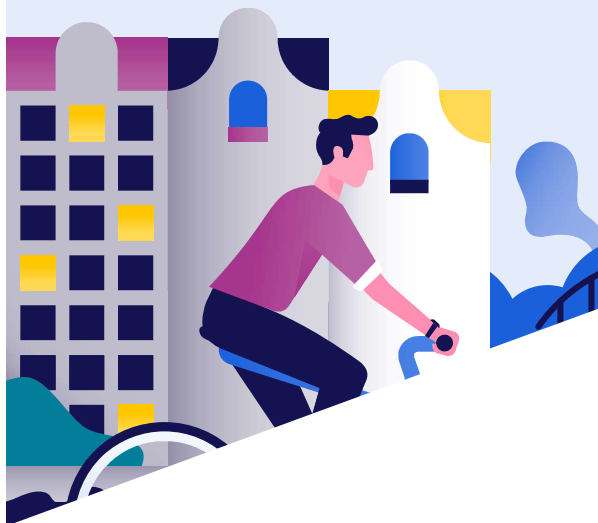


Quality of Life

Royal Schiphol Group's focus on Quality of Life acknowledges our responsibility to help ensure a sustainable future for aviation. As a central player in the aviation chain in the Netherlands, we aim to promote safe and responsible air travel and safeguard the long-term well-being of people and the environment.



Schiphol Group aims to operate the world's most sustainable airports. Building on our current sustainability performance, in 2019 we created the Most Sustainable Airports roadmap. It sets out the actions required to achieve our 2030 objectives as a next step towards realising Vision 2050.

When aviation markets opened up again in 2022, we embraced the opportunity to achieve a better balance between the needs of our customers and other stakeholders. These include our local communities, but also society at large. Sustainability and reducing pollution and noise disturbance are a priority. We also continue to examine ways to reduce noise-disturbance levels, such as offering incentives to airlines that use quieter and cleaner aircraft and incentivise airlines to use sustainable aviation fuel (SAF) at Schiphol.

In 2023, Schiphol Group published our eight-point plan 'Quieter, Cleaner Better'. It contains eight measures to improve the quality of life for our neighbours. We continue to work with the government, local authorities, regulators and other leading airports (including those in our Group) to advance the sustainability agenda at a regional, national and international level.

In 2023, Schiphol Group received a second letter from Dutch environmental organisation Milieudefensie, requesting an update of our CO₂e reduction plan for 2030. In response, we shared our 'Better and Balanced' plan, which represents the latest progression since the publication of our revised sustainability strategy. This plan reflects our ongoing commitment to environmental stewardship and outlines specific steps towards achieving our carbon reduction goals. After sharing our plan, we received no further response from Milieudefensie. Later in 2023 they announced that they are focusing on the financial sector. At the beginning of 2024 it became known that Milieudefensie will start a lawsuit against ING.

Top performance indicators Quality of Life



¹ CO₂e emissions compared to 2019. Concerns scope 1, 2 and selected scope 3 items.

TULIPS

Schiphol Group was selected in 2021 by the EU as a lighthouse airport to contribute to the Green Airports call. This call supports the objectives in our roadmap Most Sustainable Airports with 25 million euros in funding and is being developed as an EU-wide project named TULIPS, involving 32 partners. The funding is part of the European Green Deal and aims to stimulate innovations that facilitate the transition to low-carbon mobility and enhance sustainability at airports. The consortium was launched in 2022 and is supported by the fellow airports Avinor in Oslo, SAGAT in Turin and Hermes in Larnaca, Cyprus. Amsterdam Airport Schiphol will be the proving ground for 17 demonstrator projects resulting from the partnership between airports, airlines, knowledge institutes and industrial partners in this unique European consortium. The joint programme aims to accelerate the introduction of sustainable technologies in aviation, contributing to zero-emission and zero-waste airports by 2030 and net-zero-carbon aviation by 2050. TULIPS will run until December 2025. More information is available at the [TULIPS website](#).

Read more about the steps we are taking to improve sustainability and our achievements [here](#).

Most Sustainable Airports

In order to realize our ambition of becoming the world's most sustainable airports, we developed a roadmap that helps us achieve the following objectives.

Energy Positive: Zero-emissions airports 2030, towards energy-positive in 2050

- All vehicles are zero emissions, including ground support equipment on airside.
- Existing buildings will be renovated and new buildings are at least energy-neutral.
- For energy use, we increase efficiency, produce more solar power and strengthen our grid.

Sustainable aviation: International aviation carbon emissions at 2005 level in 2030, towards net-zero mobility in 2050

- Contribute to 14% sustainable aviation fuel in 2030 and optimise airside procedures.
- Increase smart and clean mobility to and from the airports by investing in public transport, bicycle infrastructure and electric car sharing.
- Actively inform passengers about sustainability and offer sustainable travel options, and combat human and wildlife trafficking.

Circular economy: Zero-waste airports 2030, towards circular in 2050

- For infrastructure, we focus on circular design principles and reuse and upcycling. Embedding circular design in new buildings and looking for better solutions to traditional asphalt and concrete are critical tasks for us.
- For operational materials, the priorities are reuse and upcycling and closed loops. We are working towards improving separation, recycling and upcycling and having a data-driven approach to material flows.

Communities: Improved balance between communities and airports in 2030, towards a good working and living environment at and around airports in 2050

- Decrease noise hindrance, improve air quality and work on community engagement.
- Adapt to climate change and restore biodiversity.
- Empower our strongest asset – our inclusive, diverse and motivated workforce – and offer sustainable and healthy workspaces.

Sustainable Development Goals

Introduced in 2015 by the United Nations, the Sustainable Development Goals relate to the 17 most important opportunities and challenges facing the world towards 2030. The 2030 agenda was adopted by all United Nations Member States in 2015. In developing our sustainability vision and strategy, Schiphol Group analysed the SDGs, including the underlying indicators, and identified the goals that are particularly relevant to our activities. There are also indicators that are relevant for our role in the value chain: SDG 8 and SDG 12 both address sustainable tourism. We will actively support and contribute to these goals over the coming years in line with our 2030 targets. Read more about the SDGs in the [Reporting guidelines chapter](#).

	SDG 5	Gender equality
	SDG 7	Affordable and clean energy
	SDG 8	Decent work and economic growth
	SDG 9	Industry innovation and infrastructure
	SDG 11	Sustainable cities and communities
	SDG 12	Responsible consumption and production
	SDG 13	Climate action
	SDG 15	Life on land
	SDG 16	Peace, justice and strong institutions

➔ Energy-positive airports

Schiphol Group's Dutch airports Schiphol Airport, Eindhoven Airport, Rotterdam The Hague Airport and Lelystad Airport are still on track to become zero-emission airports by 2030. However, achieving our goal is more difficult due to the long lead time of projects. This includes phasing out the use of natural gas in all our offices and buildings. Since 2020, we have been taking steps along our roadmap to achieve this goal. To increase our internal target, we have committed to the goals of the Dutch Green Building Council and aim to align our commercial buildings with the climate commitments of the Paris Agreement by 2030.

ACA Level 5 and SBTi

In December 2023, Amsterdam Airport Schiphol, Eindhoven Airport and Rotterdam The Hague Airport (RTHA) reached the highest level of the Airport Carbon Accreditation (ACA), level 5. To reach this level, an airport must reach and maintain a net zero carbon balance on scope 1 and 2, and address scope 3 emission sources. This thus means that our absolute Scope 1 and 2 emissions have been reduced by 90% compared to 2010 for Schiphol and Eindhoven and compared to 2019 for RTHA and is applying credible carbon removals for the residual emissions.

The ACA certification also takes into account the work the three airports are doing with stakeholders to reduce indirect CO₂e Scope 3 emissions in order to achieve a net-zero carbon footprint by 2050.

The majority of Schiphol Group's CO₂e emissions stem from third-party (Scope 3) activities. These include aircraft landings and take-offs, aircraft handling and road traffic around the airport site. CO₂e emissions from kerosene for outbound flights are also

classified as Scope 3. Emissions generated by inbound flights to our airports are included in the carbon footprint of the departing airport, while emissions generated during landing (3,000 feet) are included in the carbon footprint of our airports.

In general, CO₂e emissions account for about one third of the total climate impact of aviation. Non-CO₂ emissions have not yet been quantified as further consideration is needed on how best to address non-CO₂ climate impacts.

Schiphol Group reports its Scope 3 carbon footprint in line with the Greenhouse Gas (GHG) Protocol. The consolidated CO₂e footprint of Schiphol Group for 2022 is available.

In September 2023 Schiphol has obtained SBTi validation for scope 1, 2 and 3 targets.

The ACI ACA accreditation and SBTi validation show that we are taking the necessary steps towards becoming the world's most sustainable airports.

On track to become zero-emission airports by 2030

In 2019, Schiphol Group introduced its Top Performance Indicators (TPIs), including the 'Sustainability' TPI, to monitor our progress towards our 2030 zero-emissions target. The Sustainability TPI target (-62%) was met in 2023 (-65%), mainly due to lower gas consumption, and HVO100 has been the default fuel for airside ground operations since January 2023.

Going forward, we will continue with our renovation plans for our buildings to phase out natural gas and continue to work with ground handlers and third parties to increase the proportion of electric ground support equipment used airside. The remaining projects needed to decarbonise our operations will be more challenging and we will also need to strengthen our energy grid to support the transition to sustainability.

