Tallinn Airport

Roadmap towards Net Zero by 2030

Net zero emissions means Tallinn airport is committed to reducing direct annual CO_2e emissions as much as possible

*CO_2e known as carbon dioxide equivalent, represents not only carbon dioxide (CO_2) but also other greenhouse gases such as methane (CH_4), nitrous oxide (N_2O), and others

2018
Completed milestones

Joined the Airport Carbon Accreditation (ACA) program's first level by conducting emission data mapping and initial CO_2e calculations.

2023
Completed milestones

Achieved -49% reduction of airport direct emissions.

2025
Near-future plans

Based on data from 2018 to 2024, The airports´s direct emission reduction has been ranges from -95%. Residual emissions will be offset using carbon reduction or avoidance credits and ACA level 3+ carbon neutrality will be applied for.

2030
Future plans

The direct emission reduction forecast is-90%. Emissions, which are impossible to reduce will be offset using carbon removal credits.

2050
Scope 3 reduction

airport carbon accredited NEUTRALITY

Carbon neutrality

NET ZERO 2050

Net Zero

2020
Established the first solar park.

2021
Achieved the third level of ACA through onsite solar energy integration.

2022
Achieved -25% direct emission reduction by transitioning from gas to district heating, introduced M1 electric vehicles and scooters, conducted stakeholder awareness-raising conferences, and initiated beach clean-up action.

2023
Approved the carbon neutrality action plan. Enforced a 0 kg CO_2e requirement for certain vehicle categories and initiated the use of renewable fuel in diesel vehicles.
By 2023 built 15 solar parks across Estonia with a total capacity of 6,5 MW.

2024
Adopted 100% renewable electricity procurement, installed 6 electric GPUs, imposed sustainability requirements on partners, mandated stakeholder environmental impact assessment, completed the airfield transition to LED technology, and ensured onsite waste sorting.

Starting from 2024,
Adopted LEED certification requirement for new buildings.

2028
Certain single-use plastic products will be banned, EV charging infrastructure for passengers, partners, and employees will be installed. Only machinery emitting 0 kg CO_2e (except for specialised equipment) will be permitted on the premises.

2030
Stakeholders operating at the Airport will be required to mitigate emissions.
To facilitate low-emission employee commuting, the company will support and encourage bicycle use. Solar panel installation will be expanded on buildings.
The first carbon removal project will take place and SAF will be ensured for aircrafts in accordance with EU requirements.

Future ideas
without set deadlines

Analysing waste management emission reduction and the use of sustainable materials in construction.
Supporting innovation in technology and knowledge domains.
Analysing circular economy principles in collaboration with partners.
Negotiating district heating transition to 100% renewable sources.
Planning transitioning specialised equipment to renewable fuels, hydrogen or electrification.
Developing web-based system for partners to transmit CO_2e data.
Exploring solutions for optimising turnaround time.
Collaborating with authorities to improve passenger movement within the airport.

All emission reduction percentages are compared to the base year 2018 and specify Scope 1, Scope 2, and employee business travel

