



2024 Updated Report of the Climate Action Plan



INDEX



1. CONTEXT

- 1.1 Towards sustainable and competitive aviation
- 1.2 The aviation industry united in building a more sustainable future
- 1.3 Alignment with key climate change recommendations
- 1.4 Milestones 2024
- 1.5 Partnerships and Alliances
- 1.6 Aena recognized as a sustainable company



2. SUSTAINABLE GOVERNANCE

- 2.1 Governing Bodies
- 2.2 Sustainable finance



3. STRATEGY

- 3.1 Aena's sustainability strategy
- 3.2 Our decarbonization roadmap



4. RISKS AND OPPORTUNITIES RELATED TO CLIMATE CHANGE

- 4.1 Risk management
- 4.2 Physical, transitional risks and opportunities



5. 5. MONITORING OF THE 2024 CLIMATE ACTION PLAN

- 5.1 Metrics, targets and emissions evolution
- 5.2 2024 objectives and actions linked to Scope 1 and 2 emission reduction: Carbon Neutrality Program
- 5.3 2024 objectives and actions linked to Scope 3 emission reductions: Community and Value Chain and Sustainable Aviation Programs





1

Aena's commitment¹ to fight against climate change is fully aligned with both European and national guidelines and objectives, particularly in the areas of decarbonization and energy transition.



¹ This report includes Aena SME SA and SCAIRM, according to the Aena's Climate Action Plan 2021 - 2030.



CONTEXT



SUSTAINABLE
GOVERNANCE



STRATEGY



RISKS AND OPPORTUNITIES
RELATED TO CLIMATE CHANGE



MONITORING OF
THE CLIMATE ACTION PLAN

Competitiveness and sustainability come together in Europe

The European Commission has introduced a new framework to boost economic productivity and ensure the EU's competitiveness. **This new roadmap** is based on the recommendations outlined in Mario Draghi's report on the future of European competitiveness. It will guide the EU's efforts in this area over the next five years, translating the report's recommendations into concrete actions for the Union's future prosperity.

Ultimately, the sustainability-competitiveness tandem proposed by the European Commission aims to strike a balance between two key objectives in economic and business development: **sustainability** and **competitiveness**.

These two dimensions are not opposing but rather complementary. Policies that promote sustainability are not only essential for global well-being and environmental protection but also serve as a driver of **innovation, economic growth, and enhanced business competitiveness** in the global market.



SOME KEY POINTS THAT WILL DRIVE THE EVOLUTION OF THIS ROADMAP INCLUDE:

- **Green Economy:** The transition to a low-carbon, environmentally friendly economy presents new business opportunities. Innovations such as renewable energy, circular economy practices, and clean technologies can enhance long-term business competitiveness.
- **Regulation and Standards:** The European Commission is implementing regulations that not only protect the environment but also ensure that businesses adapt competitively to new standards. These measures promote a level playing field and prevent discrepancies in environmental protection standards.
- **Incentives for Innovation:** The Green Deal Industrial Plan, introduced by the European Commission in 2023, accelerates access to funding and supports open trade for resilient supply chains. This initiative encourages investment in clean technologies, digitalization, and other advancements that enhance business competitiveness while addressing climate challenges.

This approach aims not only to ensure the survival of European businesses in the global market but also to position them as leaders in the transition toward a more sustainable economic model. By doing so, they can fully **capitalize on the growth opportunities** emerging from this transformation.



In summary, the new “pairing” proposed by the European Commission is the idea that sustainability should not be seen as an obstacle to competitiveness but rather as a **strategic opportunity** to drive economic growth, innovation, and global leadership.

In this regard, in 2024, ACI EUROPE supported its analysis of the transport sector and welcomed these proposals as a means to address the challenges facing aviation, particularly based on the Dragui Report:

The Draghi Report delivers a clear message: transport is essential to Europe’s competitiveness, driving economic prosperity across multiple sectors while fostering social and territorial cohesion. Draghi emphasises that this applies to all modes of transport, including aviation.

The report also acknowledges that as global passenger demand continues to grow, infrastructure must expand to ease congestion and unlock further growth. This makes it evident that the Draghi Report directly challenges the notion that the future of aviation lies in simply curbing demand and imposing capacity limits.”

This is particularly relevant for airports, as they will need to adapt and expand their facilities to accommodate both the deployment of sustainable aviation fuels (SAF) and the development of zero-emission aircraft. This will require access to vast amounts of green energy, which must be factored into energy policies and planning.

Enhancing and streamlining infrastructure planning at both the national and EU levels will be essential, with a strong focus on intermodality and the integration of transport and energy planning.





SUSTAINABLE
GOVERNANCE



STRATEGY



RISKS AND OPPORTUNITIES
RELATED TO CLIMATE CHANGE



MONITORING OF
THE CLIMATE ACTION PLAN

The aviation sector united in building a more sustainable future

The aviation sector is making significant strides toward building a more sustainable future, working together to reduce its carbon footprint while ensuring continued growth and global connectivity.

Collaboration between airlines, aircraft manufacturers, airports, governments, and international organizations has been key to accelerating the transition to greener aviation. Through technological innovation, more efficient aircraft are being developed, incorporating lightweight materials and fuel-efficient engines. A notable example is the advancement of electric and hydrogen-powered aircraft, which are expected to revolutionize the industry in the coming decades.

Additionally, airlines are investing in sustainable aviation fuels (SAF), which significantly reduce carbon emissions compared to traditional fossil fuels. These advancements, along with a stronger focus on optimizing flight routes and modernizing airport infrastructure, are helping to minimize aviation's environmental impact.

Government policies and international regulations also play a crucial role in promoting incentives for clean technologies and setting clear emission reduction targets. In this regard, the Paris Agreement and industry initiatives, such as the International Civil Aviation Organization's (ICAO) commitment to achieving carbon neutrality by 2050, reflect the global effort toward a more responsible aviation sector.

Airports play a vital role in driving the decarbonization of the aviation sector, serving as key hubs within aviation infrastructure and centers of high-intensity activity that encompass both airline and ground operations. Their influence extends beyond being mere transit points—they have the ability to promote and implement sustainable practices that can significantly reduce the industry's emissions.

At Aena, we recognize the fundamental role of airports in contributing to sustainability and our responsibility as key drivers of aviation decarbonization. Through initiatives such as adopting renewable energy, optimizing operations, promoting sustainable fuels, and collaborating on global initiatives, we are leading the way toward a more sustainable future for aviation. At the same time, we acknowledge that this effort must continue evolving and expanding as the industry faces new environmental challenges.

Ultimately, the future of sustainable aviation is promising, but only through the unity of the sector and a steadfast commitment to innovation and environmental responsibility can we build an industry that not only connects the world but does so in a way that is more respectful of the planet.



Alignment with Key Climate Change Recommendations

This report includes information on governance, strategy, risk and opportunity management, targets, metrics, and progress related to climate change, in line with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). In this regard, it is worth highlighting that since 2023, Aena has been a **TCFD supporter**, joining this initiative alongside other leading companies committed to taking action against climate change.

Additionally, we have taken into account the guidelines derived from the **European Commission's supplement on climate-related disclosures**, in accordance with Directive 2014/95/EU of the European Parliament and the Council. This directive outlines the policies, results, and risks associated with environmental issues.



Furthermore, in line with Aena's commitment to the **Science-Based Targets Initiative (SBTi)**, the validation process for the group's emission reduction targets was completed in 2024. These targets have been aligned with the **Paris Agreement** to support a **1.5°C** climate scenario. The validated targets are as follows:

SHORT-TERM EMISSION REDUCTION TARGETS:

- **Reduce absolute Scope 1 and 2 greenhouse gas emissions by 73.1% by 2030** compared to 2019 levels.
- **Reduce absolute Scope 3 greenhouse gas emissions** - from categories of procurement of goods and services, capital goods, fuel- and energy-related activities, waste generated during operations, business travel, employee commuting, and investments - by 34.7% by 2030 compared to 2019 levels.
- **Ensure that 67% of customers (in terms of emissions), including airlines and ground handling agents, within the Scope 3 category of use of sold products/services, have science-based targets in place by 2028.**

LONG-TERM EMISSION REDUCTION TARGETS:

- **Reduce absolute Scope 1 and 2 greenhouse gas emissions by 90% by 2050** compared to 2019 levels.
- **Reduce absolute Scope 3 greenhouse gas emissions by 90% by 2050** compared to 2019 levels

GLOBAL NET ZERO TARGET:

- Achieve net-zero greenhouse gas emissions across the entire value chain by 2050.

Note: The scope of the SBTi targets includes AENA S.M.E., S.A., SCAIRM, and its subsidiaries in the United Kingdom (LLA) and Brazil (ANB).



CONTEXT



SUSTAINABLE
GOVERNANCE



STRATEGY



RISKS AND OPPORTUNITIES
RELATED TO CLIMATE CHANGE



MONITORING OF
THE CLIMATE ACTION PLAN

Milestones 2024



Achieved an **A-** rating in the CDP (Climate Disclosure Project) **climate change questionnaire**.



Validation by **SBTi** of short- and long-term decarbonisation targets based on the **1.5°C scenario**.



Maintained inclusion in the **Yearbook** and the **S&P Global Dow Jones Sustainability World Index**, as well as in the **Ibex ESG Index**, recognizing Aena as one of the most sustainable and responsible companies in Spain.



In 2024, **nine airports within Aena's network, accounting for 95% of the network's emissions, received Airport Carbon Accreditation certification from ACI EU.**



Aena achieved the highest score of 5 out of 5 for its **FTSE ESG performance**.

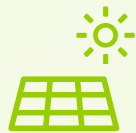
Level 3 (Optimization): AS Madrid-Barajas, JT Barcelona-El Prat, Palma de Mallorca, Málaga-Costa del Sol, Alicante-Elche, Menorca e Ibiza.
Level 2 (Reduction): Lanzarote.
Level 1 (Inventory): Santiago.

Milestones 2024



Aena has achieved a 70.4% reduction in Scope 1 and 2 emissions compared to 2019, exceeding the target by 8.4 percentage points, which has made it possible not to require offsetting carbon credits, as a result of:

- 40% reduction in **natural gas** consumption compared to 2019, thanks to the use of **aerothermal energy** and the purchase of **biofuels**
- **Purchase of renewable electricity**



Purchase of 100% renewable electricity with a guarantee of origin for the fifth consecutive year.



56% of the ground handling fleet was sustainable in 2024.



Reporting on the degree of eligibility and alignment of actions, calculated based on **Aena's economic activities in accordance with the EU Taxonomy** (63.64% eligibility and 48.43% alignment in revenue).



Launch of the energy audit process under the legal framework of RD 56/2016, serving as a starting point for the inclusion of new airports in the **Energy Management System** in accordance with **ISO 50001**.