Energy efficiency

In 2023, Schiphol Airport's energy-efficiency rating was 4.0% based on our projected energy usage for the year, equalling our

4% target. The rating is lower than in previous years because we now separate renewable energy and energy efficiency. Meanwhile, the percentage of renewable energy produced at our own sites rose to 4.0%. The energy efficiency is the result of more than 100 individual adjustments to the airport environment, including extending our use of LED lighting, replacing old telecom and IT equipment, and upgrading our climate-control and heating, ventilation and air conditioning. Adjustments to the climate settings have also been an improvement. The temperature in the airport terminal was lowered by one degree in 2022 as a result of the energy crisis. Temperatures have also been lowered in office buildings and warehouses, and all climate settings have been optimised. We continued this throughout 2023.

Despite these measures, our energy consumption increased in 2023 compared to the previous year, but remained below the level of 2019. This is due to the continued recovery in passenger numbers and the further electrification of mobility and power for aircraft through fixed power units and mobile electric ground power units.

In 2023, the energy label was renewed for four areas of the terminal. Each area showed an improvement over the previous label: Pier C now has a C label (previously G); T1 now has an A label (previously B); and Pier G now has an A+ label (previously C) and Pier E now has an A+ label (previously B). In addition, the ISO 50001 (energy management) certification for all four of our Dutch airports was reviewed and renewed.

TPI sustainability¹

In K tonnes CO₂e

	2023	2019	Change
Royal Schiphol Group	18.02	51.2	-65%
Amsterdam Airport Schiphol	16.91	48.8	-65%
Eindhoven Airport	0.94	1.2	-22%
Rotterdam the Hague Airport	0.13	1.1	-88%
Lelystad Airport	0,04	0,1	-60%

¹ The TPI is based on the emissions from gas consumption, Fuel consumption, Fire brigade emissions, electricity usage, ground support equipment and the single tenant energy usage (scope 3). RSG aims to reduce emissions from these sources to a minimum by 2030.



During the year, the Netherlands tightened national legislation on energy saving. Schiphol Group complied with the new standards by reporting, before 1 December 2023, on the measures already taken during the year and the measures planned for the coming years. Although a number of the energy-saving measures required by the updated legislation have been implemented, we still need to make improvements. The Dutch authorities will start their inspection rounds in 2024; accelerating the implementation of the necessary measures will help us make progress towards our energy-efficiency goals.

In 2024 Schiphol Airport will also begin piloting a performance contracting solution for the terminal and piers. We aim to use the knowledge gained from the pilot to extend the solution to the entire terminal complex, which we hope will improve the energy efficiency associated with this type of contracting by between 10% and 15%.

Commercial buildings

Twelve of our Commercial Real Estate offices have an A energy label or higher, while the remaining two offices have a C label. The labelling system represents the theoretical energy use of the buildings, but we prefer to use the Paris Proof metric of kWh/m²/yr, which translates gas use into kWh. Using this metric, we expect to achieve an average of 70 in 2030, 10 years ahead of the target set by the Dutch Green Building Council. In 2023, our real estate offices already average around 114 kWh/m²/yr, a 22% reduction compared to the 147 kWh/m²/yr in 2019. The significant reduction between 2019 and 2023 is mainly due to implementation of gas reducing measures like installation of heatpumps and ATEs (gas reduction was 43% compared to 2019). New measures are in the pipeline.

Meanwhile, the new Cargo Building, 17, was introduced. The building has a BREEAM Excellent rating and is designed to support the maximum number of solar panels on its roof. It is also gas-free thanks to an aquifer thermal energy storage (ATES) system, has a partially wooden support structure and is designed for easy disassembly.

In 2023, we carried out technical research to support the final design of the centralised thermal energy storage system that will serve the Outlook and Avioport buildings at Schiphol and the Schiphol Group head office. We also started installing heat pumps to prepare the buildings for the new system. The contract for the project management and construction of the system has been awarded and work is scheduled to start in early 2024.

Schiphol certifies its existing commercial properties to BREEAM In-Use, an environmental assessment method that enables property investors, owners, managers and occupiers to identify and drive sustainable improvements in the operational performance of their buildings. In 2023, we focused on implementing the latest BREEAM In-Use assessment framework for a further batch of the 10 certified buildings in our Commercial/Schiphol Real Estate portfolio.

Energy use commercial buildings

(x 1,000)	Size (m ²)	Electricity (kWh)	Natural gas (m ³)
Schiphol HQ (SHG) ¹	34	4,678	50
Commercial Real Estate ²	587	42,141	2,318

¹ Incl. datacenter
² Excl. Rotterdam Airport Real Estate (RAV)

Renewable energy

Renewable energy supports our carbon reduction programmes. Schiphol Group's electricity comes mainly from wind farms in the Netherlands, and to a lesser extent from solar farms, although the proportion of solar energy is increasing. The electricity purchased for Rotterdam The Hague Airport comes from the solar park on the RTHA airport site. In 2023, green gas will account for 17% of Schiphol Group's total gas purchases and 100% of the gas used by Eindhoven Airport, RTHA and Lelystad Airport.



The electricity purchased by Schiphol Group comes mainly from wind, though the amount of solar is increasing.

In 2023, the solar panels at Schiphol Airport generated a total of 2.3 million kWh. Due to fewer hours of sunlight during the year, the yield of the existing solar panels was slightly lower than in 2022, at -9.9%. The solar energy generated on site in 2023 is shown in the 'Solar energy per airport' table below.

Solar energy per airport

(x 1,000)	Solar energy (kwh) generated on site in 2023
Schiphol Airport	2,339
Eindhoven Airport	197
Lelystad Airport ¹	-
Rotterdam The Hague Airport	12,072
Unisun solar park at RTHA	698

¹ Data not available for 2023, we are working on getting the correct data for 2024

➔ Air pollution

Schiphol Group is committed to reducing emissions that could have a negative impact on the air quality at our airport sites and in the neighbouring communities. Air quality around Schiphol Airport is continuously monitored by the government; the province of North Holland has three air quality monitoring stations in the vicinity of the airport and publishes its measurements online. For 2023, Schiphol met all government air quality requirements (based on EU Directive 2008/50/EG) for this category.

RSG's air quality policy focuses on reducing emissions from aircraft and fossil-fuel-powered vehicles in order to limit substances that affect the climate, the environment and human health. Schiphol focuses on a number of substances because they require special attention, such as NOx and Substances of Very High Concern (SVHC), or because there is still much to learn about them, such as ultrafine particles (UFPs).

Nitrogen emissions (NOx)

Schiphol Group is committed to reducing our nitrogen emissions, an ambition supported by the Nitrogen action plan (Actieprogramma stikstof) launched in early 2020 and secured in the Most Sustainable Airports roadmap. In September 2023, the Ministry of Agriculture, Nature and Food Quality granted Amsterdam Airport Schiphol a Nature conservation permit (Natuurvergunning) under the Nature conservation act (Wet Natuurbescherming).

In areas where Schiphol's nitrogen depositions exceed a historical reference value, excess depositions must be mitigated. To do so, Schiphol is implementing a combination of internal and external measures. In terms of internal measures, Schiphol Group is reducing its own nitrogen emissions, for example through the electrification of ground-handling equipment. In terms of external measures, third parties enter into an agreement with Schiphol Group to lower or stop their deposition-causing activity in relevant areas. These internal and external measures

have become mandatory from the moment the Nature permit took effect.

Substances of Very High Concern (SVHCs)

RIVM, the National Institute for Public Health and the Environment, determines which substances are considered nationally to be SVHCs (Substance of Very High Concern/Zeer Zorgwekkende Stoffen, ZZS). Eight of the volatile organic compounds (VOCs) found in aircraft engine emissions are also SVHCs. The substances emitted into the environment by the aviation sector, including the most important VOCs, are published annually on the Emissions Register (Emissieregistratie.nl).

While there are no limit values for SVHCs emitted by aviation, there are occupational exposure limits for workplace exposure to chemicals classified as carcinogenic, mutagenic or toxic to reproduction. These substances have similar properties to those classified as SVHC. The Job Safety Analysis identified a number of exposure situations where we have not yet been able to demonstrate that exposure is below the limit. Measurements are required to establish compliance with the guidelines. These measurements will be carried out in Q4 2023 and Q1 2024. Once it has been demonstrated that Schiphol complies with the guidelines, these guidelines will be incorporated into occupational health and safety standards to ensure the health and safety of employees.

In addition, there is an obligation to minimise emissions for activities on the ground that emit SVHC (Activiteitenbesluit Art. 2.4, para. 1). Schiphol has submitted a complete Avoidance and Reduction Programma for SVHC which has been approved by the Environment Agency (Omgevingsdienst).

There is no such obligation for emissions from aviation. Nevertheless, Schiphol is committed to reducing SVHC emissions from the largest source: aircraft engines. In February 2023, TNO published a study in which it calculated the emissions from Dutch airports. In this study, TNO mapped the possibilities for aviation to reduce SVHC emissions, and Schiphol either has these measures in place or already has plans to implement them in the future.

The measures that have had the greatest impact are those that reduce taxiing times, which are responsible for the majority of SVHC emissions.

Finally, there are limits for VOCs, which make up SVHC, relative to the maximum takeoff mass (MTOW) of the aircraft. These emission values are strictly monitored in Schiphol's Handhavingrapportage and are published annually. The VOC figures have shown a steady decrease over the years, thanks to the airlines' investment in fleet renewal, supported by Schiphol's policy of reducing airport charges for quieter and cleaner aircraft.



Air quality around Schiphol Airport is continuously monitored by the government. The province of North Holland has three air quality measuring stations in the vicinity of the airport and publishes its measurements online.