Introduction

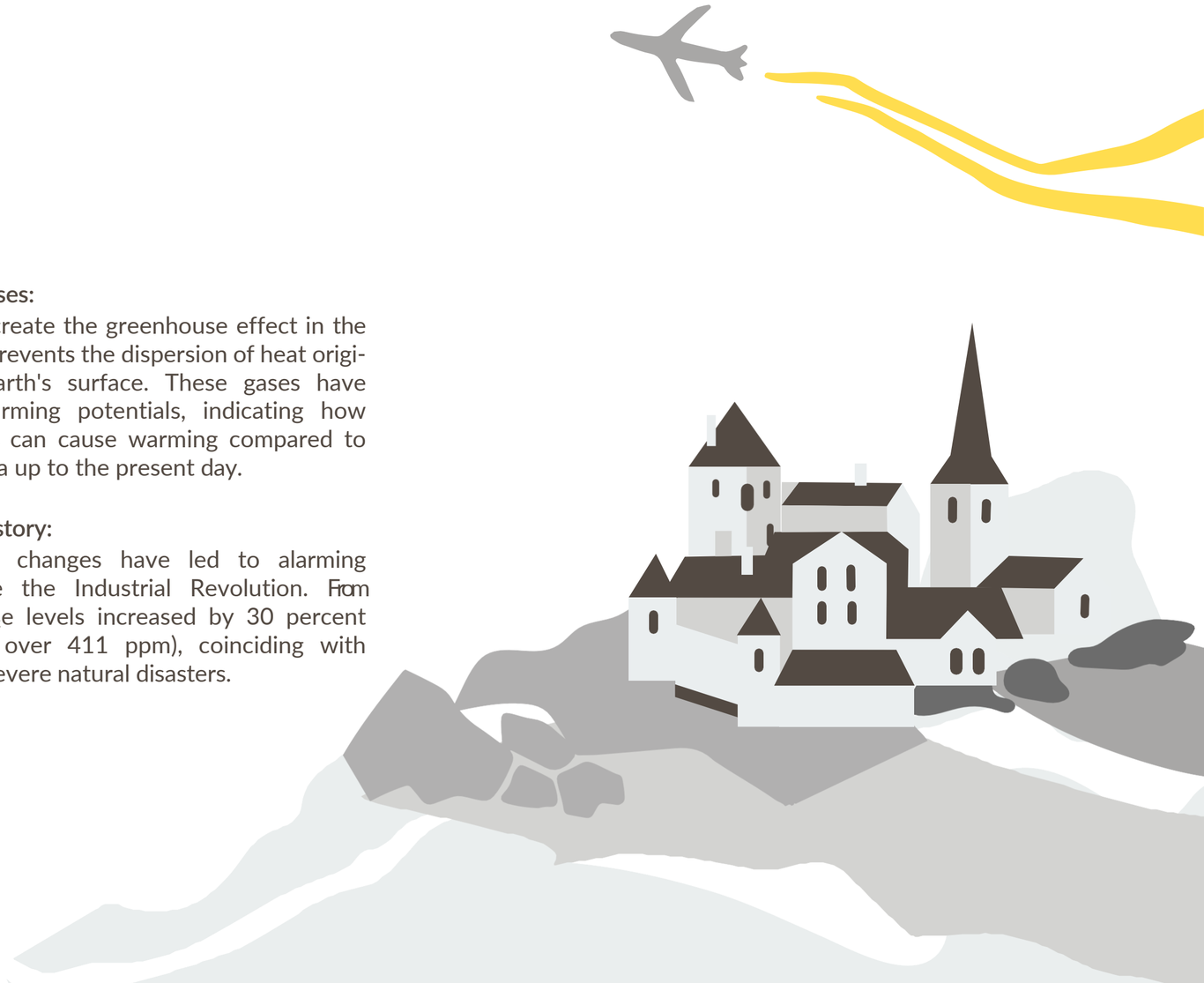
Airport emissions

Human activities like transportation, and industrialisation release emissions that affect global carbon levels, leading to long-term temperature changes. Tallinn Airport (TLL) is working to reduce its carbon footprint in accordance with international standards. This section explains where airport carbon emissions come from and how airport emissions affect the environment.

Human-caused emissions:
Human activities, primarily through additional greenhouse gas emissions, contribute to climate change by altering the composition of the Earth's atmosphere. This results in temperature changes that disrupt the natural carbon cycle by adding additional emissions and disturbing the balance of natural greenhouse gases.

Main greenhouse gases:
CO_2, CH_4 and N_2O create the greenhouse effect in the atmosphere, which prevents the dispersion of heat originating from the Earth's surface. These gases have different global warming potentials, indicating how effectively each gas can cause warming compared to the pre- industrial era up to the present day.

Carbon emissions history:
Global temperature changes have led to alarming consequences since the Industrial Revolution. From 1959 to 2019, CO_2e levels increased by 30 percent (from 316 ppm to over 411 ppm), coinciding with more frequent and severe natural disasters.



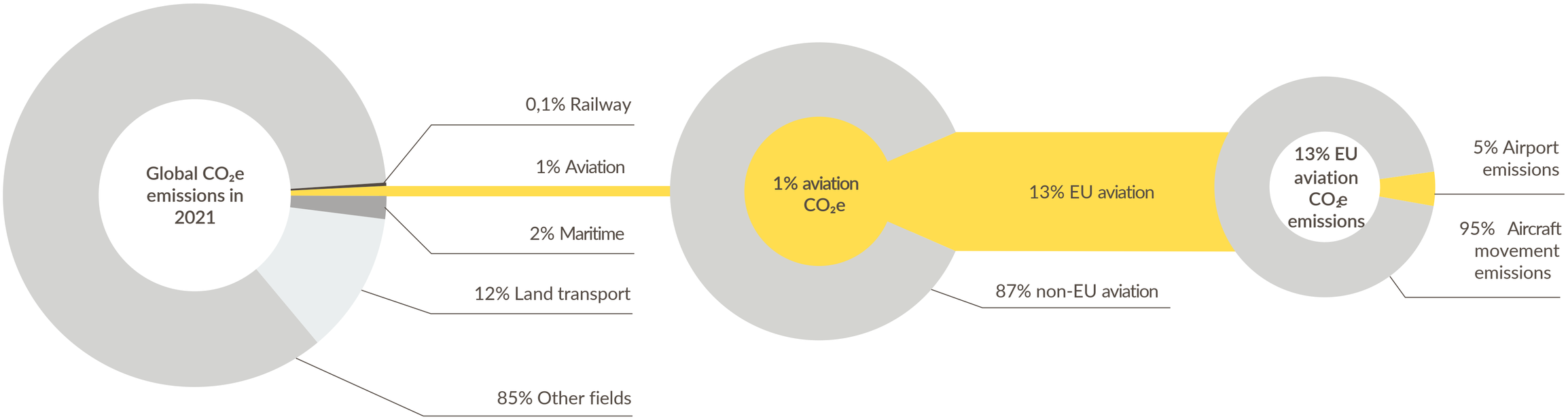
History of carbon emissions, transportation sector, and aviation: CO_2e emissions began to rise in the 1950s and have

