ROUTE 2025 ROADMAP

ATHENS INTERNATIONAL AIRPORT S.A.

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ATHENS
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Athens International Airport S.A. (AIA) has a well-established record of ambitious initiatives to minimize its environmental footprint. Nowhere is this more apparent than its efforts to reduce the contribution of airport operations to climate change. AIA's journey, described below, began with mapping its carbon footprint, then investing in new technology to reduce its footprint and finally offsetting its residual emissions to become the first carbon neutral airport in Greece and the 25th in Europe. In 2019, AIA announced its Route 2025 initiative, a commitment to reach the final destination of net zero carbon emissions by 2025, much earlier than the industry's target of 2050. The Route 2025 Roadmap, which describes the major changes needed in airport infrastructure to fully decarbonize its operations, is also presented below.

AIRPORT CARBON ACCREDITATION

AIA's representatives led a task force formed by Airports Council International – Europe to develop a program to help its member airports map and reduce greenhouse gas emissions under their direct control. It eventually evolved into a global programme following the induction of all other ACI regions. AIA was amongst the first airports to become accredited when the program, entitled Airport Carbon Accreditation (ACA), was launched in 2009. AIA quickly progressed through the various levels of accreditation as indicated below:

2007 - 2009	airport carbon accreditation	AIA participated in the development phase of the programme
2009	airport carbon accredited MAPPING	Footprint measurement and Accreditation at Level 1 (Mapping) after ACA was launched by ACI Europe
2010	airport carbon accredited REDUCTION	Carbon management plan, reduction target and Accreditation at Level 2 (Reduction)
2014	airport carbon accredited OPTIMISATION	Third Party engagement and Accreditation at Level 3 (Optimisation)
2016	airport carbon accredited NEUTRALITY	Offsetting remaining direct emissions and Accreditation at Level 3+ (Neutrality)

AIA's progression through the various levels of Airport Carbon Accreditation

CLIMATE CHANGE CORPORATE ACTION PLAN

AIA's carbon footprint includes CO_2 emissions deriving from the consumption of electricity, natural gas, petrol, diesel and other fuels at facilities or by equipment over which AIA has direct control. This includes the buildings, vehicles and other equipment owned and operated by AIA.

Every year, a Climate Change Corporate Action Plan (CCCAP) is developed following an internal consultation that involves several AIA departments, with the aim to identify

measures needed to reduce carbon emissions and maximise energy efficiency. Since the major (approx. 90%) component of AIA's carbon footprint arises from emissions from purchased electricity (Scope 2), the primary focus has been to reduce electricity consumption. Major initiatives include the construction and operation of an 8MWp Photovoltaic Park, the largest unified PV installation at an airport at the time, the replacement of several air-cooled chillers with more efficient water-cooled chillers at the Main Terminal Building, installation of harmonic filters, upgrade of IT and communications infrastructure, installation of LED lighting, upgrade of AIA's Building Automation System, and many others. In addition, several projects have been undertaken to reduce emissions from AIA's vehicle fleet, including modification of existing vehicles to run on LPG, purchase of new, more fuel efficient models, and more recently incorporating electric vehicles into the fleet and providing charging infrastructure onsite, not only for AIA vehicles but also for passengers, visitors, partners, Third Parties operating at the airport, etc. AIA has also worked closely with surface transport organizations, such as the Athens Metro, in order to facilitate the transport of airport employees to/from the airport using mass transit through the provision of a free annual mass transport card to AIA employees.

ENGAGING THE AIRPORT COMMUNITY

An important component of AIA's approach has been a wide range of measures to raise awareness on climate action amongst its employees and employees of the 300+ other companies operating within the airport fence as well as state authorities, local government, customers, partners and other members of the airport community, through a number of channels. This started in 2007 with multiple showings of Al Gore's award-winning film *An Inconvenient Truth* to top level management and staff. In addition, corporate emails are sent to all employees every year on the occasion of World Environment Day that highlight AIA's activities concerning environmental protection. Furthermore, volunteers are frequently sought for environmentally-related activities such as cleaning up local wetlands, planting new shrubs and trees in local parks, etc. This is further reinforced by the electronic distribution of *Care for the Environment*, AIA's primary publication concerning its activities related to environmental protection, which includes an entire chapter devoted to the topics of climate change and air quality and presents AIA's annual carbon footprint.