Ultrafine Particles (UFPs)

In the years leading up to 2023, several studies were carried out by external parties (RIVM), Schiphol and sector partners on the exposure of residents and the surrounding area to UFPs (Ultrafine Particles). The results of these studies and external pressure, such as from the FNV, led to the establishment of a task force in early 2022, together with the sector parties, to carry out further exposure and health studies among platform workers and to investigate short and long-term measures to limit workers' exposure to UFPs and to minimise emissions.

In December 2022, this taskforce was renamed the Aircraft and Diesel Engine Emissions (VDME) programme, and this sector collaboration includes dnata, Viggo, KLM, Axxicom, Menzies, Aviapartner, Swissport, Heijmans, BAM, VolkerInra and the Ministry of Infrastructure and Water Management. The aim of the VDME programme is to minimise the exposure of employees to the UFPs as part of VDME in order to create a safe and healthy working environment. To this end, three main areas of focus have been identified to group together current and future actions.

For all measures of the VDME programme, the sector parties are regularly updated on the progress and for each measure a selected group of the sector is actively involved in the development and implementation of the measures. Schiphol plays a leading and central role in the VDME programme. In addition, Schiphol has received two sets of demands (Deelbesluit 1 en Voorgenomen Deelbesluit 2) from the Dutch Labour Inspectorate (NLA), which it must comply with regarding the health conditions of employees in relation to VDME. Schiphol has submitted an objection (bezwaar) to part 1 (diesel engine emissions) and a response (zienswijze) on part 2 (kerosene emissions). We are currently awaiting final decisions. At the same time, Schiphol is in constant contact with the NLA about the progress of the measures in the VDME programme that meet the requirements.

VDME focus area 1: Understanding the behaviour and (health) consequences of UFPs

In August and September 2023, the Institute for Risk Assessment Sciences (IRAS) conducted an exposure study with all stakeholders in the sector, measuring the personal exposure of airside employees over the course of a day. Employees from different functional groups wore a sensor on their uniform to measure their exposure to UFPs during a normal working day. Results are expected in the first quarter of 2024.

To gain knowledge about the specific UFPs at airside, a research laboratory was officially opened in September 2023. The laboratory is located on two gates and can carry out all kinds of experiments to test possible measures to reduce emissions

or exposure to these emissions. Ten stationary UFP sensors have been installed at this location to measure the amount of UFP and provide a baseline against which Schiphol can test the effect of various measures.

In July, we introduced a policy of periodic occupational health examinations (PAGO) enabling employees to apply for an examination by health professionals to determine possible health effects due to exposure to emissions from kerosene or diesel-powered engines. As there was no existing PAGO for aircraft emissions, it was developed by an external party at the request of the VDME programme/steering committee and will be organised on a regular basis. The first PAGO was carried out in November. In addition, all information and knowledge gathered by Schiphol or its partners is available to employees via VDME e-learning in the Schiphol Learning Hub. This training will be updated as new information becomes available and will be shared with all parties in the sector.

VDME focus area 2: Minimising employee exposure to emissions

During the summer of 2023, Schiphol carried out a pilot project with respiratory protection equipment to investigate which face masks offer the best possible protection and comfort for continuous use. The results of the pilot led to consultations with the manufacturers to further develop the equipment to achieve the best possible protection.

In addition, a dedicated Sustainable Ground Movement Task Force has been established in collaboration with the Integral Safety Management System (ISMS) partners to develop and coordinate actions in the operational ground movement processes of the ISMS partners.

This includes the development of a new ground movement concept for 2030. It focuses on reducing and maintaining occupational risks from kerosene engine emissions at an acceptable level, while maintaining operational safety. These are just a few examples of the 23 measures in the VDME

programme to minimise employee exposure to UFPs from aircraft and diesel engines.

VDME focus area 3: Minimising aircraft and diesel engine emissions

Ultimately, the reduction of VDME must be achieved by reducing aircraft and diesel engine emissions in the first place. This can be done either by keeping engines off for as long as possible, such as with our APU action plan, or by electrifying the vehicle fleet and airport equipment. In order to be able to substitute certain diesel or kerosene emission, Schiphol is working on the provision of electricity on airside. This is a complex project, but crucial for the reduction of emissions.

Auxiliary power units (APU) action plan

Schiphol has submitted an auxiliary power units (APU's) action plan to the Human Environment and Transport Inspectorate (ILT), with input from the airport's partners, with the aim of reducing the use of APUs by aircraft parked on the apron. APUs run on kerosene and cause harmful emissions as well as noise nuisance for apron workers.

Schiphol considers reducing the use of APUs to be a priority because it will make a concrete improvement to the health and working conditions of apron workers. It will also help to reduce CO₂e emissions of aviation as a whole.

Aviapartner, dnata, KLM and Schiphol have joined forces to optimise the use of existing electric preconditioned air (PCAs) units at Schiphol. This has had an immediate positive impact on airside working conditions. All ground handlers can use the electric PCAs. Two e-PCAs are mounted on the passenger boarding bridge at F03 and G04, which is a new way of working for the handlers and the first reactions are positive, especially regarding the working conditions. Schiphol has ordered more e-PCAs to ensure that all wide-body stands are equipped with an e-PCA by the summer of 2024. In parallel, we're working on e-PCAs for narrowbody stands as well.

The text of the Aeronautical Information Publication (AIP) has been updated with further restrictions regarding the use of APUs before take-off. This update went into effect in late December 2023. ILT monitors the use of APUs on a weekly basis and warns airlines if they fail to comply. Schiphol is working with handlers and airlines to implement the changed procedures to comply with the AIP. We have developed a campaign to raise awareness among handlers and cockpit crews about why APU use must be minimised.

Electric equipment

Schiphol aims to achieve zero CO₂e emissions on airside by 2030. By phasing out fossil fuels we will also reduce emissions of NO_x, SVHC and UFP. The majority of the fleet is already electric or has the best diesel engine where no electric equivalent is yet available. In addition to vehicles, Ground Service Equipment (GSE) is also being replaced with electric equivalents, such as electric Ground Power Units (e-GPUs) and e-PCAs. This is being done in cooperation with the industry parties and KES, with KLM and Schiphol owning the e-PCAs that the industry parties use. Due to innovation, delivery times and required infrastructure implementations, the timeline for all GSE replacements is ongoing until 2030.



Since December 2023, 100% of the taxi rides that depart from the taxi stand at Schiphol are zero-emission.

Our partners have also expanded their electrical equipment. Viggo has purchased an electric pushback for wide-body aircraft, and KLM has purchased a number of pushbacks for narrow-body aircraft. Axxicom introduced 10 electric buses to transport people with reduced mobility to and from the aircraft. Combined Refuel Services (CRS) made a first with the electric hydrant dispenser for refuelling aircraft. We are proud to be working with such committed partners towards zero emission ground operations and improving local working conditions.

Clean mobility

Schiphol Group supports the use of clean mobility solutions, whether through its own fleet or that of companies operating on the airport site.

Taxis

Since December 2023 100% of the taxi rides that depart from the taxi stand at Schiphol airport are zero-emission. A great milestone, which Schiphol has been striving to achieve over the last decade, starting with the introduction of sustainable taxi-vehicles by Schiphol's official taxi concession holders Bios Group (ZCN), Schiphol Taxi (BBF) and Schiphol Service (Willemsen de Koning) in 2014. In the years since, the independent taxi operators that are active from the taxi stand via the taxi control foundation (STC) have also been stimulated to switch to a zero-emission vehicle. A process that has now been successfully completed.

Together, Schiphol's concession holders operate a fleet of 177 electric taxi cabs and vans from the official taxi stand. The fleet of the independent taxi operators includes a further 772 zero-emissions vehicles, among which 154 electric vans and 1 hydrogen-powered taxi. In total, 949 electric taxis are currently operating from the official taxi stand. This number has risen significantly this year, which reflects the recovery in demand for taxi services (post-Covid) and Schiphol's ambition to strive for a zero-emission taxi rank at the airport. Consequently, more than 93% of the 868.192 taxi rides from the taxi stand were carried out by zero-emissions vehicles in 2023.

Unfortunately, pre-ordered app taxi services (638,085 rides) are still mostly executed by traditional fossil fuel-powered vehicles (81%). Schiphol is working with the parties responsible for those services to change that towards a more sustainable outcome by 2026 – and plans to implement a zero-emission zone for taxi's by 2026.

Equipment pooling

At Amsterdam Airport Schiphol, six general handlers provide ground-handling services to airlines. Each handler currently uses its own ground support equipment (GSE) for ramp handling and transports its GSE from one aircraft stand to another, even if an aircraft is located at a different pier.

Transporting GSEs by vehicle creates unnecessary movements on airside access roads and around aircraft stands, resulting in increased congestion and safety risks. To mitigate these risks, Schiphol, in cooperation with the ground handlers, conducted a pilot project in 2023 to test the operational feasibility of sharing GSE between all six handlers: equipment pooling. The pilot took place between January and August at six aircraft stands at Pier D (D16-D28). The GSE used in the pilot included passenger stairs, conveyors and powerstows, all electrically powered. One of the lessons learned from the pilot was that sufficient charging facilities and space at and around the aircraft stands is essential for the successful implementation of charging infrastructure, leading to a rapid roll-out at the stands. Together with the ground handlers, we will determine the next steps to implement a more permanent equipment pooling strategy at Schiphol Airport, with a focus on equipment at the stands.

Cleaner fuels

In January 2023, KLM Equipment Services switched all airside equipment from GTL to HVO100 fuel in order to reduce carbon emissions, in addition to the air quality benefits that GTL already offered. HVO100 is produced from biomass and reduces emissions by more than 89% compared to the GTL production process.



Schiphol Group supports the use of clean mobility solutions, whether through its own fleet or that of companies operating on the airport site.