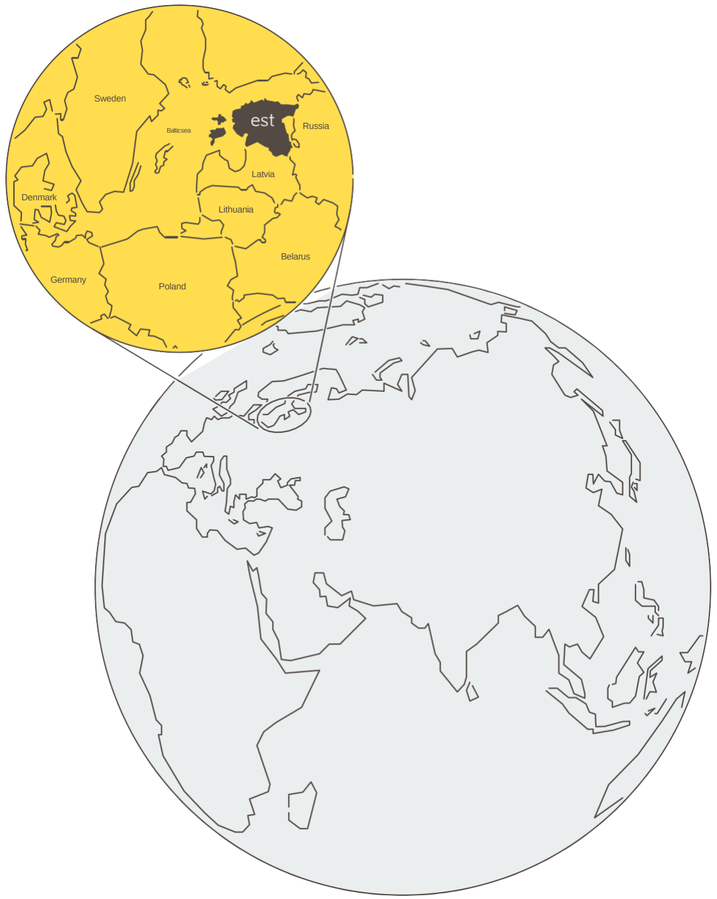
increased by over 45 percent, reaching 37.15 $GtCO_2$ in 2022. Data from 2021 indicate that the transportation sector accounts for 15% of global emissions, with the aviation sector responsible for only 1% of emissions. Although the share of aviation may seem small, its environmental impact is significant, given the rapid growth in passenger numbers.

European airports collectively contribute an average of **0,007% of global emissions.**

Sources of airport emissions:
Airports contribute approximately 5% of emissions from the European Union aviation sector. The emissions from airports as infrastructure entities are linked to energy consumption and ground services. However, the most significant impact, accounting for approximately one-third of total emissions, is attributed to air traffic, which also leads to noise and particulate pollution.

Tallinn Airport:
TLL aims to ensure the sustainable and responsible management of the airport group while protecting the environment and reducing carbon emissions. TLL utilises the Airport Carbon Accreditation (ACA) standard for reporting emissions reduction, which requires annual mitigation activities with data. Using the ACA-certified standard, TLL aims to become a carbon-neutral airport by 2025 and a net zero emissions airport by 2030 according to the Airport Council International (ACI) standard.





Tallinn Airport

Who we are?

Tallinn Airport (TLL) is located in the capital of Estonia, Tallinn and connects the Baltic region with major destinations in Europe. In 2024, we served 3,5 million passengers, averaging around 8,200 passengers and 116 flights per day. As of 2024, there were 45 regular flight routes operating at Tallinn Airport.

AS Tallinn Airport manages the airports of Tallinn, Tartu, Pärnu, Kuressaare, Kärdla, as well as the Ruhnu and Kihnu airfields. The company also has two subsidiaries: Tallinn Airport GH, which provides ground handling services, and Tallinn Airport City, which focuses on infrastructure development and management. The group's activities include airport and airfield operation, provision of airfield and air navigation services, ground handling of aircrafts, passengers, and cargo, provision of non-aviation services, and real estate development.

The airport occupies an area of 371.5 hectares, with a terminal of 34,367 square meters, capable of accommodating up to 3.5 million passengers annually. Over the coming decades, we plan to expand the airfield and terminal to ensure the capacity to serve 5 million passengers annually.

Together with 314 other airports worldwide, TLL has committed to achieving net zero emissions with the aid of Airport Council International (ACI). While most airports have set a deadline of 2050, TLL and 124 other airports have pledged to achieve this goal 2030.

How do we operate?

TLL adheres to corporate governance standards published on its website. The company follows articles of association and national legal norms in its business activities.

At the owner's request, the airport serves as a role model for Estonian companies in governance, social responsibility, and corporate culture. The group integrates principles of responsible corporate governance into its daily operations, business management, and strategy, considering stakeholders' interests in decision-making. The company takes into account stakeholders such as the public, local residents, airlines, service providers, and partners in its activities.

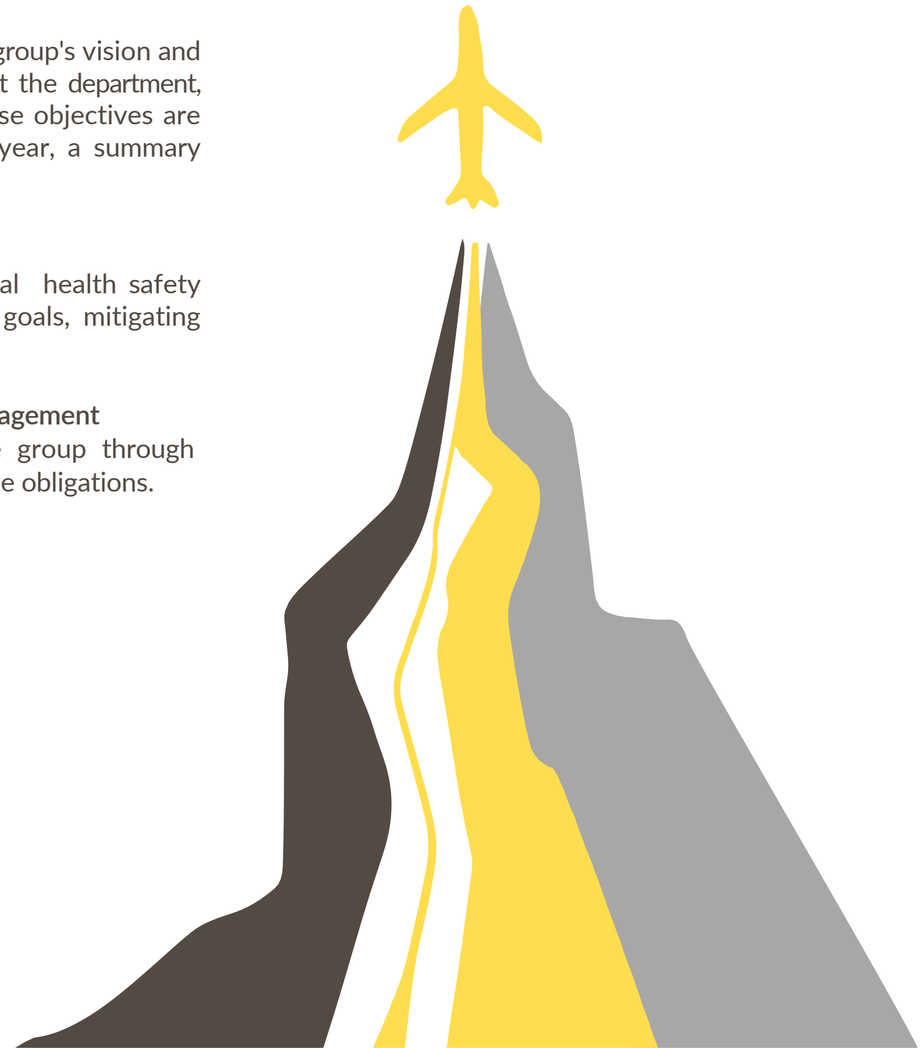
AS Tallinn Airport is governed by the board of directors, management, and supervisory board. A four-member board of directors, led by the chairman, is responsible for day-to-day financial activities. The management makes decisions at regular meetings. The supervisory board oversees the management's activities and participates in making significant decisions approving the group's strategy, action plan, risk management principles, and annual budget.