CONTEXT



SUSTAINABLE
GOVERNANCE



STRATEGY



RISKS AND OPPORTUNITIES
RELATED TO CLIMATE CHANGE



MONITORING OF
THE CLIMATE ACTION PLAN

Partnerships and Alliances

Aena actively engages in collaborations and partnerships with various stakeholders, joining some of the most significant national and international alliances that promote sustainable development and contribute to the fight against climate change. Key alliances include:



NETZERO 2050 BY ACI

The NetZero2050 initiative by ACI Europe currently includes an agreement from 324 airports managed by 104 operators in 38 European countries, all of which have committed to achieving net-zero carbon emissions from operations under their control by 2050. Of these, 132 airports have set the target for achieving this goal before 2030. Aena is part of this agreement, having increased its level of ambition in 2023 and brought forward its commitment to 2030.



SCIENCE BASED TARGETS INITIATIVE

The Science-Based Targets initiative (SBTi) drives ambitious climate action in the private sector by ensuring that companies set science-based emission reduction targets. In 2024, Aena received validation for its short- and long-term targets within the Business Ambition for 1.5°C.



CLIMATE AMBITION ACCELERATOR

A program driven by the United Nations Global Compact designed to provide companies with the necessary guidelines to set science-based emission reduction targets aligned with the 1.5°C scenario, in accordance with the requirements of SBTi, and achieve net-zero emissions by 2050. Aena participated in the second edition of the program alongside 945 other companies from 69 different countries.



CONTEXT



SUSTAINABLE
GOVERNANCE



STRATEGY



RISKS AND OPPORTUNITIES
RELATED TO CLIMATE CHANGE



MONITORING OF
THE CLIMATE ACTION PLAN



CLEAN SKIES FOR TOMORROW COALITION

The World Economic Forum's Clean Skies for Tomorrow Coalition provides a crucial global mechanism for senior executives and public leaders, across and beyond the aviation value chain, to align on a transition to sustainable aviation fuels as part of a meaningful and proactive pathway for the industry to achieve carbon-neutral flight. Aena has been part of this coalition since mid-2021.



TOULOUSE DECLARATION

This is the first public-private initiative supporting the European aviation industry's goal of reaching net-zero CO₂ emissions by 2050. It is also the first joint initiative of its kind globally, bringing together all EU stakeholders to decarbonize and transform the aviation sector in Europe. Signed by the 27 EU Member States, 10 members of the European Civil Aviation Conference, and nearly 150 companies and stakeholders (aviation manufacturers, airlines, federations, unions, etc.) from the aviation and energy sectors, including Aena, this declaration sets a long-term shared vision for the sector, aiming to achieve net-zero CO₂ emissions by 2050 in line with the EU's long-term climate goals and the Paris Agreement.



EUROPEAN CLEAN HYDROGEN ALLIANCE

Driven by the European Commission, the initiative aims to contribute to the creation of a strong, innovative, and competitive clean hydrogen sector in Europe, fully capable of supporting and enabling the energy transition outlined by the Commission in its communication "A Clean Planet for All." It brings together technological and financial knowledge and resources from both public and private sources. Aena has been part of this alliance since early 2021, with the goal of contributing to the development of the green hydrogen value chain at airports.



ALLIANCE FOR ZERO EMISSION AVIATION

The EU initiative aims to prepare for the entry into service of electric and hydrogen-powered aircraft, ensuring that air transport contributes to the goal of climate neutrality by 2050. Aena is represented through ACI Europe (leading Working Group 3 on Airports) and participates directly in Working Group 4 on Aviation Regulation, Certification and Standardization.



RENEWABLE & LOW CARBON FUELS INDUSTRIAL ALLIANCE

The EU initiative aims to boost the production and supply of renewable and low-carbon fuels in the aviation and maritime sectors. It is a key measure to support the FuelEU Maritime and RefuelEU Aviation regulations. Aena is a member of the alliance and participates as an expert in Working Group 2 of the alliance on production pathways and the value chain in the aviation sector.



ALLIANCE FOR THE USE OF H2 IN SPANISH AVIATION

An alliance, promoted by the Spanish Aerospace Technology Platform, aimed at fostering the use of hydrogen and supporting the objectives of the hydrogen roadmap, the PERTE, and the EU Green Deal. Aena actively participates in the alliance and leads the Airports Working Group.



ALLIANCE FOR SUSTAINABILITY IN AIR TRANSPORT IN SPAIN

An alliance led by key players in the aeronautical business sector, universities, and NGOs. Its goals include leading the decarbonisation of the air transport sector by exploring all possible solutions and technologies, while boosting Spain's industrial capacity to provide disruptive technologies. It also promotes public-private collaboration to foster R&D&I and accelerate the development of low-carbon aircraft. Approved in April 2023, Aena is a member of its steering committee.



FORÉTICA

It is the leading organization for sustainability and corporate social responsibility in Spain. Its mission is to integrate social, environmental, and governance factors into the strategy and management of companies and organizations. Currently, it has over 200 members.



CONTEXT



S SUSTAINABLE
GOVERNANCE



STRATEGY



RISKS AND OPPORTUNITIES
RELATED TO CLIMATE CHANGE



MONITORING OF
THE CLIMATE ACTION PLAN

Aena recognized as a sustainable company

Our commitment to sustainability is recognized and valued by various organizations and indexes:



CDP CLIMATE CHANGE (CLIMATE DISCLOSURE PROJECT)

An international, non-profit organization that provides environmental ratings to companies that integrate climate change as a strategic factor. Aena achieved the highest rating of A in 2019, 2020, and 2022, above the industry average, highlighting the value of our climate change strategy and the actions taken in this area. In the 2024 report for the 2023 fiscal year, the Aena Group received an A- rating for its performance in combating climate change.



DOW JONES SUSTAINABILITY INDEX

In 2024, Aena improved its score, achieving 78 points in the environmental dimension and 72 points in the social dimension (out of 100). In 2023 and 2024, Aena was included in the Dow Jones Sustainability World Index (DJSI World) and the Sustainability Yearbook, which recognizes companies with the best sustainability performance.



FTSE4Good

FTSE

The FTSE Russell analyst evaluates Aena annually on sustainability, and in 2024, Aena achieved the highest score of 5 out of 5 for its ESG performance.



In 2024, Aena was included for the second consecutive year in the “Europe’s Climate Leaders 2024” ranking, compiled by the Financial Times in collaboration with Statista, the largest online data portal. This list highlights the 500 European companies that have made the greatest reductions in their carbon emissions and have taken the most climate-related commitments. Aena was also once again included in the ESG Ranking of elEconomista.es, ranking 16th in the Ibex 35.

Furthermore, Aena has been included in the Ibex ESG Index of the Spanish Stock Exchange, recognizing it as one of the most sustainable and responsible companies in Spain.

Finally, in recognition of Aena’s work in sustainability, the company received the “Most Improved ESG Program” award in 2024, presented by the Spanish Association of Investor Relations in the “Large Company by Market Capitalization” category.





Certifications



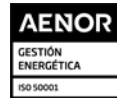
EMAS REGULATION

The European Union's Eco-Management and Audit Scheme (EMAS) facilitates the evaluation and improvement of a company's environmental performance and promotes transparency.



ISO 9001: QUALITY MANAGEMENT SYSTEM

It focuses on customer satisfaction and the ability to provide products and services that meet both internal and external requirements of the company.



ISO 50001: ENERGY MANAGEMENT SYSTEM

It helps organizations improve their energy performance by identifying significant energy uses within their operations and proposing opportunities for improvement. It systematizes the monitoring of energy consumption through the definition of baselines and energy performance indicators, which highlight improvements in energy efficiency. Ultimately, it is a management system focused on the use and consumption of energy, with objectives of continuous improvement in energy performance, energy efficiency, and cost and emissions savings, while ensuring compliance with applicable legal requirements in the energy field.

Currently, Aena has certified airports under the ISO 50001 standard, including Reus, Zaragoza, Valladolid, Valencia, Menorca, and the SATE at AS Madrid-Barajas. In 2024, Aena began the process of conducting energy audits under the legal framework of RD 56/2016, which will serve as a starting point for further additions to the ISO 50001 Energy Management System. The deployment of these systems will reinforce the energy goals outlined in the PAC.



AIRPORT CARBON ACCREDITATION

It is the carbon footprint certification program of Airport Council International (ACI), which accredits the calculation of airports' carbon footprints and the progress of their CO₂ emissions reduction commitments. Approximately 95% of the network's emissions are certified under this program, with the following levels achieved at 9 airports:

2024:

- **Level 3 (Optimisation):** AS Madrid-Barajas, JT Barcelona-El Prat, Palma de Mallorca, Málaga-Costa del Sol, Alicante-Elche, Menorca e Ibiza.
- **Level 2 (Reduction):** Lanzarote.
- **Level 1 (Inventory):** Santiago.

In **2023**, the level of ambition was increased by expanding the commitment level of certified airports for 2026: 19 airports at level 4+ (Transition) and 19 airports at level 5 (NetZero) by 2030.



ISO 14064: CARBON FOOTPRINT CALCULATION

It allows for the verification and validation of the company's greenhouse gas emissions calculation.



ISO 14001: ENVIRONMENTAL MANAGEMENT SYSTEM

It allows for the control and minimization of the environmental impact that may arise from our activities.

VERIFICATION OF CORPORATE CARBON FOOTPRINT

The corporate carbon footprint for 2024, which includes Scope 1, 2, and 3 emissions across the entire network of Spanish airports (including SCAIRM), heliports, and the company's Central Services, has been verified by Aenor, with a limited assurance level, in accordance with the UNE-EN ISO 14064-3:2019 standard and in compliance with all GHG Protocol calculation criteria.





2

Aena's commitment to fight against climate change is reflected in the involvement of top management and decision-making processes, ensuring the achievement of strategic decarbonisation goals.





Governing Bodies



The Board of Directors' commitment to sustainability is formalized through Aena's Sustainability Policy. Based on this, the Board is responsible for promoting and implementing this internal framework, engaging management in decision-making, and ensuring the long-term commitment of the entire organization.

To ensure the successful implementation of the Sustainability Strategy, the Sustainability and Climate Action Committee is responsible for understanding, driving, guiding, and overseeing environmental and social objectives, action plans, practices, and policies.

In addition, the company has an internal working group specifically set up to coordinate the cross-departmental deployment of the Strategy and support its implementation, promoting the active involvement of all areas and employees.

The Climate Action Plan is an integral part of the company strategy and has the backing of our shareholders. In 2024, the updated 2023 Climate Action Plan report was approved with a consultative vote at the Shareholders' Meeting, receiving 96% approval.

Aena also has a Chief Green Officer (CGO), a role filled by the Director of Innovation, Sustainability, and Customer Experience, whose main goal is to embed sustainability across all business areas and communicate updates and progress on the company's sustainability initiatives to both the Board and employees through established communication channels.