Supporting electric vehicles

In 2023, Schiphol implemented a charge point operator platform. More than 300 existing and new AC chargers have been added to a new management software platform and are ready for future growth. In addition to these chargers, the first DC fast charger has been installed at Rotterdam The Hague Airport, achieving proof of concept. At Schiphol Airport we will install a multitude of DC fast chargers over the next few years, starting in 2024 with the P3 shuttle bus (Q2), trucks at Truck Parking 3 (Q3) and airside vehicles (Q4). This important turning point provides an important foundation for scaling the eMobility offering to approximately 10,000 chargers with an expected equivalent capacity of 220 megawatts by 2030.

We also faced capacity issues on the energy grid in 2023. A number of projects, such as the rollout of (fast) chargers, have been postponed due to these capacity problems. However, further research in 2023 shows that with the deployment of smart dynamic load balancing technologies, we can use our reserved capacity much more efficiently. Therefore, this will become the new development standard in 2024 to continue our roll out.

➔ Sustainable aviation

Sustainability is central to the aviation sector discussion around how to move forward in the currently challenging operating landscape. 2023 saw further positive steps taken: the EU and its Member States proposed new aviation sector incentives within the Fit for 55 framework, including a new mechanism to support the proposed sustainable aviation fuel (SAF) blending mandate for fuel supplied to EU airports from 2025 onwards. The voluntary uptake of SAF by airlines is a promising development, and has been partly stimulated by Schiphol Group's incentive to partially subsidise SAF used at Amsterdam Airport Schiphol.

These new developments support the long-term course set out by Schiphol Group and the wider aviation sector in the Netherlands. Our shared target is to reduce carbon emissions generated by the Dutch aviation industry to 2005 levels or lower by 2030. Meanwhile, we are committed to reaching the targets set by the Paris Agreement and the Dutch Climate Agreement. This will include continuing to encourage measures such as distance-related taxiing, encouraging train travel for shorter distances, fleet renewal, increasing synthetic and bio-kerosene, and introducing hybrid/electric propulsion.

Supporting the EU Green Deal

Schiphol Group supports the EU Commission's Fit for 55 climate package, which sets a minimal 6% SAF blending target from 2030 onwards with strong increases in subsequent years. The package includes a specific target for the use of synthetic fuel. The EU Member States and European Parliament have agreed on most of the proposals of the Fit for 55 climate package to enable the overall target on transport fuels in 2030. The current proposal is to reach a 14.5% CO₂e intensity improvement, which will be implemented across each Member State in 2024. Schiphol Group, together with the Dutch aviation sector and Dutch government, supports the Dutch aviation industry-wide target to achieve a 14% SAF blend by 2030.

Sustainable aviation fuel

Schiphol Group is involved in several projects aimed at accelerating the uptake of sustainable aviation fuel by carriers. Flying with sustainable aviation fuel as a so-called 'drop-in solution' is the most effective way to decarbonise air travel. Fossil kerosene can be replaced with bio-based or synthetic kerosene that is blended in aircraft and hydrant storage without any modifications to facilities or aircraft engines. In larger quantities, SAF can also help to improve air quality around airports. Meanwhile, non-drop-in fuels are also being developed with different characteristics to conventional kerosene, such as hydrogen or electric propulsion.



Flying with Sustainable Aviation Fuel (SAF) is the most effective measure on the short term to successfully decarbonise air travel and achieve the climate goals for 2050 and beyond.

Promoting production capacity and the use of SAF

Since 2022, Schiphol Group has received a continuous supply of SAF by Neste and KLM into the storage and hydrant facility of Aircraft Fuel Supply, while in 2023 SAF deliveries were made to multiple airlines operating at Schiphol Airport, including Air France, Delta, KLM, Qatar, Ryanair, Transavia and United.

In total, over 40,000 tonnes of SAF was delivered, making the airport one of the leading SAF hubs in the world.

Schiphol Group partners with Port of Amsterdam, SkyNRG and KLM in Synkero BV, a start-up focused on developing a commercial SAF production facility in Amsterdam. By 2030, Synkero BV aims to produce 50,000 tonnes of SAF to help meet the SAF volumes mandated by EU proposals. We plan to supplement the volumes provided through the start-up by encouraging SAF supplies from producers such as Neste, Shell and Argent Energy, provided sustainable and scalable feedstocks are used.

In addition, in 2023 we set up an experience centre at Schiphol Airport to increase awareness among passengers, together with airlines and the aviation fuel industry. Meanwhile, Rotterdam The Hague Airport (RTHA), working with SkyNRG and CHOOOSE, has introduced a tool to enable travellers to fly more sustainably by replacing fossil fuels with SAF via the 'book and claim' principle.

Moreover, Zenid, a consortium of various pioneering partners in technology and aviation (RTHA as part of RSG, RHIA, SkyNRG, Climeworks), has the ambition to build a demonstration plant producing fully circular sustainable aviation fuel directly from air. With the technological developments necessary for building the demonstration plant being uncertain in delivery, the consortium is reevaluating its course and direction. There is no indication on how this consortium will develop in the future.

New SAF incentives in the coming years

In 2023, we continued to expand the incentive scheme introduced in 2022 to encourage the use of SAF by airlines at Amsterdam Airport Schiphol. In 2023, 12,500 tonnes of SAF was subsidised at the airport, more than doubling the volume of 2022. Meanwhile, the joint efforts of Schiphol Group and its partners in the EU TULIPS project will also contribute to the scaling up of SAF at EU airports. Some of the initiatives being explored over the coming three years include creating new supply channels for e-fuels, enabling large-scale supply options and introducing potential SAF incentives at other EU airports.

Supporting long-term solutions

In addition to promoting the use of SAF, other non-drop-in sources of sustainable energy will be needed to reach net-zero aviation emissions by 2050. These solutions include renewable electricity and green hydrogen. Together with manufacturers such as Airbus, Pipistrel and ZeroAvia, Schiphol Group is involved in initiatives to develop the long-term infrastructure for liquid hydrogen, which is a precondition to deliver sufficient energy for aircraft that can carry up to 100 passengers within Europe or beyond. The extreme cooling of hydrogen to minus 250 degrees Celsius requires new methods of transport and storage at airports.

Schiphol Group will test the use of hydrogen in the TULIPS project by storing it temporarily and fuelling a drone at RTHA. In 2023, we continued to research different options for the storage and transport of liquid hydrogen.

These ambitions are only possible with sufficient renewable energy and new supply chains. Schiphol Group has joined with the Port of Amsterdam, Tata Steel and various supply chain partners to scale up the regional availability of green hydrogen over the coming decade. Achieving our goal depends on the availability of renewable energy for ramping up local production, the connection to the national grid and focusing on international imports to identify the areas in which the production of green hydrogen is most feasible.

The TULIPS project has set up demonstrations with green hydrogen to charge aircraft and equipment and alleviate the high electricity demand at airports. In addition, RTHA and ZeroAvia have planned a hydrogen flight from London to Rotterdam in 2024.

Sustainable taxiing

Schiphol is working with a consortium to take steps towards the operational roll-out of sustainable taxiing at Amsterdam Airport Schiphol. The consortium includes Corendon, dnata, KLM, LVNL, Swissport, Transavia, TUI and Viggo. While the ambition of eliminating all avoidable taxiing-related emissions remains unchanged, the consortium members have submitted an update



Schiphol is working with a consortium that is taking steps towards the operational roll-out of sustainable taxiing.

to the strategic roadmap, detailing the scale-up of sustainable taxiing until 2030. Scaling efforts will build on the learnings via the showcase that was executed through the two TaxiBots owned by Schiphol Airport. It is an opportunity to drastically lower fuel consumption, greenhouse gas emissions, local UFP levels and noise disturbance caused by ground operations.

Schiphol and KLM are continuing their collaboration on a European Level as part of the EU-subsidised HERON consortium, which aims to drive sustainability by reducing CO₂e emissions related to airport operations. Within the context of HERON, Schiphol Group successfully established sustainable taxiing as SESAR solution. We also continue to work with EUROCONTROL to align recommendations to implement sustainable taxiing across Europe and develop European operational standards for TaxiBot operations.

Wildlife trafficking

Schiphol Group works with various sector partners as well as Airports Council International (ACI) to fight wildlife trafficking. As traffickers often use aircraft to smuggle their goods, airlines and airports are ideally positioned to help combat trafficking by training staff to recognise and deal with trafficking situations, raising awareness by providing information to the public and through partnerships in the supply chain.

In 2023, we continued our activities as chair of the ACI Wildlife Trafficking Task Force, including by sharing our case study on the prevention of wildlife trafficking with our stakeholders and fellow task force members. We also organised a workshop for ACI World Environment Standing Committee (WEnSC) members about wildlife detection scanning equipment and participated in a conference on the revised EU Action Plan against Wildlife Trafficking 2022-2027 hosted by the European Commission. Meanwhile, at Schiphol Airport, we worked with retail outlets to ban the sale of packaged eel in the food stores of our lounges. Eel products can be bought legally in the EU but cannot be exported.

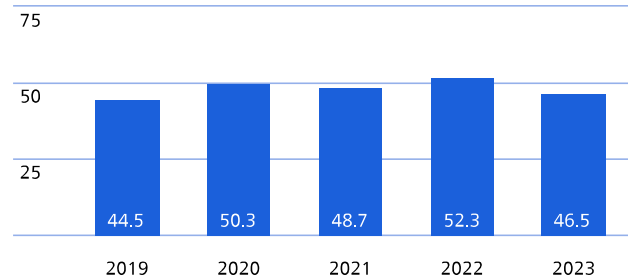
➔ Circularity

In a circular economy, we aim to create, maintain and enhance the value of resources in harmony with the environment. There is no waste; instead, resources continuously cycle from one use to another. Each resource serves a purpose in one application and, once it has completed its role, it becomes a valuable input for another, higher-value use. Achieving this requires us to address inefficiencies at every stage of the resource value chain.

