FINAVIA

2019

Responsibility report

Finavia in brief

Finavia is an airport company which operates and develops 21 airports in different parts of Finland. We serve Finnish and international passengers and airlines. Our key mission is to ensure smooth travel from Finland to different parts of the world and back. By developing airports and smooth connections, we create jobs and support Finland's international competitiveness.

We bear our responsibility for the impact of our activities on people, the environment and society at large. Safety, security, sustainable development and connectivity are at the core of our responsibility. At Finavia, responsibility consists of details, and every single detail counts.

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Finavia's Annual report 2019

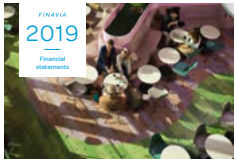
Finavia's Annual report 2019 consists of an Annual review, Responsibility report, Corporate governance and remuneration statement and Financial statements, which are published as separate PDF documents on our website.

www.finavia.fi

ANNUAL REVIEW

RESPONSIBILITY REPORT

CORPORATE GOVERNANCE AND REMUNERATION STATEMENT

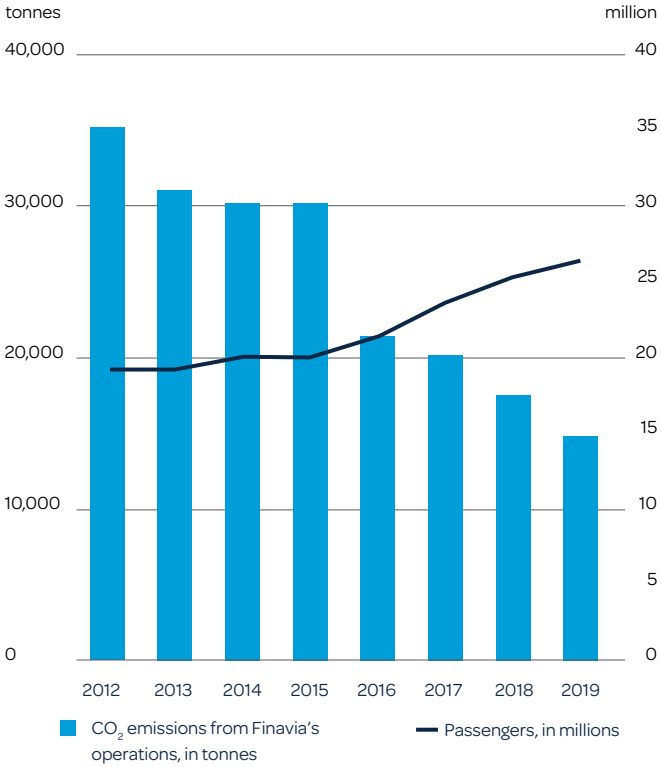


FINANCIAL STATEMENTS

Key events in 2019

All Finavia airports are carbon neutral in 2019.

CARBON DIOXIDE EMISSIONS FROM FINAVIA'S OPERATIONS AND PASSENGER VOLUMES



In 2019, we implemented innovative water protection measures to reduce the environmental impact of winter maintenance.

Our PeoplePower index continued rising and was

69.1

There were less absences due to illness. Our sick leave rate was

3.2

At Finavia, a woman's euro is 97 cents, which is 13 cents more than the average in Finland.

Finavia's safety culture grew stronger and our personnel see promotion of safety as an even more important aspect of their work than before.

Measured in the number of connections, Helsinki Airport is the **most networked hub airport in the Nordics.** We will continue our work on improving Finland's accessibility.

CUSTOMER SATISFACTION AT NETWORK AIRPORTS IN PROPORTION TO PASSENGER VOLUMES IN 2019

4.28 /5

INTERNATIONAL ASQ GRADE MEASURING CUSTOMER SATISFACTION AT HELSINKI AIRPORT

4.16 /5

Financial added value distributed by Finavia was **EUR 522.4** million in 2019.

Responsibility at Finavia

Responsibility for people, the environment and society at large is an integral part of our business. We focus on key responsibility themes that also steer our responsibility reporting.

In 2019, our key responsibility themes were responsible growth, improved accessibility and customer experience, and providing a safe work environment. At Finavia, responsibility consists of details that form a positive chain of events.

Key factors

Key factors in Finavia's responsibility are divided into three groups:

1. **factors that produce the highest added value for stakeholders and society, and which we develop proactively;**
2. **factors that improve the efficiency of operations, and which we develop, monitor and report; and**
3. **factors that ensure the continuity of our operations, and which we maintain at a high level.**

Factors that produce the highest added value for stakeholders and society at large

Connectivity

We promote the mobility of people, goods and services by enabling operational prerequisites for air traffic. By doing this, we provide a solid basis for extensive domestic and international flight connections. Management practices regarding connectivity are operational goals, financial targets and Finavia's management system.

Disclosed information relevant to Finavia's operations:

- GRI 202 Market postion
- GRI 203 Indirect economic impact

Safety and security

Safety and security are at the core of all our operations. In cooperation with our partners operating at our airports, we ensure the safety of air traffic and air travel and the security of the information systems supporting them. The Finnish Transport and Communications Agency (Traficom) supervises flight safety. Management practices regarding safety and security are management of corporate responsibility, risk management policy, corporate security, safety management system, risk assessments and occupational safety and health management system.

Disclosed information relevant to Finavia's operations:

- GRI 416 Customer safety and health
- GRI 403 Occupational safety and health

Customer experience

Our service attitude guarantees an excellent customer experience. Our safe and effective services make travelling smoother and offer experiences and unforgettable moments. Management practices regarding customer experience are Finavia's strategy and key programmes and customer satisfaction survey.

Disclosed information relevant to Finavia's operations:

- GRI 416 Customer safety and health
- GRI 203 Indirect economic impact

Responsible growth

Responsible operations and sustainable development at airports are at the core of Finavia's business. This means that we bear our responsibility for the impact of our operations on people, the environment and society at large – carefully, conscientiously and by taking care of every detail. Our goal is that our expanding operations do not increase our environmental impact. Management practices regarding responsible growth are Finavia's strategy and key programmes and customer satisfaction survey.

Disclosed information relevant to Finavia's operations:

- GRI 201 Financial results
- GRI 203 Indirect economic impact

Factors that improve the efficiency of operations

High wellbeing at work

We want to ensure a high level of wellbeing at work, and that people want to come to work for Finavia. Employees who feel well, enjoy their work and are able to develop continuously in their work ensure an excellent customer experience, safe travel and close cooperation with our customers and partners.

Transparent cooperation in the value chain

Airlines, passengers, Finavia's personnel, hundreds of companies operating at our airports, the authorities, decision makers and people living around our airports are our key stakeholder groups. We develop our operations and the sector by engaging in an open dialogue with our stakeholders.

Ability to change

To keep up with international competitors, Finavia and its airports need to change all the time. We update our operating practices and apply technologies with our partners to respond to the growing expectations of our stakeholders concerning smooth travel and services.

Global environmental impact

We reduce the climate impact arising from our operations by ensuring the energy efficiency of our airports and by using renewable energy, for example. With airlines, we also improve the environmental efficiency of air traffic through reduced taxiing, for example. We also play an active role in the international environmental work in the sector.

Local environmental impact

By working with airlines and the air navigation service company ANS Finland, we develop solutions for noise control related to air traffic. We are constantly developing solutions to reduce the environmental impact of the anti-skid and de-icing agents used at airports. We cooperate with airport neighbours, municipalities, environmental authorities and air traffic organisations. Airport operations are governed by strict environmental permits, and compliance with them is supervised by regional Centres for Economic Development, Transport and the Environment (ELY).

Factors that ensure operational continuity

Compliance with standards

We comply with laws and good corporate governance in all our operations. We communicate our operations, management systems and remuneration practices in an open manner. Finavia observes the Corporate Governance Code of Finnish listed companies to the appropriate extent, given state ownership and the nature of our operations.

Impact on regulations

We aim to foresee the impact of national and international laws and regulations on Finavia's business operations. Airport operations are governed, for example, by international aviation regulations and EU-level laws and regulations. We engage in an active dialogue within the sector and with our neighbours and the authorities.

Responsibility goals

Finavia's responsibility goals are related to sustainable growth and profitable business, improvements in good connections, Finland's competitiveness, and wellbeing at work.

Sustainable growth and profitable business

The aim of our climate programme is to continuously reduce emissions caused by Finavia's operations. Our goal is that our expanding and developing operations do not increase our environmental impact.

Helsinki Airport has been carbon neutral since 2017. During 2019, all our other airports also became carbon neutral. We achieved our goal of carbon neutral airports one year ahead of our original schedule. We will continue to reduce our emissions, and our next goal is to have zero emissions throughout our company. In addition, we aim to have an impact on the environmental goals of other companies operating at our airports. We promote the use of renewable diesel and encourage other companies operating at our airports to broaden their range of responsible products and services.

We evaluate all investments from every angle to ensure that they are justified and responsible. Our investments and financial development have a significant impact on society at large. The impact of the Helsinki Airport development programme on employment alone is roughly 16,000 person-years, and the expanded airport is expected to create 5,000 permanent jobs.

Finavia aims to maintain its high profitability, regardless of the massive Helsinki Airport development programme.

Improvements in good connections and Finland's competitiveness

Our goal is to improve smooth and safe travel and diverse connections, and to develop high-quality services. Helsinki Airport is a significant hub for flight connections between Europe and Asia. Furthermore, our airports in Lapland offer excellent connections to different parts of Europe. Finavia is working actively to expand routes offered from Finland to every part of the world.

Satisfied employees and an attractive workplace

Our employees are committed and dedicated to work here. We always want to develop our working community to make Finavia an attractive and inspiring workplace – and in the future as well. We consider investments in occupational safety and wellbeing at work to be very important, and we monitor related indicators closely.

Management of responsibility

Finavia's responsibility is steered by its safety culture and values, its customer promise of a smooth airport experience, policies and guidelines, Code of Conduct and corporate governance. Every Finavia employee must act responsibly and promote responsibility.

Decisions that ensure the responsibility of Finavia's operations are jointly made by the CEO and the Executive Group. Finavia's Board of Directors actively monitors the management of responsibility and regularly discusses matters pertaining to the company's finances, sustainable development and social responsibility. All policies observed in the company are approved by the Finavia Board of Directors. Financial profitability, customer satisfaction and safety are the corporate responsibility indicators set out in Finavia Group's scorecard.

Practical aspects of environmental responsibility are coordinated by Finavia's environmental unit and sustainable development director in cooperation with business areas and airports, which function as profit centres in the business areas.

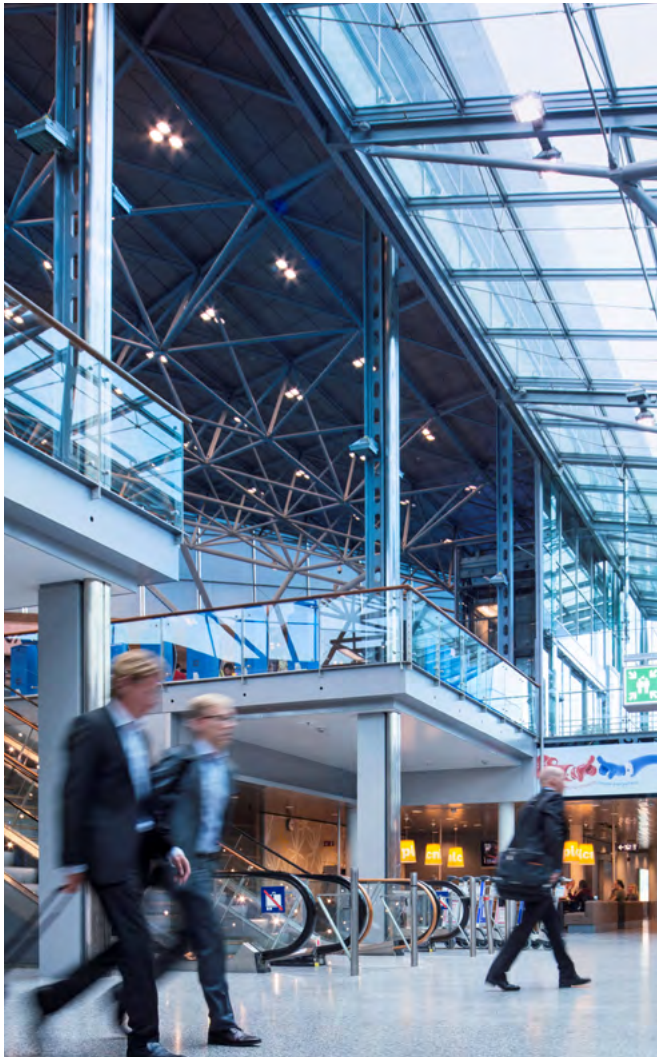
Finavia complies with the certified ISO 14001 environmental system. Finavia's environmental policy lays the foundation for the setting of environmental goals and targets that are approved by the CEO. We also identify the functions and services that generate the most significant environmental impact we can influence. The environmental goals and targets are divided into long-term (5–10 years) development programmes and annual action programmes. Finavia measures its environmental impact and monitors the effectiveness of actions taken on a regular basis.

The CFO is responsible for implementing economic responsibility at a practical level. Consideration and promotion of social responsibility is the task of a number of different parties at Finavia. For example, the Group's HR matters are the responsibility of the HR director and the HR unit. The management of social responsibility is also steered by Finavia's personnel strategy and the detailed action plan based on it, as well as Finavia's Code of Conduct. The Group's safety unit coordinates the management and development of safety in accordance with the risk management policy.

Finavia is engaged in an active dialogue with its stakeholders, coordinated by the communication unit, and the feedback we receive is an important consideration in our responsibility activities. According to the company's communication policy, we aim to communicate proactively, transparently and openly.

Finavia requires its suppliers to abide by applicable laws, regulations and good trading practices, as well as sustainable development principles and responsibility. Finavia's procurement responsibilities and procedures are specified in the procurement policy. Procurement resources and methods are developed in a goal-driven manner so that the different aspects of social responsibility and their applicability to all service agreements can be ensured.

Finavia is committed to good governance in all its operations. Effective internal control and risk management help to ensure high operational performance, and they constitute an essential element of the good corporate governance observed by the Group. Finavia's Code of Conduct, operating manual and procurement principles, among others, set guidelines for Finavia's operations in line with standards. The transparency of governance is ensured by complying with the Finnish Corporate Governance Code for Listed Companies to the extent that it is practicable in a company owned by the State of Finland. Finavia monitors the results of its corporate responsibility and reports them in its corporate responsibility report by using indicators in accordance with the standards of the Global Reporting Initiative (GRI). Corporate responsibility reporting is coordinated by the communication unit.



Stakeholder cooperation

Our stakeholders include a broad range of different parties from socially significant organisations down to individual passengers. Maintaining a continuous dialogue with our stakeholders is important to us.

We aim to work especially with organisations and parties which have the most impact on Finavia's business operations, and which we can influence through our activities.

Our key stakeholders include airlines, passengers, personnel, the authorities, the state and municipalities, people living around our airports, companies operating at our airports, partners, subcontractors and suppliers, financiers and owners, and media services. We are engaged in an especially close dialogue with airlines, companies operating at our airports, the authorities and decision makers. Finavia has appointed a dedicated responsible person for key stakeholders to coordinate cooperation.

Memberships in aviation associations

Finavia participates in the development of the sector in several Finnish and international organisations and working groups, as well as in development forums in the travel industry. For example, Finavia is a member of the Airport Council International (ACI Europe) and participates in its working groups. At the end of the year, Finavia joined as member in Nordic Network for Electric Aviation (NEA), that enhances electric aviation in the Nordic countries.

Finavia is a founding member of the Nordic Initiative for Sustainable Aviation (NISA). Its goal is to expand the use of biofuels to the aviation industry.

As a member of the World Travel & Tourism Council, the Nordic Travel Retail Group and the Nordic Council of Shopping Centres, Finavia also develops the travel industry and the commercial potential of airports on an international scale. Finavia is a member of PALTA, the Association of Service Sector Employers.

Charity and sponsorship policy

Every year, Finavia donates money to charities that it considers socially important. Finavia also sponsors causes that help to promote the company's business operations. In accordance with our charity and sponsorship policy, we do not donate money to political parties, politicians or political institutions.

In 2019, Finavia spent a total of EUR 87,900 (94,000) on charity and sponsorships. In 2019, Finavia donated EUR 15,000 (13,600) to charity.

Finavia has cooperated with Plan International Finland since 2009. By the end of 2019, approximately EUR X has been collected at airports for children in developing countries. Passengers can make donations at Helsinki, Oulu and Kokkola–Pietarsaari Airports. Donation boxes collected a total of EUR X in 2019. In Finland, Finavia supports families with children by participating in the Christmas Spirit campaign organised by the Finnish Red Cross and the Mannerheim League for Child Welfare.

Finavia is also an official partner of the Finnish Olympic Committee. This cooperation will continue when the Olympic Games are held in Tokyo, Japan, in 2020 and in Beijing, China, in 2022.

Responsible procurement

Finavia is a major buyer of goods and services – both locally and nationally. Procurement and supply chain management are integral to our responsibility. In 2019, Finavia acquired goods and services from 2,842 suppliers. Our purchases totalled approximately EUR 370 million. We aim to consider different areas of responsibility when planning procurement activities, and we are constantly developing our responsible procurement practices.

Most of the goods, services and investment commodities that we use are purchased from Finnish suppliers. A dedicated responsible person has been appointed for all of Finavia's procurement categories. Other expenses, such as air traffic monitoring charges, constitute independent categories.

We expanded our procurement agreement on renewable fuel at the end of 2019 and used recycled material throughout the year in

Our goal is that from 2021, actions related to social responsibility will be part of our procurement process.

new work clothing acquired for Finavia's customer service employees. Our discarded work clothing is used to manufacture composite material and composite furniture that we have acquired for Helsinki Airport, for example.

We identify the most significant suppliers considering responsibility, and we will continue the categorisation and risk category assessments, started in 2019, of our suppliers. We will also prepare criteria for monitoring and evaluating supplier categories. We will describe and define practices to develop the consideration of social responsibility factors in Finavia's procurement activities. Our goal is that from 2021, actions related to social responsibility will be part of our procurement process.

The procurement legislation steers Finavia's bidding processes. In addition, the Code of Conduct for suppliers of goods and services released in 2018 increases the transparency of competitive bidding. Since the beginning of 2019, the Code of Conduct has been an integral part of all agreements between Finavia and its partners. In cases below the EU threshold value, Finavia requires the fulfilment of the contractor's obligations and liabilities, one aspect of which is the prevention of the grey economy. Procurement activities abide by the Act on Procurements and Concession Contracts of Entities Operating in the Water and Energy Supply, Transport and Postal Services Sector (1398/2016).

In 2019, our bidding processes included shop and restaurant services, rescue equipment and textile services. In our bidding processes, we aim to consider any opportunities to optimise the logistics chain and reduce the carbon footprint of Finavia's goods deliveries. We also encourage our suppliers and partners to develop their operations. For example, we require our suppliers to provide a responsibility plan as part of minimum requirements in our bidding processes. Furthermore, we react to any non-conformities discovered during cooperation, including the use or recycling of packaging material.

In 2019, we combined the pick-up of clean laundry and the delivery of dirty laundry with the delivery of replacement carpets and hand towels. As a result, we were able to significantly reduce the amount of transportation and improve its efficiency for the benefit of the environment.

STAKEHOLDER	ISSUES BROUGHT UP BY STAKEHOLDERS	EXAMPLES OF FINAVIA'S ACTIONS IN 2019	FORMS OF COOPERATION
Airlines	• Digital services and developing the customer experience • Efficient and punctual airport services and competitive pricing • Regulation as a cost factor • Continuous development of operations and Finavia's initiative • Close and open cooperation and communication • Improving awareness of Helsinki and Finland to create demand for routes	• Routes to Helsinki opened by three Chinese airlines • Maintaining Helsinki Airport's efficient operations during the expansion project • Maintaining our position as one of the most affordable main airports in Europe • Targeted marketing of Finland with different regional parties and Visit Finland • Successful development of routes to and from Lapland through the new Istanbul–Rovaniemi route, for example	• Regular customer-specific meetings, continuous dialogue and cooperation • Quarterly briefing and consultancy meetings regarding the Helsinki Airport development programme • Preparation and joint assessment of route development analyses • International visibility of Finavia's airports • Development of routes and joint marketing with airlines • Helsinki Airport's visibility in targeted markets through campaigns • Customer surveys
Passengers	• Flight safety • Purposeful airport network and diverse domestic and international connections • Smooth service at airports, high standard of customer service • Diverse shopping and service opportunities • Activities in line with environmental responsibility	• Reliable and visible activities to ensure flight safety • Improved efficiency of operations in cooperation with other parties operating at airports • Ensuring smooth travel during different construction stages under development programmes • Improving experiences at airports and providing more shopping opportunities • Smoother passenger processes by means of automation and technology • Continuous development of websites and mobile applications • Joint service and cultural training for airport operators • Information signs in multiple languages at Helsinki Airport • Targeted services for Chinese passengers • More continuous measurements of customer satisfaction • Carbon neutrality	• Communication regarding safety activities • Personal service situations • Customer feedback channels and customer satisfaction surveys • Websites, newsletters, bulletins, social media and mobile apps • Events • Cooperation with other service providers at airports to offer a harmonious customer experience

STAKEHOLDER	ISSUES BROUGHT UP BY STAKEHOLDERS	EXAMPLES OF FINAVIA'S ACTIONS IN 2019	FORMS OF COOPERATION
Personnel	• Wellbeing at work • Encouraging and fair remuneration • Continuous and close cooperation • Continuous development of competence • Questions related to improved operational efficiency • Good management and supervisory work • Ethical operating methods	• Wellbeing projects • Personnel survey • Training, peer support and coaching for supervisors • Customer service training for the personnel • Clearer goal setting, performance management and assessment • Development of a performance-based bonus scheme	• Performance and target appraisals • Intranet and information screens • Staff briefings • Training sessions • Expanded occupational healthcare • Cooperation with shop stewards and monthly meetings with personnel organisations • Presentations at shop steward events of personnel organisations
Authorities	• Compliance with regulations and Finavia's own guidelines • Helpful and active approach in official matters • Changing threat assessments of security authorities • Quick response to environmental damage and customer queries • Up-to-date environmental reporting	• Reviewing airport safety and security plans, and testing them in cooperation with different authorities • Compliance with regulations and Finavia's own guidelines and principles • Influencing the development of regulation in the industry • Implementation and application of aviation regulations by the European Aviation Safety Agency (EASA) • Well-organised material in applications for environmental permits and replies regarding appeals • Reporting to the authorities on environmental issues raised by local residents • Developing the environmental reporting process • Participation in the noise control working group coordinated by Traficom • Cybersecurity cooperation with different companies and authorities	• Continuous dialogue, meetings, working groups with authorities • Preparations for and reactions to changes in the operating environment (for example, with Finnish Customs, the Police of Finland, the Finnish Border Guard) • Joint overview and communication • Transparent and reliable reporting • Member participation in the activities of the airspace control advisory group • Fulfilling cybersecurity at Helsinki Airport, defined as a significant location considering the functioning of society, in cooperation with the authorities (Traficom)

STAKEHOLDER	ISSUES BROUGHT UP BY STAKEHOLDERS	EXAMPLES OF FINAVIA'S ACTIONS IN 2019	FORMS OF COOPERATION
Financiers and owner	• Efficiency and profitability • Financially sustainable business • Transparency of operations and reporting • Environmental responsibility • Ability to pay dividends	• Maintaining growth and good profit-making ability • Strong balance sheet • Sustainable investment plans • Business operations compliant with Finavia's operating principles and guidelines	• Meetings and communication • Financial reporting • Reporting environmental indicators to owners • Contact with state ownership steering • General Meeting of Shareholders
State and municipalities	• Provision of cost-efficient air traffic services • Good accessibility of Finland and its different regions • Promotion of business and competitiveness through well-functioning air traffic • Land use planning around airports to prevent new noise issues • Seeking synergy benefits between airports and municipal functions • Local employment effect	• Enhancement of operations as part of the air traffic service chain • Competitive pricing • Employment effects of the Helsinki Airport development programme and the investment programme for network airports • Closer cooperation with the EU • Cooperation with regional councils in the preparation of regional plans and the implementation of national land use goals • Cooperation with the City of Vantaa in issues concerning land use, runoff water and noise control • Improved water protection at different airports • Issuing statements on land use plans • Cooperation with the City of Vantaa in planning processes • Master plans and the development of Aviapolis	• Continuous dialogue • Meetings, working groups

STAKEHOLDER	ISSUES BROUGHT UP BY STAKEHOLDERS	EXAMPLES OF FINAVIA'S ACTIONS IN 2019	FORMS OF COOPERATION
Residents in the proximity of airports	• Aircraft noise control • Minimised environmental impact caused by runoff • Open line of communication, hearing and having an impact	• Increasing the continuous descent approach of aircraft • Communicating the direction of noise caused by the Helsinki Airport modernisation and aircraft • Illustrative material for aircraft noise permit issues announced by the Regional State Administrative Agency • Revising the Helsinki Airport aircraft noise control plan • Reducing emissions into the air and soil, e.g. centralised de-icing locations • Developing the storage of hazardous waste at airports • Participation in events in Vantaa and Espoo • Cooperation with schools in Vantaa • Cooperation with residents in the Kylmäoja remediation project	• Environmental feedback channel and responding to queries • Regular reporting also available to residents • Internet, social media • Local events • Model of participatory planning • WebTrak flight tracking and noise measurement service
Companies operating at airports, partners, subcontractors and suppliers	• Business relations that benefit both parties • Open dialogue and good personal relationships • Good project management and Finavia's ability to fulfil agreed obligations • Creating a fair competitive situation for operators at the airport • Well-functioning operational infrastructure and working conditions • Equal treatment • Finavia's responsibility and good reputation as a partner	• Employment effects of the Helsinki Airport development programme and the investment programme for network airports • Expansion and internationalisation of the partner network • Closer cooperation with suppliers • Implementing the Helsinki Airport development programme through joint contracting • Assessing the environmental impact of purchases • Including the Code of Conduct for goods and service suppliers in every new agreement • Creation and management of overall safety at airports	• Briefings for potential bidders regarding each project greement negotiations • Daily contact, follow-up meetings and safety meetings • Development projects • Training sessions

STAKEHOLDER	ISSUES BROUGHT UP BY STAKEHOLDERS	EXAMPLES OF FINAVIA'S ACTIONS IN 2019	FORMS OF COOPERATION
Media	• Reliable, transparent and up-to-date information • Media access to management and corporate communication • Environmental responsibility	• Active communication in different channels	• Bulletins and briefings • Interviews • Meetings providing background information • Events and visits • Media Desk service • Comprehensive environmental reporting
Military and state aviation	• Safety • Level and smoothness of services (e.g. operating hours at airports) • Efficiency	• Cooperation related to drills by the Finnish Defence Forces • Tripartite cooperation between the Finnish Defence Forces, ANS Finland and Finavia	• Local dialogue and customer service at airports • Regular cooperation meetings • Membership in the airspace control advisory group of the Ministry of Transport and Communications • Working groups
General aviation	• Support and services at airports • Listening and discussion • Pricing policy for season tickets • Safety • Smooth access at airports	• Maintaining the price of a season ticket for recreational aviation at a low level • Enabling air shows and other aviation events at network airports • Standard methods for moving around at airports and developing access systems	• Local dialogue • Meetings of the cooperation body of Finavia and the Finnish Aeronautical Association • Relationships with interest groups and aviation schools

There are over 1,500 companies and other organisations at Finavia's airports in charge of ensuring air traffic's smooth and safe operations.

Finavia and it's subcontractors · The Finnish Border Guard/ Customs/Police · Bus, train and taxi companies · Airlines and their subcontractors · ANS Finland · Commercial operators

Finavia creates value

Finavia's operations are guided by a vision under which we offer air passengers the best connections between Northern Europe and the rest of the world while promoting Finland as an attractive and easy-to-reach destination.

The purpose of Finavia is to promote the mobility of people and goods and to support international connections by providing safe, high-quality and cost-effective services for air passengers and air traffic.