FUNCTION

FREQUENCY

General Shareholders' Meeting	Consultative vote and monitoring of the Climate Action Plan.	annual
Board of Directors	Approval of the CAP and annual and periodic supervision.	
 Appointments, Remuneration, and Corporate Governance Committee	Guidance and oversight of the strategy, policies, objectives, risks, and outcomes related to climate action.	
 Audit Committee	Compensation model linked to climate action objectives.	annual
 Sustainability and Climate Action Committee	Supervision of the risk management system, with the assurance of key risks' identification, management, and communication within the planned levels.	annual
	Reporting, oversight, and monitoring of the Climate Action Plan.	quarterly
Executive Management Committee	Monitoring of the Climate Action Plan.	
 Chief Green Officer	Integration of sustainability as a core element in the Company's decision-making process and the communication of updates and progress on the company's sustainability efforts to both the Board and employees through established communication channels.	
Sustainability Directorate	Development and coordination of the Climate Action Plan.	bimonthly



The Sustainability and Climate Action Committee is responsible for reviewing the correct development of initiatives within Aena's Climate Action Plan on a quarterly basis. Additionally, the Audit Committee participates in reviewing the environmental risk system, while the Appointments, Remuneration and Corporate Governance Committee is responsible for establishing a compensation system that supports the deployment of the CAP. Finally, the results are presented annually to the Board of Directors and are subject to a consultative vote by the General Shareholders' Meeting.

The progressive achievement of the Climate Action Plan is tied to the retribution of Aena's workforce in Spain, including the Chairman, members of the Executive Committee, and the rest of the senior management, through the performance management system.

In this regard, it is important to note that the variable bonuses for the CEO and the Executive Vice Chairman depends on the achievement of company objectives, including sustainability-related goals (such as the development and proposal of the Climate Action Plan). For the CEO, these objectives account for 25% of the total company objectives, while for the Executive Vice Chairman, they represent 25% of 50% of the company objectives.

Additionally, for senior management retribution, the variable complement depends on the achievement of company objectives, including a goal related to the Climate Action Plan, which accounts for 25% of the total, with company objectives weighing between 40% and 50% for senior management.



CONTEXT



SUSTAINABLE
GOVERNANCE



STRATEGY



RISKS AND OPPORTUNITIES
RELATED TO CLIMATE CHANGE



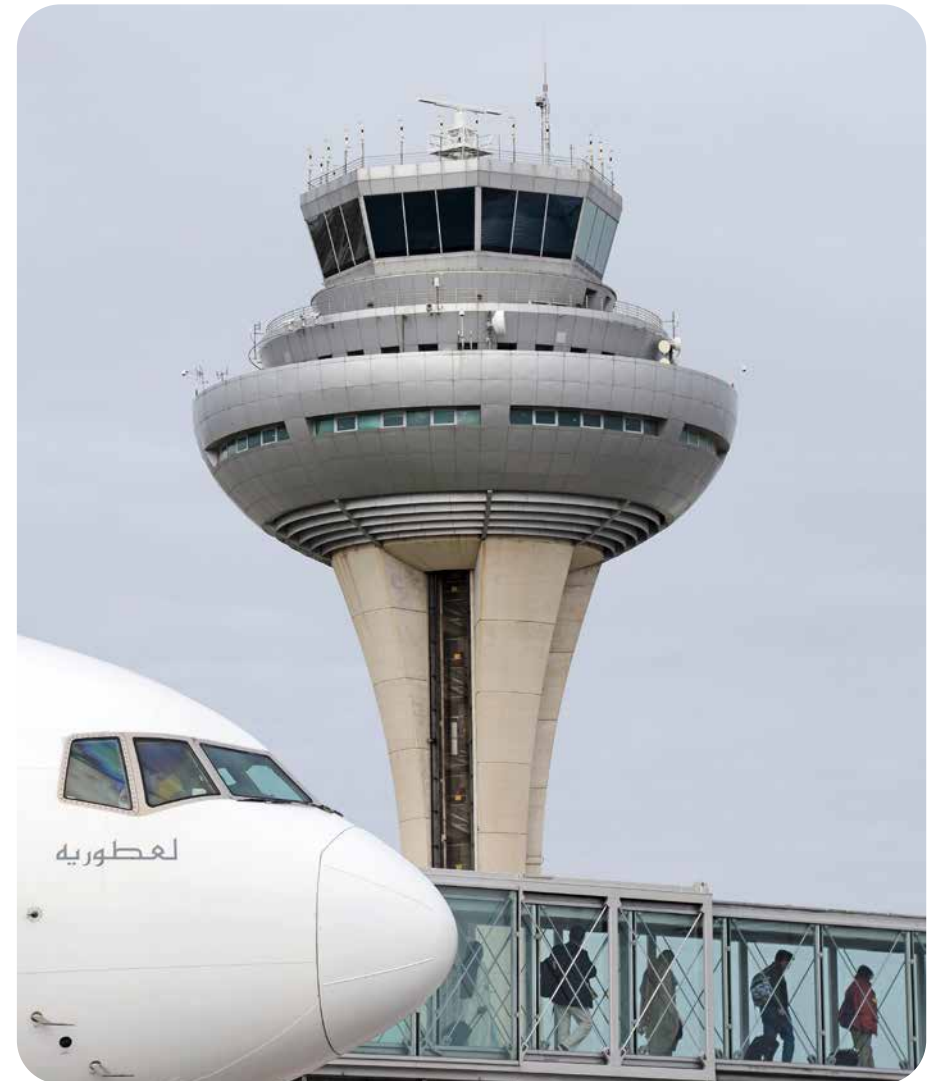
MONITORING OF
THE CLIMATE ACTION PLAN

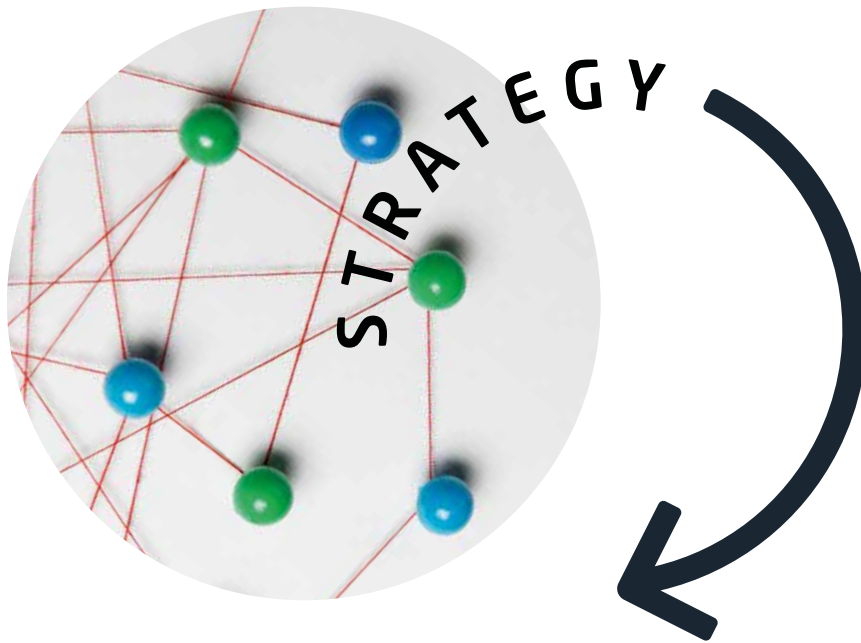
Sustainable Finance

Aena currently has several financing instruments tied to the Company's sustainability commitments. One key example is a €2 billion sustainable syndicated credit line ("Sustainability-Linked RCF"), subscribed by 14 national and international financial institutions. The unique aspect of this credit line is that the interest rate is based not only on the credit rating but also on achieving a CO₂ emissions reduction target. Additionally, Aena has a €250 million loan with an interest rate linked to the Company's sustainability performance, measured by an ESG scoring provider.

As part of its Financial Information Report, Aena identifies eligible and aligned economic activities in accordance with the European Environmental Taxonomy: Regulation (EU) 2020/852 of the European Parliament and Council, which sets a framework to facilitate sustainable investments.

Through the taxonomy report, Aena publishes and verifies how its activities align with sustainable economic practices, determining the environmental sustainability level of its revenues, investments, and expenses in accordance with the criteria outlined in the taxonomy. Specifically, and in line with the delegated acts on climate change mitigation and adaptation, Aena provides the necessary information to assess its performance in fight against climate change.





3

Aena is dedicated to sustainability by embracing efficiency, innovative solutions, and collaboration with external partners.



Aena's sustainability strategy

Aena's Strategic Plan for 2022-2026 integrates sustainability as a cross-cutting factor in the Company's roadmap, with a particular emphasis on the environmental pillar, aligned with the 2022-2026 DORA, its Sustainability Strategy 2021-2030, and its Climate Action Plan..

At Aena, we are committed to being an **active agent not only in the fight against climate change** but also in addressing other environmental challenges, such as minimizing the consumption of natural resources, reducing air pollution, managing noise, and protecting biodiversity. The goal is to strengthen our commitment to environmental care, natural capital management, and minimizing the environmental impact of our activities, while setting the conditions for the sustainable development of the Spanish airport network.

This commitment is supported by our **Sustainability Strategy 2021-2030, which includes Aena's Climate Action Plan**. To this end, an investment of nearly **€750 million** has been set aside, reinforcing our dedication to responding to ESG challenges and megatrends.

Collaboration with third parties, as well as the communication and dissemination of our environmental performance, are key levers for progress. These actions allow us to engage all relevant stakeholders and create synergies through dialogue and idea exchange. **Throughout 2024, we participated in 26 forums, conferences, and events focused on environmental communication and awareness,** demonstrating transparency and authenticity.

¹ Aena's Climate Action Plan includes Aena SME SA and SCAIRM.





CONTEXT



SUSTAINABLE
GOVERNANCE



STRATEGY



RISKS AND OPPORTUNITIES
RELATED TO CLIMATE CHANGE



MONITORING OF
THE CLIMATE ACTION PLAN

COMMITMENT TO THE SDGs



Structure of Aena's sustainability strategy



PROGRAMS	LINES OF ACTION				
Carbon neutrality	 Renewable energy 	 Energy efficiency 	 Sustainable own fleet 	 Offsetting emissions 	
Sustainable aviation	 Clean aircraft propulsion 	 Efficiency in aeronautical operations 	 Sustainable groundhandling fleet 		
Responsible use of resources	 Efficient water footprint	 Circular economy			
Sustainable community and value chain	 Sustainable mobility 	 Co-operation and awareness 	 Air quality 	 Noise management 	 Preservation of biodiversity 
Social commitment	 Relationship with the community	 People Management			

Our frameworks of reference

Sustainability Policy

Approved by the Board of Directors in June 2024, the policy focuses on several key areas to promote sustainability in Aena's operations. Aena is committed to aligning its business model and strategy with the 17 Sustainable Development Goals (SDGs) of the United Nations 2030 Agenda, with a particular focus on SDG 13, which addresses climate change.