Our approach prioritises reducing material consumption and enhancing the next-life application of residual materials for future life cycles. We also aim to minimise the environmental impact of the processes and the consumption of the materials

Percentage of separated operational residual flows¹

(per year at Amsterdam Airport Schiphol)



¹ Excluding CAT1 aircraft waste.

we use. Our goals are to achieve zero waste by 2030 and full circularity by 2050. The new circular system and the programme to implement it are currently being developed. Among other things, we are planning the following initiatives.

Separation rate

For the operational residual streams that are part of Material Flow Management, the separation rate was 46.5% in 2023. Although the focus was on source separation, there was a successful post-separation pilot from summer 2022 to April 2023, which increased the waste separation rate. From May 2023, it has no longer been possible to continue post-separation in the pilot form. We are focusing on separation at source by encouraging passengers to put waste in the right bin and working with business partners to avoid certain products (and prevent waste from being generated).

Improving the value chain

To meet our zero-waste goals and advance our circular transition by 2050, Schiphol Group must focus on optimising our value chain, asset lifecycles and material flows. In 2023, we continued to apply our zero-waste and circularity policies.

A significant organisational development this year was teaming up with Renewi/Seenons as our new material flow management partner for operational streams. In addition, establishing the Sustainability and Energy Management team within Asset Management marks a pivotal shift towards a systematic, KPI-driven circularity model, moving away from an approach that is driven by the project level.

Currently, organising data on our residual streams and forecasting their future trajectory poses a challenge. This year, our focus is on several flagship projects that demonstrate how Schiphol is putting its circularity ambitions into practice. As the following examples illustrate, our primary emphasis is on preserving or enhancing the value of resources, while actively avoiding downcycling and waste generation.

Towards a fully circular 2050

The 2030 Roadmap helps us to become zero waste. However, with increasing resource scarcity and the risk this poses to business continuity, we need to embrace a circular model that makes the best use of material resources. To realise our new system and our 2050 goals, we must act now, in parallel with the implementation of the 2030 Roadmap.

Materials are becoming scarce and expensive due to increasing demand, insufficient reuse and depletion of these finite resources. The linear 'take-make-waste' approach depletes available materials and fails to maximise material value. Focusing on recycling alone, while maintaining a linear approach, will not deliver sufficient results. We need to manage both input and output in a systemic way that requires a paradigm shift in the way we manage our materials, recognising their inherent value.

From operational residuals to operational resources

In 2023, we continued our efforts in Work Package 6 – Circular Airports, as part of TULIPS. Our aim is to minimise passenger waste and maximise the reuse of secondary materials in construction. Throughout the year, we measured our operational waste streams and assessed their environmental footprint. We have made two relevant results available to the public: the [Circularity Performance Management System](#) and the [Airport Circularity Baseline Study](#). These results are crucial for prioritising residual streams and defining concrete, specific actions to reduce passenger waste.

In June 2023, we started working with Renewi and Seenons at Amsterdam Airport Schiphol and Rotterdam The Hague Airport, and with Remondis, our material flow management partner, at Eindhoven Airport. In this new approach, we treat our operational residuals as materials. We have worked with partners along the value chain and collected relevant data to assess and prioritise streams (also in collaboration with TULIPS Work Package 6).

We already know that residual waste, cabin waste, plastics and food waste have a big impact in terms of weight and environmental footprint (including CO₂e), so we are taking concrete measures to reduce these streams and increase the value for their next use. For example, in addition to the introduction of a deposit on PET bottles (July 2021), Schiphol Airport has also been offering a deposit on cans since 1 April 2023. Although Schiphol is not legally obliged to provide return facilities, we are motivated to voluntarily facilitate such initiatives in line with our goal of achieving zero waste by 2030. Our goal is to offer travellers the option to either donate the deposit or receive a 0.15 euro refund via an app. We are currently exploring the feasibility of this initiative to contribute to our broader sustainability goals.

In addition to these actions, we are also defining the monitoring system to start managing circularity. Systematic data collection, visualisation and analysis with relevant KPIs is a framework that will be in place in 2024 for our operational residual streams.

Plastic road

In 2023, we conducted a trial on airside with a road composed entirely out of recycled plastic from our airport. Although Schiphol itself was not dissatisfied with the results of the trial, the organisation that developed the initiative has stopped. We are therefore not continuing with the test.

Partnerships

To measure the sustainability performance of our suppliers and partners, we are implementing the Global Sustainable Enterprise Systems. This tool enables us to also select partners we work with based on sustainability by actively monitoring and tracking their level of circularity at product, project and overall company level.

From construction residuals to construction resources

Circular construction materials

According to our sustainability roadmap, approximately 1% of all construction residual streams in the Netherlands come from Schiphol. Concrete is the building material most frequently used

in construction projects at Schiphol and has the greatest impact on CO₂e emissions.

At the concrete recycling plant at Zonnekruisweg at Schiphol Airport, we will collect demolished concrete from the Schiphol ecosystem and process it into recycled concrete materials. In the coming years, we want to process more and more demolished concrete into high-quality circular concrete. By using circular concrete, we can save CO₂e emissions in the polluting concrete supply chain. In addition, we can secure our own supply of high-quality concrete for the future, which is particularly beneficial given our project portfolio (e.g. Terminal South, Pier C).

Examples of the circular transition

In the Checkpoint 90 project, we shifted from using traditional design methods to circular design principles. The Quebec Project exemplifies this transition by adopting an integrated sustainable approach that enables the creation of a circular building using reused materials from existing cargo buildings on-site. The circularity of a building is quantified using the Building Circularity Index (BCI). The BCI target for the Checkpoint 90 project was 60%. The project successfully achieved a BCI of 68%. In particular, various secondary materials were used, including steel for the roof, doors, lighting, sanitary facilities, counters and emergency equipment.

In addition to the use of secondary materials, the project emphasises forward-looking practices. Checkpoint 90 is designed to be demountable, allowing materials to be reused in future construction projects. This approach underlines a commitment not only to circularity in the present, but also to sustainability and the reuse of materials for future endeavours.

Checkpoint 90 is bio-based, meaning that the construction materials, mainly wood, and other materials used in the building are of natural origin. Energy is generated locally as the canopy is made up of over 1,100 German bifacial solar panels. – which is almost enough for the building to become zero net (energy neutral).



Doorlaanpost 90 is biobased, meaning that the construction materials, predominantly wood, have a natural origin, enabling the reuse of materials in future construction projects.

Another great example is the 'Zwanenburg Runway'. This project ensures the operational availability of the runway for the next seven years. Major maintenance was required to ensure reliability and prevent the risk of breakdowns. Assets on the runway could no longer be safely maintained and had to be replaced in accordance with legislation and regulations. About 60 percent of the removed asphalt from the runway has been reused in the newly laid asphalt and several parts, such as the fixtures, have been refurbished for use during upcoming projects. In addition, the released materials that could not be used at Schiphol, were collected separately as much as possible so they can be used at other locations.

In addition, the cargo apron, called Sierra, will be extended with three aircraft stands. Work started in 2023 and will be completed in 2024. Three major improvements have taken place. First, we have reduced the thickness of the pavement foundation at the front of the apron by 20%. This was possible because this area has lower surface loads, saving 720m³ of concrete or the equivalent of 60 lorries.

Second, we reconsidered the need for a new emergency power station. By looking at similar situations and data, we eliminated the need for an additional building with a diesel generator.

Third, as the aprons are used day and night, we need lights there. Normally we would have built 25 lights, but by defining the apron more precisely we only needed 18 lights, without compromising on compliance and functionality. All these measures together mean that we're using less material, producing fewer emissions and using less energy.

➔ Water pollution

At Schiphol Airport, we have a separate sewer system that transports wastewater (mainly sanitary wastewater) from buildings to an on-site treatment plant. The rainwater system, including all rainfall from paved areas (including buildings), flows directly to the surface water. In winter, measures to keep aircraft free of ice and to keep snow and ice off taxiways, runways and aprons affect the quality of surface water. The de-icing agents used are biodegradable and remove oxygen from the water. Other risks of water pollution come from spills from equipment



Schiphol is committed to improve the quality of surface water on a permanent basis, particularly by minimising the harmful effects of de-icing and ice control measures. This includes both more economical spraying and the use of sustainable alternatives.

or activities. Schiphol has several measures in place to minimise the impact.

Measures

Schiphol is continuously improving the quality of surface water, in particular by minimising the harmful effects of de-icing and ice control measures. This includes both more economical spraying and the use of sustainable alternatives such as potassium formate. Source reduction measures focus on the more economical use of both aircraft de-icing and snow and ice control agents.

Handling agents use monopropylene glycol (glycol) for aircraft de-icing and potassium formate for ice control on asphalt. Glycol has the greatest impact on oxygen demand in surface waters and is therefore collected as much as possible after aircraft de-icing through infrastructural and operational measures. Glycol is collected both at the Central De-Icing Facility and at the gates.

Use and collection of de-icing fluids in winter 2022-2023 (mild winter)

	Winter 2022-2023
Potassium formate	1,121,000 litres
Glycol	784,000 litres
Collected glycol-water mix	9,309,000 litres

We work closely with the Rijnland Water Authority to monitor the quality of surface water during the winter season. The oxygen demand of the surface water from the de-icing fluids is actively monitored at 20 locations around the airport. From 2023, all monitoring sites are continuous, automatic and online, so oxygen and oxygen demand in the surface water can be checked at any time.

