



Ministerie van Infrastructuur
en Waterstaat

A Sustainable Flight to 2050

Civil Aviation Policy Memorandum 2020-2050

The Civil Aviation Policy Memorandum 2020-2050 sets a new course towards a sustainable aviation sector that will safeguard the Netherlands' strong connections with the rest of the world now and in the future. It will put all the parties involved in the sector on a solid footing and give them an agenda for the years ahead, with clear goals and a detailed approach. In this way the Netherlands is doing what it is good at: leading the way in the global changes in aviation that lie ahead.



Aviation connects the Netherlands to the world. It allows us to do business, go on holiday and visit friends and family around the globe. Goods can be transported quickly over great distances. Thanks in part to aviation, a small country like the Netherlands can be an international hub for people, trade, investment and knowledge. Many people earn a living in this sector. And people also enjoy airborne leisure activities like hang gliding, parachuting and ballooning. Moreover, with new technology, more and more useful applications are available for drones and other remotely piloted aircraft. In short, aviation contributes to our prosperity and wellbeing.

The Civil Aviation Policy Memorandum adopted in 2009 focused primarily on supporting the growth of aviation. This policy was a success. For a small country, the Netherlands is exceptionally well connected to the rest of the world. This is important for our open economy. In subsequent years, however, the capacity of European airports and airspace has lagged behind demand, and both have grown increasingly crowded. After a period of recovery, this trend is expected to continue in the future, while new airspace users such as drones, electric aircraft and flying cars are on the rise, bringing new opportunities and new challenges, including keeping aviation safe. While automation can help, it also comes with risks of technical problems and cybercrime.

Aviation has negative effects, too. Not only does it disturb people's sleep; noise from the growing numbers of aircraft can also be a nuisance in the daytime. People worry about their health because of particulate emissions and about the risks of air traffic. Nitrogen emissions and their impact on nature are yet another concern. A range of groups, such as local residents, companies and other stakeholders, want to be more closely involved in decision-making on aviation.

Moreover, aviation's demand for space puts it in competition with other types of land use, e.g. housing, commercial activities and the energy transition. Since the last Civil Aviation Policy Memorandum was adopted (in 2009), international climate goals were agreed at the Paris climate conference in 2015, including a number of goals specifically for aviation agreed within the International Civil Aviation Organization (ICAO). All these developments determine the parameters for aviation.

The aviation industry is traditionally good at innovation, which helps reduce its negative effects. Aircraft are becoming increasingly efficient, quiet and clean. But the government does not want the number of flight movements to grow so fast that they lead to an increase in noise nuisance and pollutants and thus also in greenhouse gas emissions, which contribute to climate change.

1.1 Towards a new balance

'Smart and sustainable' are the watchwords of the new Civil Aviation Policy Memorandum, with safety as priority number one. This is laid down in the 2017 coalition agreement. The smooth functioning of Amsterdam's Schiphol Airport and a successful national carrier are of major importance to the Dutch economy, enticing foreign businesses to locate to the Netherlands. The government seeks to make aviation future-proof. That means that it must cause fewer problems for people and emit less pollution. In its further development, the aviation industry must reduce the negative effects on people, nature and the environment. The aviation sector can grow only if it becomes demonstrably cleaner and quieter.

The government has stated (in its letter to parliament of 5 July 2019) that quality will be at the heart of future aviation policy. A new balance is needed between the quality of the environment and the quality of the network of international connections. This requires clear agreements, unambiguous rules and strict enforcement. Unchecked growth is no longer possible. Central government will set clear conditions in line with public interests. This means there is no guarantee that aviation will be allowed to expand beyond its 2019 pre-pandemic level. Growth is possible if innovation and fleet renewal demonstrably reduce aviation's negative impact on the climate and

environment. This offers the sector growth prospects but the pace of innovation is uncertain, and the public interest conditions will determine the number of flight movements. This approach is designed to foster mutual trust among all stakeholders. This change of course is in line with the recommendations made in 2019 by the Council for the Environment and Infrastructure (RLI).

A change of course on this scale cannot be made all at once. This policy memorandum is a long-term agenda for aviation that sets a direction with a new outlook. It describes the tasks we face and the course the government will follow. In some cases this will mean a continuation of existing policy. In other cases, new policy instruments will have to be developed.

This is the case, for example, in tackling the climate targets and in adapting policy to better align with people's perception of noise nuisance. Effective policy depends on establishing an appropriate participatory structure for this purpose. New policy can only be adopted after consultations with stakeholders and due consideration of their input.