The policy outlines the commitments, objectives, and strategies that the Aena Group will follow to ensure its activities contribute to sustainable development, create long-term value, maximize positive impacts, and minimize negative effects on people and the environment throughout its value chain, all while maintaining ethical and transparent practices. It also integrates climate change considerations into its internal decision-making processes, as well as into the management of risks and opportunities related to climate change, air quality, noise, water and waste management, biodiversity and ecosystem impacts, and waste management in the short, medium, and long term. This ensures that Aena's processes adhere to the highest quality standards and supports the transition to a circular economy across all operations.

This policy is available to stakeholders on the Company's website.



Integrated Management Policy for Quality, Environment, Energy Efficiency, and Occupational Health and Safety

Updated in 2024 by the Board of Directors, this policy provides a framework for the company's activities, integrating quality, environmental protection, energy efficiency, and occupational health and safety.

With this policy, Aena commits to incorporating decision-making criteria that reduce the environmental impact of its activities, promote the sustainable use of resources, and fight climate change. Aena also strives to align its airport operations with the protection and conservation of local natural habitats and biodiversity, minimizing deforestation and mitigating its impact through appropriate measures.

Additionally, the policy ensures these principles are communicated to all staff and companies within the value chain.

Our decarbonization roadmap

The **Climate Action Plan 2021-2030**, approved by the Board of Directors and subject to a consultative vote by the Shareholders' Meeting in 2021, covers the entire airport network, including SCAIRM, and Spanish heliports. It aligns with ACI Europe's Net Zero initiative, which is currently supported by over 300 airports managed by 86 operators across 32 European countries. These airports are committed to achieving and maintaining net-zero carbon emissions in their operations by 2050 at the latest, marking a significant step forward in the aviation sector's efforts to combat climate change.

In 2023, Aena accelerated its Net Zero commitment for Scope 1 and 2 emissions to 2030, 10 years ahead of the original target. The company has set internal decarbonization goals aligned with ACI Europe's initiative, which provides stronger support and feasibility for the defined action plans. Aena's commitment to ACI Europe's Net Zero initiative is also in line with the Paris Agreement's goals, which aim to limit global warming to 1.5°C. The central objective is to strengthen the global response to climate change, keeping the global temperature rise this century well below 2°C above pre-industrial levels and continuing efforts to limit the temperature increase to 1.5°C.

In essence, the CAP (Climate Action Plan) serves as our roadmap for decarbonization, outlining specific measures to reduce our own emissions (Scope 1 and 2) and to promote the decarbonization of third-party activities at our airports and throughout the entire value chain (Scope 3). Our main objectives, as set out in the CAP, are to achieve carbon neutrality by 2026 and reach net-zero emissions for Scope 1 and 2 by 2030, positioning us ahead of the aviation sector's global commitment.

CAP AENA'S CLIMATE ACTION PLAN: STRATEGIC PROGRAMS



CARBON NEUTRALITY

Scope 1 and 2

Become a carbon-neutral airport operator by 2026 and achieve Net Zero Carbon by 2030.



SUSTAINABLE AVIATION

Scope 3

Act as a driving force for other aviation sector stakeholders to accelerate their decarbonization.



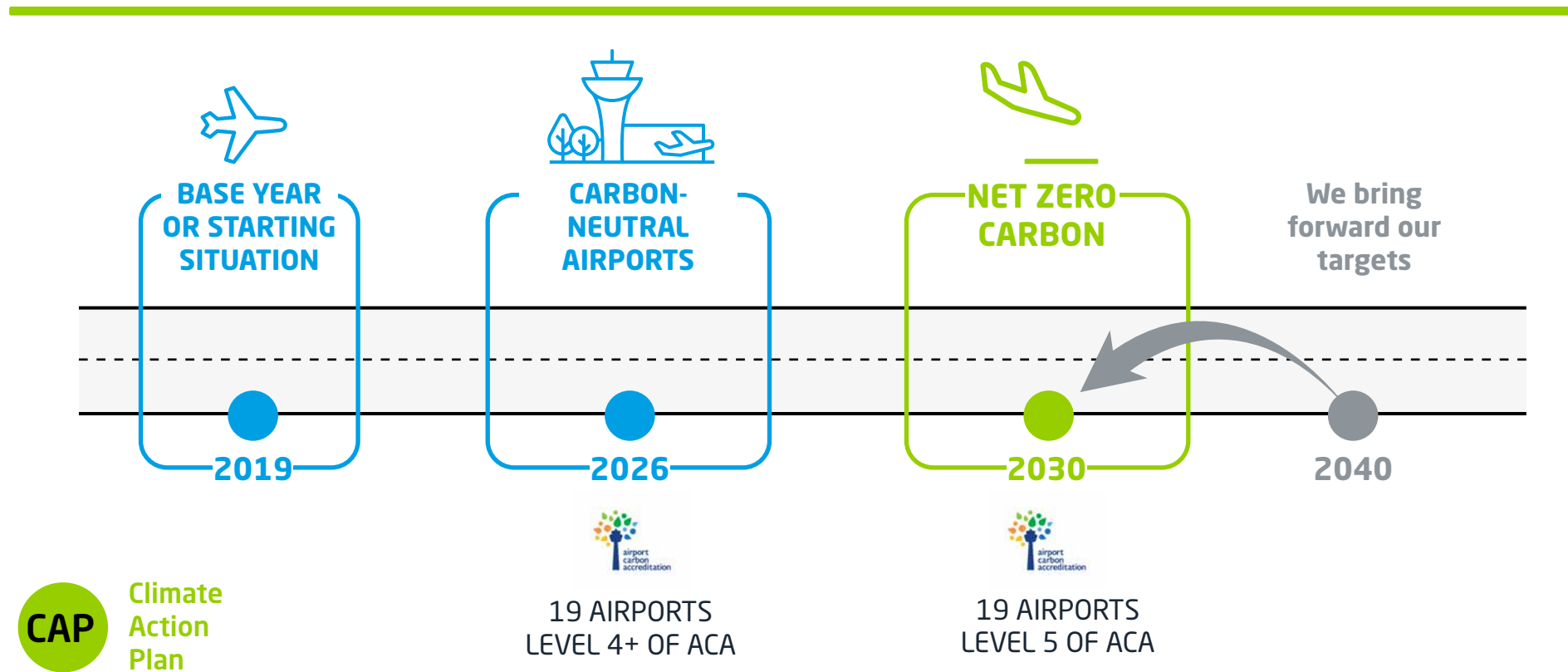
SUSTAINABLE COMMUNITY AND VALUE CHAIN

Scope 3

Enhance the sustainability of the surrounding environment by collaborating with suppliers, tenants, transport agents, and the community.

Our decarbonization roadmap

At Aena, we are committed to decoupling the growth of our operations from greenhouse gas emissions, continuing to strengthen our position as a leader in our sector. Achieving our GHG reduction targets will undoubtedly make us more efficient, enable sustainable growth, and create value for the company, our shareholders, and society.





4

RELATED TO CLIMATE CHANGE

The climate scenario analysis, recommended by the TCFD (Task Force on Climate-related Financial Disclosure), allows for the integration of climate-related risks and opportunities into the organization's strategy and generates useful information for investors.



Risk management

Climate risks are incorporated into the Company's risk map, which also considers the relevant management, oversight, and control mechanisms. These include indicators and measures tied to the compliance with the Climate Action Plan

Aena approaches risk management from a transversal perspective, involving all corporate departments as well as the various governance bodies in the process of identifying, analyzing, evaluating, assessing, and controlling risks.

In line with the corporate environmental commitments and objectives established, integrating the analysis of climate risks into risk management is key to identifying, preventing, and mitigating the various strategic impacts of these risks in the fight against climate change, as well as to identifying new opportunities.

Organizational structure for risk management



BOARD OF DIRECTORS

It defines, updates, and approves the Risk Control and Management Policy.



AUDIT COMMITTEE

It oversees the internal control systems and risk management, ensuring that risks are identified, managed, and maintained at the planned levels.



CORPORATE DIRECTORATES

They identify and assess the risks within their area of responsibility, proposing and implementing action plans for their mitigation, and reporting on the effectiveness of these plans.



INTERNAL AUDIT DIRECTORATE

It oversees the proper functioning of the Risk Management System, standardizes and consolidates information related to the identification and assessment of risks (and their corresponding follow-up actions), and reports to the Executive Committee and the Audit Committee

Physical, transition risks and opportunities

Following the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), climate risks have been analyzed, distinguishing between physical risks, transition risks, and opportunities:

- **PHYSICAL RISKS:** Physical risks arising from precipitation and extreme temperatures, heatwaves, water stress or droughts, rising sea levels, and the risk of river or coastal flooding, among others. These risks can directly affect the resilience of airport infrastructure and operations, such as damage to infrastructure that may limit airport capacity, reduced water availability, increased heating or energy costs, or limitations on aircraft takeoff weight. This underscores the need for adaptation measures at airports in the medium to long term.

Aena's physical risk analysis covers short-term (2023-24), medium-term (2033), and long-term (2053) horizons, considering the vulnerability of assets and activities based on their geographical location and lifespan. It also ensures alignment with the company's strategic and investment plans.



The following climate scenarios have been considered in the physical risk analysis

- **RCP 8.5 SCENARIO (BUSINESS AS USUAL SCENARIO):** This corresponds to a trajectory where emissions continue to rise at the same rate as they currently are, assuming global warming that is likely to exceed 4°C.
- **RCP 4.5 SCENARIO (STRONG MITIGATION SCENARIO):** This corresponds to a trajectory where emissions would be reduced by half by 2080, and it is highly likely that global warming will not exceed 2°C.
- **SSP1-2.6 SCENARIO:** SSP scenarios consider both emission levels and the Shared Socioeconomic Pathways. The "1" refers to the socioeconomic trend, in this case, sustainable development, and 2.6 refers to the approximate level of radiative forcing for the year 2100. This scenario is similar to RCP2.6 in terms of climate projections, although it covers a broader range of future greenhouse gases and atmospheric pollutants. These types of scenarios are considered in the IPCC's Sixth Assessment Report.

Based on this analysis, Aena is updating its adaptation plan for the 2025-2035 period for airports identified with critical physical risks. This plan involves developing additional strategies to address these challenges, including identifying and reassessing specific vulnerabilities in infrastructure and operations at each location. Concrete measures are also being implemented to ensure that airports are resilient and capable of effectively managing extreme climate events.