The management board's objective is to ensure the group's sustainable development in line with its mission, vision, and goals, as well as effective risk management and internal control. Airport sustainable development is based on three pillars: performance management, safety management, and quality and compliance management.

Performance Management
starts with the management establishing the group's vision and five-year strategy. Objectives are then set at the department, division, and individual employee levels. These objectives are reviewed quarterly, and at the end of the year, a summary evaluation is conducted.

Safety Management
ensuring aviation safety and occupational health safety measures, setting performance targets and goals, mitigating hazards.

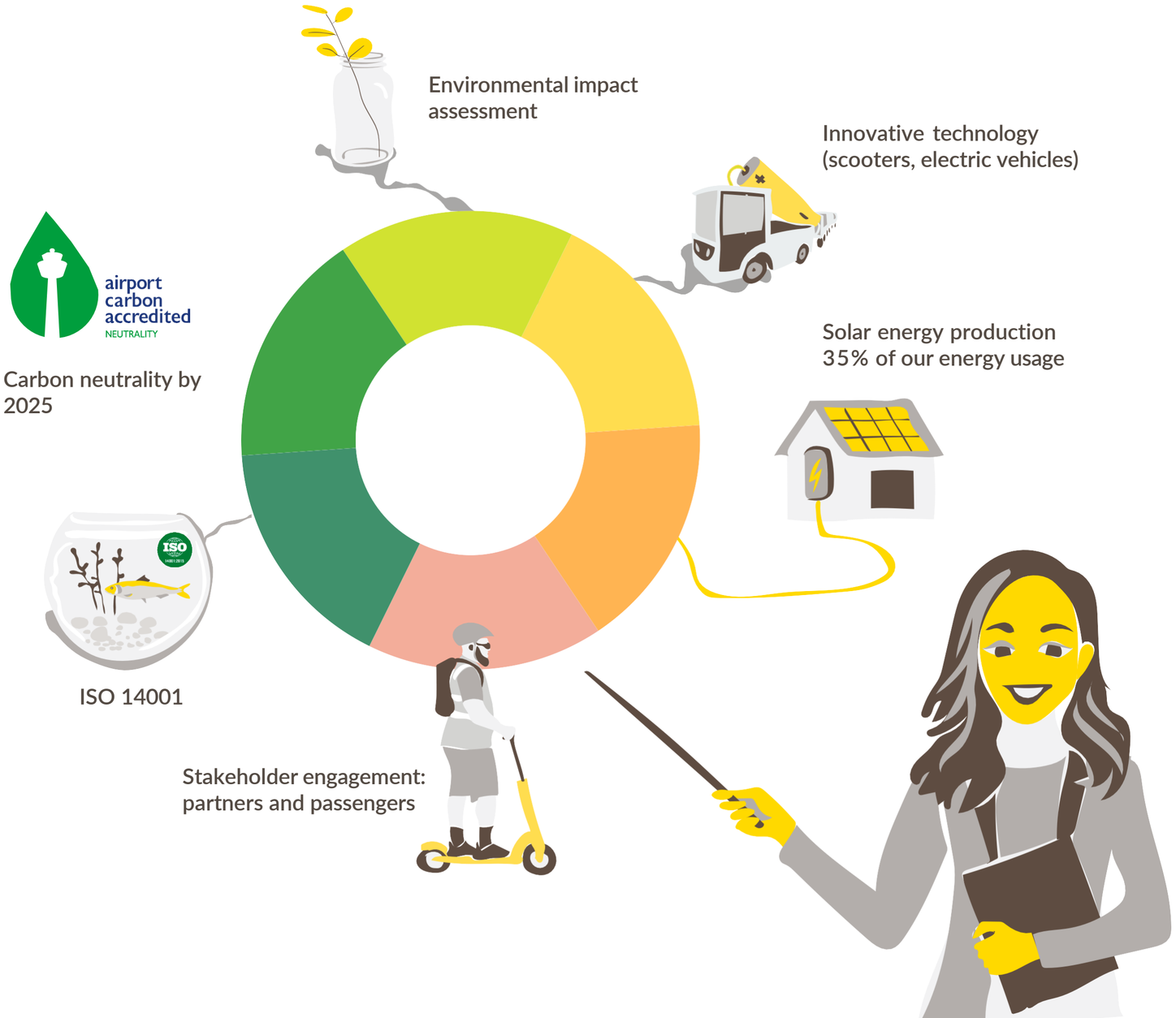
Quality, Compliance, and Environmental Management
supports the strategic development of the group through quality assurance and fulfillment of compliance obligations.