Decisions can take several years to translate into specifics. Despite the current crisis and the uncertainty as to whether flight movements will recover, the government recognises the importance of continuing to give Schiphol a prospect of growth, partly in view of the aviation sector's potential contribution to economic recovery. In this light, the first steps in this process can be taken in the coming period. This will provide clarity for the surrounding community and the sector. It will also enable Schiphol to conduct the necessary studies with due care and in good time, and take the procedural steps that are required for decision-making. A clear and timely presentation of our plans for both the next several years and the longer term will enable the aviation sector to make the necessary investments in safety, innovation and sustainability.

In the short term, the rules for Schiphol will be given a legal basis in the form of an amended Airport Traffic Decree. Over time, the sector can 'earn' additional growth by following the principles and meeting the conditions set out in the Civil Aviation Policy Memorandum.

In the present policy memorandum, the government sets out its vision of a new balance in aviation for the period until 2050. It is based on the outcome of a broad participatory process, several different recommendations, the 2020 Strategic Environmental Assessment by Royal HaskoningDHV, Buck Consultants International and the Dutch Aerospace Centre, and the scientific knowledge base. As part of the participatory process, several regional dialogues were held about aviation, public support was surveyed, and input from civil society and stakeholders was taken into consideration.

Based on this input, close attention was paid to the significance of the decisions and proposals for users, local residents and the economy. There was also discussion of treating aviation more like any other industry or form of transport. The decisions' feasibility and enforceability were studied, and the concept of 'quality' was further fleshed out.

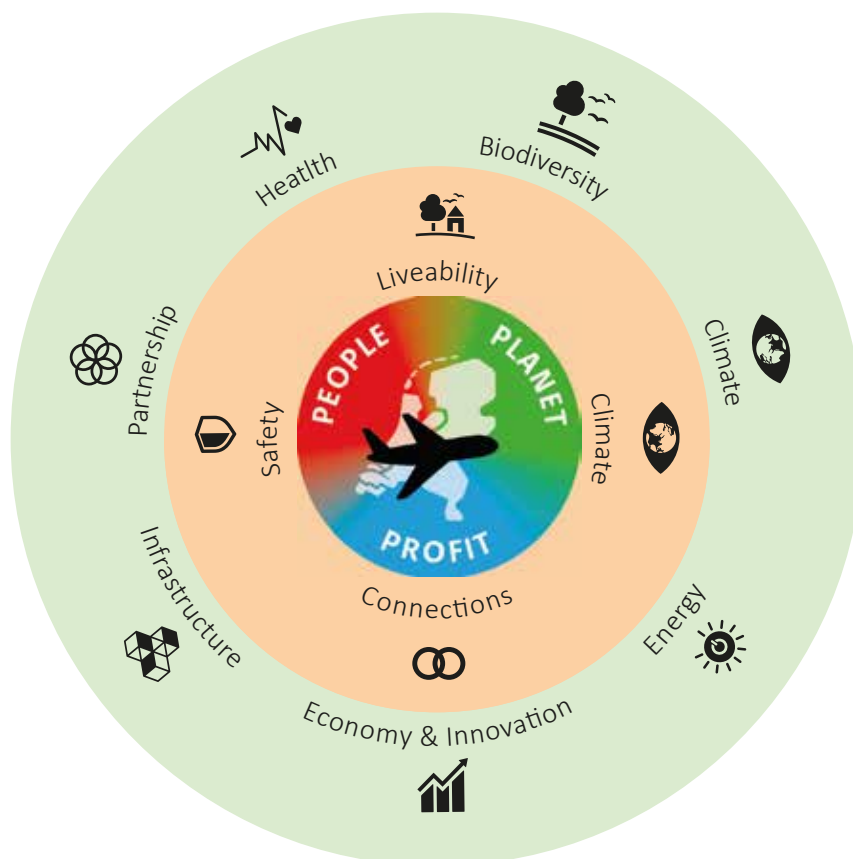
1.2 Public interests are central

The Civil Aviation Policy Memorandum touches on the following Sustainable Development Goals adopted by the UN in 2015: Health (SDG 3), Energy (SDG 7), the Economy (SDG 8), Innovation and Infrastructure (SDG 9), Climate (SDG 13), Biodiversity (SDG 15) and Partnership (SDG 17).

Four public interests are central to this policy memorandum:

1. safety, in the air and on the ground
2. good connections
3. an attractive and healthy environment
4. a sustainable Netherlands.