- **TRANSITION RISKS:** In the transition to a low-carbon economy, Aena faces various changes associated with the implementation of new legal and regulatory requirements, technological advancements, emerging policies, and market dynamics. To better understand the transition risks related to climate change, an evaluation of these risks has been carried out using the following climate scenario:
- **NZE SCENARIO (NET ZERO EMISSIONS BY 2050):** This scenario outlines how the global energy sector can achieve net-zero CO₂ emissions by 2050, in line with the United Nations' Sustainable Development Goals (SDGs), limiting global warming to 1.5°C by 2100. It is the most demanding scenario for organizations, as its achievement will require the implementation of various costly measures, which in turn may necessitate adjustments to short-term strategies.

Transition risks, identified for the same time horizons as physical risks, are assessed under the concept of materiality. These risks have the potential to significantly impact economic outcomes, operational continuity, or reputation.

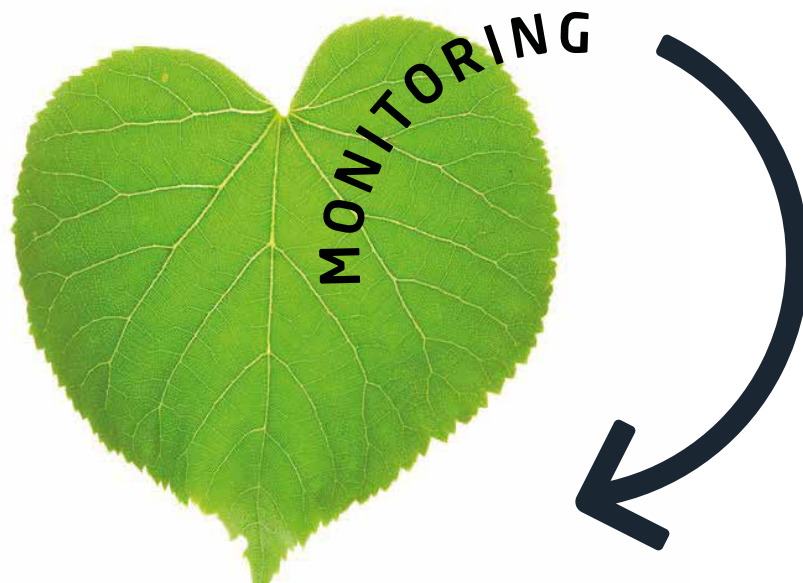
Among the identified technological, market, reputational, and legal risks, the material risk related to the energy crisis in Europe stands out. This crisis increased energy prices, affecting industrial production and quality of life. Geopolitical instability could trigger another energy crisis, disrupting supply and causing volatility in the markets.

Additionally, the potential impact of climate change on the attractiveness of tourist destinations has also been identified as a risk, negatively affecting the transportation industry.

OPPORTUNITIES

In addition to the above, technological advancements and market changes that could positively impact operations are also taken into account. Addressing the risks of climate change not only helps the company but also opens up new opportunities, such as optimizing energy consumption efficiency and exploring new business ventures like renewable energy production or clean propulsion technologies. Ultimately, this enhances our competitive position.





5

OF THE CLIMATE ACTION PLAN 2024

Our commitment to decarbonization was strengthened in 2024, thanks to the positive progress made towards achieving our targets.



Metrics, objectives and evolution of emissions

Aena calculates its carbon footprint, which includes emissions from airports in the Spanish airport and heliport network, SCAIRM, and Central Services. This calculation helps assess the impact of its activities on climate change, monitor the evolution of its environmental performance, and evaluate the effectiveness of the measures taken to address climate change.

For the calculation of emissions in 2024, the current emission factors have been used, which are updated every year. In this regard, it should be noted that the certification of Aena's emissions is included under the annual **Airport Carbon Accreditation** programme at the main airports, corresponding to approximately **95%** of the network's annual emissions since 2020.

In addition to this certification, the carbon footprint (Scope 1, 2, and 3) for 2024 was verified with limited assurance, in accordance with the UNE-EN ISO 14064-3:2019 standard and aligned with all GHG Protocol calculation criteria.

It is also worth noting that Scope 2 emissions were calculated using the market-based method, which accounts for the residual electricity mix for non-renewable energy, assigning a zero emission factor to electricity from renewable sources with a guarantee of origin.

Greenhouse gas emissions (Scope 1, 2 y 3) (tCO₂e)

	2019	2020	2021	2022	2023	2024	Reduction 2024 vs 2019
Scope 1 emissions	22,770	17,113	16,793	17,805	14,309	12,668	44.37%
Scope 2 emissions	113,861	26,199	31,871	26,990	26,263	27,717	75.66%
Scope 3 emissions	3,866,448	1,870,884	2,255,476	3,280,638	3,375,955	3,468,233	10.30%

Note: Carbon dioxide equivalent (tCO_{2eq}) is a universal measure used to indicate, in terms of CO₂, the equivalent of each greenhouse gas relative to its global warming potential

Scope 1 and 2

Description of Scope 1 and 2 categories of Aena's carbon footprint:

The following categories of Scope 1 and 2 are based on those established in the Airport Carbon Accreditation program of ACI EU.



Scope 1 emissions:

Direct emissions from sources, processes, and activities controlled by Aena at its facilities, such as emissions from heating boilers, fire-fighting services, or vehicles in its fleet.



Scope 2 emissions:

Indirect emissions resulting from the generation of purchased electricity or thermal energy at airports.

Energy consumption of Aena

Greenhouse gas emissions are calculated based on the consumption of fuels, electricity, and the purchase of thermal energy by the organization.



Aena's energy consumption (GJ)

	2019	2020	2021	2022	2023	2024
 Fuels (Scope 1)						
Gasoil/ Diésel	175,238	128,154	131,276	136,081	112,248	107,938
Gasoline	2,297	1,907	1,973	1,886	1,340	984
Natural Gas	164,590	132,092	120,498	133,503	122,635	96,553
Propane	851	551	796	624	389	957
Kerosene	2,661	1,501	2,314	1,544	820	887
Biofuels	-	-	-	-	9,628	12,560
Subtotal	345,637	264,205	256,857	273,637	247,060	219,879
 Purchase of electricity and thermal energy (Scope 2)						
Electricity	3,447,151	2,591,629	2,884,816	3,346,497	3,433,570	3,451,209
Heating/ refrigeration	623,144	522,762	605,602	620,436	606,099	645,695
Subtotal	4,070,295	3,513,095	3,490,418	3,966,933	4,039,669	4,096,904
Total Scope 1 and 2	4,415,932	3,378,596	3,747,275	4,240,570	4,286,729	4,316,783

Note: Greenhouse gas emissions are calculated based on the organization's fuel and energy consumption. In 2024, the purchase of biofuels includes HVO (Hydrotreated Vegetable Oil) and biogas

Scope 3

At Aena, we recognize that airports contribute to a small share of the sector's emissions. Therefore, we strive to lead the transformation of the entire sector by promoting collaboration and implementing innovative solutions with key stakeholders, including airlines, ground handling companies, as well as our employees and passengers. Our approach to decarbonizing the sector also focuses on reducing Scope 3 emissions by involving third parties.

The applicable Scope 3 categories calculated are based on the relevant categories of the GHG Protocol initiative, as outlined below:

The following are the categories of Scope 3 in Aena's carbon footprint:

- **Purchased goods and services:** This includes all "upstream" emissions from the production of all goods (tangible products) and services (intangible products) purchased or acquired by Aena.
- **Capital goods:** Emissions associated with the life cycle of purchased or acquired capital goods. Capital goods are those treated as fixed assets, properties, and equipment.
- **Activities related to energy production:** This includes emissions related to the production of energy or fuels purchased and consumed during the reporting period that are not included in the footprint under Scope 1 and 2 (emissions from fuel use and electricity consumption). Scope 1 includes emissions from fuel use by controlled or owned sources, while Scope 2 includes emissions from the use of fuels to generate purchased electricity, steam, and heating.
- **Waste generated in operations:** This includes emissions from the disposal and treatment of waste generated in our operations during the reporting year. This category covers both solid waste and wastewater.
- **Business travel:** This includes emissions from employee travel for business activities using vehicles owned by Aena or operated by third parties, such as airplanes, trains, buses, etc.
- **Employee commuting (home-work-home):** This includes emissions from employees' travel between home and work. These may include emissions from:
 - Car travel
 - Bus travel
 - Train travel
 - Subway travel
- **Upstream leased assets:** This category includes emissions associated with the operation of assets leased by Aena that are not included in the Scope 1 and 2 emissions inventory. This category includes machinery over which the organization does not have operational control.
- **Downstream transportation and distribution:** This includes all emissions from downstream transportation. In our case, it covers the transportation of passengers to and from airports, as well as the distribution of goods to the nearest transport hub.

Evolution of Scope 3 emissions (tCO₂e)

- **Use of services provided by the organization:** This includes emissions resulting from the use or consumption of goods or services sold. Our customers are considered to be: airlines, handling agents, and passengers. The use of services by passengers is included in Scope 1 and 2 emissions, as it relates to the use of facility services (lighting, heating, water, etc.), which has already been accounted for in the Scope 1 and 2 inventory or other Scope 3 categories.

For airlines and ground handling agents, this category accounts for emissions from aircraft takeoff and landing (LTO cycle), auxiliary power units (APUs), and emissions caused by the activities of these agents, which are considered Scope 3 emissions

- **Investments:** This category includes emissions associated with investments made in international investee subsidiaries in 2024.

The calculation of Scope 3 emissions is carried out according to the Corporate Value Chain (Scope 3) Accounting and Reporting Standard published by the GHG Protocol Initiative.

Additionally, as part of the sustainable community and value chain program and as outlined in the CAP, in 2025, 100% of the emissions generated in 2024 from Aena employee travel (1,351 tCO₂e) will be offset through verified sustainable projects.