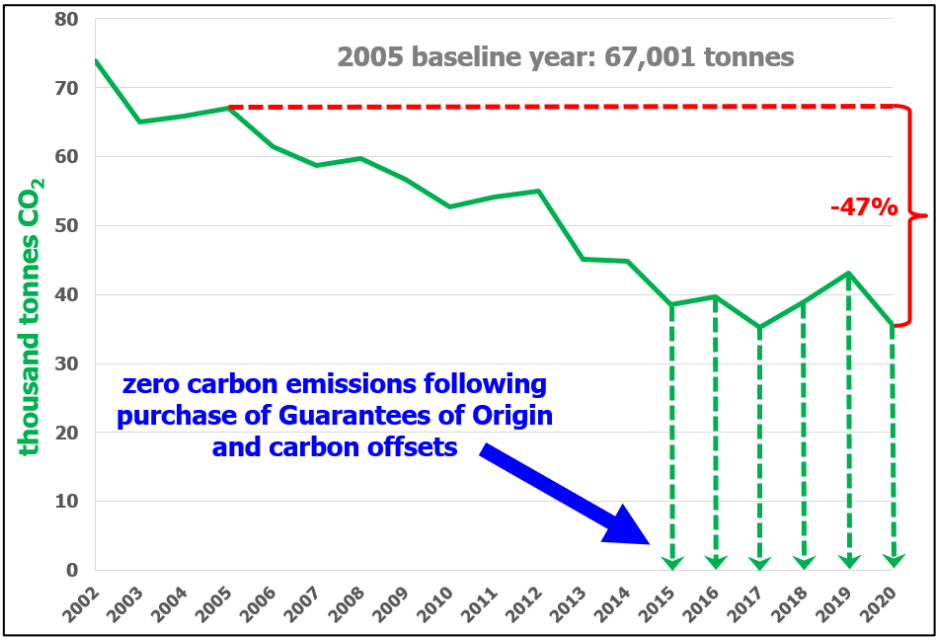
Regarding Third Parties, AIA works closely with them in order to raise awareness and improve environmental protection and performance across the airport site. This applies not only to the issue of carbon management, but also to other environmental aspects such as proper waste management, recycling, legal compliance, etc. In this framework, there is on-going environmental awareness training to Third Parties which also includes site tours. Moreover, biannual meetings take place with the three types of major Third parties (catering companies, ground handling & ground support equipment maintenance services) on environmental issues. Finally, workshops are organised for Third Parties on the subject of environmental management on an annual basis.

AIA requires that Third Parties submit a carbon footprint on an annual basis. In order to assist Third Parties in this process, AIA has organized a number of training sessions with guidance on how to construct carbon footprints, emission factors, etc. Several major Third Parties (e.g. IKEA and Leroy Merlin) have managed to reduce their carbon footprint after setting a reduction target and the implementing a number of energy saving measures.

AIA has also extended its missions of environmental education beyond the airport fence. Significant resources have been invested over the past several years to raise environmental awareness of students from schools in the communities around the airport. Trips to the airport are subsidized by AIA and students have the chance to attend an environmental awareness presentation followed by a site-tour to places of environmental interest in the airport (PV park, sewage treatment plant, recycling center, etc.).

CARBON FOOTPRINT

AIA's ambitious efforts to reduce its carbon footprint have led to remarkable results. In the context of its accreditation at Level 2 of Airport Carbon Accreditation, AIA set the following emission reduction target in 2009: a 25% reduction in CO_2 emissions by the year 2020 versus the baseline year of 2005. Further to the implementation of aggressive annual Climate Change Corporate Action Plans, AIA managed to reach its goal in 2013, 7 years earlier than planned.