We create value for our owner, the State of Finland, and society at large by providing efficient and reliable connections with the rest of the world as well as by investing in the development of our airports and the surrounding areas. We create value for our customers. The services of our airports are based on smooth and efficient operations on the one hand, and on comfort and experiences on the other.

Our operations also impact the environment. We are constantly working to mitigate the environmental impacts of our operations and to develop stakeholder cooperation and environmental communications.

Connectivity

Connectivity is the most significant of Finavia's responsibility themes. Diverse flight connections are vital for the competitiveness of Finnish companies. Well-functioning flight connections provide Finnish people with access to a quick and easy way to travel.

Finland is an island in the northeast corner of Europe. However, our location between east and west is a significant geographical advantage, because Finland can offer the shortest route between Asia and Europe.

Finavia's airports, combined with the diverse routes of airlines, make Finland a central and easily accessible destination. Well-functioning flight connections are a must for the vitality and competitiveness of Finnish companies. By taking good care of these connections, we can produce significant added value for our stakeholders and society at large. Air traffic is needed, for example, for imports and exports of goods, establishing international networks, and the cross-boundary management of value chains. Connectivity is also vital for the development and growth of tourism in Finland.

Finland's flight connections do not serve Finnish companies alone. When international companies expand to new market areas, they consider how easily these market areas are to access, and how supply chains can be arranged. Investors also consider the same questions: good flight connections make a potential investment objective more attractive.

Finavia has developed flight connections in the long term to improve Finland's connectivity and attractiveness. In 2019, three Chinese airlines (Juneyao Air, Tibet Airlines and Sichuan Airlines) opened new routes to Helsinki Airport. Important new routes were also opened in Lapland when Turkish Airlines, among others, started flying from Istanbul to Rovaniemi.

In recognition of the developed connections in Lapland, the Finnish Lapland Tourist Board gave the award for the best travel achievement of the year in Lapland to Finavia in 2019. This award recognised Finavia's investments in route development and a broadened service range at airports in Lapland, helping to increase tourism in Finland.

Finavia markets Finland in cooperation with Visit Finland, House of Lapland, regional organisations and tourist operators to increase the attractiveness of Lapland and the rest of Finland. In 2019, targeted marketing campaigns were carried out, for example, in China, Estonia and Russia.

In its competitiveness report, the World Economic Forum (WEF) ranked Finland's airport network the fourth best in the world. According to the Airport Industry Connectivity Report 2019, Helsinki Airport is the most networked airport hub in the Nordic countries and is in 12th place at a European level, measured by the number of connections.

Finland's connectivity is continually improved by developing travel chains related to air travel, for example, with shipping companies. This development will also be continued in 2020, steered heavily by the programme initiated by the Ministry of Transport and Communications towards a national 12-year transport system plan.

INTERNATIONAL ROUTE DESTINATIONS BY AIRPORTS

	2017	2018	2019
Helsinki	149	162	**169**
Enontekiö	3	4	**5**
Ivalo	7	6	**6**
Joensuu	1	2	**3**
Jyväskylä	3	4	**2**
Kajaani	0	0	**1**
Kemi	4	0	**0**
Kittilä	17	16	**19**
Kokkola	3	3	**2**
Kuopio	5	4	**5**
Kuusamo	3	7	**9**
Maarianhamina	1	1	**1**
Oulu	11	12	**9**
Pori	1	1	**2**
Rovaniemi	16	16	**15**
Savonlinna	1	1	**1**
Tampere	10	17	**9**
Turku	5	9	**11**
Vaasa	10	10	**9**

INTERNATIONAL ROUTE DESTINATIONS BY CONTINENTS

To Asia	20	22	**24**
To America	9	8	**10**
To Europe and Middle East	117	126	**129**

Over 10 flights annually.
The figures include charter flights.

Services and customer experience

Serving passengers and improving the customer experience are at the core of our strategy. Every Finavia employee works to ensure smooth travel and provide exceptional customer experiences.

An exceptional customer experience makes us stand out strategically from our international competitors. Finavia ensures that our customer promise "For smooth travelling" is fulfilled in every passenger and airline encounter.

Improving the customer experience is based on extensive research and four pillars of customer experience: feeling relaxed, feeling secure, feeling refreshed and the feeling of Finnishness. These pillars of customer experience steer the development of processes and services and are integral parts of decision-making processes.

During 2019, we improved a harmonious customer experience at our airports. Finavia's employees and the employees of all other companies operating at our airports are expected to understand the significance of our customer experience pillars in practice and adopt them as our common cause. We launched the Finavia Experience Academy, a coaching programme for airport employees working at the customer interface to offer a harmonious customer experience throughout the passenger path. The coaching programme will continue in 2020.

Modern technology makes travelling smoother

We are constantly seeking new ways to enhance processes and offer attractive services based on modern technology. For airlines, our development measures mean shorter turnaround times and more punctual operations. For passengers, the improvements mean smooth services, quick transfers and easier travel. The digitalisation and optimisation of processes also help our employees to enjoy their work more.

In 2019, our development measures focused on the security check process, and our digital sales and communication channels. In the new part of Helsinki Airport, we opened a modern security check area using the latest technology. It will produce benefits for transit passengers. The modernisation was a significant improvement in the efficiency of transit passengers' security checks, and it also improved customer satisfaction.

During 2019, we developed our digital sales and communication channels. As a result, the use of our digital services increased. We especially focused on pre-booked parking and interactive airport maps. We also carried out various tests during 2019. For example, we tested an autonomous maintenance vehicle in various conditions at Ivalo and Jyväskylä Airports.

Ensuring the safety, security and functionality of airports is a top priority for Finavia. To meet this end, we place the functionality of technologies and processes under exhaustive testing before new functions or facilities are commissioned.

We monitor customer satisfaction closely

We monitor customer satisfaction at our airports through regular surveys, and we react quickly to feedback to maintain the customer experience at an excellent level. Finavia uses a feedback process whose purpose is to allow us to respond to customer feedback as quickly as possible.

We confirm the target levels for customer experience indicators every year. Customer satisfaction at Helsinki Airport is measured using the international Airport Service Quality (ASQ) survey, while customer satisfaction in the airport network is measured by means of a separate questionnaire.

We use information obtained from customer surveys to understand our customers' changing needs and develop our services. We also monitor customer satisfaction in real time, for example, in parking facilities and gate areas. On the basis of feedback, we can quickly take corrective actions.

An indication of our success is that the Airport Council International (ACI) gave Helsinki Airport the ASQ Award as the best airport in its size category (15–25 million passengers per year) in Europe. The award is given to airports that passengers consider to offer the best customer experience. It is the first recognition given to Finavia of our dedication and commitment to customer service.

Airport Council International: Helsinki Airport is the best airport in Europe in its size category, measured by customer experience.

Ensuring excellent customer experience during construction

We were able to maintain our high customer satisfaction in 2019 despite massive construction projects. Especially at our network airports in Ivalo and Kittilä, customer satisfaction was excellent in 2019. Helsinki Airport almost reached the previous year's level.

Maintaining a high level of customer satisfaction during construction projects is the result of thorough planning. With companies operating at our airports and different authorities, we studied different scenarios, used mystery customers to ensure quality and focused on information boards. To ensure a good customer experience, we also increased the amount of communication offered to passengers, stakeholders and media services. Moreover, we developed real-time measurements to continuously obtain information about customer satisfaction.

CUSTOMER SATISFACTION AT NETWORK AIRPORTS IN PROPORTION TO PASSENGER VOLUMES IN 2019

4.28

/5

INTERNATIONAL ASQ GRADE MEASURING CUSTOMER SATISFACTION AT HELSINKI AIRPORT

4.16

/5

Responsible and profitable growth enables operational development

To successfully implement our strategy, Finavia must maintain its financial performance. Responsible and profitable growth enables the development of airport operations in the future as well.

Responsible growth means that Finavia's decisions and investments have a minimum impact on our shared environment. It also means that Finavia can maintain its competitive position, make investments and develop its operations in various ways. Together, these factors secure the continuity and development of our operations to ensure that we can meet the expectations of airlines and passengers, and maintain a first-class safety culture. Finavia's revenues comprise the air traffic charges paid by airlines, facility and plot rents paid by companies operating at airports, rents for advertising spaces, and parking fees.

Finavia Group's revenues increased in 2019 to EUR 398.2 (377.3) million. Profit before taxes decreased to EUR 40.5 (58.4) million, and the operating result decreased to EUR 34.3 (45.3) million.

Finavia's goal is to pay dividends to the State of Finland, its owner, within the constraints of its financial results and distributable assets. Finavia is currently defining its dividend policy. Finavia's Board of Directors proposes that EUR 11.1 (11.1) million be distributed in dividends for the 2019 financial year.

Continuously improving efficiency

The efficiency of Finnish air traffic services has been ranked the fourth best in the world (World Economic Forum, Global Competitiveness Report 2019). Efficiency is one of the cornerstones for sustainable and profitable growth of Finavia's business operations. The maintenance and development of airports is a highly capital-intensive business, in which the efficient use of investments is essential.

In 2019, Finavia's profitability was at a good level, although the increase in passenger volumes decelerated from the previous year's peak. We especially focused on the management of our cost structure and on improving the efficiency of our operations in 2019.

The development of operational efficiency is at the core of day-to-day activities. This guarantees smooth travel and short aircraft turnaround times. In turn, cost-effectiveness means that we can reduce our unit costs per passenger and per landing. This supports Finavia's competitiveness, as it allows us to keep our airport charges at reasonable levels.

We cover the losses arising from our airport network with the commercial income of Helsinki Airport.

Finavia's competitive pricing model

In price comparisons between European main airports, Helsinki Airport's air traffic charges have been among the lowest for many years. We support the expansion of flight connections by providing airlines with low air traffic charges and discounts on new routes.

At the beginning of 2019, Finavia raised air traffic charges by 2.1% from the 2018 level due to higher depreciation and capital expenditure resulting from airport investment programmes.

In Finland, a single service level-based charge is payable for identical services at all airports, irrespective of the profitability of individual airports. This is called the network principle. According to the EU legislation, each individual airport should be profitable

REVENUE 2019 EUR

398.2

million, +3.2%

OPERATING PROFIT EXCL. EXTRAORDINARY ITEMS 2019 EUR

50.7

million, 13% of the revenue

In 2019, Finavia's profitability was at a good level.

but, in accordance with the network principle, loss-making airports can be supported using the commercial income of Helsinki Airport. Without the network principle and the subsidies from the income of Helsinki Airport, Finavia would have to substantially increase the price level of its network airports to make their operations economically viable.

Due to low traffic volumes, the potential for increasing commercial income at airports other than Helsinki Airport and the largest network airports is limited. In the long term, the decrease in domestic air traffic is likely to continue at several airports. This is caused by urbanisation, the age structure and the improved competitiveness of other modes of transport.

Airport profit structure and performance of regional airports

Considering the scope and service capacity of the airport network, passenger volumes are low in places, and network operations produced a loss in 2019, as in the previous year. However, higher revenues from growing passenger volumes, improved operational efficiency and good cost control have enabled Finavia to reduce these losses. The airports in Lapland have posted the highest increases in passenger volumes, in addition to which small increases have also been recorded at the main regional airports. Operating results have also improved at these airports.

The financial results of a single airport are mainly affected by passenger volumes, the structure of air traffic, the customer structure and opening hours, all of which have a major impact on personnel expenses. Airport operations are a highly capital-intensive business, which means that a significant proportion of Finavia's expenditure and the costs of its airport network are fixed and determined by regulations. Personnel expenses are also a major factor; they account for an average of 40% of total costs.

A breakdown of the financial results of a relatively large airport in 2019 is shown as an example in the table. The airport's international passenger volume decreased, with the total passenger volume being several hundred thousand. The loss was EUR 2.1 million. Finavia does not report the financial results of its individual airports.

Breakdown of the financial results of a relatively large airport in 2019

Traffic revenues from services paid by airlines	EUR 2.9 million
Revenues from services paid by passengers	EUR 0.9 million
Other revenues (e.g. revenue from rents)	EUR 0.3 million
Total revenues	**EUR 4.1 million**
Traffic services	EUR 2.0 million
Terminal services	EUR 0.5 million
Security services	EUR 0.6 million
Air navigation services	EUR 1.1 million
Other	EUR 1.2 million
Total expenditure	**EUR 5.3 million**
Losses covered by the commercial income of Helsinki Airport in 2019: EUR -1.2 million	

We invest in Finland's competitiveness

In 2019, our investments totalled EUR 306.1 (239.5) million. The most significant investments in 2019 were related to development programmes at Helsinki Airport and airports in Lapland as well as Tampere Airport. We also completed renovations of EUR 1.5 million at Pori and Kuusamo Airports.

Adequate cash flow financing provides a basis for long-term development and investments to the airports. In 2019, cash flow from operations amounted to EUR 125.7 (99.3) million, which was used to cover financing needs in maintenance and development. The Helsinki Airport development programme was also partially funded with committed credit.

A stable financial position enables development investments

Finavia's financial position is strong, which provides a solid basis for development investments. At the end of 2019, the Group's cash and cash equivalents totalled EUR 25.7 (22.8) million. During the year, Finavia withdrew new loans to a value of EUR 210 million.

At the end of the year, Finavia's interest-bearing liabilities amounted to EUR 517.4 (323.1) million. Investments are financed not only by revenue, but also by liabilities. Net debts totalled EUR 489.8 (300.3) million. Finavia's financing needs are based on its

Adequate cash flow financing provides a basis for long-term development and investments to the airports.

long-term business plan, which estimates future cash flows and the company's future investment needs.

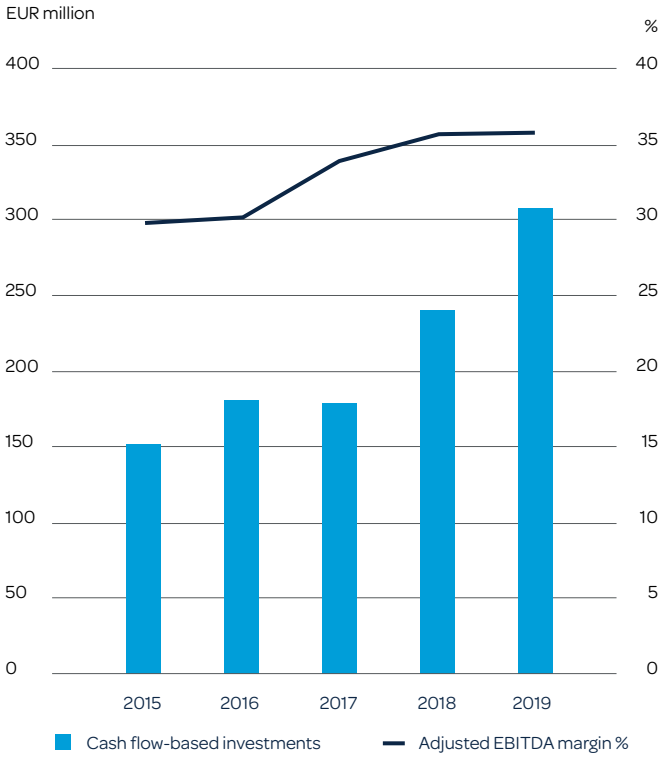
In 2019, Finavia signed a loan of EUR 150 million with the European Investment Bank. Unused long-term credit facilities taken out to finance the Helsinki Airport expansion totalled EUR 215 million at the end of the year. Finavia also has a short-term commercial paper programme of EUR 250 million.

Finavia's investments are mainly financed through project financing, which is well-suited for extensive strategic infrastructure projects. This type of credit is also in line with Finavia's long-term earnings logic, in which investments in airports generate income over a very long period, while passenger volumes are expected to grow.

At the end of 2019, our equity ratio was 50.1% (58.7%), clearly above the targeted level (at least 40%). Finavia has planned its investment programmes to ensure that the company's solvency remains high in all situations when growth expectations are met.

BALANCE SHEET TOTAL AND EQUITY RATIO, 2015–2019

INVESTMENTS AND ADJUSTED EBITDA MARGIN, 2015–2019



Financial added value for stakeholders

Profitable business is based on fulfilling our customers' needs in the most cost-effective and operationally effective manner.

The most significant economic impact of Finavia's operations on Finnish society arises from our role as a facilitator of efficient air traffic. This also enhances the competitiveness of our society. Finavia is committed to developing its business operations in a manner that ensures the operating prerequisites of air traffic in Finland.

When our operations are on a financially sustainable base, we can responsibly take care of our personnel, the environment and our assets, and invest in the development of our airport network. At the same time, our airports are attractive from the perspectives of new airlines and passengers.

By seeing to our competitiveness, we also create jobs in all parts of Finland. The Helsinki Airport development programme, which is estimated to create 5,000 new permanent jobs at the airport, has the most significant impact on employment. So far, the development programme has already generated 9,822 person-years during the construction stage. The total employment effect of the development programme is estimated at 16,000 person-years during the entire construction period. The Lapland construction programme employed X person-years during its construction.

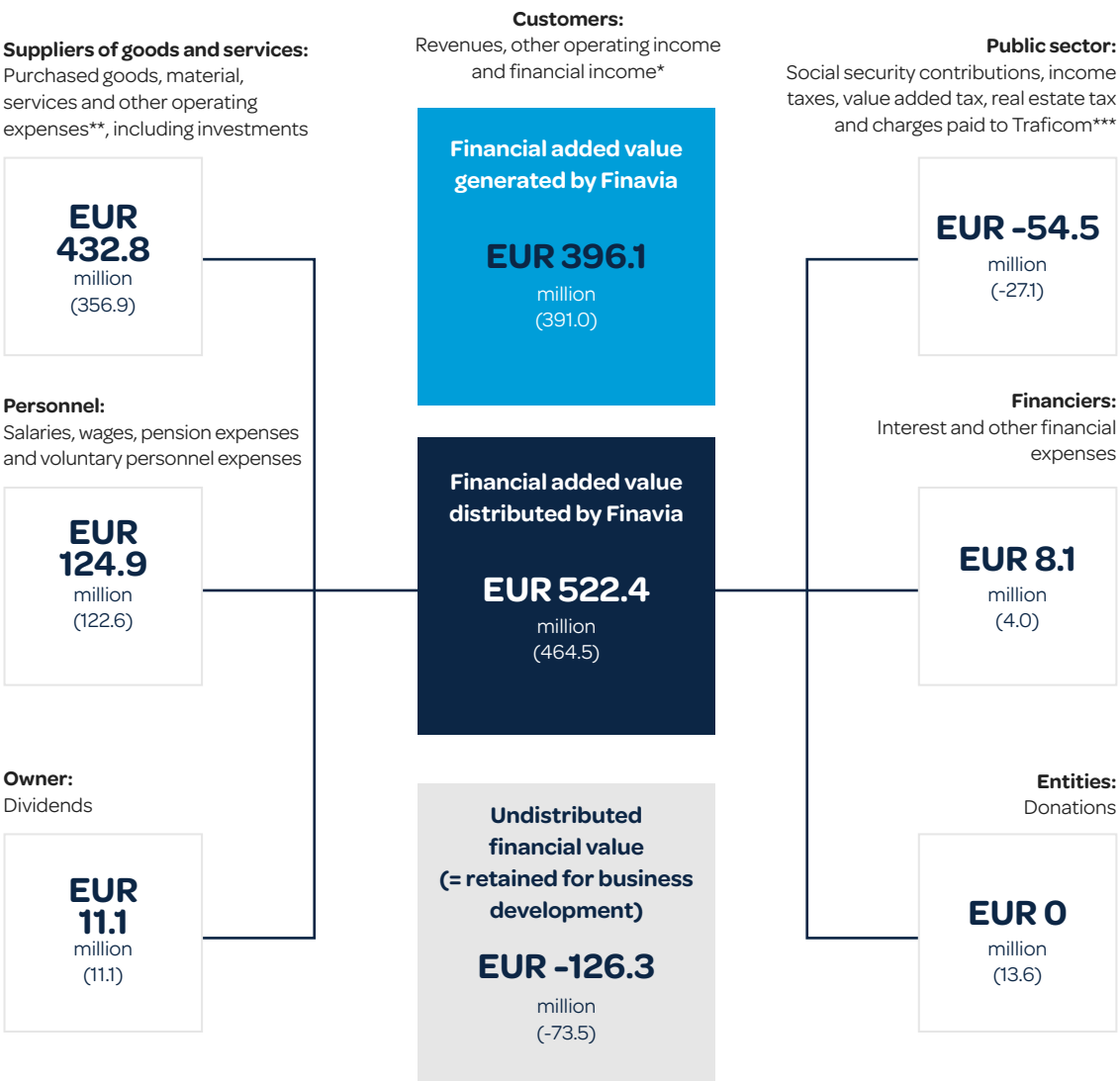
The most significant investments in 2019 were related to development programmes at Helsinki Airport and airports in Lapland as well as at Tampere-Pirkkala Airport.

Finavia created EUR 396.1 million in financial value

Finavia creates financial value for a large number of different stakeholders through its operations. In 2019, we generated EUR 396.1 (391.0) million in financial value. The financial value distributed to our stakeholders totalled EUR 522.4 million, exceeding the financial value generated by Finavia by EUR 126.3 million.

Expenses arising from purchased goods, material and services were EUR 432.8 (356.9) million, reflecting the high level of investments at Finavia. Total investments were EUR 306.1 (239.5) million. Financial expenses totalled EUR 8.1 (4.0) million. Salaries, wages and other personnel expenses were EUR 124.9 (122.6) million.

FINANCIAL ADDED VALUE GENERATED AND DISTRIBUTED BY FINAVIA IN 2019



*Including excise duty
**Less Traficom's charges, real estate tax and voluntary personnel expenses
***Excluding monitoring charges collected from airlines

FINAVIA'S DIRECT AND INDIRECT FINANCIAL IMPACTS TO THE SOCIETY

STAKEHOLDER	DIRECT IMPACT	INDIRECT IMPACT
Finnish society	• The extensive flight connections made possible by Finavia keep Finnish society, people and goods moving. • Well-functioning air traffic is a key factor safeguarding Finland's competitiveness. Finavia is responsible for ensuring the competitiveness of airports to maintain extensive flight connections. • In its 2019 competitiveness report, the World Economic Forum (WEF) ranked the efficiency of Finland's airport network the fourth best in the world. • The total employment effect of the Helsinki Airport development programme is estimated at 16,000 person-years during the construction period. In 2019, the employment effect was 3,249 person-years. In addition, an increase in the airport's passenger volumes will also generate about 5,000 permanent jobs. The employment effect of the Lapland investment programme was 600 person-years during the construction period. In 2019, it was 6,000 person-years. • Air traffic accounts for 3.2% of Finnish GDP and directly or indirectly provides employment for roughly 100,000 people in Finland.	
Customers	• Finavia provides airlines with cost-effective and accurate airport services. • In July 2019, Finavia reduced the operation-specific charges of touch-and-go landings made during training flights by 50%.	• Finavia is committed to developing its business in a sustainable fashion that ensures the operating prerequisites of air traffic in Finland. • Finavia endeavours to constantly improve the efficiency of its operations, which supports competitive pricing. • Finavia promotes aviation culture in Finland and supports Finnish general aviation with several hundred thousand euros every year by keeping the prices of general aviators' season tickets low.
Personnel	• At the end of 2019, Finavia Group had 2,775 (2,852) employees. • Finavia provides jobs at all its airports in different parts of Finland. • Finavia invests resources in the competence of its personnel by way of different types of training, encourages employees at airports to learn multiple skills and supports the wellbeing of its personnel in various ways. • Every year, Finavia recruits dozens of summer employees and offers opportunities for thesis work.	• The Helsinki Airport development programme will have significant employment effects during the construction period, totalling 16,000 person-years • The employment effect of the Lapland development programme totalled 600 person-years.

STAKEHOLDER	DIRECT IMPACT	INDIRECT IMPACT
Suppliers or goods and services	• The services purchased by Finavia include real estate, repair, maintenance, security patrolling, security checks, construction, and contracting and expert services, such as planning and weather services. • As a result of its development programmes, Finavia makes significant purchases. The Helsinki Airport development programme totals more than one billion euros. In addition, we invest in our airport network: for example, an investment programme of EUR 55 million was carried out at airports in Lapland during 2018 and 2019.	• Finavia seeks long-term cooperation with its partners. Operations are developed in close cooperation with partners. This also supports the business opportunities of suppliers. • Finavia makes purchases in a centralised manner and at a local level.
State of Finland	• Finavia pays income tax, real estate tax and value added tax. • Finavia collects air traffic monitoring charges on behalf of Traficom and debited to Traficom. In 2019, monitoring charges totalled EUR 12.2 (13.3) million. • Finavia pays dividends to its owner, the State of Finland, within the constraints of its financial results and distributable assets. The Finavia Board of Directors has proposed that EUR 11.1 million be distributed in dividends for the 2019 financial year.	• Finavia supports the development and welfare of society by paying taxes and providing jobs in Finland. • Finavia strives to operate in a financially sustainable way by looking after the efficiency of its own operations compared to other European airports. In this way, Finavia can contribute to the competitiveness of Finnish companies and the welfare of Finnish people.
Financiers	• Finavia seeks to finance its maintenance investments through cash flow financing. Investments in expansions required for growth can also be financed through long-term borrowing. • The European Investment Bank granted a loan of EUR 230 million to Finavia in 2016, and a loan of EUR 150 million in 2019. • The Nordic Investment Bank (NIB) granted a loan of EUR 150 million to Finavia in 2015 for the Helsinki Airport expansion.	• Finavia aims to retain the equity ratio at a level that enables the cost-effective obtaining of financing. On 31 December 2019, the equity ratio was 50.1% (58.7%).

Finavia pays all its taxes in Finland

Finavia only has business operations in Finland, and it pays taxes and tax-like levies for its results in Finland in accordance with the Finnish legislation. Finavia has not defined a separate tax strategy.

The company's CFO is responsible for tax-related matters at Finavia. If necessary, the CFO reports to the Audit Committee of the Board of Directors. Finavia actively cooperates with the tax authorities and requests preliminary rulings from them in matters subject to interpretation so that tax-related uncertainties can be minimised. Finavia complies with all deadlines set for payment and notification obligations.

Finavia ensures that it has adequate group-level expertise in taxation matters. If necessary, Finavia may purchase taxation-related expert services from outside the company. In 2019, Finavia also used tax advisory services supplied by external providers.

Finavia's tax-related reporting does not include any evaluations. Reporting is based on consolidated financial statements and accounting material.

Taxes and tax-like levies

In 2019, Finavia paid a total of EUR 26.1 (39.1) million in taxes and tax-like levies. Finavia does not pay or account for taxes in tax haven countries defined by the OECD and has not received support from these countries. In 2019 Finavia received EUR 166,621 of energy fund to build recharging points for electric cars at various airports and a solar power plant for the extension of the West Pier terminal. Finavia received EUR 660,000 in EU funding for the design of the Helsinki Airport travel center.

Corporation tax includes taxes recognised in financial results for the period and taxes recognised for the previous period (not including deferred taxes). Payments made to Traficom include air traffic monitoring charges and other aviation-related charges.

Taxes and tax-like levies accounted for

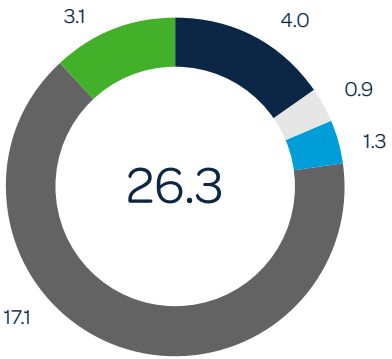
Finavia collected and accounted for a total of EUR 41.8 (42.0) million in taxes and tax-like levies. The taxes and tax-like levies collected do not affect Finavia's results, as the company acts as an intermediary for the charges.

The air traffic monitoring charge is a statutory charge levied by Traficom, which Finavia collects and debits to Traficom. The charge, which has been approved by Parliament and is collected from all airlines, is not related to the airport services provided by Finavia.