		2019	2020	2021	2022	2023	2024
Acquisition of goods and services		364,289	211,438	242,184	325,126	398,008	300,894
Capital goods		388,463	416,448	356,485	254,361	204,687	116,734
Activities related to energy production (not included in Scope 1 or 2)		38,730	5,298	9,690	12,228	12,469	12,327
Waste generated during operation		15,717	7,298	3,548	4,922	5,750	7,389
Business travel		3,949	2,661	1,760	2,195	1,186	1,351
Commuting home-work-home of employees		3,367	1,275	2,523	2,036	6,486	7,008
Assets leased by the organization		37	No material	38	88	128	76
Downstream transportation and distribution		611,323	143,885	130,742	638,907	384,554	410,361
Use of services provided by the organization	LTO Cycle	2,327,368	1,019,117	1,431,664	1,859,373	2,179,148	2,479,100
	APU	58,490	22,577	31,438	51,371	57,510	64,128
	Ground Handling	30,754	18,288	19,485	32,164	30,290	25,091
Investments		23,960	22,600	25,918	97,908	95,739	43,774
Total Scope 3		3,866,448	1,870,884	2,255,476	3,280,638	3,375,955	3,468,233

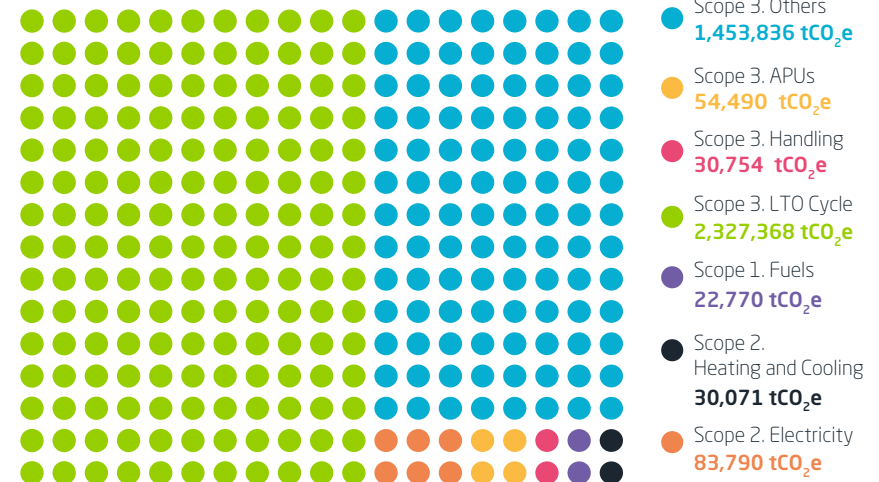
Scope 1 emissions have been reduced by 44.37% compared to 2019, thanks to the implementation of mitigation and efficiency measures aimed at reducing energy consumption in our facilities. These measures also include increasing the percentage of electric vehicles in our fleet, improving climate control efficiency, and the purchase of biofuels.

The reduction in Scope 2 emissions achieved in 2024 compared to 2019 was 75.66%, primarily due to the purchase of 100% renewable electricity with a guarantee of origin and lower natural gas consumption from the trigeneration plant outsourced to an external company at AS Madrid-Barajas airport.

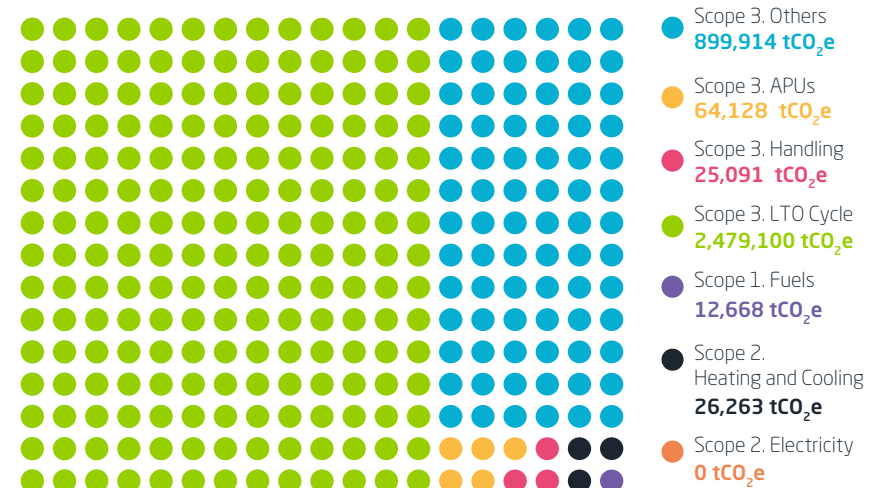
Despite the increase in traffic, the reduction in the Scope 3 footprint in 2024 compared to 2019 was 10.30%, thanks to a more sustainable ground handling fleet and reduced emissions in categories such as the purchase of goods and services, capital goods, energy production and extraction activities, waste generation, business travel, and downstream transportation and distribution. These reductions were further supported by collaborative initiatives with third parties implemented throughout 2024.



Contribution of emissions in 2019 (tCO₂e) Our carbon footprint in 2019



Contribution of emissions in 2024 (tCO₂e) Our carbon footprint in 2024



2024 objectives and actions linked to Scope 1 and 2 emission reduction:

CARBON NEUTRALITY PROGRAM

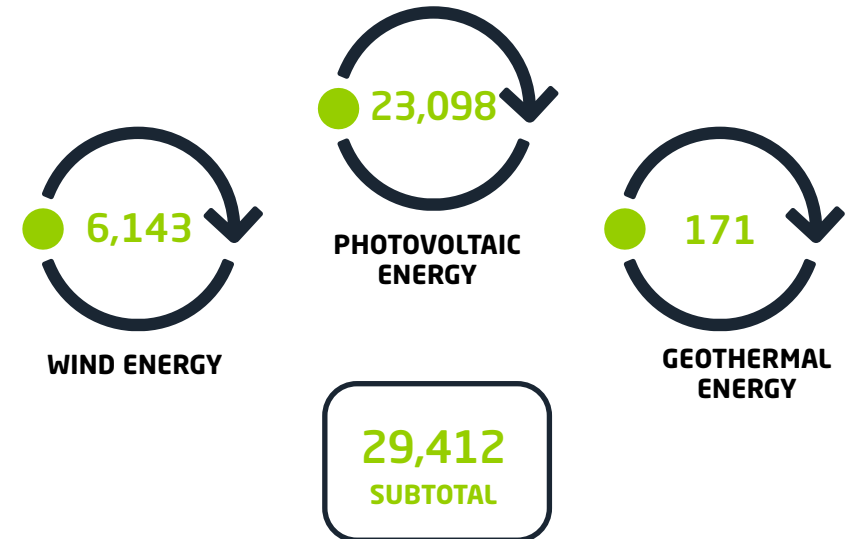
OBJECTIVES 2024

In 2024, the emissions reduction target was surpassed by more than 8.4%, achieving a total reduction of 70.4%, exceeding the committed target of 62%. As a result, there was no need to purchase carbon offset credits for Scope 1 and 2 emissions.

Throughout the year, Aena maintained the purchase of 100% renewable electricity with a guarantee of origin, both for its own consumption and for the use of tenants and other companies operating at our airports.

Regarding energy production at our own facilities, in 2024, 29,412 GJ of renewable energy was produced, which also includes the thermal energy generated by the geothermal plant at Reus Airport.

ENERGY GENERATED FROM RENEWABLE SOURCES (GJ)



In this regard, it is important to highlight that after the redefinition of the electricity strategy and the new renewable energy production target in 2023, driven by network capacity issues that hindered the development of new grid-connected renewable energy projects, progress on the photovoltaic plan at our airports has proceeded as planned. However, with the goal of achieving greater energy independence and resilience at our airports, additional work was carried out in 2024 to plan new photovoltaic plants for self-consumption, without grid connection, as well as to explore the feasibility of storing the surplus energy from these plants.

Electricity Power Strategy

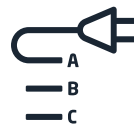
Thus, the company's power energy strategy, redefined in 2023, is based on four key pillars of action:



PHOTOVOLTAIC PLAN AND OTHER RENEWABLE INSTALLATIONS

10 airports with guaranteed
access and connection
availability

In 2029:
~ 285 MWp (*)
~ 51% (*)



10-YEAR RENEWABLE ENERGY FINANCIAL PPA.

Collaborate with one or more
renewable energy producers
by financing and stabilizing
their investment for 10 years,
in exchange for specific fixed
price guarantee of origin.

From 2026 onwards:
15-20% (*)



PURCHASE 100% RENEWABLE ENERGY WITH CERTIFICATE OF GUARANTEE IN ORIGIN

Purchase of renewable
energy with a guarantee
of origin certificate up to
complete 100%



FUTURE SOLUTIONS FOR GRID INDEPENDENCE

Feasibility analysis of
lithium and green hydrogen
battery storage leveraging
land availability, with the
aim of increasing installed
power through storage and
improving resilience and
independence from the grid.

100% Green Energy

* Percentages calculated based on the 2019 consumption: 952 GWh/year

The following progress has been made throughout the year 2024:

Photovoltaic Plan and Other Renewable Installations: Throughout 2024, work on the Photovoltaic Plan continued with actions related to plant construction, project development, permit applications, and the deposit of the required guarantees. Notable progress during 2024 includes the construction of the 142 MWp plant at Adolfo Suárez Madrid-Barajas Airport, as well as the initiation of construction for the 12 MWp plant at Josep Tarradellas Barcelona-El Prat Airport and the 15 MWp plant at Reus Airport.

Additionally, the construction of photovoltaic plants at Málaga-Costa del Sol Airport (7 MWp) and Zaragoza Airport (6.0 MWp) has been awarded. Furthermore, in 2024, the construction of photovoltaic panels on new parking canopies for self-consumption was awarded at both Palma de Mallorca and Alicante-Elche airports.

Given the progress outlined, by 2029, the deployment of Aena's Photovoltaic Plan will achieve the target of 51%. Additionally, new plants are being planned at several airports across the network, most of them without grid connection. When combined with the existing self-consumption renewable installations already in operation, this could further increase the share of renewable energy production.

Photovoltaic Plan. Installations and capacities (2024)



Airport	Peak power	Production (GWh/año)
AS Madrid-Barajas (142)	142 MWp	243
JT Barcelona-El Prat	12 MWp	19
Reus	15 MWp	25
Zaragoza	6 MWp	10
Málaga-Costa del Sol	7 MWp	10
València	28 MWp	50
La Gomera	1 MWp	2
AS Madrid-Barajas (80)	50 MWp	89
Sevilla	4 MWp	8
Jerez	35 MWp	57
La Palma	1 MWp	2
Otros	22 MWp	31



- **Financial Power Purchase Agreement (PPA):** Throughout 2024, a tender was launched for the purchase of 175 GWh through this mechanism. In 2024, 40 GWh were awarded at a fixed price with a solar profile for a ten-year period. In 2025, the remaining 135 GWh will be tendered again, with an effort to combine it with a wind profile, aiming to cover between 15% and 20% of total electricity consumption from 2026 onwards, in line with the set target.
- **Purchase of 100% renewable energy with a guarantee of origin:** This involves incorporating the necessary requirements into electricity contracts to ensure that 100% of the energy consumed by Aena is from renewable sources. Since 2020, Aena has been purchasing 100% of the electricity consumed at its airports with a guarantee of origin renewable, and this has been maintained for the fifth consecutive year in 2024.
- **Additionally, potential future solutions for grid independence are being analyzed through surplus energy storage:** In order to increase installed capacity through storage and enhance the resilience and independence of the electrical grid at airports managed by Aena, studies have begun to assess the feasibility of storing renewable energy in lithium-ion batteries, other battery compositions, and green hydrogen, utilizing available space at our airports. The goal is to increase installed capacity through storage. In this regard, in 2024, feasibility studies were conducted for storing surplus energy from one of the photovoltaic plants at Madrid Airport and Seville Airport.