AIA's Carbon Footprint: 2002-2020

The chart above shows the evolution of AIA's carbon footprint from 2002, its first full year of operation, through 2020. In 2016, AIA became carbon neutral and upgraded its accreditation to Level 3+ (Neutrality). Zeroing out AIA's 2015 carbon footprint was achieved by purchasing Guarantees of Origin, ensuring that all electricity consumed by AIA was produced by renewable energy sources, and by purchasing verified carbon offsets for AIA's other remaining emissions (e.g. its vehicle fleet). The offsets come from projects that also contribute to various United Nations Sustainable Development Goals, including Good Health and Well-being, Clean Water and Sanitation, Decent Work and Economic Growth and Sustainable Cities and Communities. AIA has since maintained its certification at Level 3+ of Airport Carbon Accreditation.

AIA's carbon footprint is published annually in its e-publication Care for the Environment, which can be found online at: https://www.aia.gr/company-and-business/the-company/Corporate-Publications/enviroment.

NET ZERO 2050

In June 2019, at the 29th ACI Europe Annual Congress & General Assembly, Europe's airports committed to become net zero for carbon emissions under their control by 2050, at the latest. The commitment is provided below. AIA was one of nearly 200 airports to undersign the commitment.

1. **ACI EUROPE and its members, while reaffirming their support to the ATAG environmental goals as per the 2008 Aviation Industry Commitment to Action on Climate Change and acknowledging the progress made by ICAO with CORSIA to deliver carbon neutral growth for international aviation from 2020:**

   i) **Call on all aviation industry stakeholders globally to complement these goals with a joint ambition, vision and roadmap towards a net zero carbon emissions air transport system;**

   ii) **Call on Governments at ICAO to accept the latest evidence from the UN IPCC on climate change and, building on the ICAO basket of measures including CORSIA, to establish a work plan aimed at approving a long-term carbon emissions reduction target and related roadmap at the 2022 ICAO Assembly.**

2. **As part of the above-mentioned aviation industry ambition, vision and roadmap, ACI EUROPE and its members commit to net zero carbon emissions from airport operations fully within their own control by 2050 at the latest, reducing absolute emissions to the furthest extent possible and addressing any remaining emissions through investment in carbon removal & storage.**

3. **ACI EUROPE and its members call on the EU and European Governments beyond the EU to accelerate, where necessary, a clean energy transition ensuring that airports across Europe can switch to zero carbon energy under competitive conditions.**

ACI Europe Net Zero 2050 Commitment

ROUTE 2025

Recognizing the need for more urgent action, in December 2019, AIA announced "ROUTE 2025" its official commitment to achieve net zero carbon emissions by 2025. The commitment addresses the following:

A detailed roadmap for the self-production of clean electricity within the airport boundaries via solar power for self-consumption purposes, aiming to cover 100 percent of the Airport Company's electricity needs, which corresponds to 91% of its current carbon footprint.

A detailed roadmap to address the remaining 9% of its carbon footprint corresponding to direct emissions from fuel consumption onsite (via initiatives such as the use of electric vehicles, biodiesel, heat pumps, etc).

Through the internationally pioneering initiative ROUTE 2025, AIA has the goal of becoming the first airport operator in Europe to cover 100 percent of its electricity needs by on-site production from renewable sources and zeroing out its direct emissions from fuel consumption.

ROUTE 2025: ELECTRICITY

The project to cover 100% of AIA's needs for electricity is intended to be completed in two phases. The first phase, installation of a new Photovoltaic Park (PVP) with 16MWp installed capacity, is in progress. The necessary licenses have been obtained from the Greek authorities in early 2021. The tender for the construction, operation and maintenance of the new PVP is to be launched by the end of 2021. The construction and commissioning is to be completed within 2022.

The second phase will require the installation of an additional 40MWp capacity as well as energy storage infrastructure. The regulatory framework for energy storage is pending from Greek State, it is however expected within 2022.

ROUTE 2025: OTHER SOURCES

The other sources of emissions under AIA's direct control include its vehicle fleet, its boilers (to heat its buildings and produce hot water) and its emergency generators.

VEHICLE FLEET

As in the end of 2020, AIA's vehicle fleet comprised of 131 vehicles, 66 of which ran on diesel, 10 were hybrid and the rest ran on petrol. 41 of these were leased vehicles for AIA's management.