The taxes collected and accounted for 2018 and 2019 do not include value added tax. In 2019, Finavia reclaimed more VAT than it collected and accounted for.

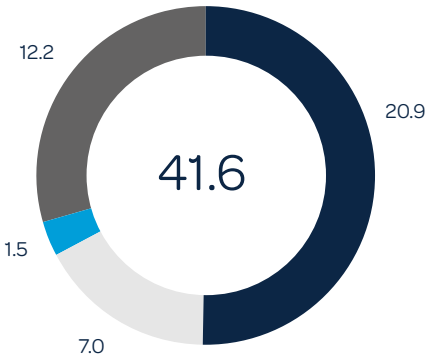
PAID AND COLLECTED TAXES AND TAX-LIKE FEES

Taxes paid



- Corporation tax: EUR 4.0 million
- Real estate tax: EUR 0.9 million
- Payments to Traficom: EUR 1.3 million
- Pension contributions: EUR 17.1 million
- Other statutory personnel expenses: EUR 3.1 million

Taxes collected



- Tax deducted at source EUR 20.9 million
- Employees' pension contribution EUR 7.0 million
- Employees' unemployment insurance contribution EUR 1.5 million
- Air traffic monitoring charge EUR 12.2 million

Finavia creates added value as a part of the society

Finavia's key role in Finnish society includes the development and maintenance of a countrywide network of airports. The purpose of Finavia is to promote the mobility of people and goods and to support international connections by providing safe, high-quality and cost-effective services for air passengers and air traffic.

All our operations are guided by a vision under which we offer air passengers the best connections between Northern Europe and the rest of the world while promoting Finland as an attractive and easy-to-reach destination. All this can only be achieved if we grow in a responsible and profitable manner. A highly positive customer experience gives us a strategic competitive edge.

In order to maintain this advantage, we use Finavia's key resources in accordance with our values. These resources are airports, skilled personnel, customers and partners, financial capital, investments, energy and natural resources.

We create value for our owner, the State of Finland, and society at large by providing efficient and reliable connections with the rest of the world as well as by investing in the development of our airports and the surrounding areas. Ensuring that Helsinki Airport remains a major international transport hub contributes to the success of Finland as a whole. We are a major taxpayer and employer. In 2019, Finavia airports employed over 20,000 people in approximately 1,500 companies.

We create value for our customers. The services of our airports are based on smooth and efficient operations on the one hand, and on comfort and experiences on the other. Short transfer times, quick security checks and internationally acclaimed services are highly valued by airlines and passengers using Helsinki Airport. In 2019, we had 50 airlines and approximately 26 million passengers as our customers. An exceptional customer experience keeps the cash flow generated by our airline customers and passengers at a high level, which allows us to continue the development of our airport network.

In 2019, Finavia's profitability and customer satisfaction remained at a good level. This shows that our investments have paid off and that we are also in a good position to create value for our stakeholders in the future.

Our operations also impact the environment. Procurement and supply chain management are central to our operations. In 2019, our aim was to consider the life-cycle costs of every purchase that we make. We are constantly working to mitigate the environmental impacts of our operations and to develop stakeholder cooperation and environmental communications. Finavia achieved its goal of the carbon neutral airport network during the year 2019.

Ensuring that Helsinki Airport remains a major international transport hub contributes to the success of Finland as a whole.

ASSETS

Airports
- 21 airports
- Capital assets EUR 1,245.6 million
- Business premises and advertising space
- Buildings, machinery and equipment
- Ground structures

Human resources and skills
- Personnel 1,277, of whom 69% were men and 31% women
- Training 2.9 days/person
- Statutory qualifications and standards
- Ability to understand the customer experience
- Project and logistics expertise
- Process expertise (passenger flows, aircraft turnaround times, snowhow, etc.)
- Managing and developing the ecosystem

Customers and partners
- More than 50 airlines as customers
- 26 million passengers
- 2,840 suppliers of goods and services
- 1,500 companies operating at the airports

Economic capital and investments
- Balance sheet EUR 1,360.1 million
- Total investments EUR 306 million
- Environmental investments EUR 5 million

Energy and natural resources
- Water consumption 188,830 m^3
- Consumption of heating energy 62 GWh
- Consumption of electric energy 82 GWh
- Fuel consumption of ground equipment 2,320 tonnes
- Total land area 9,856 m^2

BUSINESS MODEL

For smooth travelling

VISION
Finavia's vision is to offer passengers the best connections from Northern Europe to the world and to promote Finland's accessibility as an attractive destination.

VALUES
- Safety
- For customers
- By developing
- Responsibility

PASSENGER SERVICES
Unique customer experience

AIR TRAFFIC SERVICES
Efficient and reliable services for airlines

Service providers and partners at airports

Customer experience & development

OPERATING ENVIRONMENT
Megatrends:
Urbanisation, digitalisation, climate change, growth of the middle class (especially in Asia), ageing population, growth in tourism, competition for passengers at global level
Extensive regulation of the sector Finland's reputation and geographical location

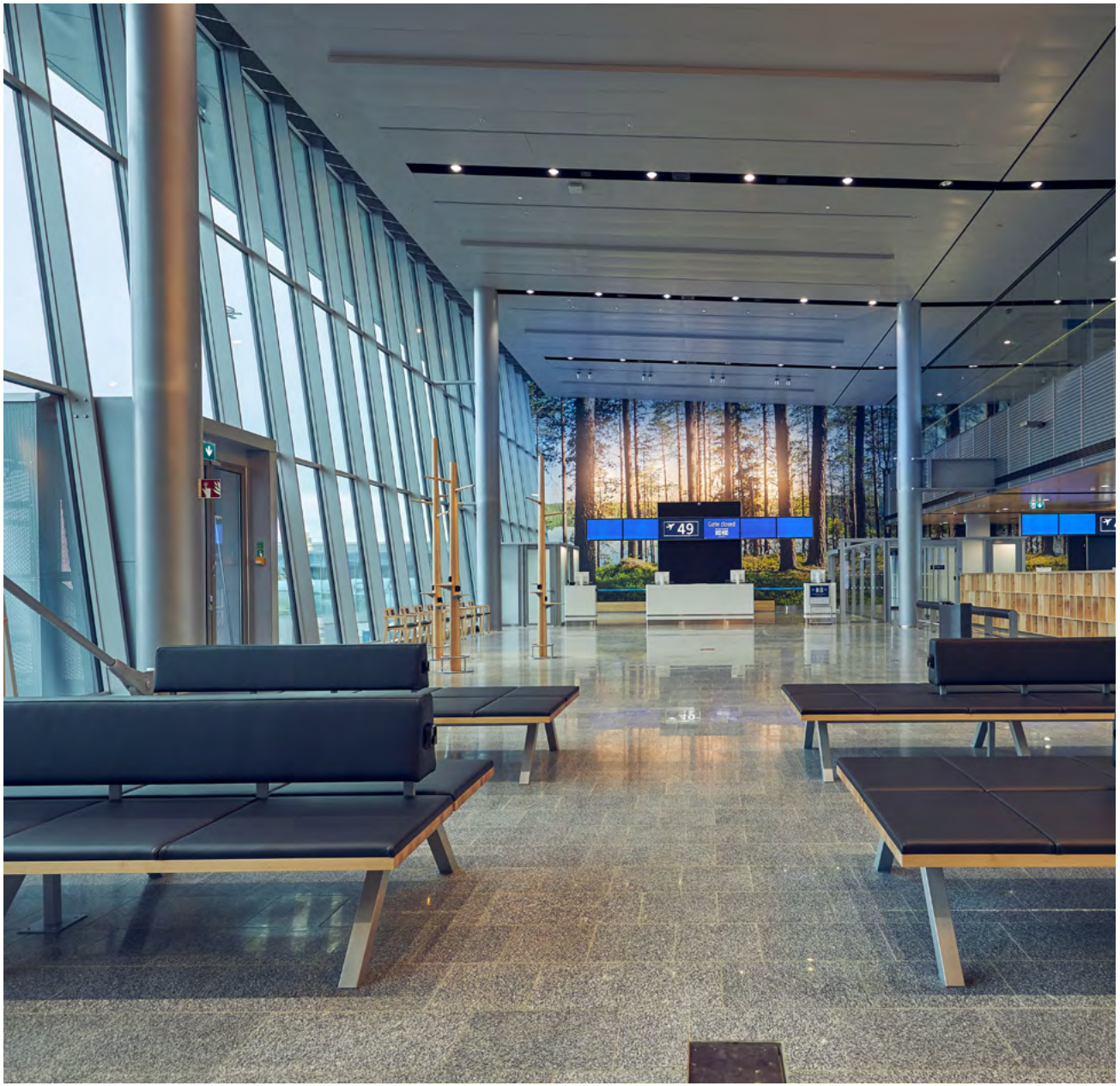
IMPACTS

Extensive and reliable global connections
- About 38.6% of all passengers at Helsinki Airport are transfer passengers
- Landings totalled 125,869
- Direct destinations from all airports: 186
- Competitive landing and passenger charges
- Reliable operations irrespective of weather

Unique customer experience
- Customer satisfaction at Helsinki Airport: 4.16/5 (ASQ)
- Customer satisfaction at network airports: 4.28/5
- Customer satisfaction among airlines 3.94/5
- Average waiting time at security check at Helsinki Airport: 2 min 30 s
- World-class services at Helsinki Airport
- Short transfer times

Competitiveness and economic impact
- Total revenue EUR 389 million
- Salaries and fees EUR 99 million
- Purchases from service and goods suppliers EUR 370 million
- Taxes and tax-like levies EUR 26.1 million
- Air traffic accounts for about 3.2% of Finland's GDP
- Air traffic provides employment for 100,000 people in Finland
- The Helsinki Airport development programme has already created 9,800 person-years
- Development of Lapland as a tourist destination: 724 charter flights

Environmental impacts
- Helsinki Airport carbon neutral in 2017, regional airports in 2019
- Introduction of renewable fuels
- Ground equipment CO_2 emissions 6,340 tonnes
- Monitoring of air quality
- Promotion of the noise control plan
- Monitoring of surface water quality at all 21 airports
- Monitoring of groundwater quality at 14 airports
- Biological oxygen demand (BOD) of runoff water 62 tonnes
- Continuous energy-efficiency improvements
- Amount of waste 4,660 tonnes, of which 75% was recyclable waste



Safety at Finavia

Safety is a prerequisite for smoothly flowing airport operations. It is an important value for us that is reflected in all our activities. In 2019, our safety activities focused on cooperation with other airport operators and investments in the development of cybersecurity and information security.

Our operations are based on the right to act as an airport operator as licensed by the authorities. To maintain this right, we need to operate in compliance with requirements, and have a reliable and productive safety culture. Finavia is responsible for ensuring that all activities carried out in airport areas are safe and conform to regulations. As an airport operator, we issue operational guidelines and monitor compliance with them. In addition, other parties operating at airports provide their employees with instructions and trainings as required.

We control and develop safety-related practices at airports and continuously analyse our operations. We participate actively in discussions, and aim to have an impact on regulations in matters that build and improve safety. Smooth and safe airport experiences are based on a high level of safety work.

In 2019, we clarified our safety guidelines for our employees and developed our practices, ranging from observations to reporting. Last year featured various safety drills and briefings that also helped to increase the number of safety-related observations reported by our personnel. This high activity level indicates that Finavia's safety culture has strengthened and our employees consider improvements in occupational safety to be a shared theme.

Finavia carries out diverse safety activities

Airports are ecosystems involving a number of different parties and where safety is key. At airports, safety is an integral part of every function and process, every day. Flight safety, protection of civil aviation, cybersecurity, information security, occupational safety and environmental safety are at the core of safety activities. Different areas of safety are steered by national or EU regulations, to which Finavia adheres to the letter.

Finavia has already received a safety certificate from the European Aviation Safety Agency (EASA) in 2017, and Finavia continues to operate in accordance with its requirements. The purpose of EASA's aviation regulations is to ensure that the safety of air traffic is at the same standard in all parts of Europe. The Finnish Transport and Communications Agency (Traficom) supervises that we comply with the requirements of the EASA certificate.

In 2019, Finavia spent EUR 50.0 (45.9) million in the maintenance of safety, most of which came from the provision of security checks in accordance with safety regulations and investments in safety technology.

Modifications at airports also improve safety

At our airports, we carry out safety activities in cooperation with different authorities like the Police of Finland, Finnish Customs and the Finnish Border Guard. This cooperation is based on a trust-based exchange of information and the continuous development of activities.

In 2019, the massive development programme at Helsinki Airport also caused changes in safety activities at the airport. To prevent any modifications from having an impact on airport or flight safety, we develop our operations proactively, reactively and based on subsequent assessments.

With the Helsinki Airport development programme continuing until 2024, the development of safety cooperation with other parties operating at the airport will also be emphasised for the next four years.

Safety management system

Our safety organisation consists of Group-, business- and function-specific units. This organisational structure ensures the flow of information and provides the management level with necessary information about factors that affect safety.

Finavia's safety management system is based on seven main principles that are presented in the table.

MAIN PRINCIPLES OF FINAVIA'S SAFETY MANAGEMENT SYSTEM

Compliance with official standards

The safety management system must comply with a significant number of international and national regulations. The Finnish Transport and Communications Agency (Traficom) supervises compliance with these regulations. In 2019, Traficom conducted 10 (7) audits in the airport network.

Commitment of the management

Finavia's management is committed to the principles of the safety management system and using the information it produces in decision-making processes. Safety targets have been set for different functions, and their fulfilment is monitored regularly.

Proactive approach to safety

systems and methods on safety are assessed beforehand. The aim is to identify and control risks associated with changes and minimise them through various actions and back-up procedures.

Encouraging non-conformity reports

Any non-conformities reported by the personnel are classified and analysed. An independent internal investigation is initiated for more significant non-conformities without apportioning blame.

Sufficient self-monitoring

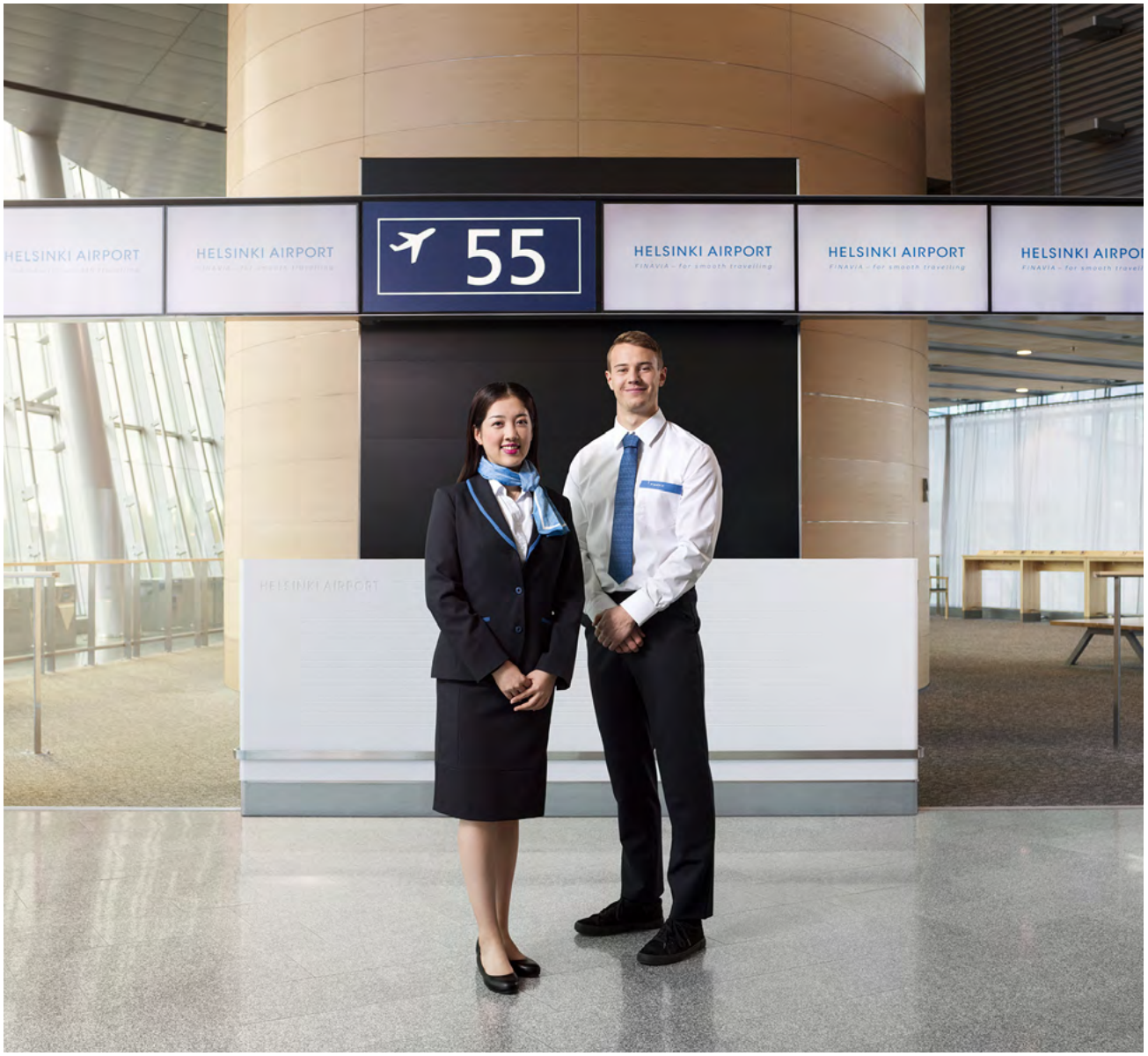
In addition to self-monitoring within operational units, independent internal audits are conducted so that the impact of activities on safety are taken into account when deciding on the content, extent and focal points of audits. Any non-conformities identified are processed and investigated, and the corrective measures required are implemented.

Competent staff

The personnel have the appropriate qualifications based on training, professional competence and experience.
A training record is maintained of the personnel where the details of special training, experience and level inspections required for the position are recorded.

Dissemination of useful information

The information derived from investigations, audits, analyses of non-conformity reports, effective corrective actions, and international cooperation is extensively used for training personnel, for developing instructions, and for internal communication.



Finavia as an employer

Providing smooth air travel to passengers and airlines would not be possible if it were not for our skilled employees and a high level of wellbeing at work. In 2019, we continued to develop our management and performance and invested in improved wellbeing.

In 2019, Finavia had four key personnel-related goals: development of people and performance management, increased competence, taking care of the wellbeing of employees and strengthening the employer image even further. In supervisory work, we also focused on improving the quality of development reviews and on setting individual goals.

At the end of 2019, Finavia Corporation had 1,277 (1,240) employees. Finavia Group employed 2,775 (2,852) people. In 2019, we recruited fixed-term employees, especially in customer service positions, due to development projects at Helsinki Airport and airports in Lapland. The number of employees has also increased as a result of the development of data management and digital services.

In 2019, we had 530 diverse vacancies, for which we received 3,121 applications.

Person-years at Finavia

A person-year describes the work input of an employee as a full-time equivalent. All compensable hours of Finavia employees, excluding overtime, are divided by the computational hours of full-time employees per year, as laid out for the task in question. A single employee can work a maximum of one person-year per year. Unpaid absences reduce the person-year.

In 2019, Finavia Corporation employees worked a total of 1,096 (1,045) person-years. The total average number of employees in Finavia Group, as calculated in person-years, was 2,241 (2,186).

Personnel by type of contract

In 2019, Finavia Corporation had 951 (918) permanent and 249 (226) fixed-term employees. A total of 1,045 (1,006) employees worked full-time, and 155 (138) worked part-time.

Finavia Group had 2,108 (2,132) permanent employees.

A total of 1,083 (1,030) Finavia employees, or 90.6% (90.0%) of the personnel, was subject to a collective bargaining agreement.

In 2019, contracted personnel at Finavia Corporation totalled 1,207 (1,164) person-years. General security and security check services comprised the largest part of external employment services. Finavia also used external employees in maintenance and IT services.

FINAVIA'S PERSONNEL 2019

Person-years by function

Headquarters and Group Services	285
Helsinki Airport development programme's project office	14
Helsinki Airport	389
Airport Network	408
Enontekiö Airport	3
Ivalo Airport	30
Kajaani Airport	18
Kemi-Tornio Airport	15
Kittilä Airport	24
Kuusamo Airport	15
Oulu Airport	33
Rovaniemi Airport	41
Northern Finland and Lapland Total	179
Kuopio Airport	36
Joensuu Airport	17
Savonlinna Airport	9
Eastern Finland Total	62
Turku Airport	32
Pori Airport	11
Vaasa Airport	28
Mariehamn Airport	12
Kokkola-Pietarsaari Airport	13
Western Finland Total	97
Tampere-Pirkkala Airport	32
Jyväskylä Airport	22
Halli Airport	5
Utti Airport	5
Central Finland Total	66
Total	**1,096**

Distribution of personnel by age and gender

In 2019, the average age of Finavia Corporation's permanent employees was 45,5 (44). At the end of 2019, 69% (70%) of all employees were men, and 31% (30%) were women.

Duration of contracts of employment

In 2019, a total of 26% (21%) of all Finavia personnel had worked in the company for between 1 and 4.9 years. The percentage of employees that had been employed for 5 to 9.9 years was 13% (13%), and the percentage of those employed for 10 to 14.9 years was 13% (15%). A total of 32% (34%) had been employed for more than 15 years.

Personnel turnover

The indicator of personnel turnover is calculated by adding the numbers of incoming and departing employees and comparing the sum with the average number of permanent employees during the year.

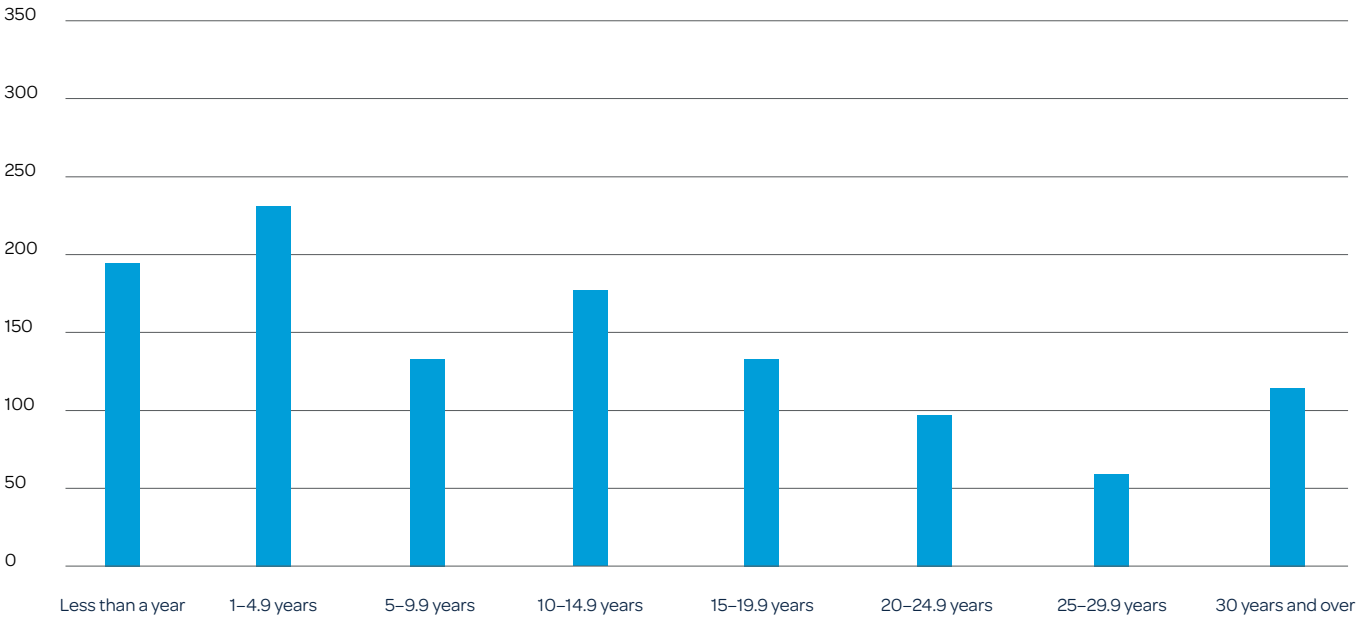
The total personnel turnover at Finavia Corporation stood at 20.3% (17%) in 2019. Incoming employee turnover was 9.8% (8%), while departure turnover was 10.1% (9%).

Personnel training

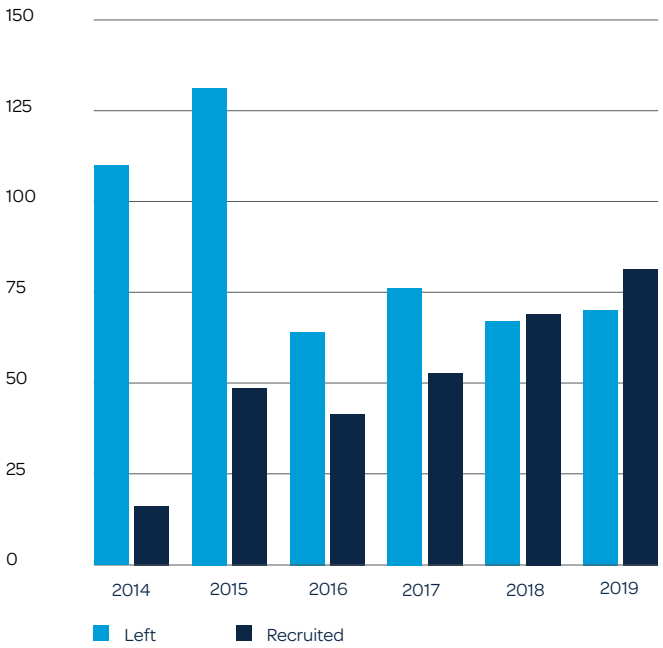
In 2019, each Finavia employee spent an average of 2.9 (2.5) days in training.

Finavia needs employees trained in accordance with regulatory requirements, and the required skill levels must also be ensured in the future. 2019 marked the year of training development, during which we developed not only our sector-specific competence but our professional and working life skills in general. During the year, we identified the current state of training and took action to allocate training more accurately. Finavia aims to build a culture of continuous learning and development.

YEARS OF SERVICE



NUMBER OF PERMANENT STAFF RECRUITED AND LEFT



Job satisfaction and competence development

We want all Finavia employees to enjoy their work. To us, the most important factor is that employees are able to improve their skills. We can thus both extend and strengthen our employees' careers. During the year, we developed supervisory work, conducted competence surveys and expanded our cooperation with educational institutions.

The personnel survey identifies the dedication and engagement of Finavia employees, both of which developed positively from the previous year. The survey results were better than the average for Finnish organisations. The PeoplePower index for job satisfaction was 69.1, slightly above the level of Finnish companies (67.9). Our employees reported that the flow of information have improved as well as opportunities for participation and making initiatives. Estimates of supervisory work were also more positive than in the previous year.

We train supervisors to lead individuals

Finavia finds it important that supervisory work and management are at an excellent level in every unit. To achieve this goal, we have diversified our development tools applied to supervisory work. In 2019, we provided all supervisors not only with regular training but with training for a coaching approach to supervisory work and development reviews. Furthermore, we provided supervisors with guidance, individual and group coaching and mentoring, as well as cooperation with partner airports.

The goal of supervisory training is to further improve the presence and interaction of supervisors in day-to-day activities. We have also trained supervisors to prepare strategy-driven action plans and set individual goals based on these plans.

In 2019, we built a comprehensive operating model for supervisors in which all new supervisors in the network were provided with an experienced colleague from another airport as a mentor. With this arrangement, we want not only to share competence within Finavia but ensure that there are no unit- or location-specific differences in HR management or supervisory work.

We respond to future challenges by means of competence development

Most of the trainings focuses on the qualifications required in regulations governing Finavia's operations, alongside which we aim to comprehensively develop the professional skills of our employees.

Finavia employees consider that they are strongly supported in their professional development.

We want to anticipate the skills that will be needed in the future and ensure that the skill profiles of our employees meet these needs.