Thermal Energy Strategy

The thermal energy strategy was strengthened in 2023 to enable the reduction of corresponding emissions and achieve the Net Zero target by 2030.

It focuses primarily on reducing Scope 1 emissions from the use of fossil fuels for heating and Scope 2 emissions from the trigeneration plant operated by a third party at Adolfo Suárez Madrid-Barajas Airport.

The use of renewable energy for **thermal energy generation** at Aena's airport network presents an opportunity to improve the environmental performance of airports, making them more sustainable, efficient, and resilient. The goal is **100% of the thermal energy** consumed by our airports to come from **renewable sources** by 2030.

The strategy is based on two main pillars of action:

SUSTAINABLE HEATING/COOLING

Implementation of renewable thermal energy solutions, hybridized with renewable electricity:

- **Geothermal energy**
- **Aerothermal energy**
- **Electric chillers**
- **Electric boilers**

The strategy aims to implement sustainable heating/cooling solutions based on geothermal and aerothermal energy, which will also reduce energy consumption at airports due to their high energy efficiency.



RENEWABLE FUELS AND GASES

- **Substitution of natural gas consumed by biomethane or biogas with a guarantee of renewable origin.**
- **Replacement of heating oil consumed with sustainable diesel (HVO)**





SUSTAINABLE HEATING/COOLING

The strategy focuses on implementing renewable thermal energy solutions, utilizing geothermal and aerothermal energy at Adolfo Suárez Madrid-Barajas, Palma de Mallorca and Josep Tarradellas Barcelona-El Prat airports. Additionally, it involves electrifying air conditioning and heating systems through the installation of heat pumps, chillers, and electric boilers, integrated with renewable electricity production and/or purchases.

In 2024, significant progress was made on preparatory work for these systems. This included conducting geothermal response tests at both Madrid and Palma de Mallorca airports to assess the geothermal potential of the land.

At Palma de Mallorca Airport, gas consumption has been reduced by approximately 90% compared to 2019, significantly cutting emissions, thanks to the installation and use of aerothermal energy in modules B, C, and D. A hybrid solution combining geothermal and aerothermal energy is also being developed for the passenger terminal.

At Barcelona Airport, the implementation of aerothermal energy in Terminal 1 is planned for 2026, and work has begun to replace the boilers in Terminal 2 in the near future.

In 2024, it is also worth highlighting the savings in diesel consumption from the boilers at Terminals 1, 2, and 3 at Adolfo Suárez Madrid-Barajas Airport. This was achieved through the connection of the airport's trigeneration plant to the terminals, allowing the excess thermal energy produced by the plant to be used heating and cooling, instead of relying on diesel boilers as was previously done. As a result, over 1,300,000 liters of diesel were saved throughout 2024.

Finally, as the trigeneration plant is one of the main sources of CO₂ emissions at the airport, a specific action plan has been developed for it. This plan stipulates that once geothermal energy becomes operational as the main producer of thermal energy for the airport, the new trigeneration plant will be configured as a control center for renewable thermal energy, also providing continuity and emergency energy. To achieve this, it will manage a hybrid solution of renewable energies. The plant's operating regime will be conditioned to compliance with the GHG emissions reduction target in line with Aena's Climate Action Plan, and additional investments in sustainable technologies will be made to cover the peaks, such as the installation of new chillers and electric boilers, which will be connected to one of the airport's future photovoltaic plants.

In 2025, the plant's operating regime will be adjusted to solely cover the airport's thermal demand, and starting by mid 2026, chillers and electric boilers will be installed to reduce the consumption of fossil fuels of the plant. Additionally, any remaining gas consumption will be replaced with biomethane.

For other airports, a strategy was defined in 2024 to extend the use of geothermal and aerothermal energy to most airports of the network, aiming to make them more sustainable, resilient, and efficient. The first step will be conducting geothermal response tests at airports with higher energy consumption and emissions, such as Santiago Airport, to assess the feasibility of replacing the existing diesel boilers with geothermal energy. At airports where the implementation of geothermal energy is not technically or economically feasible, the viability of using aerothermal energy will be studied.

Purchase of sustainable fuels for heating

The thermal energy strategy encompasses the procurement of sustainable fuels, aiming to fully phase out the use of fossil fuels in our facilities by 2030. This complements the emission reductions anticipated in the field of thermal energy by the aforementioned renewable energy initiatives.

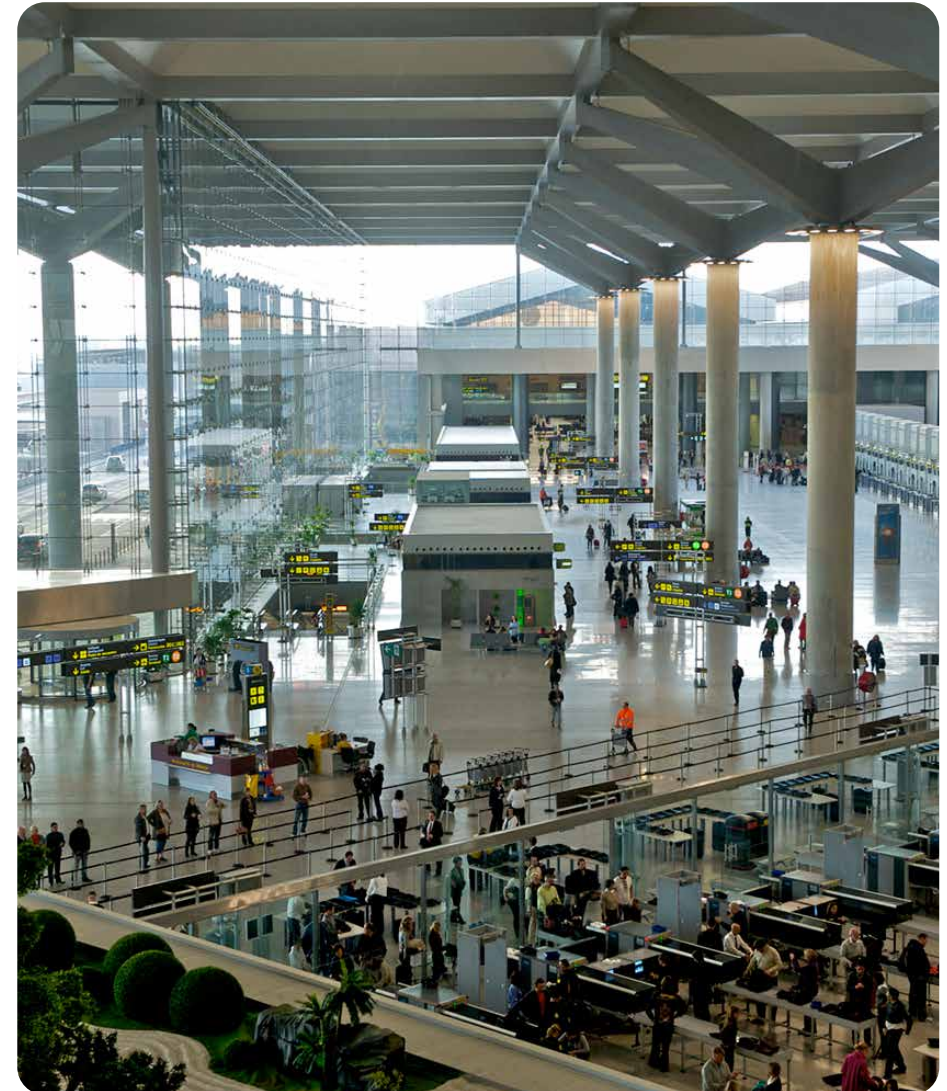
The transition from fossil fuels to sustainable heating fuels involves procuring biomethane or biogas with certified renewable origins, replacing fossil-origin natural gas. Additionally, it includes substituting heating diesel with sustainable alternatives like hydrobiodiesel or HVO (hydrotreated vegetable oil).

In 2024, the purchase of certified biomethane in accordance with the ISCC+ and ISCC EU schemes has been carried out for boilers at Josep Tarradellas Barcelona-El Prat Airport, replacing the natural gas previously used in the boilers.

Additionally, progress has been made in securing biomethane supply for 2025 and 2026 for Barcelona Airport's boilers. This involves the purchase of 5 GWh of biomethane for boilers use in 2025 and 15 GWh for 2026, with the option to purchase additional 10 GWh if needed for both years.

Similarly, progress has been made in securing HVO supply for 2025 and 2026.

All of these actions will be implemented to ensure the committed emissions reduction targets are met and to achieve Net Zero Carbon by 2030.





Sustainable Fleet

In 2024, the purchase and acquisition of electric vehicles and vans continued, which now includes a total of 74 electric vehicles and 144 electric vans, in addition to 13 hybrid cars. At Bilbao Airport, 1,500 liters of sustainable HVO diesel were consumed in its vehicles. Finally, progress was made in transitioning the current diesel shuttle buses at Adolfo Suárez Madrid-Barajas and Josep Tarradellas Barcelona-El Prat airports to electric shuttles, with the aim of having them in operation by 2026.

Energy Efficiency

In 2024, progress was made with measures aimed at adjusting and controlling energy consumption to the actual operations of airports, as well as technological improvements in lighting and climate control (such as motion detectors, LED replacements, air conditioning system upgrades, and automatic lighting regulation). By the end of 2024, approximately 50% of the terminal building areas across Aena's airport network had been fitted with LED technology.

Regarding the installation of energy management platforms for the network's airports, already installed at Adolfo Suarez Madrid-Barajas Airport, the first phase of the installation of energy platform equipment for JT Barcelona-El Prat Airport has begun in 2024.





2024 Objectives and Actions linked to Scope 3 emissions reduction:

COMMUNITY AND VALUE CHAIN AND SUSTAINABLE AVIATION PROGRAMS

The main actions aimed at reducing Scope 3 emissions are framed within Programs 2 (Sustainable Aviation) and 3 (Community and Value Chain) of our Climate Action Plan (CAP), focused on positioning Aena as a driver for other aviation sector stakeholders to accelerate their decarbonization. These actions also promote sustainable mobility to and from airports and involve proactive collaboration with the supply chain and the community.

In 2024, Scope 3 emissions were reduced by 10.30% compared to 2019.

The following summarizes the main actions carried out during 2024 that have contributed to reducing Scope 3 emissions:

Sustainable “Ground Handling” Fleet

One of the key pillars of decarbonizing third-party operations is the transition to sustainable fleets of vehicles and ground support equipment for aircraft.

In this area, we are deploying the necessary initiatives to ensure that this transition is feasible and aligned among all ground service providers and airports. Following the awarding of the tender for third-party ground services in 2023, in the ramp handling category, the new license activities began in 2024, achieving 56% of a sustainable fleet by the end of 2024, surpassing the target of 39% set for the year.

Furthermore, in line with the established goals and with the aim of improving efficiency through reduced energy consumption, telematics are now installed in the ground support vehicles at 15 airports.