Figure 1.1: Relationship between aviation and the quality of the environment



1. Safe

Keeping the Netherlands safe, in the air and on the ground, is a key aim of aviation policy. This means ensuring the safety and protection of aircraft passengers and crew, and the safety of people on the ground. Developments in aviation must not come at the expense of safety. Central government therefore aims to strengthen cooperation among all parties in the sector and promote the development of all aspects of safety management. Whenever major decisions are taken that lead to significant changes in aviation, an independent, comprehensive safety analysis is conducted first to highlight possible consequences for safety. The Minister of Infrastructure and Water Management commissions safety analyses for civil airports.

Automation offers opportunities for safe, efficient aviation, but it also creates new vulnerabilities: for cybercrime, terrorism and technical failures. Central government works with the sector to protect aviation from these risks.

2. Connected

The Netherlands needs to stay well connected to the world's major destinations. This calls for a modern, efficient and sustainably organised airspace. The government therefore seeks to prioritise forms of aviation that have the greatest value for the Dutch economy and employment. To this end, central government is developing a policy framework on network quality, and will test existing policy instruments for their possible use in strengthening network quality. Where necessary and possible, the Dutch government will also endeavour to modify EU frameworks.

3. Liveable

Reducing adverse health effects is a precondition for the future growth of aviation. Central government will find ways to improve methods of measuring and calculating aviation noise in such a way that they better reinforce each other. Efforts are also being made to gain a deeper insight into what aspects of aviation noise determine people's experience of it as noise nuisance, so as to devise policy that takes better account of these aspects. This calls for a customised approach for each airport, which will be reflected in airport decrees for nationally important civil airports. The aviation industry will also be required to help achieve the air quality goals of the Clean Air Agreement (as set out in the letter to parliament of 13 January 2020) between central government and provincial and municipal authorities.

The government attaches importance to improving the quality of the environment and nature areas near airports, especially with regard to nitrogen deposition. Dutch spatial planning policy seeks to balance a wide range of spatial uses and is being fleshed out in the National Environment and Planning Strategy (NOVI). Central government and the provincial and municipal authorities are exploring whether the instruments of the Environment and Planning Act could help strike a better balance between land use for aviation and for other purposes, such as housing, commercial activities and the energy transition.

4. Sustainable

An ambitious climate approach has been formulated for the aviation sector which the government eventually aims to align with the aims of both the European Union and the National Climate Agreement (reflecting the Paris Agreement) of being practically climate-neutral in 2050. Within the EU and the International Civil Aviation Organization (ICAO), a UN body, the Netherlands is therefore pressing for more ambitious climate goals. Anticipating these more ambitious goals, the Netherlands is implementing the Sustainable Aviation Agreement which aims to reduce carbon emissions from Dutch aviation to 2005 levels by 2030, to half of 2005 levels by 2050 and to zero by 2070. If more far-reaching agreements are made at international level, the Netherlands will adjust its national goals accordingly.

The four public interests have different implications for one another and for overall capacity. There is, for example, a relationship between climate targets and the scope for additional flights in the Netherlands. In the Strategic Environmental Assessment (SEA), central government studied the anticipated effects of the climate undertakings contained in the Sustainable Aviation Agreement (letter to parliament of 27 March 2019). As this climate strategy is relatively new, there are still many uncertainties about the different ways of pursuing the goals as well as about the expected effects. It is apparent from the SEA that the implementation of the Sustainable Aviation Agreement should be feasible. A scenario with rapid innovation will allow growth in aviation. Since the adoption of the agreement, the sector has set to work on enhancing sustainability, and the first tangible results of the sector's efforts are already visible.

The possible impact of scarcity on the Netherlands' network of connections depends partly on the scope for growth at hub airports in surrounding countries. Because connections are important, the effects of scarcity will be carefully monitored. To earn enough scope for growth, it will be essential for airlines to use fuel blends with at least 14% bio kerosene by 2030. Sustainable technologies such as electric and hybrid aircraft will also have to make a contribution. There will be opportunities for the Dutch aviation industry in these areas. An international approach will be important in achieving results.

There is also a relationship between the ultimate number of aircraft movements and health. If aircraft become quieter and cleaner more rapidly than the number of flights increases, there will probably be a decline in noise burden and an improvement in people's health.