By law, contaminated runoff from new pavement structures (taxiways, runways and aprons) cannot be discharged into surface water. First flush from new pavements is therefore collected, stored and combined with collected aircraft de-icing fluid for off-

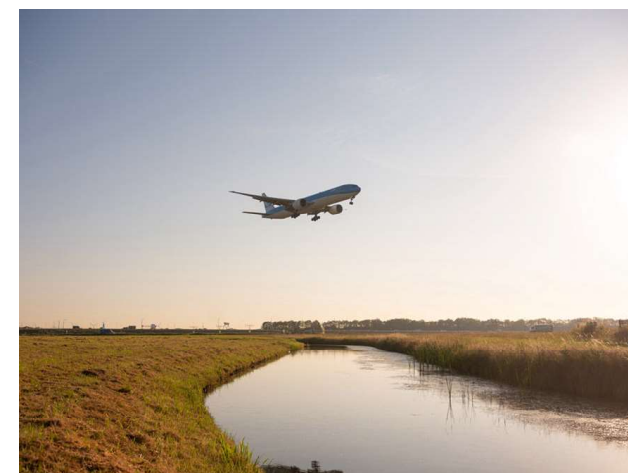
site treatment. This year, a first flush system was installed on the first phase of the new Quebec taxiway viaduct.

At a busy airport, spills from equipment or activities do occur. Schiphol has put in place an appropriate system to control and clean up these spills as quickly as possible. Most spills are directly cleaned after they are reported, minimising the risk of spills contaminating our surface water.

Future developments

Schiphol has developed a new strategy to convert the existing storm water sewer and build a treatment plant on the airport in order to collect and process potassium formate contaminated runoff from existing taxiways, runways and aprons. This will be a long-term, 10-15-year strategy as all existing facilities will need to be upgraded.

Next year, projects on the Romeo and Sierra platforms will have a first flush installation.



At a busy airport, incidents with spills from equipment or activities happen. Schiphol has set up an adequate system to control these spills and clean them as fast as possible.

PFAS

For every project that requires work in or with the soil, the quality of the soil is assessed through the standard protocol and on the standard set of parameters according to Dutch legislation. As of 2016, these assessments include testing for PFAS (Poly- and PerfluoroAlkyl Substances) because firefighting foams containing PFAS have been used in the past at Schiphol Airport (and airports worldwide).

Originally, the legislation restricted the reuse or disposal of PFAS-contaminated soil, and no effective remediation methods were available, leading to the establishment of storage facilities for contaminated soil on our grounds. Currently, approximately 180,000 tonnes of PFAS-contaminated soil are stored on-site.

We have been exploring and testing various remediation techniques suitable for our specific soil. This research has recently yielded a promising method, leading to our decision in 2023 to acquire a remediation facility that uses this technique. We aim to start operations by the end of 2024, following the necessary permit acquisitions. This facility is expected to process all stored PFAS-contaminated soil within approximately three years, marking a significant step in our environmental stewardship efforts.

We do not foresee any health risks for local stakeholders. The cleaning process is a closed system (no process water is discharged), the soil remediation installation is realized on a liquid-proof floor, stored soil awaiting remediation is covered with foil, there will be a dirty and clean zone and there will be a wheel washing installation so that trucks do not remove any contaminated soil from the dirty zone. Moreover, the site is closed and not accessible to unauthorized persons.

→ Soil pollution

Schiphol Group makes every effort to manage emissions into soil and to prevent, control and reduce such emissions and thereby pollution (e.g. with PFAS). If for some reason emissions do occur we act prudently and in line with our permits and regulations to ensure the impact on the environment is limited.

Preventative measures

Schiphol Airport adheres to the national guideline for soil protection (*Nederlandse Richtlijn Bodembescherming*). Potential threats to soil quality, such as oil storage, undergo assessment. This includes a comprehensive soil risk analysis to identify and implement essential measures and technical solutions that minimise contamination risks. No activities commence until these preventative steps are firmly in place.

Despite stringent preventative measures, soil contamination incidents are sometimes inevitable. Our goal remains prudent remediation. In 2023, we encountered three incidents:

- A mobile lighting unit leaked oil during maintenance. Approximately 90 metric tons of contaminated soil were promptly excavated and treated off-site
- An airplane spillage of kerosene during taxiing led to the excavation and off-site remediation of 40 metric tons of soil. 25 m³ soil is still polluted and will be remediated as soon as possible
- A pump failure resulted in an oil-water mixture spill, leading to the excavation and off-site treatment of about 15 metric tons of affected soil

Runoff from runways and taxiways, similar to motorway usage, also contributes to soil contamination along verges, predominantly with PACs (polycyclic aromatic compounds (PACs) and metals. These contaminants remain superficial, posing minimal immediate health or environmental risks. Remediation is not effective as long as runoff and therefore contamination continues to take place.

→ Climate adaptation

The current pace of global warming suggests that we may see significant climate-related events in the future, including an increasing number of extreme weather events. Extreme climate events have already caused disruptions at airports worldwide. At Schiphol Group, we have introduced a range of measures – described in our Most Sustainable Airports roadmap – to mitigate climate change, such as becoming an energy-positive and circular airport. Nevertheless, we are aware that global warming has been accelerating in recent decades and cannot be stopped overnight. In addition to mitigation measures, we must also focus on climate adaptation, which means dealing with the impact of climate change and adapting our airport accordingly. For this reporting year, we do not see any financial reporting risks related to the climate change adaptation while drafting the financial statements 2023.



To combat future amounts of water and prevent flooding, a comprehensive water storage plan was developed, tailoring specific projects for each drainage area within the airport premises. This approach ensures dry conditions today as well as safeguards against future water-related challenges.

Climate Adaptation Strategy

In 2022, Schiphol conducted research into the effects of the changing climate on our airports, the outcome of which was our Climate Adaptation Strategy. This strategy, which focuses on extreme weather events, is in line with the latest scientific findings of the Royal Netherlands Meteorological Institute (KNMI) and the Intergovernmental Panel on Climate Change (IPCC). In October 2023, the KNMI published new climate scenarios. These findings were already incorporated into Schiphol's research in 2022 with the help of the KNMI. In 2023, we worked on translating the 2022 climate adaptation strategy to the business units.

We have all observed a shift in our climate patterns: summers are noticeably warmer and winters milder. As global temperatures rise, we are experiencing longer drought periods during summer. However, we are also witnessing more extreme rainfall events in both the summer and winter periods. This increase in precipitation is a direct result of the warmer air's enhanced capacity to hold water vapour, a consequence of ongoing global warming. Schiphol Group has been proactively implementing the measures detailed in the Climate Adaptation Strategy. These initiatives focus mainly on water management and heat mitigation.

In 2023, we developed a new set of asset and design requirements for projects dealing with climate adaptation, based on regional standards. These new requirements are now being incorporated into major projects such as the new baggage cellar and Pier C.

Water storage plan

To manage future water volumes and prevent flooding, a comprehensive water storage plan has been developed, with specific projects tailored to each drainage area within the airport site. This approach ensures dry conditions today and safeguards against future water-related challenges. We are focusing on increasing buffer capacity, increasing storage capacity, increasing natural infiltration areas and speeding up water run-off.

Improvements have been made to Schiphol's primary water models. The stormwater model and the surface water model have been seamlessly integrated into a single framework, improving the airport's ability to accurately predict outcomes during various weather events. Among the ongoing projects, the construction of Cargo Building 17 stands out as a significant effort, with a substantial water storage area being excavated. At Schiphol Centre, the completion of the drainage work on the Handelskade has increased rainwater capacity. With the renovation of the Zwanenburg Runway, the drainage systems were extended to meet our new standards for rainwater capacity.

Water management

Water management at Schiphol is largely controlled by Rijnland Water Authority, which manages the pumps and intakes to keep the polder dry or to allow freshwater in during periods of low water. The waterways are maintained by Schiphol Airport and, in cooperation with Rijnland Water Authority, we monitor the operation of the water system and take preventive and corrective measures when necessary.

Addressing heat-related problems

Higher temperatures and prolonged exposure to them can cause heat-related problems. Heat is a pressing climate risk for Schiphol Group airports, but unlike flooding, it is one with which we in the Netherlands have less experience. For this reason, the measures are mainly in the research phase.

We are currently assessing the need to modify the comfort requirements for hot days in the terminal buildings. Ongoing discussions with our main contractors are also focusing on airside flooring considerations. We are discussing the frequency of implementation of existing thermal protocols and assessing their impact on future scenarios.

In order to adapt to the warmer climate with extreme hot days, we have linked current labour laws and regulations to our 2023 Climate Adaptation Policy, resulting in a revision of the catalogue of occupational health and safety for workers at our airport.

➔ Noise

Noise disturbance from air traffic remained a key issue in our discussions with the local community in 2023. Schiphol adheres to the agreements in place to minimise the impact of our activities on local residents, such as keeping the number of annual aircraft movements (ATMs) below 500,000 in 2023 (of which 32,000 can take place between 23.00 and 07.00). Owing to the sustained impact of COVID-19, 430,842 ATMs were recorded in the 2023 operating year (compared to 497,303 in the pre-COVID-19 year 2019); 24,533 of these took place at night.

Reducing noise disturbance

Schiphol and Air Traffic Control the Netherlands (LVNL) are working on a noise-disturbance reduction programme called minderhinderschiphol.nl. The programme consists of 44 measures to reduce noise disturbance in the region surrounding the airport, which have been put together in consultation with local authorities and residents, as well as other stakeholder groups.