Our mission and vision

The group's mission is to connect Estonia with the world, being the most homely airport in Europe. The company upholds the values of reliability, openness, and compassion. The group's strategic objectives include ensuring Estonia's attractiveness to various target groups, safe airport operations, responsible environmental stewardship, cost-effective management, and suistainable growth of company's real estate.

The company's environmental policy obligates employees to avoid environmental pollution, adhere to regulatory requirements, implement the ISO 14001 standard, minimise environmental impacts, and achieve carbon neutrality by 2025 and net zero emissions by 2030. By choosing sustainable technological solutions and continuously seeking environmental innovation, the company keeps environmental impact under control, while also contributing to community awareness and engaging in open communication with stakeholders.



Our strategy

The company has set the following strategic objectives for the year 2030

The group is well-managed and sustainable. Sales revenue is 97 million, and EBITDA is 35 million

Tallinn Airport GH market share in Tallinn is at least 75%, and flight punctuality is 98%

Our airports are the cosiest in the world, Tallinn Airport ASQ 4.5

Company with open culture, focused on cooperation, and a valued employer. We are in the top five in employer rankings, and TRIM >70

Construction of the expansion of the passenger terminal is completed, and the number of passengers reaches 5 million

We operate Tallinn and regional airports safely and sustainably

On the passenger journey, 80% of passengers use self-service solutions. The group implements artificial intelligence solutions

We operate sustainably and by 2030 we are a climate-neutral airport

Airport City supports keeping airport charges low, sales revenue is 13 million, and 5 contracts are signed in the southern area

Management Board statement

Our dedication to reducing emissions and following net zero roadmap will drive success in growing passenger loyalty and numbers. As we strive to achieve our emission reduction goals, it is vital that all employees and partners demonstrate a high-level commitment. By leading through example, management board will actively promote and oversee established initiatives, ensuring every project and investment of Tallinn Airport aligns with our sustainability commitment.

The changes we bring on not only fulfil our environmental responsibilities but also set a precedent for accountability and proactive management to inspire other companies to follow by our example. Tallinn Airport confirms its goal to achieve carbon neutrality by 2025 based on the ACA standard and net zero by 2030 according to the ACI commitment.

Riivo Tuvike
Chairman of the Management Board (CEO)
Tallinna Lennujaam AS

Carbon footprint

Definitions and methodology

Before introducing the carbon footprint of TLL, we wish to clarify the principles of the calculations and the methodology used. This chapter explains the methods used in carbon footprint calculations:

Terms: carbon neutrality and net zero emissions

Carbon neutrality
The airport has reduced direct emissions (Scope 1 and 2) as much as technologically feasible and offset emissions that cannot be eliminated.

Net zero emissions
The airport has reduced direct emissions by at least 90% compared to the base year and offset emissions that cannot be eliminated with carbon removal credits.

Tallinn Airport emissions are further explained on page 13.

CO_2e calculations are conducted according to the Airport Carbon Accreditation (ACA) manual, using the ACERT tool. Data is submitted in the annual ACA application through the online system, undergoing independent third-party audit.

From 2018 to 2024, Tallinn Airport and its subsidiary, Tallinn Airport GH, were reported as a single entity. As of today, the emission data for the two companies is calculated separately.

The base year for the calculations and reduction percentage is the year 2018.
The airport primarily includes direct emissions in reduction activities, covering Scope 1, Scope 2 and employee business travel emissions.

Scope 3, indirect airport emission reduction occurs gradually, with the main focus on raising community awareness and collaborative efforts.

Electricity consumption calculations use emission factors from either the service provider or the AIB (Association of Issuing Bodies) report.

Provider-specific emission factors are preferred in all calculations, but if unavailable, ACERT data is used.

The calculations account for the impacts of the COVID-19 pandemic in 2020–2021, resulting in a decrease of CO_2e compared to 2019. Pandemic years cannot be compared to pre- and post-pandemic years.