Sustainability and health interact with one another. How exactly they influence each other will depend on technological developments. Electric aircraft are quieter, for instance, but if many small electric aircraft or drones are introduced to replace a small number of conventional aircraft, that

could in fact increase the nuisance or the safety risks. Moreover, kerosene that is better for the climate is not necessarily better for air quality.

1.3 The changing context of aviation owing to the impact of COVID-19

COVID-19 is having an enormous impact on aviation throughout the world, one that will continue to be felt for years to come. Precisely how big the impact will be depends on many factors that are surrounded by great uncertainty, such as the speed at which the virus is brought under control worldwide, passenger confidence, structural changes in travel patterns, and the long-term economic consequences, both nationally and globally. To gauge the potential effects, the Ministry of Infrastructure and Water Management commissioned two consultancies, SEO and To70, to study a number of scenarios based on international insights and set out their consequences (letter to parliament of 17 August 2020 on the scenario study of COVID-19's impact on aviation).

The consultants drew up four scenarios for Dutch aviation, ranging from rapid recovery to slow recovery. The study was a snapshot based on the knowledge available in summer 2020. The situation is constantly changing and our understanding of the virus's impact is still evolving. The four scenarios together represent a range of possibilities, and the study tells us nothing about their probability. Each scenario estimates the impact on air traffic (passengers and cargo), connectivity, prosperity (including the environment and climate) and the economy (jobs and added value) from 2020 until the end of 2022, looks ahead to 2030 and describes the impact on the four public interests named in the draft Civil Aviation Policy Memorandum.

Within Europe, the popular origin-destination markets with high passenger demand are expected to recover first, followed by the less popular markets and transit traffic. This means that demand will recover at large hub airports first. At the same time, recovery will also take longest at these airports as they will benefit from any subsequent upturn in transit traffic. In the most optimistic scenario, the Dutch aviation sector will surpass the 2019 level in 2022. In the most pessimistic scenario, the number of passenger movements will remain 70-80% below the pre-crisis level for a long time.

Looking ahead to 2030, each scenario considers the four public interests named in the Civil Aviation Policy Memorandum. In some scenarios the long-term impact on the public interests is limited because air traffic recovers to its former level and there is no fundamental change in its composition. The airlines, however, eat into their financial reserves and have less scope to invest in safe, quieter and sustainable technologies. These technologies may therefore take longer to develop. In other scenarios, a considerable impact is expected on the public interests owing to the expected rationalisation of the intercontinental network and the ensuing fundamental change in the composition of air traffic. This will be accompanied by positive effects in the areas of safety, the environment and sustainability because less use will be made of airspace and airport capacity, and therefore of less-preferred runways, which cause most inconvenience for local residents, and larger aircraft, which are responsible for more nuisance and emissions. On the other hand, the rollout of new technology could be delayed in these scenarios, and rationalisation of the intercontinental network could lead to a systematic decline in network quality and thus in the Netherlands' international connectivity. If network quality is impacted more at Dutch airports than at foreign airports, the country will become less attractive as a business location. This could also have consequences for cargo traffic.

In light of the study's findings, and with due regard for the many uncertainties and the present level of understanding, the government thinks that its current policy of focusing on public interests rather than capacity is robust. The study shows that the public interests have to be weighted differently in each scenario. If air traffic gradually recovers to its former level, it will still be important to focus on safety, the environment and climate. If there is no recovery, unrelenting efforts will be needed to retain the Netherlands' international connectivity. The public interests form a framework for current and future governments. If conflicts arise between these interests,

the government will have to make a political assessment and decide which issues to prioritise in practice.

1.4 An adaptive approach

Central government is setting conditions in line with the public interests. The aviation sector will be able to grow subject to these conditions. Because of the uncertainty surrounding many developments, the government is opting for an adaptive approach. This means that undertakings will be given for a number of years, with a view to achieving long-term goals. An implementation agenda has therefore been appended to the Civil Aviation Policy Memorandum to map out the steps the government will take with other stakeholders in the years ahead. The implementation agenda is not set in stone; it is a living document. Whenever a new government takes office, for example, it can set out its position on the public interests and any conflicts between them. This will determine which issues are prioritised in practice. The action taken will be monitored and evaluated to decide whether it is on course, whether goals will be achieved and whether policy needs adjusting.

The expected growth in international transport demand can be partly accommodated by using the capacity of the different airports in a more coordinated way.

The government would also like to see greater use of international rail transport and long-distance buses, for example by improving their connections with incoming and outgoing flights. To this end we will examine what investments are needed in airports and road and rail networks and how they can be paid for.