Noise disturbance due to air traffic remained a central topic in our discussions with the local community in 2023.

Three measures were implemented in 2023. These included the introduction of a ban on the noisiest aircraft, which provides a legal basis to ban aircraft with an effective perceived noise of -10 dB. Some examples of aircraft subtypes that can now be banned include subtypes of the Airbus A321, Airbus A300 Freighter and Boeing 767-200 Freighter.

Another measure is the combined implementation of RECAT-EU with Time-Based Separation. This implementation helps us to improve the tactical hourly capacity and operational resilience under all circumstances at Amsterdam Airport Schiphol, especially under strong headwind conditions. By maintaining a high tactical hourly capacity in this type of weather, relatively more aircraft can be handled from the noise preferential Polderbaan and Kaagbaan Runways, which cause relatively less inconvenience to the local population than the other runways.

During the year, we also completed two evaluations of measures. The curved night approach to the Zwanenburgbaan from the north to reduce the noise impact on the residents of Assendelft and the higher night approach to the Polderbaan. The combined evaluation showed that more than 75% of the traffic flew the new curved approach to the Zwanenburgbaan, which was significantly more than the expected 45%. This resulted in less noise being measured at the NOMOS measuring points in Assendelft and Castricum.

We will keep our community informed and actively involved in the development of the programme as we continue to research, implement and introduce new measures in the coming years.

Noise contours

In 2023, the New Environmental Standards and Enforcement System (NNHS) was tested. The NNHS includes rules on the use of preferred runways at Schiphol. It also limits the number of people who can be exposed to severe noise disturbance in communities around the airport and aims to keep affected residents within certain noise contours. The NNHS prescribes the 48 dB(A) and 58 dB(A) Lden noise contours using the ECAC Doc.29 noise

calculation method. However, the current regulations still require the older NRM method, the results of which are shown below.

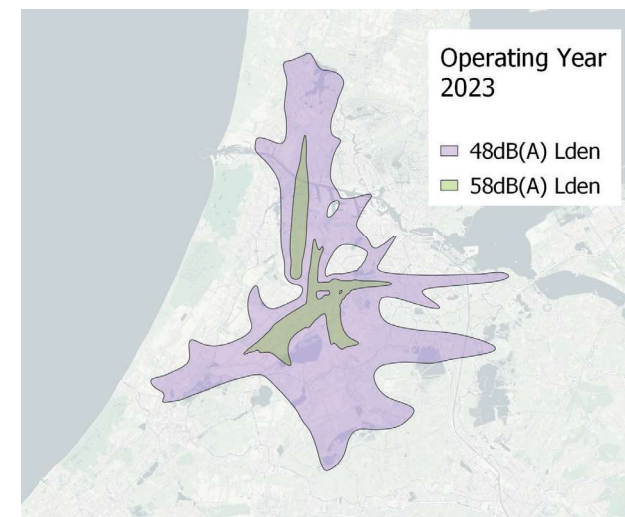
The figure 'Lden noise contours' depicts the contours for 2023 (between 1 November 2022 and 31 October 2023) as purple and green lines. The contours highlight the areas where the average noise exposure from aircraft is greater than 48 and 58 dB(a) respectively.

Local Community Contact Centre: A work in progress

Bewoners Aanspreekpunt Schiphol ('Local Community Contact Centre'; BAS) provides local residents with information on various topics related to the daily operation of Schiphol. The contact centre also registers noise nuisance reports and complaints from local residents. The knowledge gained from the BAS reports supports our ongoing efforts to reduce noise disturbance and improve the living environment around the airport. The website for Schiphol's noise reduction programme, minderhinderschiphol.nl, explains how BAS data is being used to develop and evaluate noise-reduction measures.

Behind the scenes, we continue to focus on increasing the capacity of BAS, but this remains a challenge in the tight labour market. In 2023, BAS presented a satisfaction survey for the first time and has taken up some of its recommendations. The

Lden noise contours



satisfaction survey will be repeated annually. One of the other improvements we are working on is transferring reports on flights to and from Schiphol made at the Rotterdam-The Hague Airport counter to Schiphol's reporting system and vice versa. The BAS website can be used to report (noise) disturbances. These reports are registered by BAS and forwarded to Schiphol, LVNL, the Ministry of I&W and municipalities in the region. These

Number and nature of reports to BAS

	Focus group ¹		Habitual complainants	
	2023	2022	2023	2022
Number of complainants	10,724	10,520	93	85
Number of complaints				
Specific reports ²	90,977	76,137	127,253	145,999
Period reports ²	96,980	88,336	17,456	17,438
General reports ²	12,003	9,387	3,911	3,704
Total number of reports	199,960	173,860	148,620	167,141

¹ The focus of BAS reports is on the focus group: complainants who submit a complaint between 1 and 500 times per year. Individuals who submit more than 500 complaints per year are referred to as habitual complainants. They are mentioned in overviews but omitted from analyses in order to avoid a distorted picture.

² Specific complaints are complaints about noise nuisance at a specific time, period complaints are complaints of noise nuisance during a specific period and general complaints are all the complaints not directly related to noise nuisance from air traffic, such as environmental policy.

parties use the data as input for the development of policies and measures to reduce disturbance. The disturbance reports also provide input for Schiphol's noise reduction programme 'Minder Hinder' and also serve as input for Schiphol Airport's plans to be quieter, cleaner and better and in balance with the environment. In particular, several of the measures in the 'eight-point plan': the night closure, the ban on noisy aircraft and the ban on private jets.

Rise in number of complaints

In 2023, the number of complaints (199,960) increased by 15% compared to 2022, while the number of complainants (10,724) increased by 1.9% (within the so-called focus group). The total number of flight movements from/to Amsterdam Airport Schiphol increased by 11% in 2023 compared to the previous year. For more extensive information and a detailed analysis regarding data, please visit bezoekbas.nl.

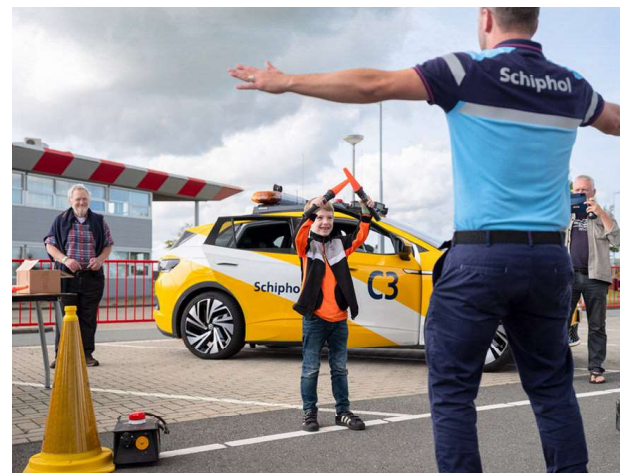
➔ Engaging with our communities

In April 2023, Schiphol Group made a strong commitment to our neighbours by introducing an eight-point plan to be quieter, cleaner and better. In our balanced approach response of 20 June 2023, we presented calculations using the ECAC Doc29 model, which show that measures such as night curfews, phasing out private jets and banning the noisiest aircraft would improve our neighbours' quality of life.

As part of our eight-point plan, we have also proposed an Environmental Fund. Schiphol will provide a total of 70 million euros (10 million euros per year), which will be used to improve the quality of life in the Schiphol Airport region. In 2023, we finalised details about the programme and governance of the fund. The Environmental Fund is expected to be operational in October 2024.

Engaging with our neighbours

Direct engagement with the community is an important responsibility for a major airport in a densely populated area. To rebuild the lack of trust our neighbours have in our ambitions, we need to create awareness and understanding of our vision and commitments. To enhance this engagement, we are continuously improving our communication channels, messages and information to be relevant and transparent. We regularly update our [website](#) for local residents and send out our monthly newsletter with information on various topics that affect our local residents, such as runway maintenance, noise disturbance measures and new operational procedures. Schiphol publishes a bi-weekly air traffic outlook, which contains forecasts for air traffic movements and runway use. In 2023, Schiphol organised its traditional Neighbour Days. Schiphol welcomed 4,000 neighbours for a unique behind-the-scenes look at our organisation and partners. Together with the Schiphol Aviation Community (LCS), we have developed a vision for cooperation with educational institutions. We provide them with information via our 'Jij en Schiphol' website and participate in all kinds of school projects.



Schiphol organized its traditional Neighbour Days. The airport welcomed 4000 neighbours who got a unique look behind the scenes of Schiphol and its partners.

To give residents more background information on runway maintenance, we have published a summary of the runway maintenance strategy on the website, in which we have sought an optimal balance between the impact on our residents, the aviation sector and the technical feasibility of the maintenance. In 2023, we carried out major maintenance on the Zwanenburgbaan Runway. We informed residents, journalists and other parties in advance about the work and its impact on the surrounding area. During the maintenance, we took a selected group of residents and journalists to the maintenance site to explain the work in more detail. Moreover, we had the opportunity to provide [De Stichting Hoogvliegers](#) with a unique runway drive. Looking forward we also worked on the planning for the maintenance of the Kaagbaan Runway in 2024 and started to prepare the communication campaign.

As ambassadors for the local community within our organisation, we discuss and develop measures to further reduce the impact on the surrounding area and set the agenda regarding the importance of reducing the negative impact on our surroundings.