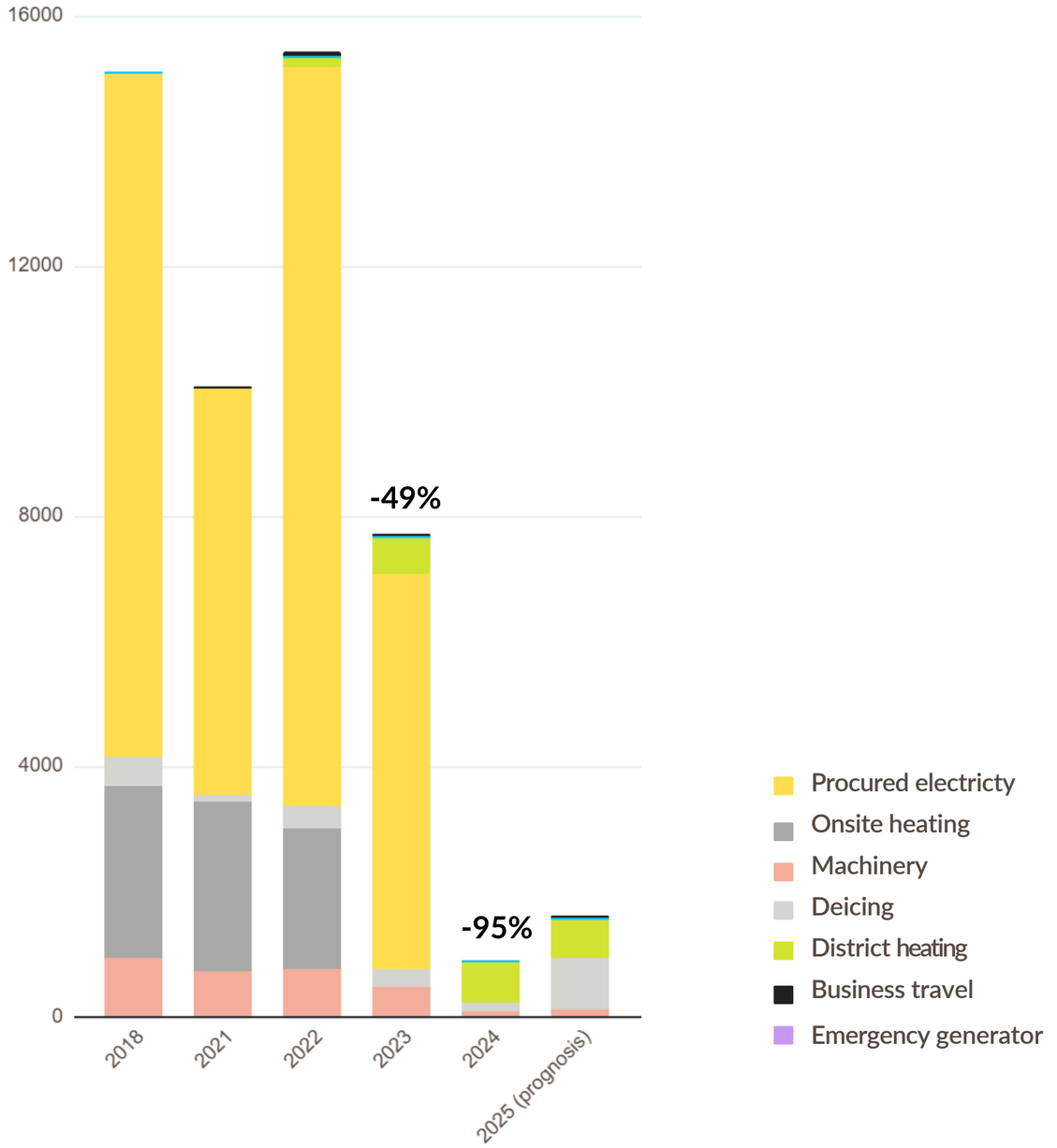
Carbon neutrality will be achieved based on 2024 data by submittng the application in 2025.

Starting point and past emissions

Tallinn Airport began calculating its carbon footprint in 2018, which was designated as the base year for calculations and emission reduction. The company's objective is to reduce emissions by direct actions by 80-90% in 2025 compared to 2018 and only then use offsettng for irreducible emissions. The graph shows the direct emissions from airport activities Associated with the airport as an infrastructure provider.

The reduction of the carbon footprint began with annual renewable energy production and the establishment of solar parks. In 2022, district heating was adopted, and starting from 2023, renewable fuel is used in diesel vehicles.

Note: The graph does not reflect years affected by the pandemic.



Visual explains Tallinn Airport emission division between direct emissions (Scope 1 and 2) and indirect emissions (Scope 3)

Scope 1
Machinery
Deicing
Emergency generator
Refrigerants
Onsite hea?ng

Scope 2
Electricty
District heating

Scope 3
Stakeholder energy demand
Waste and wastewater disposal
Employee business travel
Aircraft movement
Stakeholder vehicles
Airport arrival of passengers, employees, partners