Redesigning the airspace can lead to more efficient use by civil and military aircraft, emergency services and general aviation. Airspace redesign would also enable the use of drones for passenger and freight transport.

The government is not planning to build an airport off the coast or to conduct a study into this possibility. However, conditions will be established for any parties that may want to conduct such a study. Land will continue to be reserved for a runway at Schiphol parallel to the Kaag Runway. After the appropriate studies are completed, a decision will be made on the status of this reservation no later than 2021.

1.5 Innovation in aviation

Innovation is the key to success. New forms of transport may be introduced in the future, and new providers of mobility and online platforms will appear that offer mobility as a service. Such providers will play a major role in aviation in the near future. Innovation creates opportunities for Dutch industry, including aviation. With this in mind, central government is drawing up an innovation strategy.

The introduction of drones and other remotely piloted aircraft, such as flying cars, will create useful applications and commercial opportunities. Vertical takeoff and landing by aircraft could eliminate some of the current disadvantages of aviation. The government seeks to provide scope for remotely piloted aircraft and innovative technologies and services, while ensuring safety and minimising nuisance.

Upcoming developments challenge established players to adapt as much as possible to new circumstances. Government authorities face questions such as how safe use of data, cybersecurity and privacy can be guaranteed. Fast, open digital infrastructure is important in this respect for all parties.

Besides making room for new types of aircraft, the sector also faces a considerable challenge in becoming cleaner, quieter and more efficient. This can be achieved by, for example, using bio kerosene and technologies such as electric engines. The first prototypes of electric aircraft that can make short flights already exist. Innovation is needed in four areas:

1. navigation and communication technologies
2. more efficient and quieter engines and aircraft
3. sustainable fuels
4. electrically powered and hybrid aircraft.

1.6 Central government's role: direction and ultimate responsibility

Central government sets the course for the development of aviation and safeguards public interests. It also sets standards for aviation in areas like safety, nuisance and emissions of pollutants.

The pursuit of the ambitions set out in this policy memorandum will lead to new tasks for the sector and a different role for central government. The current government will make a start on implementing the memorandum, but it will be up to future governments to flesh out the plan further and make decisions with long-term financial implications. The position of the aviation sector as a result of the coronavirus crisis will also be addressed. The aviation sector itself will play a key role in achieving and thus, in principle, financing the long-term goals. An example of this is the use of biofuels to achieve the climate targets. Central government will retain responsibility for carrying out public tasks and will therefore finance specific statutory tasks. However, where the aviation sector benefits from the performance of these tasks, the government will consult with it and ask it to make a contribution.

Many of the challenges in aviation are of national importance. For this reason, central government believes it is important to provide direction at national level. To this end, it seeks the involvement of stakeholders such as local residents, the sector, public authorities and civil society organisations. To shape participatory processes concerning the future development of the regional airports, central government follows the recommendations made on the test case of Eindhoven Airport. With regard to organising forward-looking stakeholder consultations about Schiphol, the government will issue a decision based on the evaluation done by the Schiphol Local Community Council (ORS), the recommendations of the Aviation Governance and Participation Committee and the parameters of the Civil Aviation Policy Memorandum.

1.6.1 The Caribbean Netherlands

Aviation is a lifeline for the Caribbean Netherlands and vital for its economic and social development. This policy memorandum specifically addresses the issue of the accessibility of Bonaire, St Eustatius and Saba.

1.6.2 Relation to military aviation

The Civil Aviation Policy Memorandum focuses primarily on civil aviation. Where it refers to 'aviation' or 'airports', these terms should be understood to refer to civil aviation, unless military aviation is explicitly mentioned. Military aviation is a constitutional responsibility of the Ministry of Defence and its aims differ from those of civil aviation. Its special status is founded on the following constitutional tasks:

- safeguarding national security
- guarding Dutch airspace and the area of responsibility assigned to this country by NATO
- taking part in international missions in conflict situations
- combating terrorism and other possible future threats.

Civil aviation and military aviation share a common interest in the redesign of Dutch airspace; this is comprehensively considered both in the government's decision on its preferences in this regard

and in the associated environmental assessment report. The Civil Aviation Policy Memorandum outlines the policy frameworks for the redesign of Dutch airspace, thereby securing the relationship between military and civil air traffic.

The Ministry of Defence's existing statutory framework also applies to noise nuisance and other consequences of military aviation. The government is working to establish a single civil/military service provider as part of the current Dutch air traffic control agency. The aim is to complete this process by 2023.