In 2021 a vehicle replacement program was undertaken for the leased vehicles for AIA's management, incentivizing replacement of gasoline and diesel vehicles with Plug-in Hybrid Electric Vehicles (PHEV) and fully Electric Vehicles (EV).

In addition, an extensive program to install charging infrastructure for these and other electric vehicles belonging to airport employees, passengers, visitors and Third Parties operating at the airport has been initiated.

Options to power its heavy-duty vehicles, including a fleet of several buses, are under investigation. 100% biodiesel (B100), which is used at other airports in Europe to power heavy-duty vehicles (e.g. snow removal equipment), is not yet available in

Greece. Therefore, it is critical that the Greek industry and authorities be engaged to facilitate the introduction of this fuel, and other such fuels (E100, etc.) to the Greek market.

A technical and financial assessment of the conversion of the remaining vehicles to zero carbon will be undertaken in 2022.

BOILERS

AIA's boilers are of the dual fuel type, able to use either natural gas or heating oil as a fuel. They operate using natural gas as the basic fuel and convert automatically to heating oil when a pressure drop in the natural gas supply is detected. AIA currently owns and operates a total of fifteen (15) boilers.

Several possible alternatives to heat the buildings that AIA owns and operates (e.g. main terminal, satellite terminal, office buildings, etc.) are under investigation. This includes B100 (described in the previous section) as well as renewable natural gas. Renewable Natural Gas (RNG), also known as Sustainable Natural Gas (SNG) or biomethane, is a biogas which has been upgraded to a quality similar to fossil natural gas and having a methane concentration of 90% or greater. It can be generated from biomass or also by electrochemical processes. Some airports are already using RNG, however it is not yet available in Greece. As with B100, it is critical that the relevant stakeholders be engaged in order to make such solutions available on the Greek market, not only for AIA but for other industries on the road to decarbonization.

Heat pumps also represent an alternative to provide heating and hot water from electricity, which AIA would produce from its PVP. This solution requires considerable changes in the existing infrastructure, which must be thoroughly investigated with regard to both technical and financial parameters. This investigation shall be undertaken in 2022.

GENERATORS

AIA owns and maintains approximately twenty-five (25) diesel generators that serve as auxiliary power units in case of interruption of the supply of electricity from the Public Power Corporation. Their operation is therefore on an "as needed" basis, but regular tests are conducted to ensure operational readiness.

As with AIA's heavy-duty vehicle fleet, B100 represents a possible alternative to standard diesel fuel. A more radical solution would entail replacing the generators with energy storage. As previously mentioned, the regulatory framework is pending from the Greek State. Furthermore, once AIA completes its transition to covering 100% of its electricity needs from its PVP, in combination with energy storage infrastructure, it will no longer have need of the emergency back-up generators. Consequently, no further investigation is foreseen at this time.

AIRPORT COMMUNITY

AIA fully understands that it cannot act alone and that the entire aviation industry and supply chain must endeavour to decarbonize quickly to make flying a sustainable mode of transport for this and future generations. To this end, AIA continues to engage the

full range of stakeholders comprising the Airport Community towards the procurement of clean electricity, electrification of vehicle fleets, adoption of clean fuels for sources for which clean electricity is not suitable, etc. One of the most important initiatives is to work together with airlines, in particular home carriers, fuel suppliers and others to bring Sustainable Aviation Fuel (SAF) to the Airport. Finally, it should be noted that AIA is a member of the STARGATE (SusTainable AiRports, the Green heArT of Europe) consortium awarded considerable funding to design and demo more sustainable airport operations. The STARGATE consortium includes 22 partners led by Brussels Airport and includes Budapest and Toulouse Airports as well as airlines, ANSPs, fuel suppliers and a wide range of consultants and research institutes. Innovative technologies and solutions developed during the project will be replicated at AIA, addressing not only vehicle electrification, SAF, hydrogen, sustainable mobility, digital models of airports to facilitate planning but also circular economy concepts, aircraft noise and other environmental challenges associated with the operation of an airport.

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