In 2019, we also launched a training programme for potential new talents, with 28 Finavia employees participating. To increase the impact of management and operational excellence, the programme sought new innovative ideas to strengthen Finavia's market position.

In 2019, the HR unit assumed a stronger coordinating role in developing personnel training. The development process started by identifying the current state of training and analysing the current skills of our operational employees. The identification process started with airports in Lapland. During 2020, the identifications will expand to Helsinki Airport and other network airports. On the basis of the identification of skills, we also built new training modules for Finavia employees to be started in 2020.

Finavia needs employees with competence that is not directly provided by educational institutions. To develop competence and find new talents to join Finavia, we are engaged in close cooperation with a number of educational institutions. In 2019, we expanded our educational cooperation in Northern Finland and in the Helsinki region, and we launched different training programmes based on cooperation. Through cooperation, we have obtained trainees in different units and provided young people with valuable work experience.

In 2019, we updated the induction programme provided for customer service employees and started the Finavia Experience Academy. This coaching programme is intended for employees from different companies operating at the customer interface at airports. The Finavia Experience Academy will continue in 2020.

We also want to encourage our employees to educate themselves during their careers. To ensure the smooth progress of studies, our employees have access to ten days of paid leave per year for studies that support their work development.

Job rotation offers opportunities for development

For several years now, Finavia employees have had the opportunity to work in other units through our "Toisen työ tutuksi" (Trying other jobs) policy. Employees are attracted by this opportunity to expand their competence, and in 2019, a record number of Finavia employees applied for job rotations. During the year, 44 (46) employees tried other jobs in other units.

Members of Finavia's Executive Group also regularly visit our operational units. This strengthens dialogue between the Executive Group and other employees, while giving first-hand information to members of the Executive Group from our different professionals.

Finavia encourages all employees to try job rotation. During 2019, 42 people transferred to new positions within Finavia.

In addition to offering internal job rotation, Finavia has an agreement on employee exchange with Beijing Airport. The main purpose of the employee exchange programme is to obtain new ideas, especially for developing services for Asian passengers, and to hear about the best practices at different airports. In 2019, employees from Finavia's customer service, operations centre and marketing unit participated in the exchange programme.

The aim is to continue and diversify the employee exchange programme even further. In the spring of 2020, Finavia will receive employees from Munich Airport.

Wellbeing and occupational safety

The fulfilment of our strategy requires that we ensure our employees' wellbeing, and observe occupational safety at all times. To develop wellbeing at work, we aim to engage our employees and proactively support their ability to work.

The amount of sick leave decreased overall in 2019 from the previous year.

Our goal is to continuously improve Finavia employees' wellbeing and coping at work. The actions taken in 2019 have produced good results. For example, our sick leave rate is only 3.2% (3.3%). Furthermore, the amount of disability pensions is low (pension contribution category 2).

Developing management practices, setting goals and improving competence are significant factors for the success of employees and the employer. These also have a considerable impact on wellbeing at work: the more skilled employees are in their work and the better they are aware of their individual goals, the better they are also able to work. Then again, new challenges and opportunities for further training make work more meaningful.

In addition to competence, other factors that have a significant impact on enjoyment include health, wellbeing and coping. In 2019, we focused on engaging our personnel to take even better care of themselves. Some job descriptions require working in shifts or good physical condition, in addition to which we want to provide all our employees with new ways to maintain their ability to work and improve their wellbeing.

Close cooperation with occupational healthcare services

We are working closely with occupational healthcare services to monitor our employees' wellbeing and ability to work and prevent any problems. In addition to health check-ups, we have conducted annual occupational health surveys to identify employees who have a higher risk of being unable to work in the future.

In 2019, we applied a low threshold to refer employees suffering from musculoskeletal disorders to a physical therapist. Our principle is to proactively support our employees' health and abilities before the situation escalates and reduces the ability to work.

Even if an employee's ability to work has decreased in certain tasks, the employee may not be completely unable to work. Sometimes, it is possible to find a new position in another unit, which is why Finavia follows the policy of replacement work.

For more serious challenges in performance and coping, we use the "Sopiva työ" (Suitable work) service. The service allows us to plan new career paths for employees through different retraining and employment options.

We develop our occupational safety processes

Finavia is committed to improving the level of occupational safety, and has set goals for this development. In 2019, we systematically improved the assessment of occupational safety risks at airports to raise the quality of the assessment process and make it more up-to-date. We developed and updated occupational safety risk assessments, particularly in the airport network.

Furthermore, we are constantly monitoring the number and frequency of occupational accidents. In 2019, there were 67 (52) occupational accidents at Finavia, of which 24 resulted in an absence of at least one day. Lost Time Injury Frequency Rate (LTIF) based on injuries resulting from absence for at least one day was 10.9. All occupational accidents were investigated locally. The investigation results help to prevent similar accidents from recurring in Finavia's locations.

The most common occupational accident at Finavia is falling, which is most often caused by slipping and is thus related to the time of year. The number of occupational accidents increased from 2018, while our goal is to reduce their occurrence. In 2019, the number of observations made by employees regarding occupational safety doubled from 2018. This high activity level indicates that our safety culture has strengthened, and our employees consider improvements in occupational safety to be a shared theme.

In 2019, we developed communication activities related to occupational safety. We regularly distribute safety alerts to our employees to communicate safety-related news at airports. Moreover, we release a safety summary not only of flight safety but of the prevention of occupational accidents.

The most active workplace in Finland

In 2019, we participated in the "Suomen aktiivisin työpaikka" (The most active workplace in Finland) project of the Finnish Olympic Committee, whose aim is to raise employees' activity levels at work through physical exercise. The correct amount of physical exercise can prevent musculoskeletal disorders and thus reduce sick leave. As a result of the project, we received several suggestions to raise the activity levels of Finavia employees. We also received a certificate for our physical exercise programme.

As part of the project, we trained activators in our working community whose role is to inspire and help other employees to make healthier choices every day. Each activator has their own way of inspiring others: they may encourage their colleagues to do physical exercise during the day, change their diets or increase functional exercising. During the year, we also held a separate activity campaign, through which we donated funds to charity whenever our employees carried out physical activities.

In 2019, three Finavia shift workers started to improve their wellbeing under the guidance of an external coach. The aim was to find new ways to maintain a healthy lifestyle to support coping when working in two and three shifts.

Equality and non-discrimination

Finavia aims to be a good place to work, regardless of age or gender. We treat all employees even-handedly and pay an equal salary. We also aim to make it easier to combine work and family life, support older Finavia employees to cope at work and ensure a more balanced gender distribution in our units.

Equal treatment is steered by our personnel policy, our Code of Conduct, and our equality and non-discrimination plan, revised every two years and prepared with personnel representatives.

We are actively monitoring equal salaries and the gender distribution in a separate committee, including representatives of the personnel. We also aim to achieve a more balanced gender distribution in managerial positions by promoting the careers of female staff members.

At Finavia, a woman's euro is close to a man's euro

We monitor the gap between the average pay of women and men by comparing the regular earnings of our full-time staff members.

In Finland, women's average earnings are 84% of the pay received by men. According to the Finavia's 2019 pay survey, women's earnings during regular working hours are 97%, or just slightly lower, than men's average earnings. The total pay of women is 6% higher than that of men at Finavia, as more women are working in offices and as specialists.

Finavia has studied the proportion of women in different working hour arrangements, as well as the impact of shift work on overtime and consequently, on pay. The findings show that the proportion of men is higher in those working hour arrangements that involve a large amount of shift work and overtime. This partly explains the higher overall salaries of men. Compared with 2018, there have been few changes in the amount of overtime and the proportion of women and men in different working hour arrangements.

We support employees to combine work and family life

We want to ensure that our employees can combine their work and family life as flexibly as possible. Finavia offers flexitime and remote work opportunities for employees in positions where such arrangements are possible. We also offer flexible working hours for changing situations. Part-time work is possible for parents of small children on partial care leave and pensioners, and in situations where this is otherwise necessary. Finavia also provides its staff members with longer holidays than many other employers, which allows employees to spend more time with their families.

Most of Finavia's employees work in shifts, which makes combining work and family life more difficult. When developing our shift systems, we take into account the workload caused by shift work, and units can arrange shifts in accordance with employees' wishes. In some units, emphasis is placed on the regularity of shifts.

We encourage both men and women to use family leave equally. In the 2019 equality survey, the proportion of care leave used by women increased slightly from the previous year to 86.9% (80.4%). With regard to maternity, paternity and parental leave, the proportion of women also decreased from the previous year to 60% (62.9%).

In the annual personnel survey, Finavia staff members were asked to give their views of how different needs concerning the

We provide Finavia employees with flexible working hours for changing situations.

combination of work and leisure time are taken into account at Finavia. Women gave more positive grades than men. The average score given by women was 3.04 (on a scale of 1 to 4), while the corresponding figure given by men was 2.88. At Finavia, the total score was 2.92. These scores slightly decreased from the previous year's survey.

A high ability to work throughout careers

The average age of Finavia employees is 45.5 years. The majority of Finavia employees, 15.6%, are in the 50–54 age group. This is followed by the 35–39 (13,5%) and the 45–49 (13%) age groups.

In its age programme, Finavia has models for supporting employees close to retirement in coping at work. Roughly five years before retirement, senior discussions will be held as part of development reviews to discuss retirement plans and the transfer of tacit knowledge to successors.

In 2019, we once again participated in the "Työ ei syrji" (Work does not discriminate) campaign organised by the Confederation of Finnish Industries, which challenges companies, organisations and society at large to build a non-discriminatory work culture in Finland.

Most Finavia employees are men

We aim to ensure a more balanced gender distribution in units by already addressing equal treatment in the recruitment phase. The recruitment process always involves a recruitment professional to ensure equal treatment.

No significant changes took place in the gender distribution. In 2019, 69.1% of our employees were men, and 30.9% were women. Compared with 2018, the proportion of women increased by 4.6%.

This gender distribution is explained by the high physical loads of different tasks and the focus on technical skills, which have traditionally attracted men. For example, women accounted for only 2.0% of all maintenance workers in 2019, whereas 72.9% of all service personnel and 62.5% of specialists were women. The low number of women working in technical positions can also be explained by the majority of persons applying for study places in technology and engineering being men.

We encourage women to actively apply for supervisory and managerial positions. The proportion of women in supervisory positions at Finavia increased in 2019. The company's Executive Group consisted of seven men and two women.

Finavia's environmental activities

Our responsible environmental activities are based on the consideration of laws, international regulations and justified expectations of different stakeholders within the scope of flight safety. The goal is to minimise the environmental loads caused by airport operations.

Our activities are guided by the provisions set out in environmental permits and the goals laid out in accordance with our environmental system. The State of Finland's ownership policy also calls for due diligence and detailed reporting from us.

Finavia develops its environmental responsibility on the basis of permit regulations and continuous improvement in accordance with its certified ISO 14001 environmental management system, taking financial aspects into account. The environmental management system has steered the development of Finavia's environmental activities since 2001, and it includes:

- Environmental management manual (ISO 14001)
- Environmental policies and goals
- Environmental programmes for seven themes for 2016–2020
- Environmental goals for 2020
- Monitoring and reporting
- Environmental provisions for the investments required by permits and other regulations

Finavia's environmental management system was certified in December 2018. According to monitoring surveys conducted in September 2019, the certificate is still valid.

On the basis of its environmental management system, Finavia has prepared environmental programmes for seven different themes. Based on these programmes, we select our annual environmental goals.

Management of environmental responsibility at Finavia

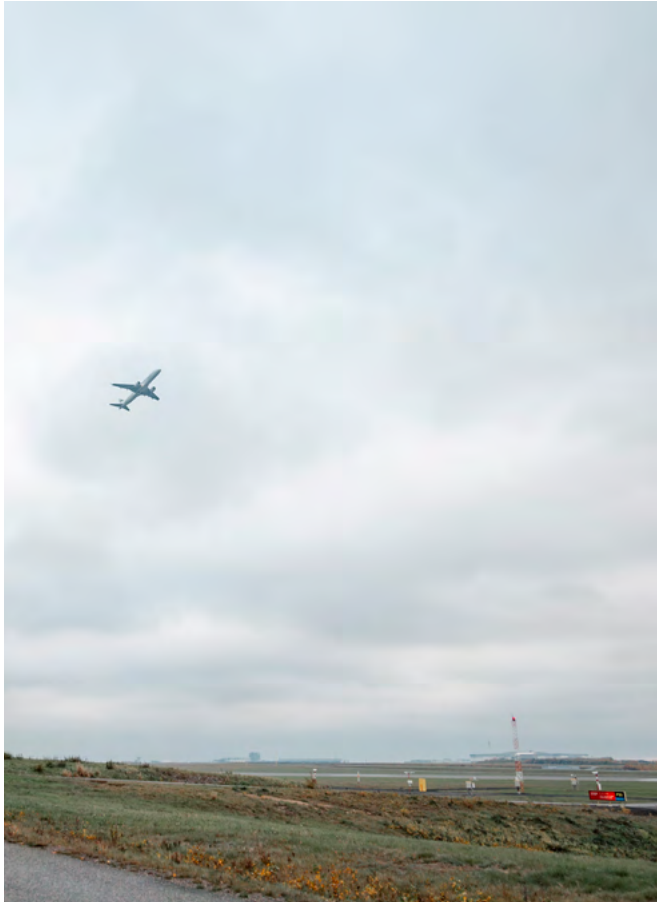
The technology and responsibility unit and the director of sustainable development coordinate Finavia's environmental activities. Our aim is to constantly reduce the environmental impact of our operations, as well as to develop stakeholder cooperation and communication related to environmental issues.

The main areas of responsibility of Finavia's environmental unit are:

- Sustainable development of operations
- Environmental permit processes and official reporting
- The investigations and plans required by environmental laws and permits
- Supervision of interests to secure operational prerequisites

Examples of our continuous themes of environmental responsibility:

- Developing the protection of watercourses at airports
- Reducing emissions from Finavia's operations using renewable energy and renewable fuels
- Investigation and remediation of contaminated soil
- Developing aircraft noise control measures at Helsinki Airport in cooperation with airlines and air navigation services
- Supporting ANS Finland's air navigation services by improving flight methods and the environmental efficiency of airspace
- Reducing the use of plastics at airports
- Developing environmental reporting and communication



Finavia's climate programme

The aim of our climate programme is to reduce carbon dioxide emissions caused by Finavia's operations to zero at all our airports. All Finavia's airports are already carbon neutral.

The climate impacts of Finavia's airports are mainly created by the illumination of terminals and other consumption of electricity, heating, cooling and the energy consumption of vehicles. Finavia is responsible for controlling these emissions, and it has been implementing its climate programme for several years. The programme's essential parts are a significant increase in the use of renewable forms of energy, the origin of electricity and heat, improvement of energy efficiency in all activities and the compensation of emissions in the markets.

The energy consumption and emissions of airports are shown in closer detail on page 66 of the report.

All Finavia's airports are carbon neutral. Finavia has succeeded in reducing the emissions of Helsinki Airport to zero, and it has been officially carbon neutral since 2017. The regional airports became carbon neutral in the spring of 2019 – more than a year earlier than the target. Achieving carbon neutrality has called for hard work and the thorough consideration of environmental aspects in all activities, not forgetting investments.

Finavia's entire diesel-powered vehicle fleet switched to using renewable biofuels

Currently, the heating systems of 11 of Finavia's airports use renewable sources, such as biomass, biogas or geothermal heat. All the electric energy used is Nordic wind power. In addition, Helsinki Airport has a solar power plant, which was expanded in 2019. Currently, it is one of the largest solar power plants in Finland and the largest airport power plant in the Nordic countries. Solar power plant will be increased during 2020.

At the end of 2019, the use of renewable biodiesel was extended to cover all Finavia's diesel-powered equipment in Finland.

We offset any remaining emissions through development projects identified by the Nordic Environmental Finance Corporation (NEFCO). In their subject countries like Ghana, these projects produce various positive socioeconomic and environmental impacts.

Finavia supports the international climate agreement with its climate programme

It is important that air traffic operators are at the forefront reducing the emissions from their operations. Finavia is a key partner to the joint commitment of European airport companies under which there should be 100 carbon neutral airports in Europe by 2030. Finavia's airports represent 20 per cent of this target.

We also want to promote emission-free air traffic. We cooperate with airlines and the air navigation service company ANS Finland in promoting green landings that reduce the fuel consumption, emissions and noise of arriving airplanes. In addition, we are involved in funding the development and testing of Finland's first electric aircraft.

Green landings are discussed in closer detail on page 55 of the report.

Finavia's carbon dioxide emissions have decreased in spite of increased passenger volumes.

FINAVIA'S CLIMATE PATH

2008
- **Finavia composes its climate and energy program**
- **The carbon footprint calculation begins**

2011
- **Finavia joins the ACA program***

2012
- **Finavia's CO_2 emissions per passenger: 1.8 kg**

2016
- **Finavia acquires wind power for Helsinki Airport: Electricity usage 100 per cent renewable**

2017
- **Helsinki Airport carbon neutral**
- **Finavia opens a solar power plant and starts using renewable diesel, remaining emissions are compensated**
- **Finavia's CO_2 emissions per passenger: 0.9 kg**

2018
- **Finavia acquires more wind power for all airports: Electricity usage 100 per cent renewable**
- **Finavia increases the use of renewable diesel at Lapland airports**

2019
- **All airports carbon neutral**
- **Finavia expands the solar power plant at the Helsinki Airport, remaining emissions are compensated at all airports.**
- **Finavia's CO_2 emissions per passenger: 0.6 kg**

2020
- **Finavia expands the solar power plant further at Helsinki Airport**
- **Use of renewable diesel at all airports**

2030
- **Zero net emissions**

*ACA (Airport Carbon Accreditation) is an international programme that aims to reduce airports' carbon dioxide emissions.

GOALS AND ACHIEVEMENTS OF ENVIRONMENTAL RESPONSIBILITY

Environmental responsibility theme	Goals for 2019	Results	Goals for 2020
Reducing atmospheric emissions	1. ACI/ACA Level 3+ certification for the Lapland Airports group. 2. ACI/ACA Level 3+ certification maintained at Helsinki Airport and as part of this: 3. The remaining output (approximately 400 kWp) of the solar energy production in the new terminal sections is commissioned, and an investment decision is made for additional production in the new parking facility. 4. Renewable diesel to be used in Finavia's diesel-fuelled equipment at all airports. 5. All airports start using wind power, and remaining emissions will be compensated.	1. Certification obtained on 6 September 2019. 2. Level maintained. 3. Commissioned, and an investment decision on the parking facility made. 4. Use of renewable diesel started in December 2019. 5. Goal achieved in the winter of 2019.	• The utilisation rate of renewable diesel is 100% in the network following the start of deliveries, and 75% in diesel-fuelled equipment at Helsinki Airport. • A general plan to achieve a net level of zero carbon dioxide emissions in Finavia's operations by 2030. • A plan for carbon-free heating systems for Finavia's buildings, including implementation schedules. • ACA Level 3+ to be maintained at Helsinki Airport and airports in Lapland. Finavia's operations at other airports were also carbon neutral. • Increasing solar power production at Helsinki Airport by 200 kWp.
Development of water pollution control at Helsinki Airport	1. Reconditioning of the Kylmäoja stream regarding the fishing industry, particularly the trout spawning grounds. 2. Commissioning of the Kylmäoja biofiltration pilot and initiation of a follow-up study. 3. Building of the Veromiehenkylänpuro wetland pilot and initiation of a follow-up study. 4. Finishing de-icing locations 120 in apron 1.	1. Reconditioning completed. 2. Commissioned, follow-up study in progress. 3. Wetland construction started, to be completed in the summer of 2020. 4. Three ground-protected locations completed.	• Finishing the Veromiehenkylänpuro wetland, controlled commissioning and initiation of a follow-up study. • Monitoring the biofiltration area as planned. • An investigation of surface water and groundwater loads on runways 1 and 2.
Development of aircraft noise control at Helsinki Airport in cooperation with ANS Finland	1. Optimisation of arrival routes and approach methods in the STAR 2019 reform. 2. Update of CDO instructions as part of CEM cooperation. 3. Definition of instructions for noise control with approach methods (LP/LD).	1. Completed as planned. 2. 2. and 3. draft prepared, development will be continued in 2020. 3. Video material of noise control measures related to approaches for air navigation services and airlines.	• Update of CDO and LP/LD instructions as part of CEM cooperation. • Optimisation of power reduction and acceleration height and noise control measures for take-off methods.

Environmental responsibility theme	Goals for 2019	Results	Goals for 2020
Development of de-icing and water pollution control at network airports	1. Enhancement of glycol collection measures at Jyväskylä Airport by constructing a storage pool. 2. Leading the glycol-containing waters at Rovaniemi Airport to the treatment plant by constructing a storage pool and drainage system. 3. General plan of water pollution control measures for de-icing operations at Kittilä Airport, construction plan and implementation. 4. General plan for the technical management of glycol emissions at Oulu Airport.	1. Completed and in operation. 2. Positioning and implementation planning for structures started, to be continued in 2020. 3. General plan prepared, environmental provision completed, to be built in 2020. Vacuuming tests will be continued in the winter of 2020. 4. Land acquisition started, planning to be continued. The project has been postponed due to scheduling of other similar projects.	• Collection of glycol-containing water at Rovaniemi Airport using a vacuum tanker under preparation by planning a storage pool. • Collection of glycol-containing water using a vacuum tanker and the construction of a storage pool to be started at Kittilä and Turku Airports, and the connection of the storage pool to the wastewater sewer system at Kittilä Airport.
Surveying the level of contamination of fire drill areas at airports and the required reconditioning measures	1. Planning of PFAS reconditioning for the fire drill area at Joensuu Airport in compliance with new risk management instructions.	1. Instructions completed in the spring of 2019. 3D modelling of groundwater flows to be completed in early 2020. Reconditioning to be planned in 2020 and potentially implemented in 2021.	• Planning of PFAS reconditioning for the fire drill area at Joensuu Airport in compliance with groundwater modelling and the Finnish Environment Institute's new risk management instructions.
Environmental responsibility criteria for purchases	1. Finavia's Code of Conduct to become a standard part of bidding processes. 2. Identification of products and services that are most significant for responsibility. 3. Participation in the "Plastic-free airport" project.	1. In use from the beginning of 2019: a standard appendix to Finavia's agreement templates and initially included in all bidding processes. 2. Preliminary investigation completed; products and services that are most significant for responsibility identified. 3. The procurement unit will consider this in bidding processes when necessary.	• Setting threshold criteria for environmental responsibility for the most important product and service categories, and systematic addition of environmental elements to bidding processes. • Fewer plastic products will be purchased. • Instructions for responsible procurement. • Stabilising social responsibility as part of the procurement process.
Development of Finavia's environmental responsibility communication and communication with neighbours of Helsinki Airport	1. The first diverse learning package for comprehensive school students implemented with the basic education services of the City of Vantaa. 2. Airlines start using renewable aviation fuel at Helsinki Airport. Companies operating at the airport start using renewable diesel fuel. 3. Preparing a programme for reducing the use of plastic at Helsinki Airport and airports in Lapland, and its implementation together with companies.	1. Completed in March 2019. 2. Finavia supports airlines and fuel companies in the use of renewable fuels. 3. Some ground handling companies at Helsinki Airport and all ground handling companies at airports in Lapland use renewable diesel. 4. Investigation and reduction plan completed, to be implemented later.	• The diverse learning package for comprehensive school students to be made a standard practice with the basic education services of the City of Vantaa. • Finavia's responsibility to be highlighted at various public events. • Selected airport operators to be supported in preparing a reduction programme for carbon dioxide emissions for 2020–2025. • Airlines start using renewable aviation fuel at Helsinki Airport.

Environmental investments

In 2019, Finavia made specific investments in improving the aircraft anti-icing and de-icing infrastructure. Additional investments strengthen our water protection activities.

Our environmental investments totalled EUR 5.0 (10.X) million in 2019. The most significant investment of roughly EUR 3 million was made to build three de-icing locations at Helsinki Airport.

The new de-icing locations reduce environmental loading in watercourses resulting from de-icing treatments. Other significant environmental investments at Helsinki Airport included the reconditioning of the Kylmäoja trout stream, starting the construction of underground wetlands, the completion of the biofiltration area and investments in use of solar power, electric vehicles and adding recharging points.

Measures to improve water protection were also carried out at other network airports. Finavia's equipment's fuel distribution station was renovated at Savonlinna and Joensuu airport. In Ivalo water protection was improved by adding automation to the recovery system for glycol used in anti-icing and de-icing treatments.

In addition to environmental investments made in 2019, environmental costs were incurred from reducing carbon emissions, such as the expanded use of renewable diesel, the procurement of wind power and the compensating of remaining emissions.

MAIN ENVIRONMENTAL INVESTMENTS IN 2019

Three new de-icing locations at Helsinki Airport EUR **3.0** million	**Other de-icing investments** EUR **0.4** million	**Urban runoff treatment and management** EUR **0.5** million
Storage of fuels and chemicals EUR **0.6** million	**Electric vehicles and charging stations** EUR **0.5** million	**Solar power plants and more effective use of energy** EUR **0.5** million

Our environmental investments totalled EUR 5.5 million in 2019

Environmental permits

According to the Environmental Protection Act, airport operations are subject to an environmental permit. For Finavia, permit processes are part of its environmental activities, the fulfilment of statutory requirements and interaction with the sectors it serves. Cooperation with the Finnish Defence Forces is also important, as responsibility for permits is shared at joint operation airports.

Eighteen of Finavia's airports have an environmental permit in accordance with the Environmental Protection Act. A small number of airports do not need an environmental permit unless the scope of their operations substantially changes. In addition to the environmental permit, airport operations are governed by many international and national aviation regulations.

At the end of 2019, the permit application for Kajaani Airport was being processed by the permit authority.

In May 2019, the Vaasa Administrative Court issued its decision on appeals related to the decision to redefine the permit regulations of Utti Airport. Finavia, among others, has applied for changes to this decision, and lodged an appeal with the Supreme Administrative Court. The case is still pending at the Supreme Administrative Court.

At the end of 2018, the Uusimaa ELY Centre decided to redefine the permit regulations of Helsinki Airport. Finavia submitted its response to the case to the Regional State Administrative Agency of Southern Finland in June 2019 and supplemented its response in December 2019.

Environmental permits require reports and plans

The provisions of environmental permits include numerous reporting and planning obligations concerning such issues as water pollution and noise control.

Regarding Helsinki Airport, Finavia submitted its response to a decision issued on the basis of the Aviation Act to the Regional State Administrative Agency of Southern Finland in September 2019, and issued a study of air traffic at night and a change application regarding permit regulation 4 in April 2019. The Regional State Administrative agency gave a decision in January 2020 and the decision is final. The change application regarding permit regulation 4 is still underway. In addition, the Vaasa Administrative Court is processing an appeal regarding the intensified recovery of glycol based on a decision issued in June 2019.

Decisions on urban runoff and noise studies regarding Tampere-Pirkkala Airport were issued in June 2019. Finavia lodged an appeal with the Vaasa Administrative Court regarding a decision on the recovery and processing of glycol-containing waters at Turku Airport issued in 2018. The processing of the case is pending. A study of urban runoff at Vaasa Airport was submitted to the Regional State Administrative Agency of Western and Central Finland in October 2019. The processing of the case is pending.

Environmental impacts

The most significant environmental impact at airports result from anti-icing treatments for runways, anti-icing and de-icing operations for aircraft, and flight operations.

Finavia bears its responsibility for the environmental impact of its operations. As an airport operator, we are also partly responsible for the environmental impact of our partners operating in airport areas. Although passenger volumes are growing, the environmental impact does not follow the same trend.

A significant part of the environmental impact of Finavia's operations comes from the winter maintenance of airfield areas (aquatic and soil emissions), the maintenance of buildings and infrastructure (energy consumption, emissions), and the use of equipment (emissions). Ground handling companies carry out anti-icing and de-icing operations for aircraft (aquatic and soil emissions).

The most significant environmental impact of airport operations comes from air traffic (noise, emissions). Finavia controls the environmental impact of air traffic in the proximity of airports in cooperation with the air navigation service company ANS Finland.

