combined markets of Europe and North America.

Crafting a level playing field for trade that includes China is becoming increasingly urgent. The five-year “truce” announced in June 2021 between the European Union and the United States, regarding the disputes opened within the framework of the World Trade Organisation (WTO) on the conditions of competition between Boeing and Airbus, should make possible to move towards this objective.

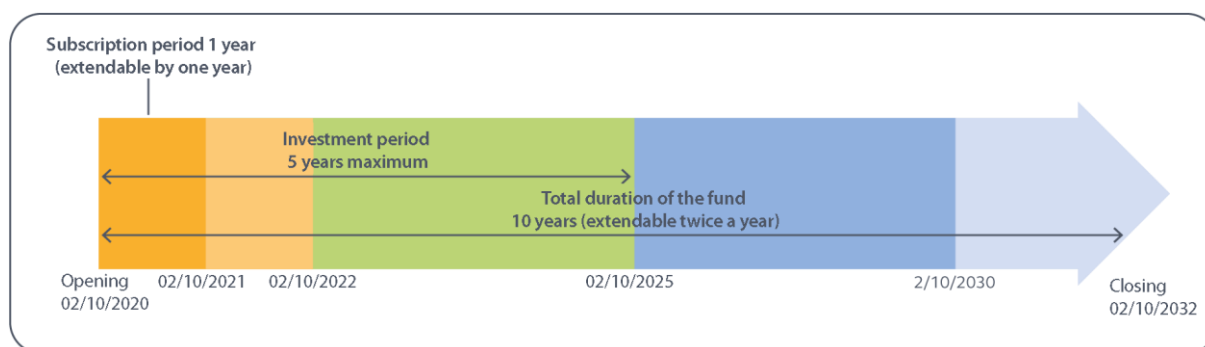
Competition will also remain very strong in the military field with European and extra-European competitors. It requires alliances like the one being formed around the “Future Combat Air System” (FCAS).

The increased competitiveness will be felt in companies at all levels of the sector.

To support them in this effort, the June 2020 aeronautics plan provided for the creation of a modernisation, diversification and environmental transition fund endowed with €300 million over three years. Led by the Directorate General for Enterprise with the technical support of Bpifrance, it was aimed particularly, but not exclusively, at small, medium and intermediate sized enterprises, by providing subsidies, up to 50% and within the limit of €800,000. At the beginning of September 2021, the fund had been almost completely consumed. It was primarily used for investments in industrial modernisation (37% of cases) and digitization (32% of cases) and, to a lesser extent, for environmental transition (21% of cases) and diversification operations (10%). It has therefore played its counter-cyclical role perfectly, while contributing to the transformation of companies in the sector.



## Ace Aéro fund time horizon and lifespan



Source: Court of Accounts, from Bpifrance.

The June 2020 plan also provided for promoting mergers between companies in the sector to enable them to reach the critical size necessary for their development. A consolidation fund, endowed at its opening with €630 million, was thus created in July 2020, the subscribers being the Government for €150 million, Bpifrance for €50 million, the four major buyers for €200 million and Tikehau Capital for €230 million. This fund is managed by “Ace capital partners”, a subsidiary of Tikehau Capital specialised in aeronautics. The start of the fund was slow, for various reasons: the Government guaranteed loan and partial activity support schemes gave some companies respite in the search for solutions to their difficulties, the fall in company valuations due to the crisis may have deterred some potential sellers, and the family nature of certain VSEs/SMEs can be an obstacle to merger operations. At the end of September 2021, only four operations, all recent, had been formally completed or were in the process of being completed, a fifth operation having been announced at the beginning of October. Negotiations for new acquisition of holdings posted by “Ace capital partners” in December 2021 reflect greater fund activity.

The requirements for improving competitiveness and the foreseeable arrival of new manufacturers with the decarbonisation of the sector, however, call for involving other stakeholders in the consolidation that is sought. “Ace aero partners” cannot be the only solution.

### *The necessary attractiveness of the sector*

This new aviation will require renewed professional skills. While aeronautics compensated with a positive image for some of the recruitment difficulties that the industry was experiencing, it is now faced with an issue of attractiveness and reputation. The sudden halt in recruitment and temporary employment turned away some of the candidates, all categories combined. The still uncertain nature of recovery in the sector and the image effects relating to the polluting nature of aviation activity are likely to reduce the pool of candidates, at the risk of upsetting the conditions for recovery.

This resource constraint comes at a time when the challenge of the ecological transition and the deployment of the processes of the industry of the future will profoundly change the nature of jobs in the aeronautics industry. A major effort to adapt employee training will be necessary in the short and medium terms. The diagnosis is made at the national level, in the commitment for the development of jobs and skills (EDEC). The metallurgy branch and the major stakeholders in the sector are already preparing for this. But the ability of the fabric of SMEs, VSEs and intermediate-sized enterprises to meet this challenge remains uncertain and the follow-up to the EDEC, which ends in 2022, is not known at this stage.