Target areas

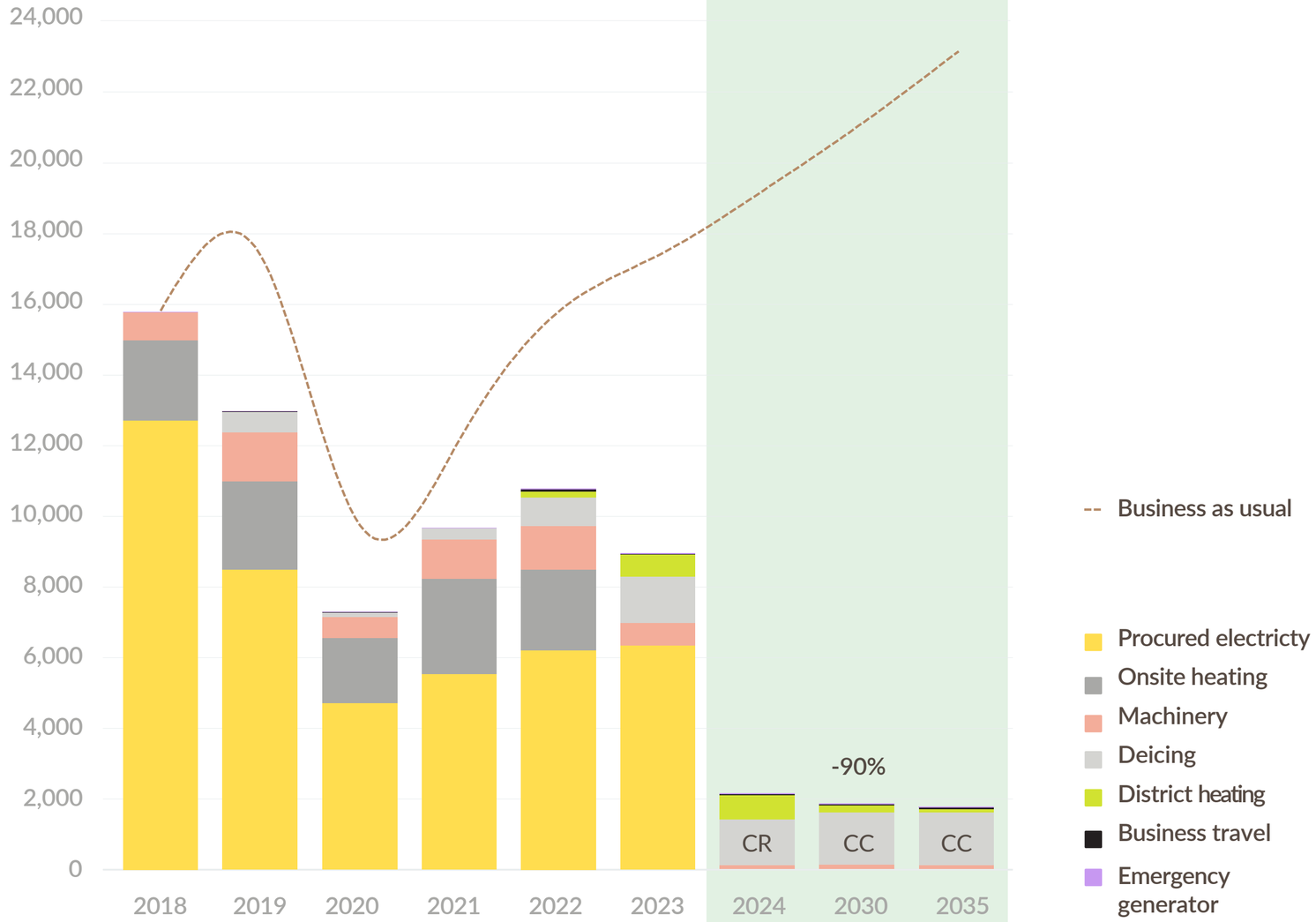
This chapter outlines how TLL plans to reduce its carbon footprint and reach carbon and net zero.

Strategic goal	Source	Action	Target	Key performance indicator
SCOPE 1 The goal is to reduce the total tCO_2e emissions by 10% compared to 2018.	Machinery	Paraffin fuel usage in diesel vehicles	Exclusive procurement and supply of paraffin fuel for diesel vehicles	Annual emissions from fossil diesel fuel (tCO_2e)
		Gradual replacement of gasoline and CNG vehicles with electric-powered alternatives (excluding specialised equipment)	Replacement of gasoline and CNG machinery by 2028	Percentage of electric vehicles out of total (%)
	Onsite heating	Renewable fuel in emergency generators and onsite heating	100% usage of paraffin fuel	Annual emissions from self-produced heating and generator (tCO_2e)
SCOPE 2 The goal is to reduce the total tCO_2e emissions by 70% compared to 2018.	Purchased energy	Increased share of onsite solar energy production	35% self-generation of electricity by 2025	Percentage of electricity consumption vs production (%)
		Procurement of electricity derived from exclusively renewable sources	100% procurement of renewable energy	Composition of electricity (%)
		Procurement of district heating derived from renewable sources	50% renewable-based district heating by 2025 80% renewable-based district heating by 2030	Composition of district heating (%)
SCOPE 3	Electric vehicle charging infrastructure	Electric vehicle charging infrastructure for passenger, employees and stakeholders	Install at least 1 charging point for every 50 parking spaces	Progress of electric vehicle charging infrastructure
	Stakeholders	We organize a Green Forum for the transportation sector, Green Mornings for partners, and community events such as World Cleanup Day	Awareness-raising events/presentations once per quarter	Number of awareness-raising activities per year
		Partners operating within the territory are required to use machinery with 0 kg CO_2e/km emissions by 2028 and to set targets for emissions reduction	In 2029, we achieve a 40% reduction in emissions from our onsite partners' vehicle fleet	Emissions from partners' vehicle fleet (excluding specialised equipment) (kg CO_2e)
		The use of solar panels on leased buildings	TBA	TBA
		Ban on certain single-use plastics	30% reduction in packaging waste at the passenger terminal	The percentage of packaging waste (%)
		We communicate openly with partners, airlines, aviation academies, and enthusiasts, including small and recreational pilots	N/A	N/A

Emission trajectory

The emission forecast takes into account an emission factor of 0 $kgCO_2e/kWh$ for procured renewable energy. Emissions from fuel, electricity, and heat depend directly on market conditions and may change according to global events. This forecast is based on data, laws, and regulations available as of 2024. If changes occur in the laws, methodology, or emission factors, the carbon foot- print calculation forecast will be considered outdated and cannot be referred to.

The graph compares all years with 2018 data. The years 2020 and 2021 are affected by the pandemic and cannot be compared. From 2024 onwards, columns marked in green represent emission offsetting. CR means carbon reduction credits and CC represents carbon removal credits.



Carbon offsetting

Starting in 2025, TLL will begin using carbon credits, prioritising companies from Estonia or the European Union whose projects meet ACA requirements. The company providing the credits and the selected projects will be determined through a public procurement process, as TLL is subject to public procurement regulations and follows the Public Procurement Act when making purchases. The following principles will be determining when purchasing credits:

Reality

Emission reductions or removals must be proven and certified.

Additionality

Project results must be additional and would not occur without project funding.

Measurability

The volume of emission reductions or removals must be measurable.

Verifiability

Emission removal or reduction must undergo continious auditing.