Environmental impact of air traffic

De-icing treatments and runway anti-icing operations

Finavia is responsible for anti-icing operations on runways. Mechanical methods, such as sweeping and snow-ploughing, are the primary methods. Chemical agents are required for removing frost and ice from the runway surface and for preventive anti-icing operations. These substances consume oxygen in watercourses, but have the least negative impact on the environment of all anti-icing agents.

In aircraft anti-icing and de-icing, propylene glycol is sprayed on aircraft surfaces. These treatments are carried out by a ground handling company. Propylene glycol is not a hazardous substance, but it consumes oxygen when it decomposes and emits an odour, and due to this Finavia takes the appropriate measures to manage runoff related to anti-icing and de-icing.

Movement of aircraft

A significant environmental impact of airport operations comes from air traffic, i.e. aircraft noise and emissions. Finavia steers aircraft noise control and develops guidelines together with ANS Finland, the provider of air navigation services.

Maintenance of airport infrastructure and buildings

Finavia is responsible for the maintenance of airport buildings (terminals and offices), as well as for their heating and waste and wastewater management. The environmental impact of buildings consists of their direct and indirect emissions.

Although passenger volumes are growing, the environmental impact does not follow the same trend.

Innovative water protection measures aim to reduce the environmental impact of winter maintenance

Finavia is responsible for the winter maintenance of runways and other airfield areas. Mechanical methods, such as sweeping and ploughing, are the primary anti-skid methods used. Chemical agents are required for removing frost and ice from the runway surface and for skid prevention. Substances currently used are sodium acetate, potassium acetate, sodium formate and potassium formate in granular and liquid form. These substances consume oxygen in watercourses, but have the least negative impact on the environment of all applicable substances.

Anti-icing and de-icing treatments for aircraft are necessary to secure the manoeuvrability and performance of aircraft in winter conditions. Propylene glycol, sprayed on aircraft surfaces for anti-icing and de-icing purposes, is not classified as hazardous, but it consumes oxygen and emits an odour when it decomposes. Anti-icing and de-icing treatments are carried out by ground handling companies, while Finavia is responsible for runoff management at airports. Although the aim is to recover the chemicals used by using different methods, they also access watercourses through runoff.

In 2019, Finavia carried out activities defined in its environmental programme to develop water protection at Helsinki Airport. More information about the most significant and unique projects, i.e. the reconditioning of the Kylmäoja stream in terms of fisheries management and the construction of a biofiltration area and underground wetlands, is presented on page 53.

Noise from flight operations

Airlines are mainly responsible for flight operations and the resulting environmental impact at Finavia's airports. However, other parties, such as the authorities and the Finnish Defence Forces, are also engaged in flight operations.

Noise and atmospheric emissions come not only from flight operations but from taxiing and test operations. The responsibility for the environmental impact of flight operations is divided between several parties: all aviation operators (equipment), municipalities (land use planning) and Finavia, via ANS Finland (use of runways, flight methods).

Aircraft noise is regulated in great detail in airport-specific environmental permits. Aircraft noise is controlled by planning the use of runways and flight routes and by supervising land use around airports. Finavia, with air navigation services, plans low-noise take-off and landing methods, while airlines are responsible for their implementation. The engine technology of aircraft has taken great leaps forward as a result of international noise regulations, and modern planes produce less noise than those built two decades ago.

Emissions from flight operations

Carbon dioxide emissions from aircraft and their impact on the climate are governed by international agreements and regulations. Air traffic within the EU has been part of the emissions trading system since 2012. In 2016, the International Civil Aviation Organisation (ICAO) decided to introduce the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA). Under the scheme, airlines commit to offsetting their emissions from international flights that exceed the 2020 level by buying emission allowances from markets.

Water management at Helsinki Airport

Water management comprises a central part of Finavia's environmental responsibility. For example, the proper treatment and management of urban runoff reduces erosion in surrounding streams and environmental loads in watercourses caused by anti-icing and de-icing agents.

During 2019, a number of innovative projects were carried out at Helsinki Airport to develop water management. Through systematic reconditioning, it was possible to return the threatened sea trout, which had previously disappeared, to the Kylmäoja stream flowing close to the airport. In the spring, Finland's largest biofiltration area for urban runoff was completed at the corner of runways 1 and 2. In addition, Finavia started to build underground wetlands at Helsinki Airport to recondition a stream located close to the airport area by improving the condition of water and oxygen balance.

Kylmäoja trout stream reconditioned in cooperation

Long-term cooperation between Finavia and its partners to improve the reproduction, migration and living conditions of fish in the Kylmäoja stream continued in 2019. Although Finavia was in charge of the reconditioning project in the summer of 2019, a number of Finavia's stakeholders participated in the project. The reconditioning programme was approved by the regional fish industry authority. The project's steering group included many authorities. In addition, people living in the area were provided with information about the project. Finavia also contacted all landowners whose land areas were affected by the project, and acquired the required official permits. Professional organisations carried out the actual reconditioning activities. For example, they built suitable spawning and protective areas using gravel and rocks of different sizes.

The authorities and non-professional reconditioning associations have been satisfied with the development of the Kylmäoja stream. The next few years will show the extent to which fish stocks and spawning expand in the stream.

Finland's largest biofiltration area was completed at the corner of runways

In March 2019, a biofiltration area of approximately one hectare, apparently the largest of its kind in Finland, was completed on a piece of peat-containing land at the corner of runways 1 and 2. The purpose of the area is to delay the flow of urban runoff in the airfield area and treat it before it accesses local watercourses.

In the biofiltration area, the flow of urban runoff is decelerated so that it can be filtered through a peat layer. The peat layer binds harmful substances. Furthermore, anti-skid and de-icing agents partly disintegrate in the peat layer. Filtered water is discharged from the area via underdrains. If necessary, the flow of water discharged from the area can be regulated.

Underground wetlands at Helsinki Airport improves the condition of water and oxygen balance.

The recently built biofiltration area requires that its operation and water quality are monitored regularly. Water needs to pass through the filter layers unimpeded without forming any puddles to avoid attracting any water birds that present a collision risk. Samples are taken from incoming and outgoing water every two weeks. At the same time, specific parts of the area are inspected. The biofiltration area is an experimental project, and based on experiences obtained from it, similar areas will be built for the treatment of runoff around runways 1 and 2.

The first underground wetlands in the Nordic countries

Finavia started to build underground wetlands in the Veromiehen-kylänpuro catchment area at Helsinki Airport in the autumn of 2019. The wetlands will improve the condition of the stream by raising the quality of water and the oxygen balance. This is a test structure, and based on experiences gained from it, the planning of future wetlands can be specified if necessary. The construction of the wetlands will be completed in the summer of 2020.

The underground wetlands work so that water fed to the area is screened through rock material and a growing biofilm. Runoff flows into underdrains through crushed stone, and air bubbles blown from aeration pipes below the underdrains oxidise water. Aeration also prevents the wetlands from freezing in winter. The layer growing on the treatment layer acts as insulation in cold weather.

Underground wetlands have been tested at airports in various countries. Like regular wetlands, they do not attract birds, which is important for flight safety. The underground wetlands planned on the basis of Aalto University's studies are the first of their kind in the Nordic countries.

Further information

Finavia continues restoration of local streams next to Helsinki Airport

A new biofiltration system is cleaning the waters flowing through Helsinki Airport

An underground water treatment system will help Helsinki Airport clean water more effectively

Aircraft noise control

We are mitigating aircraft noise, among other things by controlling the use of runways and flight routes as well as the development of take-off and landing methods.

The Collaborative Environmental Management (CEM) working group focusing on the technical and operational noise control issues at Helsinki Airport continued its active work during 2019. The working group, which started its work in 2018, continued assessing, in cooperation with ANS Finland and the airlines with the largest numbers of operations, the possibilities of developing methods and practical implementation measures for controlling noise during approaches. One of the aims of this work was to update the earlier operational instructions for continuous descent approaches. The instructions will also be supplemented so that they will guide the pilots, particularly during night-time approaches, to use an air speed and configuration that is also optimal from the perspective of noise spreading.

We published a video, intended for pilots and air traffic controllers, regarding noise control during approaches at Helsinki Airport. The purpose of the video is to support general awareness of approach noise control and convey information on the preferred models of operation to professionals.

We actively participated in the work of ANS Finland for planning the new entry routes and approach methods of Helsinki Airport introduced in the spring of 2019. Our cooperation ensured that besides operational goals, noise control was also taken into account when planning and carrying out all changes.

Continuous descent is used in 75 per cent of approaches

In continuous descents, the aircraft approaches the runway without the horizontal flight previously used as the basic premise, which required flying at an altitude of a few hundred metres, using high engine power. In continuous descents, noise is controlled by maintaining a higher altitude for longer and by opening the flaps and landing gear as late as possible and by steadily adjusting the speed. In 2019, 75 per cent (74) of planes landing at Helsinki Airport used the continuous descent approach.

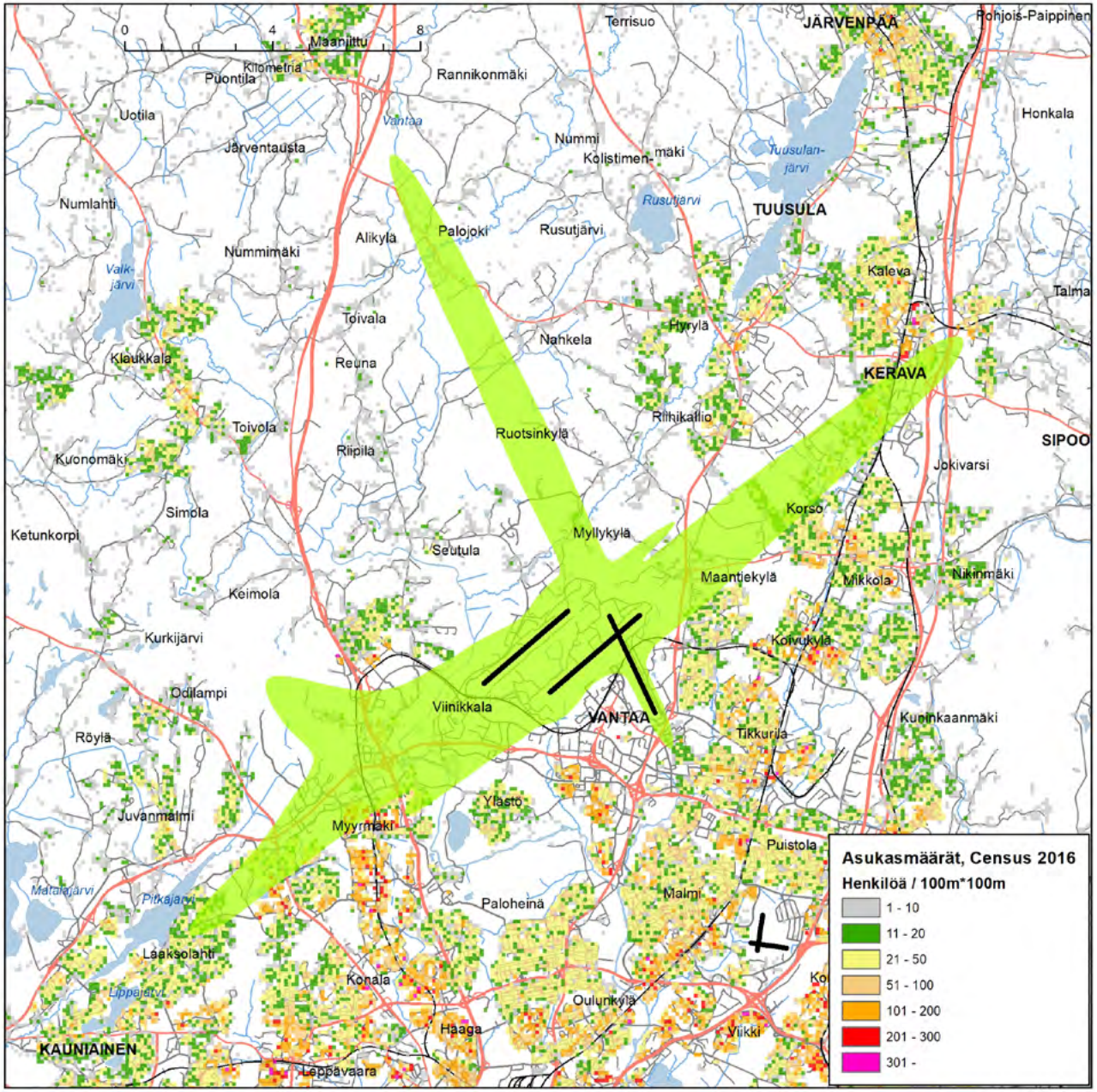
The percentages at different times of the day were as follows: 72 per cent of flights between 7 am and 10 pm used continuous descent, while the percentage was 83 at night between 10 pm and 7 am. Both figures exceeded the guide values in the environmental permit. Compared with the rest of Europe, the average share of horizontal flight is the shortest of all the 30 most important airports in Europe included in the comparison. The development regarding continuous descent approaches has been positive for years as a result of cooperation with the air traffic control of ANS Finland and airlines. At other airports, there is more scope for using the method, as their airspace has less traffic.

The noise area at Helsinki Airport has decreased by two thirds in the long term

There are ten measurement stations in the noise monitoring system (ANOMS) at Helsinki Airport. Finavia uses the system to monitor the noise situation and produce reports. The WebTrak service publicly displays data collected by ANOMS at Finavia's website. The measurement results of different measurement points can be viewed by every second for different aircraft routes during a chosen period. Over a long period, the noise area has reduced to one-third thanks to developments in aircraft technology and the methods applied by air traffic control.

In 1990, a total of 97,000 people lived in the aircraft noise area. In 2018, the corresponding number was 24,000 (25,000). The shape and population of the noise area vary every year due to wind conditions and runway renovation operations, for example. In 2018, the calculated noise area was affected by the northerly and easterly winds, which were more common than the average and resulted in Runway 04L having to be used for landings more often than usual. The share of Runway 15, used as the primary landing runway, was also better than in the previous year.

The extensive development programme at Helsinki Airport does not affect the use of runways and will thus not change the spread of aircraft noise. The L_{den} (day, evening, night) indicator is most commonly used in Finland to calculate aircraft Directive accordance with the EU's Environmental Noise Directive. The indicator describes the annual weighted average noise energy recorded over a 24-hour period, where aircraft noise readings taken in the evening (between 7 p.m. and 10 p.m.) are increased by 5 decibels (equivalent to three times the traffic), and aircraft noise readings taken at night (between 10 p.m. and 7 a.m.) are increased by 10 decibels.



HELSINKI AIRPORTS AIRCRAFT NOISE AREA IN 2018 (L_{DEN}55 dB)

Runway usage and distribution of traffic

Helsinki Airport has three runways, which are used as required by weather conditions, traffic and environmental considerations. Safety is always the number-one priority when the runway is selected.

Taking off and landing into a headwind is the safest option for aircraft. The runway to be used is chosen by applying the principle of primacy: in addition to the direction and speed of the wind, noise control and the volume of traffic are taken into account. Runways sometimes have to be closed for repair and construction work. In 2019, Runway 3 was closed for three weeks in the autumn due to reconditioning work. The development programme of Helsinki Airport, started in 2013, does not affect the use of runways or change the direction of noise.

About 20 different runway combinations in use

The runways for landings and take-offs are always chosen taking traffic and prevailing conditions into account. The choices are interdependent. There are about 20 different runway combinations.

For southerly and westerly winds, the primary runway for landings is Runway 2 (15) from the northwest, from the direction of Nurmijärvi, or Runway 1 (22L) from the northeast, from the direction of Kerava. The primary runway for take-offs is runway 3 (22R) towards the southwest, in the direction of western Vantaa and Espoo. Low-noise aircraft can take off from runway 1 (22L) towards the south at the same time. During peak hours in the afternoon, airplanes also land from the direction of Kerava on runway 3 (22R).

When the wind is from the north or east, Runway 3 (04L) and Runway 1 (04R) are usually used for landings, i.e. for approaches from the southwest, in the direction of western Vantaa and Espoo, while Runway 1 (04R), towards the northeast in the direction of Kerava, is used for take-offs.

Choice of runway minimises noise pollution

The aim is to handle traffic so that as few people as possible are living in the area affected by aircraft noise. At night-time, landings are primarily made using runway 2 (15) from the northwest, i.e. from the direction of Nurmijärvi, and take-offs using runway 3 (22R) towards the southwest, in the direction of Western Vantaa and Espoo. Jet plane landings on runway 2 (33) from the southeast and take-offs from runway 2 (15) towards the southeast are only carried out on a few days in a year due to the dense population, apart from a few exceptions. At night-time, operations towards the southeast are also prohibited, unless otherwise dictated by air traffic safety. Air traffic safety is the main reason for not always being able to choose the optimal runway for noise control.

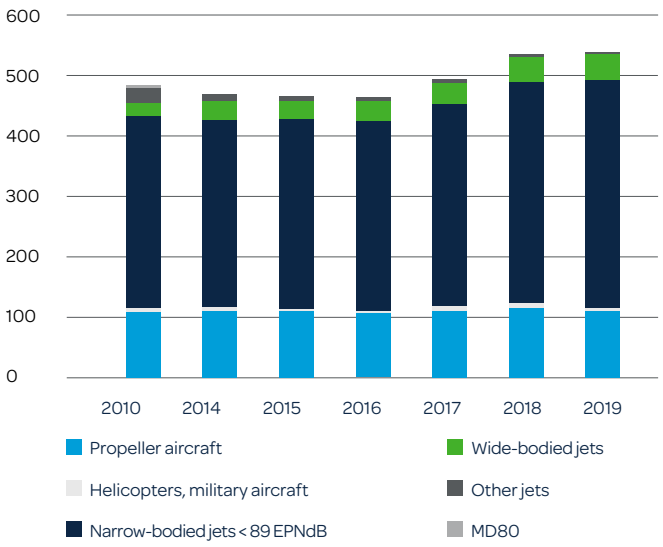
Distribution of traffic at Helsinki Airport

In 2019, the total number of take-offs and landings at Helsinki Airport was 195,700. Weekdays are the busiest days in air traffic. In 2019, an average of 437 jet planes (427) and 122 propeller planes (126) arrived at or departed from Helsinki Airport during weekdays. About 21 per cent of all passenger flights are operated with propeller planes. Air traffic at Helsinki Airport is at its peak in the afternoon and from 8 a.m. to 9 a.m. in the morning. There are a large number of arrivals from 2 p.m. to 4 p.m., while the peak hours for departing traffic are from 4 p.m. to 6 p.m. There is little traffic at night from 1 a.m. to 6 a.m., and landings account for most of the operations during those hours.

The busiest month in 2019 was October. The traffic was at its lowest in February. In 2019, a total of 70 per cent (69) of all passenger aircraft using the airport were low-noise jet planes. Wide-bodied aircraft accounted for 8 per cent (8). Propeller planes accounted for 21 per cent (21) of all flights. The noisier MD80 planes are no longer used.

TYPES OF AIRCRAFT IN SERVICE

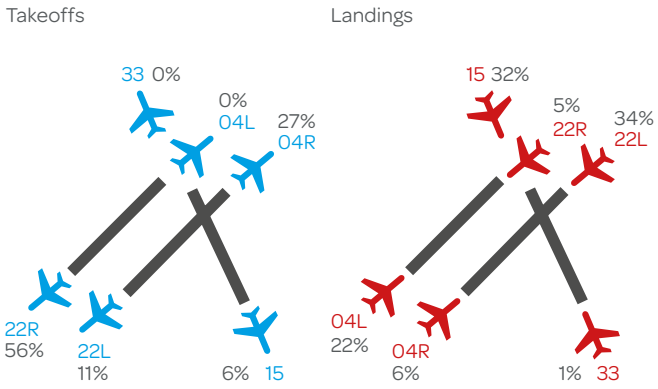
Daily operations



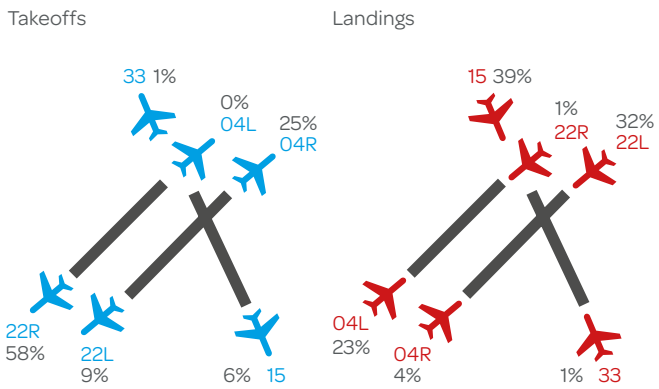
The development programme of Helsinki Airport does not affect the use of runways or change the direction of noise.

RUNWAY USE THOROUGH THE DAY IN 2019

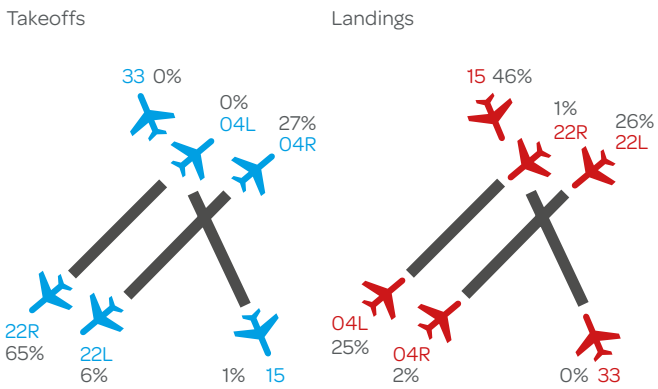
All day traffic



Evening traffic (7 p.m. to 10 p.m.)

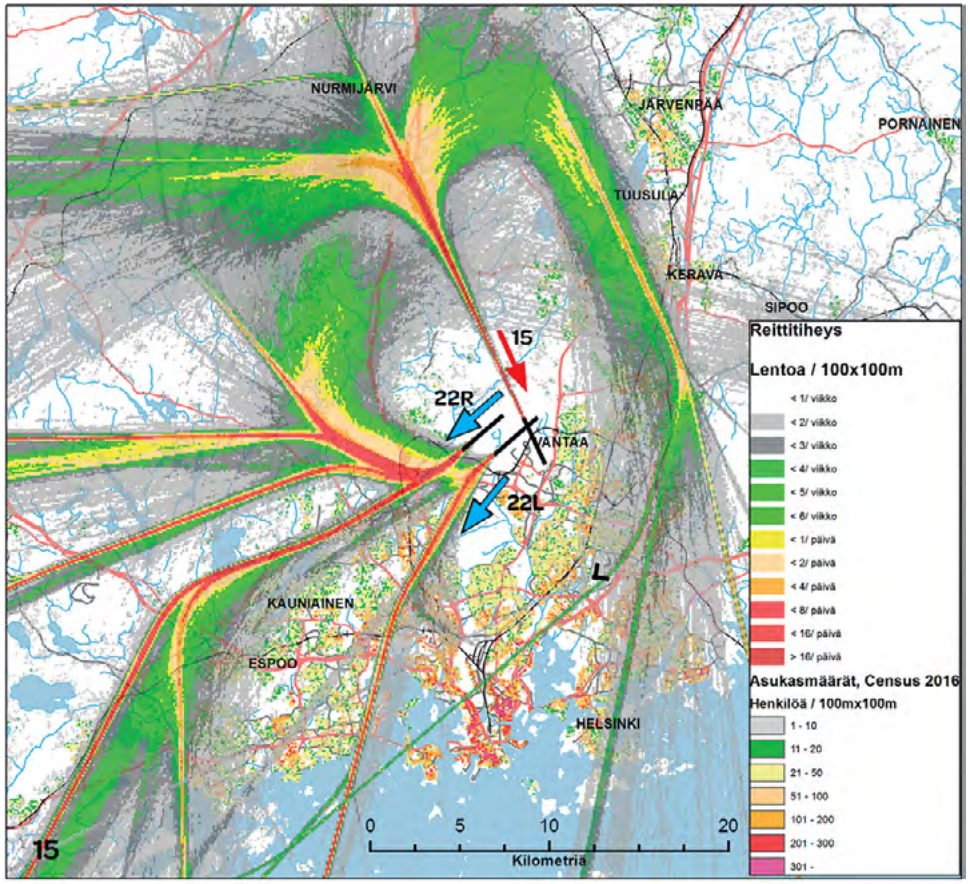


Night-time traffic (10 p.m. to 7 a.m.)

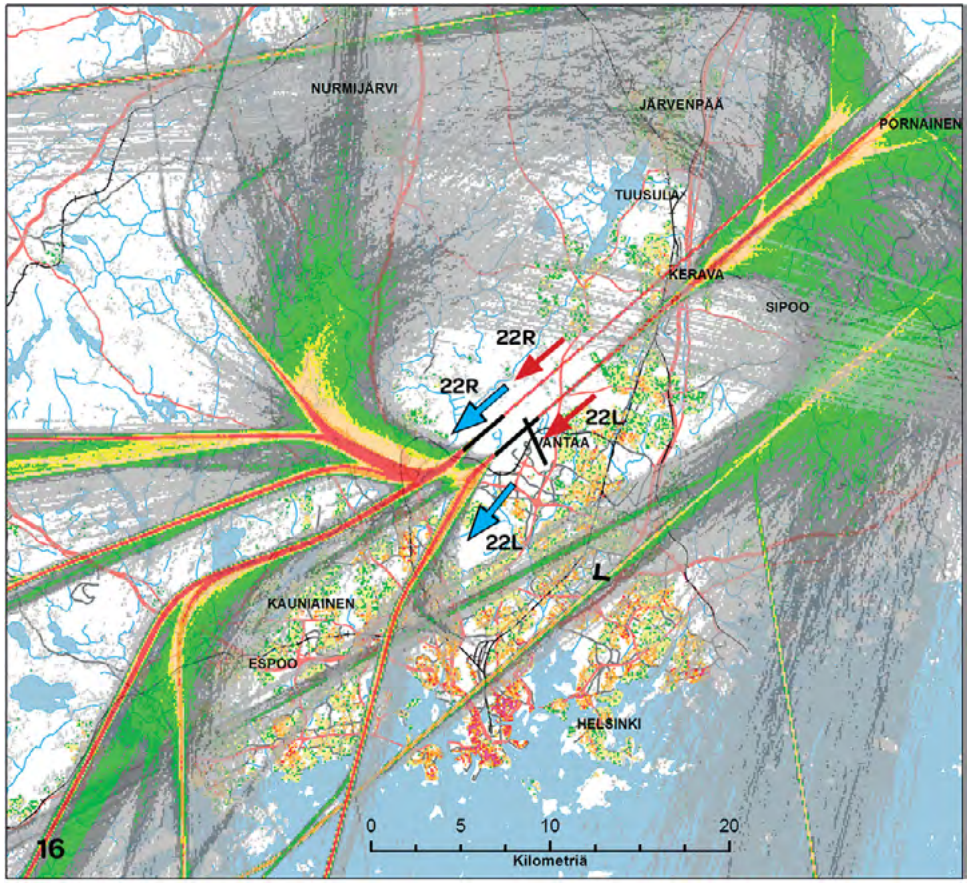


In 2019, 32 (32) per cent of all landings and 47 (46) per cent of night-time landings (between 10 p.m. and 7 a.m.) used the primary landing direction, i.e. Runway 2 (15). A total of 56 (53) per cent of all take-offs and 65 (62) per cent of night-time take-offs used the primary take-off direction, i.e. Runway 3 (22R). Only 6 (6) per cent of take-offs were towards the southeast.