To meet the charging needs of this additional electric equipment, electric chargers have been installed at the majority of airports’ airside areas throughout 2024. The total number of electric chargers installed reached 892, bringing the total number of charging points at Aena’s airports to 1,744. This project has been supported by a European subsidy under the CEF-AFIF Program (part of the “Connecting Europe Facility” in the “Alternative Fuels Infrastructure Facility” line) due to its significant scale and relevance.

Finally, several ground handling agents are now using sustainable HVO diesel fuel in various pieces of their equipment.





Sustainable Aviation Fuels

In 2023, the RefuelEU Aviation regulation was approved, which sets mandatory, minimum, and progressively increasing quantities for the use of sustainable aviation fuels. This new regulatory framework relies on Sustainable Aviation Fuels (SAF) and electrofuels (e-fuels), as these are currently the only technologically viable alternatives to drive the decarbonization of air transport in the short to medium term.

The new regulation includes, among others, the following key provisions:

1

The regulation requires aviation fuel suppliers to ensure that all fuel provided to aircraft operators at Union airports contains a **minimum percentage of sustainable aviation fuel (SAF) starting in 2025**. Additionally, from 2030 onwards, a **minimum percentage of synthetic fuel** must also be included. Both percentages will increase progressively until 2050. Fuel suppliers will be required to incorporate 2% sustainable aviation fuel by 2025, 6% by 2030, and 70% by 2050. From 2030, 1.2% of the fuel must also be synthetic, increasing to 35% by 2050.

2

The regulation requires aircraft operators to ensure that the **annual amount** of aviation fuel supplied at a specific Union airport represents, at a minimum, 90% of the aviation fuel required annually, in order to avoid **over-refueling** practices that result in additional emissions due to excess weight.

3

The regulation mandates that airport operators ensure aircraft operators have access to SAF and that they report the amount of aviation fuel consumed at each European Union airport to the competent authority.

The Spanish refining system is one of the four largest production capacities in Europe and is positioned to lead the SAF production market. Notably, various initiatives have been announced by companies in the energy and Oil & Gas sectors related to SAF production in Spain. In late 2023, a new facility with a production capacity of 250,000 tons of biofuels was commissioned in Cartagena. Additionally, a demo plant for electrofuels is being constructed in Bilbao with an annual capacity of 2,100 tons, and initiatives have been announced to produce 500,000 tons of e-fuels by 2026 and 800,000 tons by 2030. These quantities will more than cover the estimated SAF demand in Spain for the coming years and could even meet European demand through exports to other European countries with production deficits.

In addition to the Spanish refining system, the aviation fuel logistics system is one of the most efficient in the world, both economically and environmentally. This fact reinforces the availability of SAF at any of our airports, minimizing the logistical costs of the process compared to other European and global logistics systems.

The physical availability of SAF continues at five of the main Spanish airports: Adolfo Suárez Madrid-Barajas, Josep Tarradellas Barcelona-El Prat, Málaga-Costa del Sol, and Sevilla-San Pablo. In 2024, Zaragoza, Gran Canaria, Tenerife Norte, and Melilla airports have also started offering SAF.

The main airline operators in Spain have already announced SAF consumption targets exceeding the requirements set by the RefuelEU Aviation regulation. Some operators have supplied SAF in fixed proportions and on a continuous basis in 2024.

For example, one of the main fuel suppliers in Spain has provided 18,000 tons of sustainable aviation fuel (SAF) in 2024 as part of various company alliances to accelerate the decarbonization of air transport.



In 2024, the activities of all working groups defined within the Air Transport Sustainability Alliance (AST), established in 2023, began. This alliance includes over 900 companies across the entire aviation value chain to drive the sector's decarbonization. Aena is part of the governing board of the alliance, and in 2024, the sustainable fuels working group gained particular importance due to the upcoming enforcement of Article 4 of Regulation (EU) 2023/2405, which mandates the percentage of SAF available at Union airports. This regulation, effective from January 2025, ensures fair competition conditions for sustainable air transport (ReFuelEU Aviation).

Hydrogen

To ensure the sustainability of air transport, not only in the short term but also in the medium and long term, it is essential to make progress through collaborative efforts with other stakeholders in the aviation transport ecosystem. This includes joint planning to ensure that service provision is feasible at Aena airports once zero-emission aircraft and hydrogen-powered ground handling vehicles are operational.

One of the key challenges is defining the hydrogen logistics at airports, taking into account the associated safety requirements, transportation needs—both in gaseous form (for ground vehicles) and liquid form (for aircraft)—liquefaction requirements, and various alternatives to ensure its availability at each airport facility.

For all of this, it is necessary to have a forecast for the introduction of hydrogen vehicles and aircraft in the fleets of airlines and ground handling service providers. It is also essential to consider that we will likely need to support a technological mix of sustainable aviation solutions, which will require a wide range of logistical solutions.

In this context, a major achievement in 2024 has been the joint work carried out within the “Alliance for the Promotion of Green Hydrogen Use in Aviation.” This collaboration involved key players in the aviation transport sector, as well as hydrogen manufacturers and technology centers, identifying the primary challenges and barriers the aviation sector must overcome to make the introduction of future hydrogen aircraft a reality.

It is also worth highlighting Aena’s participation, as a representative of ACI Europe, in the Alliance for Zero Emission Aviation (AZE), promoted by the European Commission. The primary objective of this alliance is to prepare the market and the aviation industry for the introduction of zero-emission aircraft, both electric and hydrogen-powered.



Additionally, in 2024, a collaboration agreement was signed with the main stakeholders in the sector, titled **“H2 hubs at Spanish airports,”** with the goal of gaining a broader understanding of the hydrogen supply needs (gaseous and/or liquid) at Spanish airports, **adapting airport infrastructure and ground operations, and exploring the deployment scenarios for hydrogen-powered commercial aviation.** This collaboration also includes the joint development of a roadmap with actions to address the challenges, promoting a plan and a communication strategy on the hydrogen aviation needs.



CONTEXT



SUSTAINABLE
GOVERNANCE



ESTRATEGY



RISKS AND OPPORTUNITIES
RELATED TO CLIMATE CHANGE



MONITORING OF
THE CLIMATE ACTION PLAN



Efficiency in Aeronautical Operations

ENAIRES, with whom Aena maintains close collaboration, plays a key role in reducing emissions from air transport in our country. Therefore, we have included the following commitments in our service contracts, which are not only focused on emission reductions but also on other environmental improvements:

Emission Reduction: Through the implementation of A-CDM (Airport Collaborative Decision Making) and Advanced Towers. Efficiency improvements in Taxi-In operations are also being made, in collaboration with the Directorate General of Civil Aviation. In total, Aena's network includes A-CDM and advanced towers at 5 and 10 airports, respectively.

Additionally, the average extra Taxi-Out time at the five largest Spanish airports (Adolfo Suárez Madrid-Barajas, Josep Tarradellas Barcelona-El Prat, Gran Canaria, Palma de Mallorca, and Málaga-Costa del Sol) has remained below the average of the five major European airports.

Regarding the average additional ASMA (Air Traffic Management), in the major airports of Josep Tarradellas Barcelona-El Prat, Gran Canaria, Adolfo Suárez Madrid-Barajas, and Málaga-Costa del Sol, it has remained below the average of the five major European airports in 2024.

Sustainable Community and Value Chain

In 2024, work continued on promoting multimodal transportation as a key element for the decarbonization of the entire journey for each air transport user. To achieve this, it is necessary to transform airports into multimodal connection hubs that facilitate efficient, sustainable, and resilient door-to-door travel. This involves advancing the definition of plans to connect our airports with train and high-speed stations and providing the necessary infrastructure for land transport to enable the operation of the most sustainable vehicle technologies at our airports. One of the main actions carried out in 2024 was the installation of approximately 1,600 electric charging points in our parking areas, bringing the total number of charging points to 2,603 in 2024.

Additionally, to proactively collaborate with the supply chain and the community to drive sustainability in the air transport sector, in 2023, the first call for the **"Aena with Research"** program was launched. This program aims to promote research and technology transfer projects in the airport sector, particularly those that address the problems, needs, or opportunities within the sector, especially in areas related to social and environmental sustainability and the sustainable transformation of air transport. The projects will be developed by reputable research groups, teams, or departments in their respective fields.



The objective is to provide financial support for research projects in the following areas:

- Carbon Neutrality
- Sustainable Aviation
- Responsible Use of Resources
- Sustainable Community and Value Chain
- Social Commitment

The research funding program has a maximum budget of €840,000 for a total duration of 4 years. In the first call for proposals, 18 different projects were submitted, and three of them were selected in 2024, with the goal of beginning their development in 2025.

One of the selected projects aims to support research in the area of carbon neutrality, titled *"AeroNet - The Airport System as a Mitigator of Climate Change: Energy Flexibility and Zero Emissions Management Community"*. This project has been awarded to the Polytechnic University of Catalonia (UPC) and the School of Industrial, Aerospace, and Audiovisual Engineering of Terrassa. The project has a maximum execution period of 4 years, and Aena's contribution is up to €90,000 per year of the project's duration.

Another selected project aims to contribute to research in the area of sustainable community and value chain. The project is called : *AENA-BIRD: Autonomous Robotic Bird for the Airport Sector*.

The project has been awarded to the Andalusian Association for Research and Industrial Cooperation. Similar to the previous project, the maximum execution period is 4 years, with Aena's contribution amounting to a maximum of €90,000 per year of the project's duration.

Lastly, within the area of social commitment, the grant has been awarded to INSERTA INNOVACIÓN for the project *"BRAVA - BOARDING ROBOT ACCESSIBLE for TRAVELING AUTONOMOUSLY"*. The project has a 4-year execution period, and Aena's maximum contribution is €30,000 per year.

Innovative Sustainability Projects

As part of the second call of the Aena Ventures program, Aena's startup accelerator aimed at addressing various challenges of future airports, the initiative focusing on improving sustainability and environmental performance, titled "Greener Airport," stands out. In total, over 500 proposals were received from 40 different countries, with 95 proposals related to the "Greener Airport" challenge.

Among all the proposals received, the project for a proof of concept for CO₂ capture from fixed emission sources at airports was selected. Following the operation of the pilot project, which involved installing a CO₂ absorption plant in the boilers at Josep Tarradellas Barcelona-El Prat Airport, the goal of validating this type of solution in an airport environment was achieved.

Thus, throughout 2025 and 2026, a CO₂ capture plant will be installed at this airport to capture the carbon emissions produced by the combustion of natural gas in the current boilers.

On the other hand, Aena works on implementing solutions based on artificial intelligence (AI) to improve energy efficiency. In this regard, technological solutions based on AI are being implemented to improve and optimize energy and control systems, which will be installed in the 10 main airports in the network.



Editorial production: Editorial MIC