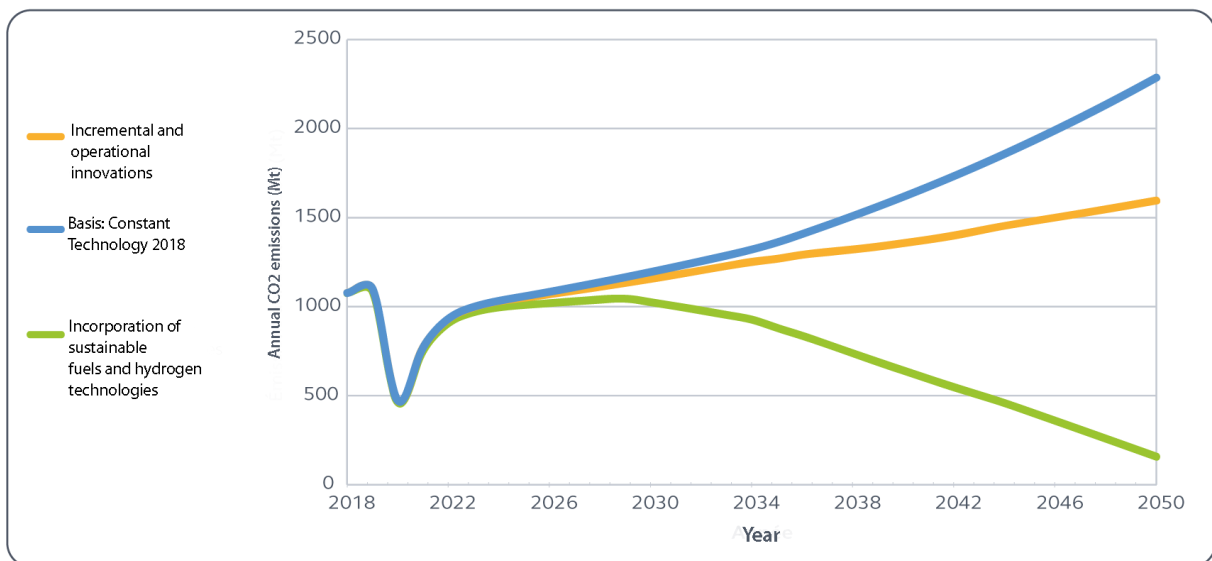
## The climate imperative

At the origin of 3.5% to 5% of greenhouse gas emissions according to studies, air transport must decarbonise and the aeronautical industry must offer solutions to achieve this objective.

Incremental innovations leading to greater energy efficiency in air transport have been implemented for many years but are insufficient to compensate for the increase in traffic. The sector must move towards breakthrough innovations: alternative fuels (*sustainable aviation fuels*), based on agro-resources or synthetic fuels, more or less compatible with existing engines but which involve problems of production and costs of these fuels, electric planes, hydrogen plane announced in flight by Airbus for 2035 and which means overcoming numerous technological and economic challenges, rethinking the architecture of the passenger aircraft which has changed little since the 1940s and building a hydrogen sector.

During the crisis, Corac was called upon to define actions in favour of the decarbonisation of aviation, for an amount of €1.5 billion over three years. A roadmap has been drawn up covering all market segments and different levels of innovation. The Directorate General of Civil Aviation (DGAC) has endeavoured to involve SMEs in this programme: they benefited from 14.3% of the aid notified at the end of May 2021. Two-thirds of this part of the aeronautical plan is committed at the end of September 2021<sup>6</sup>. It should be fully consumed within the expected time.

### Breakthrough technologies needed to achieve carbon neutrality in the aviation sector by 2050



Source: Corac December 2021

Support for the increased competitiveness and decarbonisation of the aeronautics industry must extend beyond 2022. The investments to be made are massive, whether they concern the sector in the strict sense, airport infrastructure or the creation of a new energy sector around hydrogen. The technological, industrial and financial risks are very significant and call for partnerships between the public and private sectors.

<sup>6</sup> The aid granted to large and intermediate sized enterprises would also benefit up to 30% of SMEs participating in projects carried out by large enterprises, according to the DGAC.

These transformations require a renewed European and international framework. The “truce” in WTO disputes must be used to consider the advent of carbon-free aviation collectively and prepare the rules and standards that will allow it to develop.

# Audit recommendations

## Support businesses and promote their consolidation

1. Continue the effort to identify and monitor aeronautical VSEs and SMEs in difficulty in order, if necessary, to help them adapt to the challenges of transformation of the sector (*DGE, regional prefects, regions, Bpifrance*)
2. Complete the system aimed at facilitating the consolidation or merger of VSEs and SMEs in the sector, in particular through the mobilisation of regional authorities and their means of intervention (*DGE, Bpifrance, regions*).

## Long-term support for changes in professional skills

3. Monitor the implementation of the various actions in favour of training and skills development for the aeronautical industry sector (*DGEFP*)

## Promote the decarbonisation of the sector

4. Develop industrial scenarios, with the associated costs and financing, for the decarbonisation of civil aviation in the medium and long term (*DGAC, DGE, DG Treasury*)
5. Drive a European and international strategy to accelerate the transition to carbon-free aviation within a framework of fair competition on an ecological level (*SGAE, DGAC, DGE, DG Treasury, General Secretariat of the Ministry for Europe and Foreign Affairs*)