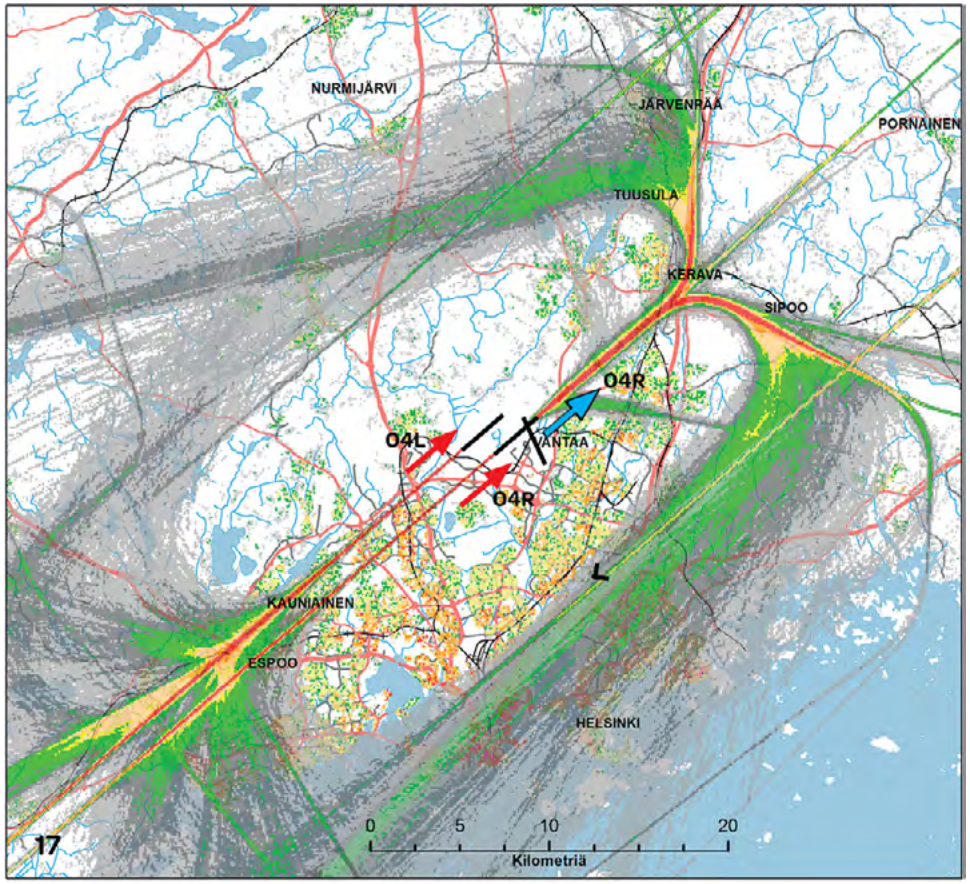
ROUTE FREQUENCY MAP: RUNWAY COMBINATION FOR WESTERLY AND SOUTHERLY WINDS



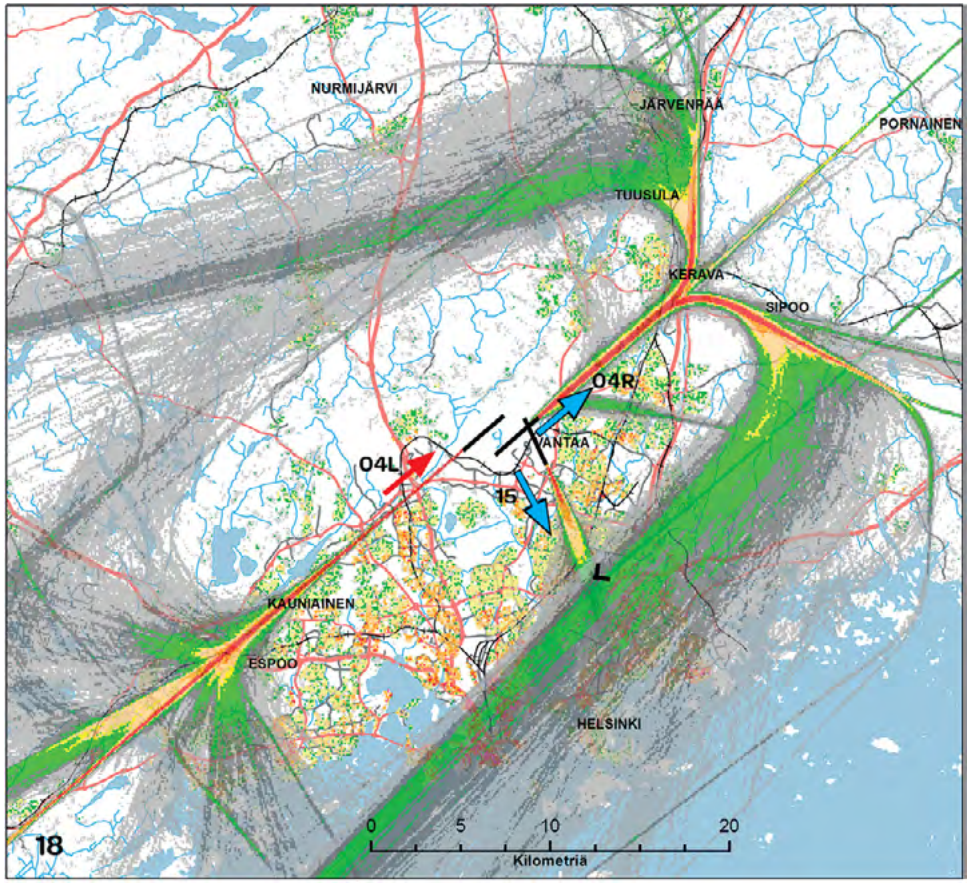
ROUTE FREQUENCY MAP: PARALLEL USE OF RUNWAYS FOR WESTERLY AND SOUTHERLY WINDS



ROUTE FREQUENCY MAP: NORTHERLY AND EASTERLY WINDS, PLENTY OF DESCENDING TRAFFIC

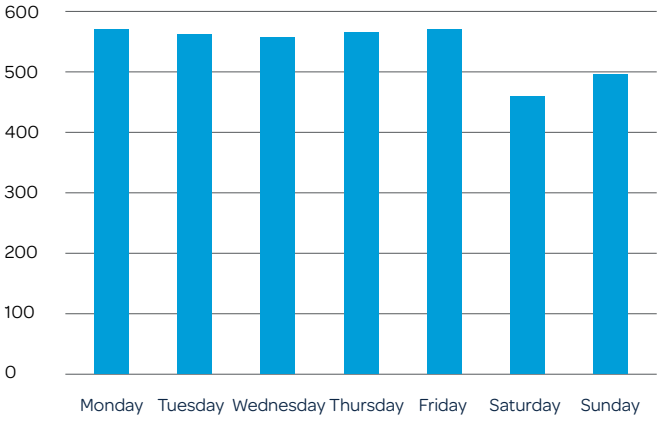


ROUTE FREQUENCY MAP: NORTHERLY AND EASTERLY WINDS, LITTLE DESCENDING TRAFFIC



DISTRIBUTION OF TRAFFIC AT HELSINKI AIRPORT BY DAY OF THE WEEK

Daily operations



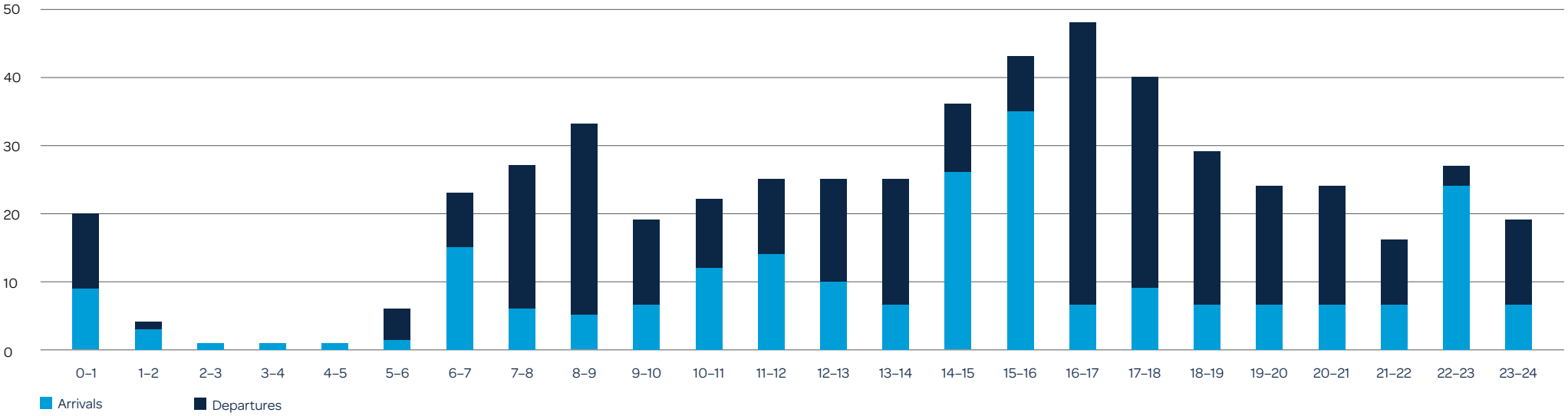
RUNWAY USAGE COMPARISON

Daily traffic	2012	2013	2014	2015	2016	2017	2018	2019
04L take-offs (Runway 3 towards northeast)	0%	0%	0%	1%	0%	0%	0%	0%
04R take-offs (Runway 1 towards northeast)	25%	26%	27%	16%	28%	27%	32%	27%
22L take-offs (Runway 1 towards southwest)	23%	8%	8%	7%	5%	7%	8%	11%
22R take-offs (Runway 3 towards southwest)	49%	64%	63%	67%	62%	62%	53%	56%
15 take-offs (Runway 2 towards southeast)	3%	2%	2%	9%	5%	4%	6%	6%
33 take-offs (Runway 2 towards northwest)	0%	0%	0%	0%	0%	0%	0%	0%
04L landings (Runway 3 from southwest)	15%	18%	18%	11%	20%	20%	26%	22%
04R landings (Runway 1 from southwest)	10%	8%	10%	6%	9%	8%	8%	6%
22L landings (Runway 1 from northeast)	39%	37%	37%	33%	44%	46%	29%	34%
04L take-offs (Runway 3 towards northeast)	3%	4%	4%	20%	5%	5%	5%	5%
15 landings (Runway 2 from northwest)	33%	32%	37%	29%	22%	21%	32%	32%
33 landings (Runway 2 from southeast)	1%	1%	0%	1%	0%	0%	0%	1%

Every year, runway closure due to renovation has an impact on the distribution of runway usage. In 2019, Runway 3 was closed for three weeks in the autumn due to reconditioning work.

HOURLY DISTRIBUTION OF HELSINKI AIRPORT TRAFFIC

Hourly operations



LANDINGS AT FINAVIA'S AIRPORTS

Airport	Year 2019				Change to previous year (%)			
	Commercial aviation	Military aviation	Other aviation	Total	Commercial aviation	Military aviation	Other aviation	Total
Enontekiö	91	0	5	96	0.0	0.0	150.0	3.2
Halli	0	1,313	358	1,671	-100.0	-12.6	-58.4	-29.3
Helsinki Airport	95,099	683	2,446	98,228	1.2	-8.8	6.0	1.2
Ivalo	1,165	85	67	1,317	0.0	-30.9	-35.6	-5.4
Joensuu	1,492	47	479	2,018	7.6	46.9	-19.4	0.2
Jyväskylä	1,085	10,902	1,658	13,645	-0.1	-3.1	-24.2	-6.1
Kajaani	1,147	97	77	1,321	4.8	162.2	-23.8	7.2
Kemi-Tornio	946	6	525	1,477	-8.3	100.0	-35.6	-20.0
Kittilä	1,684	17	82	1,783	0.4	30.8	-28.7	-1.3
Kokkola-Pietarsaari	1,094	17	517	1,628	-26.4	-26.1	-64.4	-45.1
Kuopio	2114	5,513	2,962	10,589	2.6	-1.7	-21.4	-7.4
Kuusamo	770	3	32	805	5.6	50.0	-11.1	5.0
Maarianhamina	1,365	0	1,032	2,397	-1.8	0.0	18.2	5.9
Oulu	4,597	1,147	3,747	9,491	-11.0	21.4	-13.7	-9.2
Pori	358	147	9,035	9,540	-32.2	79.3	-1.1	-2.1
Rovaniemi	2,660	4,744	2,367	9,771	-4.7	1.8	3.4	0.3
Savonlinna	462	26	87	575	-0.2	-35.0	-24.3	-7.0
Tampere-Pirkkala	2,497	3,288	16,379	22,164	-5.2	-6.2	-12.1	-10.5
Turku	4,384	206	8,510	13,100	9.7	-50.1	16.0	11.5
Utti	1	2,338	670	3,009	0.0	0.4	13.6	3.0
Vaasa	2,893	104	2,387	5,384	0.0	62.5	-16.7	-7.6
Total	**125,904**	**30,683**	**53,422**	**210,009**	**0.2**	**-2.2**	**-8.7**	**-2.6**

Distribution of traffic at Finavia airports

The number of commercial aviation landings at Finavia's airports was 125,904 (125,680). Although passenger volumes have been steadily increasing, the number of operations has not increased at the same rate.

Environment-related feedback

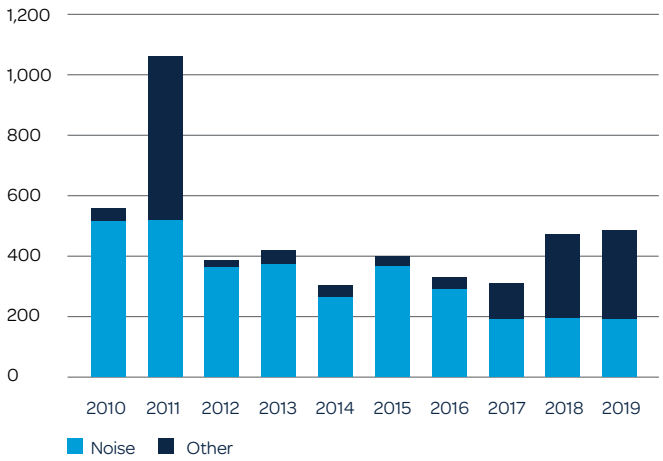
Aircraft noise affects the neighbours of our airports, in particular. It is subsequently not surprising that most of the environmental feedback we receive is noise-related.

In 2019, we received 485 (469) queries regarding environmental issues at Helsinki Airport. Less than half of these were recurring. Noise was the subject of 95 per cent (93) of the feedback.

In 2019, Runway 3 was closed for three weeks for reconditioning work. There were more exceptional weather conditions (such as fog or strong southern or northern winds) in 2019 than in previous years, which increased the number of contacts. The eastern winds persisting for a long time in July 2019 dictated the use of directions from Espoo and Western Vantaa (Direction 04) for landings, which also gave rise to many contacts. Other feedback concerned atmospheric emissions, water and soil issues, and permit matters. The monthly distribution of contacts on a map is shown here.

The total number of all environment-related queries in the network was 498 (493). We respond to all environment-related contacts and report the amount of feedback to environmental authorities on an annual and quarterly basis. The reports are available on Finavia's website.

ENVIRONMENT-RELATED CONTACTS BY YEAR AT HELSINKI AIRPORT



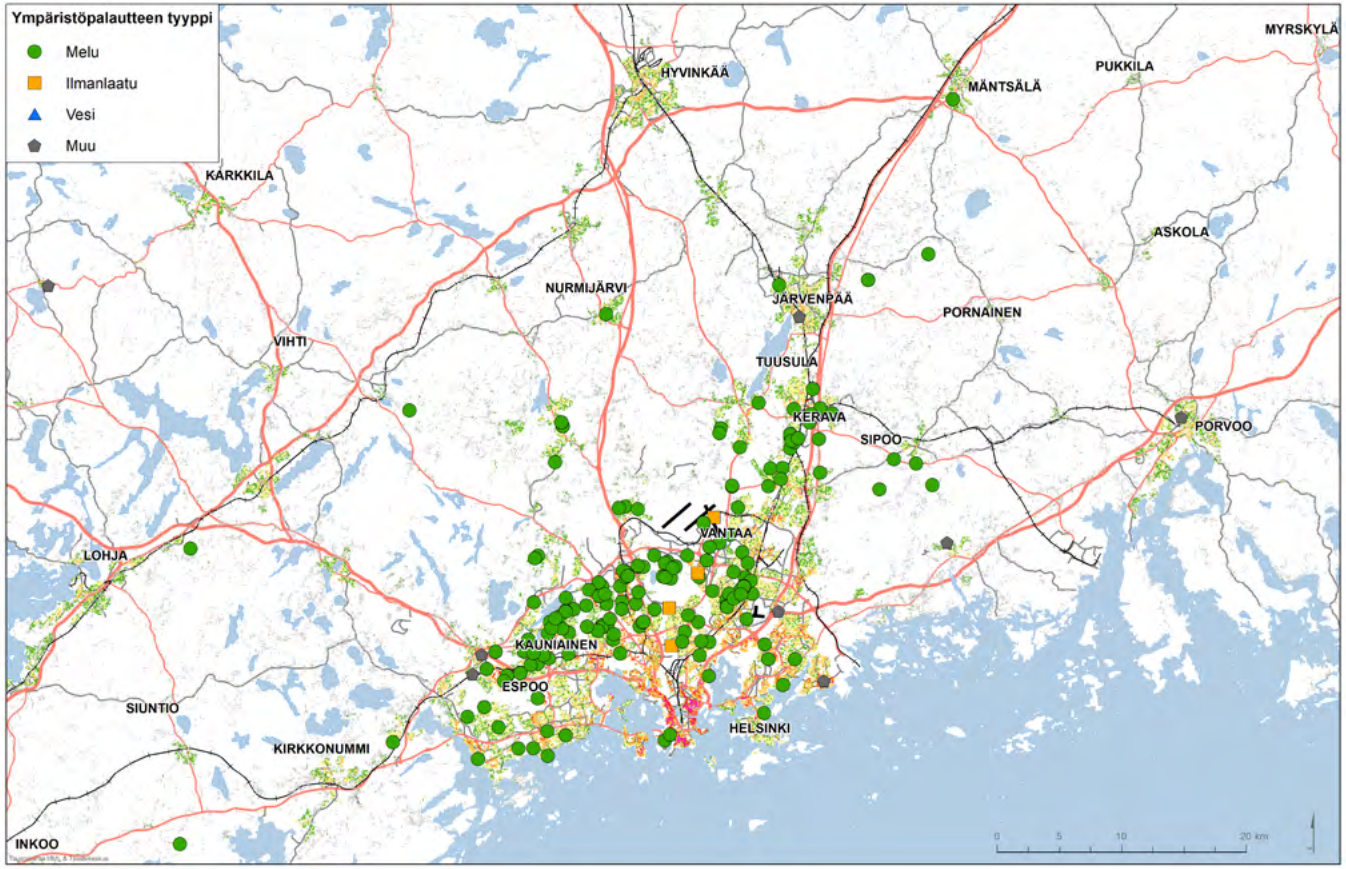
ENVIRONMENT-RELATED CONTACTS BY MUNICIPALITY, HELSINKI AIRPORT

	Different persons	Total contacts
Espoo	47	62
Helsinki	48	63
Järvenpää	2	2
Kauniainen	7	7
Kerava	17	45
Nurmijärvi	4	16
Sipoo	18	186
Tuusula	5	7
Vantaa	61	77
Others	19	20
Total	**228**	**485**

ENVIRONMET-RELATED CONTACTS, ALL AIRPORTS

	Different persons	Total contacts
Helsinki Airport	228	485
Tampere-Pirkkala	4	5
Jyväskylä	3	3
Turku	2	2
Joensuu	1	1
Vaasa	1	1
Pori	1	1
Total	**240**	**498**

TYPES OF ENVIRONMENTAL FEEDBACK IN THE VICINITY OF HELSINKI AIRPORT



Air quality

We are continuously monitoring air quality in the Helsinki Airport area, as part of the air quality measurement programme in the Helsinki region. We also carry out our own measurements on a regular basis.

Most of the total emissions in the airport area are generated by aircraft; however, these emissions are rapidly diluted as emissions heights increase. Their impact on ground-level air quality is low. The impact of ground-level emission sources on local air quality is higher. Therefore, the impacts of emissions on air quality are limited to the immediate proximity of the airport.

Air quality has improved

For several years, Finavia has participated in the air quality measurement programme in the Helsinki region organised by the Helsinki Region Environmental Services Authority (HSY). The nitrogen oxide concentrations measured using passive samplers in five locations have remained below the guideline values, and the air quality has improved. The measuring points at Myllypadontie and Lammaskaskentie roads describe the emissions from aircraft. The measuring points at Terminal 1, as well as Lentäjäntie and Teletie roads, describe the impacts of road traffic in the areas where people move. The nitrogen dioxide emissions generated by air traffic and airport operations have a local impact on air quality and it is mostly limited to the airport area and areas adjacent to it.

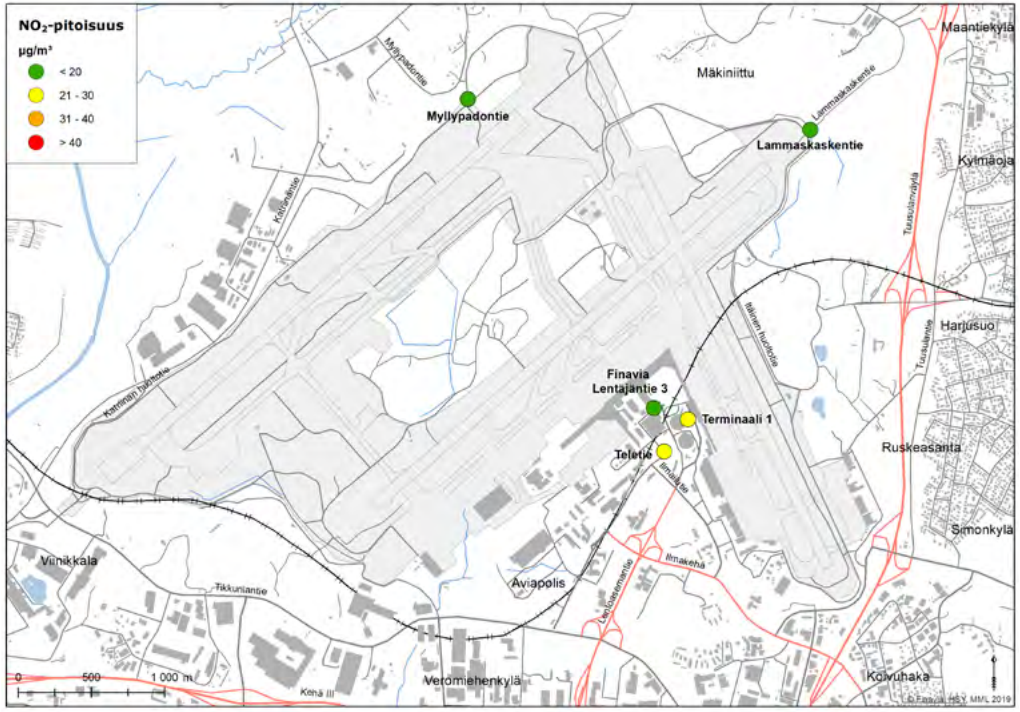
The results of our measurements are presented in a map journal. Over the years, air quality has improved at nearly all measurement points.

PASSIVE SAMPLERS' ANNUAL AVERAGE NO_2 CONCENTRATION, µg/m³

	2014	2015	2016	2017	2018	2019
Airport Terminal 1	37	37	31	29	29	25
Airport Teletie				23	25	24
Airport Rahtitie	23	23	23	20*		
Airport Lentäjäntie 3	20	21	21	20	22	20
Airport Myllypadontie	12	12	12	12	13	12
Airport Lammaskaskentie	12	12	12	11	13	12

*Measurement wagon had to be moved in October because of a construction site.

PASSIVE SAMPLERS' LOCATIONS



Energy and water consumption and emissions

Among other things, airports use energy for the heating, ventilation and cooling of terminals, as well as the illumination of indoor premises and extensive outdoor areas. Maintenance vehicles and machinery also consume significant amounts of energy. We are improving our energy usage and making solutions that reduce carbon emissions throughout our airport network. The carbon emissions per passenger are decreasing.

In the future, we will increase the use of automated methods to control the systems on the basis of demand. During the year, we implemented heat recovery projects and continued the migration to LED-based illumination. All in all, 700 light fittings were replaced, among others in the illumination of the apron in Terminal 2, which improved energy efficiency by more than 75 per cent.

The requirements laid out in the BREEAM environmental certification system for buildings are considered in the planning and implementation of the Helsinki Airport development programme. The objectives guide energy efficiency, activities during the construction stage and well-planned commissioning of the buildings. The south wing in the Helsinki Airport development project received an Excellent level BREEAM certificate in 2018. In continuation of the BREEAM work, the implementation details of the west wing and Aukio were collected for the final certification. These parts of the construction work had already received a preliminary Excellent certificate during the planning and design phase. The application for a certification of the same level for the extension of Terminal 2 is also being processed.

The solar electricity system of the non-Schengen terminals at Helsinki Airport were supplemented by covering a wall stretching along the entire new west wing with solar panels. The rated power of this section is 326 kWp; that of the whole system is 452 kWp. A new capacity of 200 kWp will be installed in the new parking facility in 2020.

Helsinki Airport renewed its level 3+ certificate (the highest level) under the ACA (Airport Carbon Accreditation) carbon dioxide emissions reduction programme of the Airports Council International (ACI). The airports in Lapland (Enontekiö, Ivalo, Kemi-Tornio, Kittilä, Kuusamo and Rovaniemi) also achieved this highest level (Neutrality) in the ACA programme. The level requires that the emissions are verified, a reduction in the emissions index, and the remaining emissions and business travel of personnel to be compensated with emission units purchased from carbon markets.

Our activities at all our airports were carbon neutral in 2019

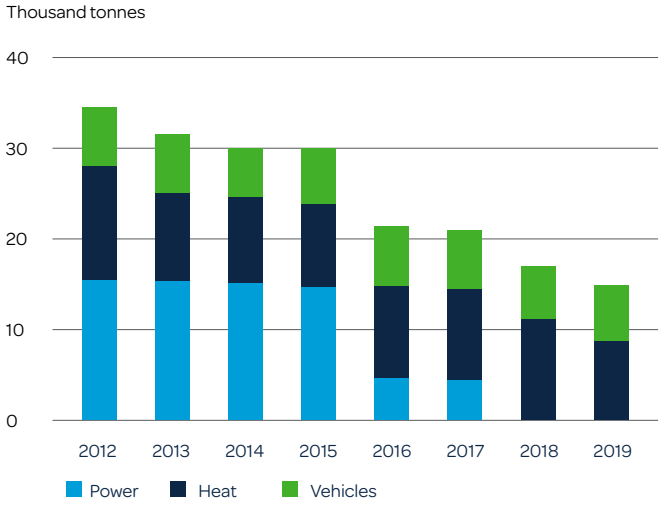
Finavia decided that all its operations in the airport network would be made carbon neutral earlier than originally planned. All electricity procured by the company was Nordic wind power (Renewable Energy Sources guarantees of origin under the European Energy Certificate System), and other emissions were compensated. The guarantees of origin concerned a consumption of 81,000 MWh and a reduction of 15,000 tonnes of emissions. The 2018 emissions were compensated with energy efficiency projects implemented in Ghana (Gyapa Improved Stoves). The 2019 emissions will be compensated with projects of the same type in Kenya, and they will correspond to approximately 15,500 tonnes of emissions. All units have been verified in accordance with the most prestigious Gold Standard.

We cooperate with the Nordic Environment Finance Corporation (NEFCO) regarding compensation projects concerning greenhouse gas emissions. NEFCO is a Nordic company financing environmental and climate projects. We are acquiring the emission units from projects indentified by NEFCO.

To reduce vehicle emissions, Helsinki Airport uses renewable diesel fuel (Neste MY) produced entirely from waste and leftovers. This product reduces emissions by up to 90 per cent, and it is used at Kuusamo, Rovaniemi, Kittilä and Ivalo Airports. In late 2019, Finavia and Neste signed an agreement on the supply of renewable diesel fuel to all Finavia's airports.

To reduce the heating emissions of our airports, Utti Airport started to use biogas, while some other airports initiated investigations regarding opportunities to switch to geothermal power and other new sources of energy. Eleven of our airports use pellets, wood chips, biogas or geothermal power for heating with zero emissions. As an airport company, we also look at the emissions and fuel consumption of aircraft using our airports. In addition, we produce separate assessments of other activities at the airports for the ACA programme.