Monitoring Schiphol's reputation

Research agency Motivaction provides regular insights into how Schiphol is perceived by local residents as well as the general public on issues such as communication, products, innovation, management and corporate social responsibility (CSR). In 2023, we observe a recovery in reputation scores showing clear evidence of our progress in addressing the problems of the previous year, such as the disruptions in operations, staff shortages, and working conditions at Schiphol. The reputation score went up from a 6.5 in 2022 to a 6.7 in 2023.

Schiphol Quality of Life Foundation

The Stichting Leefomgeving Schiphol ('Schiphol Quality of Life Foundation') oversees three main initiatives: 1) an improvement programme focused on area-specific projects, 2) a programme focused on individual measures, including those aimed at reducing noise-related disturbance, and 3) a funding programme focused on technology and innovation to improve the quality of life. Schiphol has made 20 million euros available to the

foundation, with funding also provided by the province of North Holland and the Ministry of Infrastructure and Water Management (Ministry of I&W).

In 2023, we helped approximately 50 people through the individual programmes. We also completed a number of large, area-specific projects, such as the Waterfront and the VVA site in Aalsmeer. These provide incentives to improve the quality of public space. We also made progress on innovative programmes funded by the Foundation, such as Fieldlab, an experiment exploring options for low-noise building, and DeNoize, a pilot project for new insulation technology.



The Schiphol Quality of Life Foundation completed a number of large, area-specific projects, such as the Waterfront in Aalsmeer.

The Foundation is in its final phase and will transition into a new Environmental Fund in 2024. As part of our eight-point plan, we will invest 10 million euros in this fund every year for the next seven years.

For more information, please visit stichtingleefomgeving.nl.

The Schiphol Fund

The Schiphol Fund promotes sports activities. Four times a year, it donates to public, non-profit sports associations in the area surrounding Schiphol Airport for facilities and equipment to encourage more exercise. In 2023, the Schiphol Fund received 375,000 euros, of which 297,269 euros was donated to 68 initiatives. The Schiphol Fund will have 400,000 euros at its disposal in 2024. If you would like to know more about the Schiphol Fund, please visit [our website](#).

Engaging with stakeholders

Schiphol engages with political stakeholders at a local, national and international level on a wide range of topics. In addition, we actively consult and cooperate with the Ministry of I&W, the Bestuurlijke Regie Schiphol (BRS, 'Schiphol Administrative Directorate', a partnership of 56 municipalities and 4 provinces in the Schiphol region), the Maatschappelijke Raad Schiphol (MRS, 'Schiphol Social Council'), air traffic control (LVNL) and the aviation sector.

Although Schiphol is not a formal member of the MRS, we have provided the MRS members with information in a number of meetings, for example on flight movement forecasts, runway maintenance and our eight-point plan. Both MRS and BRS were informed about the maintenance strategy and the major maintenance of the Kaagbaan Runway in 2024.

The year 2023 was a challenging year for the community and for the aviation sector. At the beginning of the year, the government adopted an Experimental Ruling, which is a necessary step to create a legal basis for noise enforcement policy and to improve the legal position for residents. The Ruling sets new noise limits and caps the total amount of air transport movements (ATMs) per year at 460,000. However, in November 2023, the government indefinitely suspended the Experimental Ruling. Schiphol is disappointed with this decision, as local residents are again getting the short end of the stick. This makes the night closure of Schiphol even more important, not to mention the other measures in our eight-point plan, such as the ban on private flights and the ban on the noisiest aircraft.



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Due to the suspended Experimental Ruling, Schiphol had to re-establish the capacity for the summer season via an addendum on the previously issued capacity declaration. In determining this addendum, Schiphol took into account the capacity at LVNL, Royal Netherlands Marechaussee and Customs. Schiphol then held various talks with airlines. The outcome is that the airport is planning to provide a capacity for 293.000 flights in the summer season, on the condition that peak times are relieved. This means that in 2024, there is room for 483.000 flights at Schiphol.

Schiphol Group actively engages with local councils, aldermen and other regional stakeholders. Together with LVNL, we organised a successful knowledge session for the BRS and their political representatives. The session was attended by 50 people. The CEOs of Schiphol and LVNL also attended a meeting in Uithoorn to address the concerns of our neighbours regarding the maintenance of the Kaagbaan Runway.

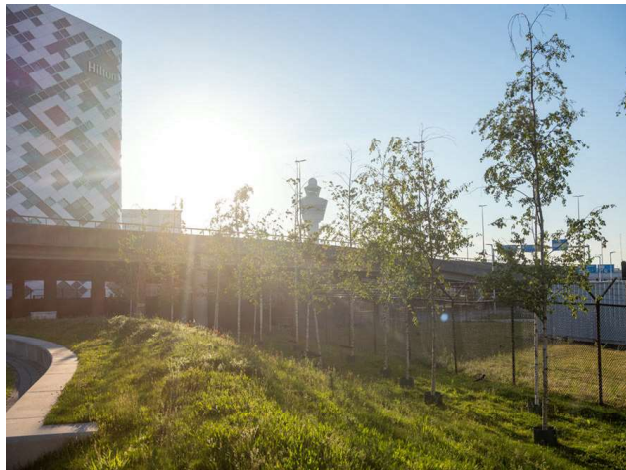
In the run-up to the early general election on 22 November, Schiphol engaged with the programme committees of the political parties and political and influential stakeholders to gain their support for our agenda on issues such as the night curfew, Lelystad Airport and the ban on private jets. Several election manifestos support our commitments.

At the European level, we are working closely with our partners and ACI Europe. Next year's European Parliament elections will take place in June, and preparations are already underway. In the European context, we are particularly active on issues such as the European entry/exit system, expanding the development and production of sustainable aviation fuels, slot reform and carbon leakage.

Biodiversity

In 2023, Schiphol Airport created a dedicated biodiversity policy that captures the importance of biodiversity to the airport and its stakeholders. The policy aims to help promote, maintain and preserve biological diversity, which refers to the variety of life on Earth at all levels, from genes to ecosystems. Going forward, our employees and third parties will be able to use the policy to embed biodiversity in projects taking place at the airport site. A key initiative will involve adjusting our grass-mowing strategy and increasing our use of pollinator mixes.

A further aim is to promote biodiverse buildings by recognising their multifaceted benefits. Green architecture enhances urban ecosystems, offering habitats for diverse flora and fauna and contributing to local biodiversity conservation. In addition,



In 2023 we have given biodiversity an impulse in our organisation by composing a biodiversity policy that captures the importance of biodiversity on Schiphol Airport.

features such as green roofs and walls help mitigate the urban heat island effect, reducing surface temperatures and energy consumption while also supporting air purification. Beyond environmental advantages, biodiverse buildings provide natural spaces that are shown to boost people's well-being and mental health.

Embracing biodiversity in building practices aligns with sustainability goals, making urban spaces more resilient and conducive to healthier living. To facilitate this, Schiphol has created a summary of different initiatives to align designers and architects with Schiphol Airport's vision for biodiverse buildings.

Measuring environmental impact during the procurement process is another priority. By integrating considerations for biodiversity and adhering to eco-friendly certifications such as EcoVadis, Schiphol can strategically manage risks associated with environmental impact and resource use. This approach aligns with aviation industry regulations and underscores our commitment to responsible sourcing practices.

Societal value

Schiphol Airport is a key contributor to the Netherlands' identity as a trading country. It is also a key contributor to the nation's success on an international level. Its extensive network and modern infrastructure make it a vital gateway to Europe and an indispensable hub for international commerce. Indeed, Schiphol is much more than an airport: it is a comprehensive ecosystem, supporting a wide range of activities and businesses that extend beyond its runways.

AirPort City Schiphol

Schiphol Airport is an excellent example of an AirportCity: a leading, efficient airport that operates 24/7, providing essential services to businesses and visitors alike. This non-stop operation has an impact on the Amsterdam region, attracting international companies and institutions, thereby fuelling economic growth and job creation. The concept of airport city, encompassing the



Our important economic contribution includes our role in supporting a wide range of jobs, from high-skilled positions to those requiring fewer qualifications.

airport, airlines and the surrounding metropolitan region, highlights the integrated nature of its operations. This ensemble of interconnected businesses and activities not only facilitates the flow of people, goods and knowledge but also drives innovation and cultural exchange.

The regional airports within Schiphol Group, including Eindhoven Airport and Maastricht Airport, complement the main airport's services. These airports cater to regional business and leisure travel, supporting the concept of selective growth and focusing on non-mainport destinations. This strategic approach helps distribute air traffic, contributing to the overall efficiency and sustainability of the Dutch aviation sector.

Air freight

Schiphol Airport also plays an important role in air freight. The combination of passenger and cargo transport makes it a pivotal marketplace for logistics. Its strategic location and connectivity have attracted European headquarters and distribution centres, facilitating the development of local companies into international players. The types of goods transported via air freight from Schiphol Airport – ranging from perishable items to high-value electronics and pharmaceuticals – underscore the airport's importance in global trade.

Tourism

Tourism is another key area where we make an impact. Our airport's extensive network connects the Netherlands to major global cities, driving the growth of the tourism sector. Its role as a hub for transit and transfer passengers enhances its capacity to connect a multitude of destinations, crucial for maintaining a robust network. This, in turn, supports the Dutch economy, with tourism being a considerable source of employment and revenue.

Dynamic job market

Our important economic contribution includes our role in supporting a wide range of jobs. More than 1,300 employers are connected to the airport, with a combined employee base of approximately 71,000 people. Our airport's 24-hour operations therefore create a dynamic job market, attracting a diverse workforce and supporting various sectors, including logistics, retail, hospitality and more. In addition, our Quality of Work pillar aims to provide inspiring and attractive working conditions for Schiphol's employees, promoting health, safety, and positive labour relations.