Permanence

Projects must ensure measures to prevent emissions from reoccurring.

Uniqueness

Projects must not be registered under multiple standards, and multiple parties cannot claim the reduction or removal.

Risk analysis

The table outlines three perspectives on associated risks, the company considering the risks confirms the goal to achieve carbon neutrality and climate neutrality.

	Technology	Reputation and relationships	Regulations	Resources
Risks associated with implementing the action plan	The technologies or solutions acquired may prove to be unstable or inefficient in the Estonian climate.	New stakeholder regulations increase prices of services and goods. Public and industry perceptions towards sustainability initiatives turns negative.	New laws change emission factors or calculation methodologies, resulting in roadmap actions not achieving set targets. Changes in government policies or regulations affect the feasibility or profitability of sustainability initiatives.	Increased investments and budget for emission reduction projects will reduce other investments. Funding conditions change, and the EU or Estonian state does not support emission reduction projects.
Risks associated with not implementing the action plan	The continued use of outdated and emission-heavy equipment.	Negative perceptions within the industry and from the public.	Fines and other financial obligations for environmental non-compliance.	Reduction in support and funding from the EU and investors.
Risks endangering the implementation of the action plan	Insufficient renewable energy production in the country. Lack of or inaccessible necessary solutions or technologies.	Contractual partners are unable or unwilling to meet sustainability requirements. Decrease in supply and demand in procurements, leading to price increases.	Fluctuations in the prices of renewable energy and materials.	Lack of workforce, time, budget, and decision-making speed. Dependency on a single supplier. Resource shortages due to geopolitical tensions or economic instability. Difficulties in securing funding or investments due to economic uncertainty or lack of investor interest. Internal resistance within the company.

Scope 3

TLL focuses primarily on raising awareness among partners and fostering collaboration to reduce Scope 3 emissions, which typically account for an average of 70% from total Scope 1 to 3. The sources of Scope 3 emissions are explained in the graph. TLL has implemented requirements on low emissions machinery, the recommended use of CDA Continuous Descent Approach procedures, and compulsory waste sorting within its premises.

TLL offers partners opportunities to use renewable energy and paraffin fuel and is installing electric vehicle charging infrastructure on its premises.

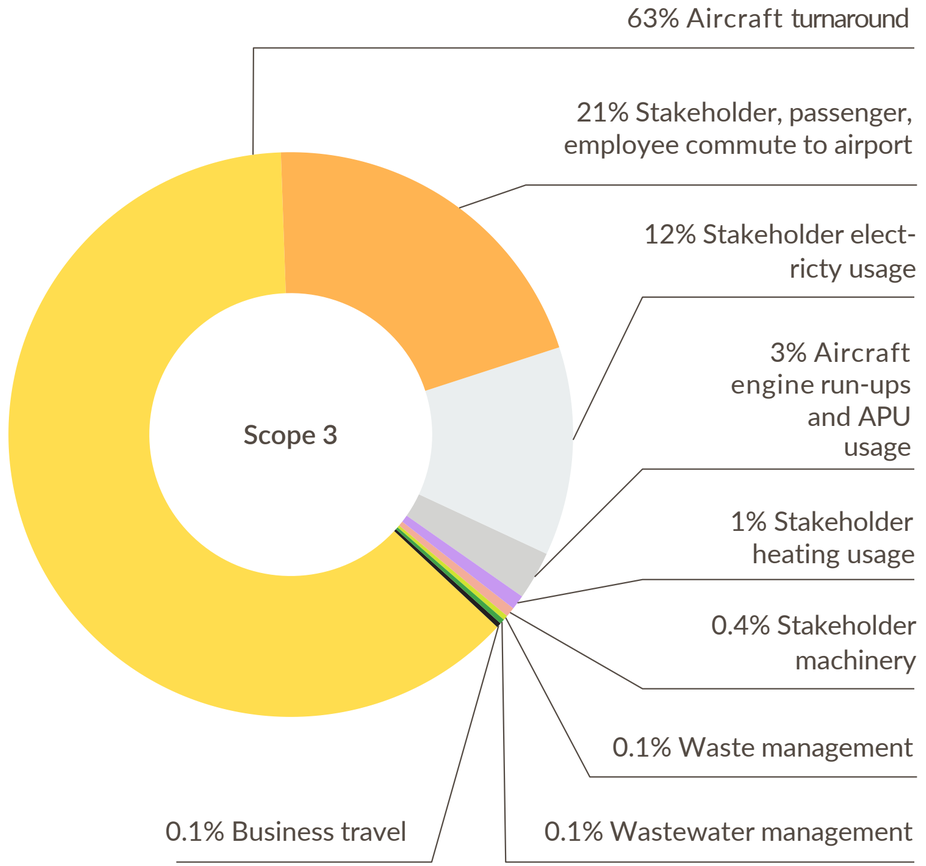
In the future, TLL plans to collaborate with stakeholders on banning single-use plastics and reducing the proportion of biodegradable waste. A web-based system will be established for partners to submit CO_2e data. Solutions to optimise turnaround times will be analysed.

Collaboration with authorities will be started to improve passenger movement to the airport using public transportation. Described activities aim to achieve a reduction in Scope 3 emissions.

Reporting and monitoring

TLL calculates Scope 1 to 3 emissions annually, and the data is submitted to the ACA web system for verification by the ACA permit manager and an independent auditor.

Additionally, the company measures direct emissions from the airport on a monthly basis, which are reported to the management. Monthly emissions are reflected in the metric $kgCO_2e/pax$, and the goal from 2024 to 2030 is to achieve and maintain 1 kg CO_2e/pax.



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