CARBON DIOXIDE EMISSIONS FROM FINAVIA'S OWN OPERATIONS



The coefficients used to calculate emissions have been updated in 2019 and the share of wind power has been taken into account since 2016.

Aircraft emissions and fuel consumption by airport

The emissions and fuel consumption of aircraft during the LTO (Landing and Take Off) cycle increased by about 3 per cent compared to 2018. The table shows the fuel consumption and emissions of aircraft flying at altitudes of less than 915 metres (3,000 feet) during the LTO cycle. Airplane emissions are calculated for the internationally specified LTO cycle. The calculation includes emissions from take-offs and landings up to 915 metres (3,000 feet) and the associated taxiing. For a large passenger aircraft, this means emissions from a distance of approximately six kilometres from the airport during take-off, and 18 kilometres during landing.

CONSUMPTION OF ELECTRICITY, HEAT AND WATER

Airport	Electricity MWh	Heating MWh	Water m^3
Enontekiö	640	330	330
Halli	80	230	140
Helsinki Airport	59,390	31,780	141,450
Ivalo	640	2,100	2,690
Joensuu	620	930	1,380
Jyväskylä	1,120	1,260	3,230
Kajaani	640	990	1,210
Kemi-Tornio	570	980	780
Kittilä	1,550	2,510	4,630
Kokkola-Pietarsaari	540	850	1,540
Kuopio	1,660	2,410	4,110
Kuusamo	770	1,250	960
Maarianhamina	450	800	510
Oulu	4,200	5,130	6,140
Pori	580	1,020	1,340
Rovaniemi	3,470	4,230	6,620
Savonlinna	460	0*	230
Tampere-Pirkkala	1,540	1,830	5,070
Turku	1,990	1,020	3,920
Utti	40	120	90
Vaasa	1,230	2,140	2,460
Total	**82,180**	**61,900**	**188,830**

*Savonlinna airport uses geothermal heating. The heating energy consumption has been combined with electricity consumption.

LTO (LANDING AND TAKE-OFF) CYCLE EMISSIONS OF AIRCRAFT BY AIRPORT

Airport	LTO-cycle (number)	CO (t/a)	HC (t/a)	No_x (t/a)	So_x (t/a)	CO_2 (t/a)	Fuel (t/a)
Enontekiö	100	0	0	1	0.1	200	100
Halli	400	10	0.1	0	0	0	5
Helsinki Airport	96,900	900	78.3	799	65.1	204,000	65,200
Ivalo	1,200	10	1.4	10	0.8	2,500	800
Joensuu	1,900	10	0.2	4	0.3	1,200	400
Jyväskylä	2,600	20	0.6	3	0.3	900	300
Kajaani	1,200	0	0.1	3	0.3	900	300
Kemi-Tornio	1,500	0	0.1	2	0.2	700	200
Kittilä	1,700	20	1.8	14	1.2	3,600	1,200
Kokkola-Pietarsaari	1,600	10	0.3	2	0.2	800	200
Kuopio	4,500	30	1.5	7	0.6	2,100	700
Kuusamo	800	0	0.4	4	0.3	1,100	300
Maarianhamina	2,000	20	0.8	2	0.2	700	200
Oulu	7,800	70	4.7	34	2.9	9,200	3,000
Pori	9,400	140	3.5	1	0.1	700	200
Rovaniemi	3,500	40	3.1	22	1.8	5,700	1,800
Savonlinna	500	0	0.1	0	0.1	200	100
Tampere-Pirkkala	17,900	220	3.7	8	0.7	2,700	900
Turku	11,100	100	4.2	17	1.6	5,300	1,600
Utti	700	10	0.2	0	0	0	9
Vaasa	5,200	40	1.7	9	0.9	2,900	900
Total	**172,500**	**1,650**	**107.1**	**941**	**77.80**	**245,300**	**78,300**

Ground equipment emissions and fuel consumption per airport

The total fuel consumption of Finavia's ground equipment increased by approximately 12% from 2018, due to the winter conditions and other factors. The CO_2 emissions of ground equipment were reduced by the extensive use of renewable diesel fuel. Renewable diesel fuel was used in Helsinki, Rovaniemi, Kittilä, Ivalo and Kuusamo. Ground equipment includes the vehicles used for winter maintenance, apron control, repairs, and general maintenance. The emissions are calculated on the basis of fuel consumption figures and vehicle details.

GROUND EQUIPMENT EMISSIONS AND FUEL CONSUMPTION PER AIRPORT

Airport	CO (t)	HC (t)	NO_x (t)	PM (t)	SO_2 (t)	CO_2 (t)	Fuel (t)
Enontekiö	0.2	0.1	0.6	0.03	0.001	70	20
Halli	0.2	0.1	0.7	0.04	0.001	80	30
Helsinki Airport	10.7	4.1	24.9	1.41	0.033	2,440	1,010
Ivalo	0.9	0.4	2.5	0.13	0.003	230	90
Joensuu	0.5	0.2	1.4	0.08	0.002	160	50
Jyväskylä	0.9	0.4	2.5	0.13	0.003	270	90
Kajaani	0.5	0.2	1.2	0.07	0.001	130	40
Kemi-Tornio	0.5	0.2	1.3	0.07	0.001	150	50
Kittilä	1.4	0.6	3.5	0.19	0.004	320	120
Kokkola-Pietarsaari	0.4	0.2	1.1	0.06	0.001	110	40
Kuopio	1	0.5	3.3	0.17	0.003	330	100
Kuusamo	0.6	0.3	1.9	0.1	0.002	180	60
Maarianhamina	0.2	0.1	0.6	0.03	0.001	70	20
Oulu	1.3	0.6	4.2	0.22	0.004	450	140
Pori	0.2	0.1	0.7	0.04	0.001	80	30
Rovaniemi	1.5	0.7	4.9	0.26	0.005	480	170
Savonlinna	0.2	0.1	0.5	0.03	0.001	60	20
Tampere-Pirkkala	0.8	0.4	2.6	0.14	0.003	280	90
Turku	1	0.3	1.8	0.09	0.002	190	60
Utti	0.3	0.1	0.4	0.03	0.001	70	30
Vaasa	0.6	0.3	1.7	0.09	0.002	180	60
Total	**24**	**10**	**62**	**3.4**	**0.08**	**6,340**	**2,320**

KEY INDICATORS FOR ENERGY, WATER AND EMISSIONS

		Change, %
Heating consumption	62 GWh	7.5 %
Heating consumption per passenger	2.4 kWh/pax	3.3 %
Electricity consumption	82 GWh	4.0 %
Electricity consumption per passenger	3.2 kWh/pax	-0.1 %
Water consumption	189,000 m^3	-0.9 %
Water consumption per passenger	7.2 l/pax	-4.8 %
Ground equipment energy consumption	28 GWh	13.4 %
Ground equipment energy consumption per passenger	1.0 GWh/pax	10.0 %
Carbondioxide emissions per passenger	0.6 kg/pax	-14.5 %
Number of passengers	26.0 million	4.2 %

The calculations of values per passenger do not include Halli and Utti Airports, since there is no regular passenger.

Towards emission-free aircraft turnarounds

Cooperation between different operators is essential when fighting the climate change. We want to develop solutions that help our customers and partners reduce their own emissions.

In June 2019, the first emission-free turnaround of a plane was carried out at Helsinki Airport. All machines and supplies used for ground handling of the aircraft were emission-free. Emission-free turnarounds are now possible, because Finavia's subsidiary Airpro has electrified the turnaround process: the passenger stairs, loading belt, pushback tractor and trucks pulling the baggage carts are all electrically powered. In addition, Airpro has acquired apparently the world's first fully electric lavatory service and water supply vehicles to form part of its emission-free ground handling vehicles.

The aim is to increase emission-free turnarounds in the future. Finavia Group is constantly looking for different solutions to reduce the emissions in the chain of air traffic operations. For example, electrical charging infrastructure is being developed at Helsinki Airport to allow the forwarding companies operating at the airport to electrify their functions.

Emissions into water and soil

The most significant environmental impacts of our airports are caused by de-icing treatments of runways, and anti-icing and de-icing treatments of aircraft.

We aim to minimise the environmental load caused by substances used in winter operations of airports on waterways and soil. Acetates and formates are among the runway de-icing agents with the smallest impact on the environment. They are readily biodegradable and contain no eutrophicating nutrients. The propylene glycol used for de-icing and anti-icing treatments is not classified as hazardous, but it causes an environmental load on waterways by increasing oxygen consumption.

Finavia is developing water load management at all airports. A development project that has been running for many years regarding control of urban runoff water on runways is in progress at Helsinki Airport. The pilot area for biofiltering was completed in 2019, and the construction work of an underground wetlands pilot started. Facilities for collecting glycol water have been constructed at Ivalo Airport as part of the Lapland development programme. Plans for the collection of glycol waters have been made at Rovaniemi, Kittilä and Turku airports. Arrangements for glycol water collection have been improved in Jyväskylä and measures to improve glycol recovery have been planned in Oulu.

This is how we reduce the environmental impacts of winter operations of airports

- Mechanical methods, such as sweeping and ploughing, are the primary methods for clearing snow from the runways.
- Acetate-based and formate-based agents are used to prevent skidding. They are readily biodegradable and contain no nutrients.
- We are constructing and reconditioning de-icing and anti-icing stations, where the propylene glycol -based agents used can be more efficiently collected. Overall, we invested a total of EUR 77 million in de-icing areas during 2010–2019. In addition to Helsinki Airport, glycol is collected at Tampere-Pirkkala, Jyväskylä, Oulu and Kuopio Airports. Recovered glycol can be used in energy production or in the wastewater treatment process as a source of carbon.
- We closely monitor weather conditions in our airport maintenance work and develop our monitoring system.
- We set out standard instructions for ground handling companies that carry out de-icing activities. We encourage companies to also use mechanical methods in the removal of snow from aircraft, such as compressed air.

Our actions in 2019

- During the winter of 2018–2019, about 78 (79) per cent of the approximately 2.0 million litres of glycol used at Helsinki Airport was recovered. In 2019, the recovery rate was 72 (56) per cent in Tampere, 60 (63) per cent in Oulu, 32 per cent in Kuopio and 9 per cent in Jyväskylä (season 2018–2019). The recovery rates fluctuate yearly with the changing weather conditions. Some of the glycol sticks to the surface of the aircraft and cannot be recovered.
- Foundation structures were constructed to protect the soil at aircraft ramps intended for de-icing use at Helsinki Airport. Work related to the automatic collection of glycol water was carried out at Ivalo Airport, while the collection of glycol water was improved at Jyväskylä Airport by constructing a new glycol water collection pool.
- At Helsinki Airport, the pilot area for biofiltering urban runoff waters from the runways was completed in the spring of 2019.
- At Helsinki Airport, the plans for the underground wet area intended for processing urban runoff were competed, and the construction work began in the autumn of 2019.
- Reconditioning work regarding the fishing industry was undertaken in the summer and autumn of 2019 in the Kylmäoja stream, where urban runoff from Helsinki Airport is discharged.
- The storage facilities for liquid anti-icing agents were renewed at Turku and Ivalo Airports.
- The refuelling station at Joensuu and Savonlinna Airports was modernised to meet requirements of the most recent standard.

We monitor the groundwater quality at 14 airports and the surface water quality at 21 airports using approximately 380 monitoring points.

Use of anti-icing agents for runways

About one third of the total quantity of anti-icing agents is used at Helsinki Airport. The consumption is at its highest during mild winter weather. The volume of traffic also affects the consumption volumes. The use of chemicals has varied over the past few years, as have the weather conditions. We aim to optimise consumption with the help of continuous training, uniform instructions and weather monitoring systems.

In 2019, the use of anti-icing agents increased at Helsinki Airport and network airports compared with the previous year. Because of weather conditions, the most difficult months in terms of anti-icing operations were February, November and December. The testing of betaine-based anti-icing agents continued at Jyväskylä Airport.

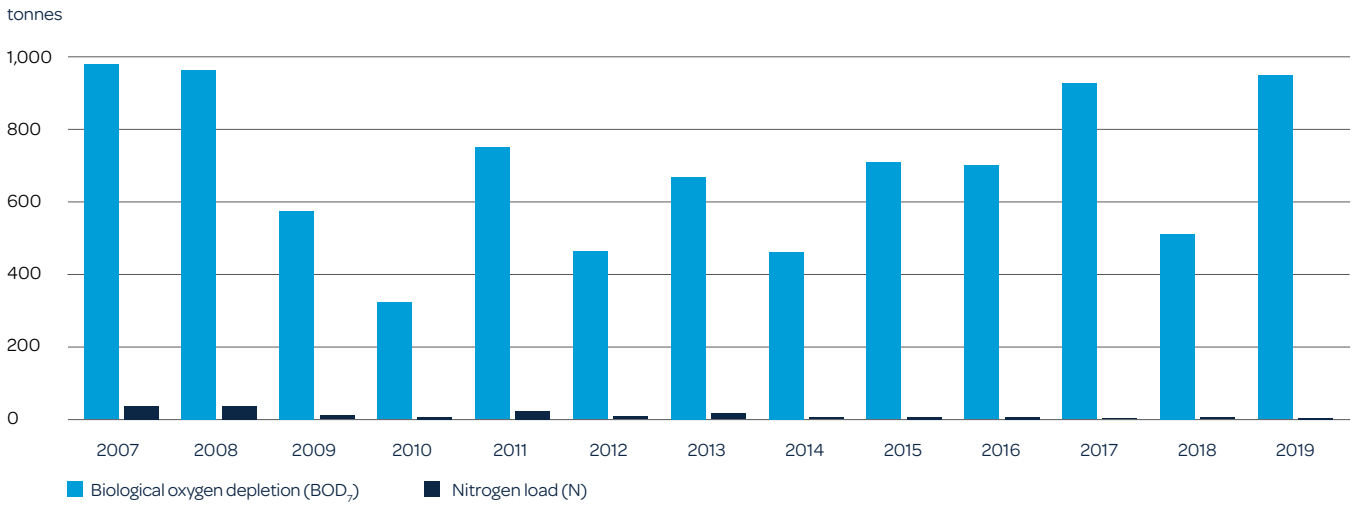
Loads caused by anti-icing and de-icing agents for runways and aircraft

The load caused by anti-icing treatment agents on the aquatic environment has significantly decreased since the turn of the century, when the use of urea was discontinued. The nitrogen pollution load has almost entirely ceased, and the oxygen consumption load has decreased at best to one-third of what it was in the early 1990s. In the 2000s, half the airports have switched to liquid formate, which exerts a minimal load on the environment, while the other half uses liquid acetate. In recent years, the load has varied due to the fluctuation in the use of the agents, since that depends on the weather conditions.

At Helsinki Airport, propylene glycol contained in the aircraft anti-icing and de-icing agents is collected using suction vehicles and directing it to the wastewater sewage system. The majority of agents can be collected for treatment. The urban runoff water that cannot be led to a waste water treatment plant is discharged into the Vantaanjoki and Keravanjoki rivers via six ditches.

In addition to Helsinki Airport, suction vehicles are also used for collecting glycol-containing runoff water at Tampere-Pirkkala, Oulu, Kuopio and Jyväskylä Airports. Tampere-Pirkkala Airport also has a melting area for glycol-containing snow and a ramp separated from the apron drainage system, from where the glycol-containing water is directed to a storage tank. At Ivalo Airport, a melting area

BIOLOGICAL OXYGEN DEPLETION AND NITROGENOUS POLLUTION CAUSED BY DE-ICING AGENTS



for glycol-containing snow was constructed in connection with the extension of aircraft ramp. The melting waters can be led from the area to the waste water treatment plant.

The quantity of oxygen-consuming substances is described by their chemical and biological oxygen consumption.

In addition to the urban runoff water coming from the airport, the humus-containing water affects the chemical oxygen consumption in the ditch water. Our efforts in managing urban runoff water have produced good results, for example, in Kylmäoja, which runs on the western side of Helsinki Airport.

The loading of Kylmäoja has decreased considerably since the early 2000s, thanks to better management of glycol-containing water, and the fact that aircraft de-icing and anti-icing operations are now concentrated in designated areas. As a result of improved water quality, trout, for example, have returned to Kylmäoja. In addition, Finavia has supported the action of the City of Vantaa to recondition the stream's water. In 2019, Finavia reconditioned trout spawning grounds in a total of 13 locations in the Kylmäoja stream along a stretch of some three kilometres.

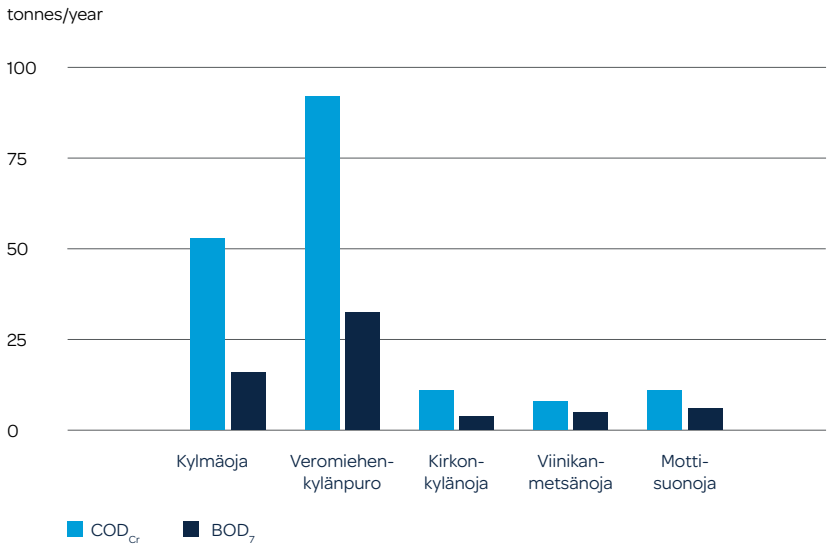
The work for developing the management of quantity and quality of urban runoff will continue at Helsinki Airport during the coming years in treatment method plot projects. The pilot site of the biofiltering area was completed in the spring of 2019. Construction of the underground wetland pilot started in the autumn of 2019. Finavia's innovative water protection measures are described in more detail on the page 53.

Fire drills

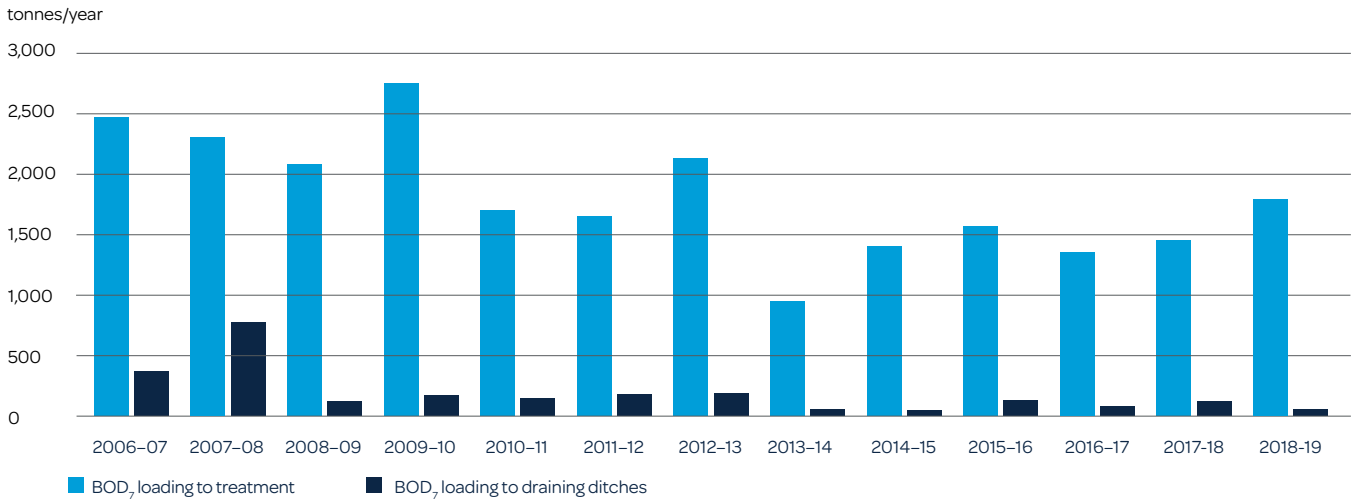
We cooperated with environmental authorities regarding the deposits of perfluorinated compounds in the fire drill areas of our airports. Some of these compounds were commonly used in extinguishing foams for fuel fires until 2011, when their use was banned within the EU.

These film-forming foams are no longer used in our fire drills; instead, fires are put out with water during drills. The fire extinguishing drills are concentrated into the exercise areas of a few airports. The areas have been converted to use LPG in aircraft fire extinguishing drills.

CHEMICAL AND BIOLOGICAL OXYGEN DEMAND LOAD IN BROOKS AT HELSINKI AIRPORT DURING WINTER 2018–2019



BIOLOGICAL OXYGEN DEMAND LOAD IN TREATMENT AND BROOKS AT HELSINKI AIRPORT



Waste

We reduce the volume of waste generated by airport operations and deliver the waste primarily for recycling. The Helsinki Airport development programme requires subcontractors to provide detailed reports, for example regarding the treatment of waste generated in demolition work.

We are among the first operators to have developed direct transfer of waste data from Finavia's own data collection system to the YLVA information system of the Finnish environmental administration. The first direct transfers of data will be performed concerning the waste generated at the airports in 2019.

Of the waste generated in the normal operations of airports in 2019, 37 per cent was recycled, 38 per cent was utilised in energy production, and 25 per cent was sent for final disposal. A total of 3,458 tonnes of contaminated soil found in connection with construction work was reconditioned at Helsinki and Kajaani Airports.

Material efficiency targets guide the construction work at Helsinki Airport

Targets have been set in the Helsinki Airport development programme for the utilisation of demolition and construction waste, and the contractors must observe these targets. We are also investigating the best ways to utilise the excess soil excavated in the construction projects carried out as part of the development programme.

In 2012, Finavia obtained an environmental permit for reusing crushed tarmac in the Helsinki Airport area. A total of some 59,900 tonnes of crushed tarmac that had been removed during the resurfacing of different pavements was reused in 2019, e.g. for maintenance road paving and airfield structures. Crushed tarmac containing coal tar removed during the apron and taxiway reconstruction work was taken for appropriate processing. Coal tar was used in the 1950s and 1960s for binding purposes below the asphalt layer.

The waste management campaign started in 2016 was continued at network airports. During the campaign, waste management training has been provided for airport personnel and reviews have been conducted at airports to offer guidance on the sorting, packaging and labelling of regular and hazardous waste, as well as responsibilities related to transportation. Proper containers for hazardous waste were also acquired for all airports. The campaign will continue and airports will be supported to keep their areas clean and in good order.

AMOUNT OF WASTE PER AIRPORT

Airport	Recyclable waste (t)	Energy waste (t)	Disposal waste (t)
Enontekiö	3.2	0.4	23.7
Halli	3.0	2.5	7.1
Helsinki Airport	1,428.6	1,374.9	868.1
Ivalo	11.0	0.0	12.4
Joensuu	13.9	12.3	3.3
Jyväskylä	22.7	17.6	4.5
Kajaani	6.7	8.5	85.0
Kemi-Tornio	7.8	6.3	6.1
Kittilä	24.9	38.0	55.6
Kokkola-Pietarsaari	2.8	14.3	2.7
Kuopio	31.0	49.0	4.3
Kuusamo	0.0	3.2	0.0
Maarianhamina	15.9	22.1	0.0
Oulu	22.6	51.6	9.2
Pori	8.7	10.0	0.7
Rovaniemi	12.0	48.8	6.1
Savonlinna	3.7	5.6	44.3
Tampere-Pirkkala	47.8	52.9	12.5
Turku	52.9	11.9	0.5
Utti	1.3	1.6	6.8
Vaasa	26.2	22.6	5.9
Total	**1,747**	**1,754**	**1,159**

Reporting principles

Finavia's corporate responsibility reporting complies with the core scope of application of the Global Reporting Initiative (GRI standards 2016). Additionally, the indicators specified in the Airport Operators Sector Supplement (AOSS) are used in reporting. Furthermore, the Finnish Government's decision-in-principle regarding the owner policy of the Finnish state and its requirements for corporate responsibility reporting have been taken into account in reporting.

Coverage of reporting

The information in this responsibility report covers the Finavia Group. However, some information, such as the whole environmental responsibility section, only applies to Finavia Corporation. These cases are separately indicated. The report and key indicators cover the period 1 January–31 December 2019. The report also includes individual pieces of information from January–March 2020. They have been separately indicated. Mitopro Oy, a specialist in corporate responsibility, has verified that Finavia's 2019 Annual Report corresponds with the GRI Standards (2016) guidelines and confirms that the reporting fulfils the core requirements of the guidelines.

Financial and administrative information

The financial indicators cover the operations of Finavia Group. The figures are based on the company's accounts and financial statements. The Financial Accounting Standards (FAS) are observed in financial reporting. The financial indicators have been audited. In 2019, Finavia complied, as applicable, with the Corporate Governance Code of Finnish listed companies approved by the Finnish Securities Market Association in 2015.

Air traffic data

Flight details are obtained from the air navigation systems of ANS Finland. Airline-specific details of passengers, freight and mail are collected from the forwarding companies operating at the airports. The data is collected in the traffic database. Air traffic statistics are based on traffic database data.

Environmental information

Traffic details, the distribution of runway usage and aircraft types

Traffic details, the distribution of runway usage and aircraft type information are obtained from the Cognos system in which the information is recorded from the Airport2020 system of airports.

Locations of flight routes and noise information

Finavia operates a continuous aircraft noise and route monitoring system (ANOMS) at Helsinki Airport which uses the input from radar to record route details, and the noise measurement data from nine noise measurement stations to record noise details. The system data provides route distribution and routes for noise area calculations for reporting purposes.

Anti-icing agents for runway

Airports register their anti-icing measures and the volume of chemicals used in an electronic maintenance journal, from which the Environmental Unit obtains data for reporting. With regard to Helsinki Airport, Airport Maintenance reports the monthly volumes of chemicals used. The correctness of information contained in the electronic journal is checked by the Traffic Area Services Unit. The consumption of anti-icing agents is presented in the Annual Report as a 100% concentration, obtained by deducting the 50 per cent proportion of water from the quantities of liquid agents used.

The oxygen consumption load caused by the anti-icing agents is calculated by using the biological oxygen demand (BOD7) factor of each product. An exception to this is urea, where the calculation factor used is its theoretical oxygen demand (ThOD) because its decomposition process differs from other agents. The factors used are shown in the table below.

	BOD_7 mg/g
Acetate solution	300
Granular acetate	670
Formate solution	90
Granular formiate	170
Liquid betaine (Betafrost)	720
Solid betaine	1,440
Urea (ThOD)	2,100

Of the anti-icing agents, urea and betaine cause nitrogen loading. A factor of 0.466 g/g is used to calculate the nitrogen loading of urea, a factor of 0.12 g/g is used to calculate that of solid betaine, and a factor of 0.06 g/g is used to calculate that of liquid betaine (Betafrost).

De-icing and anti-icing agents for aircraft

The ground handling companies performing de-icing and anti-icing treatments on aircraft keep a record of the treatments and the quantities of liquids used (types I and IV). Every month, the ground handling companies submit the daily data on liquid usage quantities and the number of treatments to Finavia's Environmental Unit and the invoicing units of those airports where the recovery of glycol has been arranged. For other airports, the ground handling companies provide the Environmental Unit with monthly details of the quantities of different types of liquids used. The Environmental Unit asks smaller companies to provide monthly data about the volume of different liquid types used at six-monthly intervals. In the Environmental Report, the annual usage volumes are presented as 100% propylene glycol, obtained by deducting the proportion of water from the quantities used. The proportion of water is 20% in type I liquid and 50% in type IV liquid.

Aircraft emissions

Aircraft emissions are calculated using the landing and take-off (LTO) cycle, an international standard. The emissions are calculated for flight altitudes below 915 m (3,000 ft.), taking into account different aircraft and engine types. The calculation includes emissions caused by take-off and landing up to 3,000 ft. and the associated taxiing. Each emission component has its own factor, obtained from the Emissions and Dispersion Modeling System (EDMS) database developed and maintained by the US aviation authority. Finavia has its own software for calculating the LTO cycle.

Emissions from Finavia's ground vehicles

The factors for different emission components are obtained from the Lipasto system maintained by VTT. The calculation is based on fuel consumption and takes into account the characteristics of different vehicles.

Finavia's total emissions (CO_2)

The emissions caused by electricity and heating are calculated from the total consumption, using airport-specific factors obtained from different sources. Heating energy is produced in different ways at different airports (pellets, district heating, etc.) and the factor for electricity varies annually with the production of electricity. Total emissions include all Finavia's emissions from electricity, heating and ground vehicles.

Consumption of electricity, heating energy and water

The airports read the electricity, heating energy and water meters each month and enter the readings in Granlund Manager. Finavia's Facility Services and Energy Unit checks the correctness of this information. The Environmental Unit obtains information about the consumption of electricity, heating energy and water from Granlund for environmental reporting.

The consumption figures per passenger are calculated by dividing the total consumption by the annual number of passengers. Consumption figures for Halli and Utti Airports are deducted before this calculation, because they do not have any actual passenger traffic.

Waste

The airports obtain information about their annual accumulation of waste from the annual reports and invoices of waste management

companies. The airports enter the data in Finavia's Environmental Information system, from where Finavia's Environmental Unit obtains it for environmental reporting. In the report, the accumulated waste volumes are divided into mixed waste, recyclable waste and hazardous waste. Recyclable waste includes separately collected biowaste, metal, glass, recycled paper and cardboard, lubricant waste, used tyres, WEEE, as well as sorted construction waste and mixed waste sent for incineration.

Fuels

Refuelling volumes of vehicles and fleet are monitored at airports. The vehicles are filled with petrol at public service stations, and the volumes are monitored with receipts. Each year, the airports compile information about fuel used by ground vehicles in Finavia's Environmental Information system, from where the Environmental Unit retrieves it for environmental reporting. A system that collects information about refuelling (Dealex) is used at certain airports. This information is collected by the Environmental Unit. Information about the use of renewable Neste MY diesel is obtained from Neste's systems.

Feedback on environmental issues

Feedback on environmental issues (including feedback received through the WebTrak system) is registered in a browser-based feedback system, in which it is also archived. The number of feedback messages and their nature are obtained from the environmental feedback system for environmental reporting.

Personnel details

Personnel details for key indicators are obtained from different HR systems. The key indicators cover either the Finavia Group or Finavia Corporation; this is shown for each indicator. The calculation of key indicators is also guided by the general instructions of the Accounting Board regarding the calculation of the personnel indicators shown in the Annual Report.

Person-years refer to regular annual working hours excluding overtime and other hours outside regular working hours. Periods without pay reduce the employee's person-year contribution.

Years of service are calculated from the date the uninterrupted employment began. The age and gender distribution shows the number of individuals in permanent employment relationships, divided according to age and gender in accordance with the average number of personnel in 2019.

Personnel turnover describes the turnover of permanent employees so that the departure turnover is the percentage of leaving employees and the incoming turnover is the percentage of recruited employees of total personnel.

Accidents and sick leave are calculated as calendar days, so that a day of absence is recorded when an accident or illness causes an absence for the whole day. Training days are also calculated as whole days.

All personnel are included in the scope of performance appraisals. Performance appraisals are activated and saved annually in the HR system. The number of appraisals held is based on the number of appraisals activated during the year.

Passenger satisfaction

Customer satisfaction at Helsinki Airport is monitored through an international Airport Service Quality Survey measuring passenger satisfaction at airports. The information is collected through questionnaires in the gate areas, and 4,200 questionnaires are conducted during the year.

Information for the network's passenger satisfaction survey is collected through questionnaires in the departure gate areas of 15 different airports. Throughout the year, around 200 or 600 responses are collected per airport, depending on the size of the airport. The results of the whole network are derived from the results of individual airports.

Feedback on Finavia's corporate responsibility reporting can be sent to comms@finavia.fi.

GRI index

GRI standard		Reported content	Location in the report	Notes
GRI 101: Foundation				
General disclosures				
GRI 102: General disclosures	**Organisational profile**			
	102-1	Name of the organisation		Finavia Corporation
	102-2	Activities, brands, products, and services	Finavia's business operations (Finavia.fi) Value creation Board of Directors' report / Business development	
	102-3	Location of headquarters		Vantaa, Finland
	102-4	Location of operations		Finavia only operates in Finland.
	102-5	Ownership and legal form	Board of Directors' report / Shares and share capital Governance and compensation report	
	102-6	Markets served	Statistics Board of Directors' report/ Operating environment/Traffic development	
	102-7	Scale of the organisation	Annual Review 2019/Key figures Board of Directors' report/ Group's key figures table	
	102-8	Information on employees and other workers	Personnel section	
	102-9	Supply chain	Evaluation of the management approach/ Stakeholder cooperation/ Value creation/ Environmental impacts of airports	
	102-10	Significant changes to the organisation and its supply chain	Board of Directors' report/ Business development	No changes occurred in the Group structure during 2019.
	102-11	Precautionary Principle or approach		Finavia observes the precautionary principle in all its operations. In all its operations, Finavia takes measures to avoid or reduce environmental risks and adverse impacts.
	102-12	External initiatives	Stakeholder cooperation	
	102-13	Memberships of associations	Stakeholder cooperation	
	Strategy			
	102-14	Statement from senior decision-maker	Review by the CEO	

GRI standard		Reported content	Location in the report	Notes
	102-15	Key impacts, risks and opportunities	Key responsibility themes Operating environment / Value creation Board of Directors' report / Operating environment	
	Ethics and integrity			
	102-16	Values, principles, standards, and norms of behaviour	Strategy Management of corporate responsibility / Governance and compensation report/Internal control, risk management and internal audit Equality and non-discrimination / Value creation	
	Corporate Governance			
	102-18	Governance structure	Governance and compensation report / Administrative and operative bodies / Management of corporate responsibility	
	102-19	Delegating authority	Management of corporate responsibility / Governance and compensation report/ Administrative bodies	
	102-20	Executive-level responsibility for economic, environmental, and social topics	Management of corporate responsibility	
	102-22	Composition of the highest governance body and its committees	Board of Directors (Finavia.fi) Governance and compensation report / Administrative and operative bodies	
	102-23	Chair of the highest governance body	Board of Directors (Finavia.fi) Governance and compensation report / Administrative and operative bodies	
	102-25	Conflicts of interest	Governance and compensation report / Related party transactions	
	102-26	Role of highest governance body in setting purpose, values, and strategy	Board of Directors (Finavia.fi) / Governance and compensation report / Administrative and operative bodies	
	102-29	Identifying and managing economic, environmental and social impacts	Management of corporate responsibility / Governance and compensation report / Internal control, risk management	
	102-30	Effectiveness of risk management processes	Governance and compensation report / Internal control, risk management and internal audit	

GRI standard		Reported content	Location in the report	Notes
	102-31	Review of economic, environmental, and social topics	Management of corporate responsibility / Governance and compensation report / Internal control, risk management and internal audit	
	102-35	Remuneration policies	Governance and compensation report / Salary and compensation report	
	102-36	Process for determining remuneration	Governance and compensation report / Salary and compensation report	
	Stakeholder engagement			
	103-40	List of stakeholder groups	Stakeholder cooperation	
	103-41	Collective bargaining agreements	Finavia as an employer	
	103-42	Identifying and selecting stakeholders	Stakeholder cooperation	
	103-43	Approach to stakeholder engagement	Stakeholder cooperation	
	103-44	Key topics and concerns raised	Stakeholder cooperation Services and customer experience Board of Directors' report / Business development	
	Reporting principles			
	102-45	Entities included in the consolidated financial statements		All Group companies are included in the consolidated financial statements. The associated company Taxi Point Oy was disregarded due to its negligible impact on group equity. The information in the responsibility section of the Annual Report covers the entire Group. However, some information only applies to Finavia Corporation. These cases are separately indicated.
	102-46	Defining report content and topic boundaries		Finavia has determined the content of the corporate responsibility report in compliance with GRI 101, Reporting principles.
	102-47	List of material topics	Reporting principles / Material factors in responsibility / Materiality table	
	102-48	Restatements of information		There are no material restatements of information provided in previous reports.
	102-49	Changes in reporting		No material changes.
	102-50	Reporting period	Reporting principles	
	102-51	Date of most recent report		15 March 2019
	102-52	Reporting cycle		Annually
	102-53	Contact point for questions regarding the report		Finavia Corporation, Communications, Lentäjäntie 3, 01531 Vantaa, comms(at)finavia.fi

GRI standard		Reported content	Location in the report	Notes
	102-54	Claims of reporting in accordance with the GRI Standards		This report complies with the Core application level of GRI standards (2016).
	102-55	GRI content index	GRI content index	
	102-56	External assurance		The contents of the report have not been verified. Mitopro Oy has checked the compliance of the report with GRI Standards guidelines.
Material topics				
GRI 200 Economy standard series				
Economic performance				
GRI 103: Management approach	103-1	Explanation of the material topic and its boundary	Material factors in responsibility / Reporting principles / Materiality table	
	103-2	The management approach and its components	Management of corporate responsibility / Materiality table / Responsible and profitable growth	
	103-3	Evaluation of the management approach	Management of corporate responsibility	
GRI 201: Economic performance	201-1	Direct economic value generated and distributed	Financial added value for our stakeholders	
	201-4	Financial assistance received from government	Finavia as a taxpayer	In 2019 Finavia received a total of EUR 826,621 in public subsidies. Energy subsidies in 2019 totaled EUR 166,620.93 (EUR 8,702.75 in 2018). These investments have been used to build recharging points for electric cars at various airports and a solar power plant for the extension of the West Pier terminal. EU funding of EUR 660,000 (EUR 43,770.94 in 2018) was received for the design of the Helsinki Airport Travel Center.
Market presence				
GRI 103: Management approach	103-1	Explanation of the material topic and its boundary	Material factors in responsibility / Reporting principles Materiality table	
	103-2	The management approach and its components	Management of corporate responsibility / Materiality table / Responsible and profitable growth	
	103-3	Evaluation of the management approach	Management of corporate responsibility / Responsible and profitable growth	
GRI 202: Market presence	AO1	Total number of passengers annually, broken down by passengers on international and domestic flights	Statistics	

GRI standard		Reported content	Location in the report	Notes
	AO2	Total annual number of aircraft movements	Value creation Runway usage and distribution of traffic	
	AO3	Total amount of cargo tonnage	Statistics	
Indirect economic impacts				
GRI 103: Management approach	103-1	Explanation of the material topic and its boundary	Material factors in responsibility/ Materiality table / Reporting principles	
	103-2	The management approach and its components	Management of corporate responsibility Financial added value for stakeholders	
	103-3	Evaluation of the management approach	Management of corporate responsibility Responsible and profitable growth	
GRI 203: Indirect economic impacts	203-1	Infrastructure investments and services supported	Business operations Stakeholder cooperation / Charity and sponsorship policy	
	203-2	Significant indirect economic impacts	Financial added value for stakeholders	
Procurement practices				
GRI 103: Management approach	103-1	Explanation of the material topic and its boundary	Material factors in responsibility / Materiality table / Reporting principles	
	103-2	The management approach and its components	Management of corporate responsibility Materiality table Responsible and profitable growth Environmental permits	
	103-3	Evaluation of the management approach	Management of corporate responsibility Responsible and profitable growth	
GRI 204: Procurement practices	204-1	Proportion of spending on local suppliers	Stakeholder cooperation	No percentage was reported.
Anti-bribery and anti-corruption				
GRI 103: Management approach	103-1	Explanation of the material topic and its boundary	Material factors in responsibility / Materiality table / Reporting principles	
	103-2	The management approach and its components	Management of corporate responsibility Responsible and profitable growth Governance and compensation report / Internal control, risk management and internal audit	
	103-3	Evaluation of the management approach	Management of corporate responsibility Responsible and profitable growth	
GRI 205: Anti-corruption	205-2	Communication and training about anti-corruption policies and procedures		Familiarisation with ethical guidelines is part of the induction of new employees in all business units.

GRI standard		Reported content	Location in the report	Notes
	205-3	Confirmed incidents of corruption and actions taken		No cases during 2019.
Anti-competitive behaviour				
GRI 103: Management approach	103-1	Explanation of the material topic and its boundary	Material factors in responsibility / Materiality table Reporting principles	
	103-2	The management approach and its components	Management of corporate responsibility Key factors of responsibility	
	103-3	Evaluation of the management approach	Management of corporate responsibility Responsible and profitable growth	
GRI 206: Anti-competitive behaviour	206-1	Legal actions for anti-competitive behaviour, anti-trust and monopoly practices		No cases during 2019.
Taxes				
GRI 207 Taxes	207-1	Approach to tax	Financial added value for our stakeholders	
	207-2	Tax governance, control, and risk management	Financial added value for our stakeholders	
	207-3	Stakeholder engagement and management of concerns related to tax	Financial added value for our stakeholders	Finavia complies with the tax reporting guidelines issued by the Ownership Steering of the State of Finland.
	207-4	Country-by-country reporting	Financial added value for our stakeholders	Finavia pays all its taxes in Finland.
GRI 300 Economy standard series				
Materials				
GRI 103: Management approach	103-1	Explanation of the material topic and its boundary	Material factors in responsibility / Materiality table / Reporting principles	
	103-2	The management approach and its components	Environmental work by Finavia Environmental impacts of airports	
	103-3	Evaluation of the management approach	Management of corporate responsibility Responsible and profitable growth	
GRI 301: Materials	301-1	Materials used by weight or volume	Emissions into water and soil / Use of anti-icing agents and de-icing chemicals Waste	
	301-2	Percentage of materials used that are recycled input materials		During the winter season 2018-2019, about 78 (79) per cent of the approximately 2.0 million litres of glycol used at Helsinki Airport was recovered. In 2019, the recovery rate was 72 (56) per cent in Tampere, 60 (63) per cent in Oulu, 32 per cent in Kuopio and 9 per cent in Jyväskylä (season 2018–2019). The recovery rates fluctuate yearly with the changing weather conditions. Some of the glycol sticks to the surface of the aircraft and cannot be recovered.

GRI standard		Reported content	Location in the report	Notes
Energy				
GRI 103: Management approach	103-1	Explanation of the material topic and its boundary	Material factors in responsibility / Materiality table / Reporting principles	
	103-2	The management approach and its components	Environmental work by Finavia Environmental impacts of airports	
	103-3	Evaluation of the management approach	Management of corporate responsibility Responsible and profitable growth	
GRI 303: Water	303-1	Water withdrawal by source	Energy and water consumption and emissions	
Biodiversity				
GRI 103: Management approach	103-1	Explanation of the material topic and its boundary	Material factors in responsibility / Materiality table / Reporting principles	
	103-2	The management approach and its components	Environmental work by Finavia Environmental impacts of airports	
	103-3	Evaluation of the management approach	Management of corporate responsibility Responsible and profitable growth	
GRI 304: Biodiversity	304-1	Operational sites owned, leased, managed in or adjacent to protected areas and areas of high biodiversity value outside protected areas		Turku, Kajaani and Joensuu Airports are located adjacent to protected areas and Natura sites. Helsinki, Vaasa, Oulu and Mariehamn Airports are located about 200-500 metres from protected areas or Natura sites.
Emissions				
GRI 103: Management approach	103-1	Explanation of the material topic and its boundary	Material factors in responsibility / Materiality table / Reporting principles	
	103-2	The management approach and its components	Environmental work by Finavia Environmental impacts of airports	
	103-3	Evaluation of the management approach	Management of corporate responsibility Responsible and profitable growth	
	305-1	Direct greenhouse gas emissions (scope 1)	Energy and water consumption and emissions	
	305-2	Indirect greenhouse gas emissions (scope 2)	Energy and water consumption and emissions	Total for Finavia's airport network: Greenhouse gas emissions (location-based calculation method): 28,300 tCO_2 Greenhouse gas emissions (procurement-based calculation method) 14,871 tCO_2
	305-3	Other indirect greenhouse gas emissions (scope 3)	Energy and water consumption and emissions	
	305-4	Greenhouse gas emissions intensity	Energy and water consumption and emissions	

GRI standard		Reported content	Location in the report	Notes
	305-5	Reduction of greenhouse gas emissions	Energy and water consumption and emissions	
	305-7	Nitrogen oxides (NO_x), sulphur oxides (SO_x), and other significant air emissions	Air quality Energy and water consumption and emissions	
Effluents and waste				
GRI 103: Management approach	103-1	Explanation of the material topic and its boundary	Material factors in responsibility Materiality table Reporting principles	
	103-2	The management approach and its components	Management of corporate responsibility Materiality table Responsible and profitable growth Environmental permits	
	103-3	Evaluation of the management approach	Management of corporate responsibility Responsible and profitable growth	
GRI 306: Effluents and waste	306-1	Water discharge by quality and destination	Emissions into water and soil	
	306-2	Waste by type and disposal method	Waste	
	306-3	Significant spills	Emissions into water and soil	
	AO4	Quality of storm water	Emissions into water and soil	
	AO6	Aircraft and pavement de-icing / anti-icing fluid used and treated	Emissions into water and soil/Use of anti-icing agents and de-icing chemicals	
Compliance with environmental requirements				
GRI 103: Management approach	103-1	Explanation of the material topic and its boundary	Material factors in responsibility Materiality table Reporting principles	
	103-2	The management approach and its components	Environmental work by Finavia Environmental impacts of airports	
	103-3	Evaluation of the management approach	Management of corporate responsibility Responsible and profitable growth	
GRI 307: Compliance with environmental requirements	307-1	Non-compliance with environmental laws and regulations		No cases during 2019.
Noise				
	AO7	Number of people residing in areas affected by noise	Aircraft noise control	
GRI 400 Social responsibility series				
Employment				
GRI 103: Management approach	103-1	Explanation of the material topic and its boundary	Material factors in responsibility / Materiality table / Reporting principles	

GRI standard		Reported content	Location in the report	Notes
	103-2	The management approach and its components	Management of corporate responsibility Finavia as an employer Job satisfaction and competence development	
	103-3	Evaluation of the management approach	Management of corporate responsibility	
GRI 401: Employment	401-1	New employee hires and employee turnover	Finavia as an employer	
Labour/management relations				
GRI 103: Management approach	103-1	Explanation of the material topic and its boundary	Material factors in responsibility / Materiality table / Reporting principles	
	103-2	The management approach and its components	Management of corporate responsibility Finavia as an employer Job satisfaction and competence development Wellbeing and occupational safety	
	103-3	Evaluation of the management approach	Management of corporate responsibility	
GRI 402: Labour/management relations	402-1	Minimum notice periods regarding operational changes		In co-determination negotiations, Finavia observes the time limits laid down in the law and in collective bargaining agreements.
Occupational health and safety				
GRI 103: Management approach	103-1	Explanation of the material topic and its boundary	Material factors in responsibility / Materiality table / Reporting principles	
	103-2	The management approach and its components	Management of corporate responsibility Job satisfaction and competence development Wellbeing and occupational safety	
	103-3	Evaluation of the management approach	Management of corporate responsibility	
GRI 403: Occupational health and safety	403-1	Workers' representation in formal joint management–worker health and safety committees		Finavia has a central committee for occupational safety, its airports have committees for personnel meetings or places of work (both combined cooperation and occupational safety committees), and Helsinki Airport has separate committees for occupational safety and cooperation. There is also a group-level cooperation negotiation committee.
	403-2	Workers with high incidence or high risk of diseases related to their occupation	Wellbeing and occupational safety	No fatalities.

GRI standard		Reported content	Location in the report	Notes
	403-4	Health and safety topics covered in formal agreements with trade unions		The occupational healthcare provided by Finavia is considerably more extensive than that agreed in collective bargaining agreements. Finavia cooperates with trade unions; there were no new initiatives regarding this topic in 2019.
Training				
GRI 103: Management approach	103-1	Explanation of the material topic and its boundary	Material factors in responsibility / Materiality table / Reporting principles	
	103-2	The management approach and its components	Management of corporate responsibility Job satisfaction and competence development	
	103-3	Evaluation of the management approach	Management of corporate responsibility	
GRI 404: Training and education	404-1	Average hours of training per year per employee	Personnel Job satisfaction and competence development	The training days have been reported. No division by gender or employee category.
	404-2	Programmes for upgrading employee skills and transition assistance programmes	Job satisfaction and competence development	
	404-3	Percentage of employees receiving regular performance and career development reviews		All employees are included in the development reviews.
Diversity and equal opportunity				
GRI 103: Management approach	103-1	Explanation of the material topic and its boundary	Material factors in responsibility / Materiality table / Reporting principles	
	103-2	The management approach and its components	Management of corporate responsibility Equality and non-discrimination	
	103-3	Evaluation of the management approach	Management of corporate responsibility	
GRI 405: Diversity and equal opportunity	405-1	Diversity of governance bodies and employees	Governance and compensation report Equality and non-discrimination	At the end of 2019, Finavia's Board of Directors had seven members and three of them were women. Average age of the Board members was 56 years. At the end of 2019, Finavia's Executive Group had nine members two of whom were women. Average age of the Executive Group members was 49 years.
	405-2	Ratio of basic salary and remuneration of women to men	Equality and non-discrimination	
Non-discrimination				
GRI 103: Management approach	103-1	Explanation of the material topic and its boundary	Material factors in responsibility / Materiality table / Reporting principles	

GRI standard		Reported content	Location in the report	Notes
	103-2	The management approach and its components	Management of corporate responsibility Equality and non-discrimination	
	103-3	Evaluation of the management approach	Management of corporate responsibility	
GRI 406: Non-discrimination	406-1	Incidents of discrimination and corrective actions taken		No cases during 2019.
Public policy				
GRI 103: Management approach	103-1	Explanation of the material topic and its boundary	Material factors in responsibility / Materiality table / Reporting principles	
	103-2	The management approach and its components	Management of corporate responsibility Stakeholder cooperation/ Charity and sponsorships	
	103-3	Evaluation of the management approach	Management of corporate responsibility	
GRI 415: Public policy	415-1	Political contributions	Stakeholder cooperation	In accordance with our charity and sponsorship policy, we do not donate money to political parties, politicians or political institutions.
Customer health and safety				
GRI 103: Management approach	103-1	Explanation of the material topic and its boundary	Material factors in responsibility / Materiality table / Reporting principles	
	103-2	The management approach and its components	Safety at Finavia	
	103-3	Evaluation of the management approach	Management of corporate responsibility Safety at Finavia	
GRI 416: Customer health and safety	416-1	Assessment of the health and safety impacts of product and service categories	Safety at Finavia	
	416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	Safety at Finavia	No cases during 2019.
Socioeconomic compliance				
GRI 103: Management approach	103-1	Explanation of the material topic and its boundary	Material factors in responsibility / Materiality table / Reporting principles	
	103-2	The management approach and its components	Management of corporate responsibility Stakeholder cooperation	
	103-3	Evaluation of the management approach	Management of corporate responsibility	
GRI 419: Socioeconomic compliance	419-1	Non-compliance with laws and regulations in the social and economic area		No cases during 2019.

Material aspects

Essential operational priorities	Content	Management practices	Information released for publication that is essential for Finavia's operations
Connectivity	We promote the mobility of people, goods and services by ensuring the operating prerequisites for air traffic. By doing this, we provide a solid basis for extensive domestic and international flight connections.	Operational objectives Financial targets Finavia's management system	GRI 202 Market presence GRI 203 Indirect economic impacts
Safety and security	Safety and security are at the core of all our operations. In cooperation with our partners operating at our airports, we ensure the safety of air traffic and air travel and the security of the information systems supporting them. Finnish Transport Safety Agency Traficom is the authority supervising flight safety in Finland.	Managing corporate responsibility Risk management policy Corporate safety Safety management system Risk assessments Occupational safety and health management system	GRI 416 Customer health and safety GRI 403 Occupational health and safety
Customer experience	An excellent customer experience and service attitude make flying smooth and easy. Our services make travel easier, offer memorable experiences, and are safe and efficient.	Finavia strategy and key programmes Customer satisfaction survey	GRI 416 Customer health and safety GRI 203 Indirect economic impacts
Responsible growth	Responsible operations and sustainable development of airports are at the core of Finavia's business. This means that we accept responsibility for the impact of our operations on people, the environment and society – carefully, conscientiously and with attention to the details. Our aim is to ensure that as we develop our operations, there is no increase in their environmental impacts.	Managing corporate responsibility Finavia's strategy Environmental manual and environmental policy	GRI 201 Economic performance GRI 203 Indirect economic impacts
Ensuring a high level of job satisfaction	We want to ensure a high level of job satisfaction in our work community and that Finavia is an attractive employer. A high level of job satisfaction ensures an excellent customer experience, safe travel and good cooperation with our customers and partners. None of this is possible without committed and skilled staff provided with opportunities for continuous occupational development.	Managing corporate responsibility HR strategy and action plan Ethical principles Equality plan Age programme Personnel satisfaction survey	GRI 401 Employment GRI 402 Labour/management relations GRI 403 Occupational health and safety GRI 404 Training and education GRI 405 Diversity and equal opportunity GRI 406 Non-discrimination
Transparent cooperation in the value chain	Airlines, passengers, Finavia personnel, the thousands of companies operating at our airports, the authorities, decision-makers and local residents are our key stakeholder groups. We develop our operations and the sector by engaging in an open dialogue with our stakeholders. We want to be a good neighbour.	Managing corporate responsibility Communications policy Stakeholder interaction Procurement principles	GRI 201 Economic performance GRI 203 Indirect economic impacts GRI 204 Procurement practices

Essential operational priorities	Content	Management practices	Information released for publication that is essential for Finavia's operations
Capacity for renewal	In order to successfully compete with other international airports, Finavia and its airports must constantly renew themselves. We update our operating practices and apply technologies so that we can respond to the growing expectations of our stakeholders concerning smooth travel and services. We do this in cooperation with our partners.	Finavia's strategy	GRI 203 Indirect economic impacts
Global environmental impacts	We reduce the climate impacts arising from our own operations by ensuring the energy-efficiency of our airports through the use of renewable energy and by other means. We also work to enhance the energy-efficiency of air traffic through such measures as reduced taxiing. We also play an active role in the international development work in the sector.	Managing corporate responsibility Environmental manual and environmental policy Environmental management system ISO 14001	GRI 305 Emissions
Local environmental impacts	We develop solutions for air traffic noise management and work to reduce the environmental impacts of the anti-icing and de-icing agents used at airports. We cooperate with local residents, businesses located in areas adjacent to airports, municipalities, environmental authorities and air traffic actors. Airport operations are subject to strict environmental permits and compliance with them is supervised by regional ELY Centres (Centres for Economic Development, Transport and the Environment).	Managing corporate responsibility Environmental manual and environmental policy Environmental management system ISO 14001 Procurement principles	GRI 301 Materials GRI 302 Energy GRI 303 Water GRI 304 Biodiversity GRI 305 Emissions GRI 306 Effluents and waste GRI 307 Environmental compliance Noise
Complying with standards	We comply with laws and good corporate governance in all our operations. We communicate about our operations, management systems and remuneration practices in an open manner. Finavia observes the Corporate Governance Code of Finnish listed companies to the extent that it is appropriate, given the state ownership and the nature of our operations.	Managing corporate responsibility Operating manual Ethical principles Procurement principles	GRI 205 Anti-corruption GRI 206 Anti-competitive behaviour GRI 307 Environmental compliance GRI 419 Socioeconomic compliance
Influencing regulation	We work to anticipate the impacts of national and international legislation and regulation on Finavia's business operations. We engage in an active dialogue within the sector as well as with our neighbours and the authorities. Airport operations are governed by international aviation regulations and EU-level legislation and regulations.	We are represented in national and international working groups and issue expert opinions on request.	GRI 415 Public policy