



The Third Vice-President and Minister for Ecological Transition and the Demographic Challenge, Sara Aagesen, and the Minister of Transport and Sustainable Mobility, Óscar Puente, visit the solar farm at Adolfo Suárez Madrid-Barajas Airport, one of the world's largest airport solar facilities

- This solar farm will consist of three plants, and will be one of the renewable energy generation systems with the highest capacity in the global airport sector, being able to generate enough power equivalent to the consumption of more than 100,000 households
- The main photovoltaic plant, which has a capacity of 120 MWn, is already operational and generates 242.9 GWh of energy annually, equivalent to the average yearly electricity consumption of 74,000 households. A total of 172.5 MWn will be installed, with a generation capacity of 333.9 GWh.
- The plant covers an area of around 142 hectares, spread across various plots within the airport grounds, and includes around 215,000 photovoltaic modules
- Once the farm is fully operational, the airport will generate enough energy to meet 100 per cent of its electricity consumption through renewable energy generation
- This project is part of Aena's 2021–2030 Climate Action Plan for the decarbonisation of airport operations

02 September 2026

The Third Vice-President and Minister for Ecological Transition and the Demographic Challenge, Sara Aagesen, and the Minister of Transport and Sustainable Mobility, Óscar Puente, visited the solar farm at Adolfo Suárez Madrid-Barajas Airport today. This farm, which is part of Aena's Photovoltaic Plan, is one of the most powerful renewable energy generation systems in the global airport sector, as well as the largest at a commercial airport in Europe, with the capacity to generate enough renewable energy to power more than 100,000 homes.



Press release

This Plan falls within the airport operator's 2021–2030 Climate Action Strategy, valued at over 750 million euros. Specifically, the Photovoltaic Plan involves installing solar panels on land within the airport grounds.

Accompanied by Aena's Chairman and Chief Executive Officer, Maurici Lucena, and other company executives, Ms. Aagesen and Mr. Puente were shown around the plant, which has a nominal capacity of 120 MWn and is already operational, enabling an annual energy production of 242.9 GWh, equivalent to the average annual consumption of 74,000 households. This is the main plant of the three that make up the complex and has a nominal capacity of 120 MWn.

"Within the current energy context, shaped by geopolitical realities," the Vice-President and Minister for Ecological Transition and the Demographic Challenge, Sara Aagesen pointed out, "making progress towards strategic energy autonomy is of crucial importance", as "one of the most significant weaknesses of our economy is our reliance on fossil fuels". "This installation, which is the largest at an airport, is a good example of the path we must follow to achieve that autonomy," she declared.

"Spain is making progress towards this goal. One extraordinary figure must be borne in mind: the fact that we have increased our installed photovoltaic capacity by more than 1,000 per cent since 2018 is a cause for celebration and a fact that should encourage us to continue making progress towards this energy transition, where Spain is a leader", added the Vice-President.

The Minister, Óscar Puente pointed out that air transport accounts for approximately 2–3 per cent of global carbon emissions, and described these facilities as "a source of pride for Spanish society as a whole, given that this is the largest solar power plant installed at a European airport. The photovoltaic plant at Adolfo Suárez Madrid-Barajas Airport is a tangible example of the airport sector's commitment to the energy transition and the decarbonisation of its operations, contributing directly to the generation of renewable energy, the reduction of emissions and progress towards a more resilient and sustainable model of mobility".

This new installation covers an area of around 142 hectares, spread across various plots within the airport grounds, and includes around 215,000 photovoltaic modules

It has a potential annual output of 242.9 GWh, a figure equivalent to the average annual consumption of approximately 74,000 households, thus contributing significantly to reducing dependence on conventional energy sources and promoting a more sustainable energy model.

Once the solar farm is fully operational, it will generate enough energy to cover 100 per cent of the airport's electricity consumption, thereby boosting Aena's commitment to sustainability and the reduction of CO₂ emissions.

Aena's Chairman and Chief Executive, Maurici Lucena, noted that "within a context where businesses, public authorities and society are demanding increasingly ambitious and effective climate action, Aena has developed a Sustainability Strategy with an estimated investment of 750 million euros, of which the Climate Action Plan (CAP), published in 2021, is a key instrument".

Three photovoltaic plants at Adolfo Suárez Madrid-Barajas Airport

The 120 MWn Photovoltaic Plant is the main component of the airport's photovoltaic complex, which also includes a second 7.5 MWn, dedicated to on-site self-consumption, that is currently under construction, and a third 45 MWn facility currently at the design stage.

The 7.5 MWn self-consumption plant, which is at an advanced stage of construction, covers an area of 22 hectares and will provide clean energy intended entirely for the airport's own consumption, with no surplus fed into the distribution grid. It has a potential annual output of 11.8 GWh, equivalent to 16 per cent of the annual consumption of the terminals T1, T2 and T3 or the average annual consumption of 3,600 households, while also preventing the emission of 2,575 tonnes of CO₂ into the atmosphere.

The third plant will have a nominal capacity of 45 MWn and an estimated annual output of 79.2 GWh, installed over 41 hectares of land.

The location of the plants has been determined taking into account the availability of land within the airport grounds, environmental criteria for the site and the high potential for solar energy generation offered by the airport's geographical location, whilst complying at all times with all safety requirements.

Together, the three facilities will form one of the highest-capacity renewable energy production systems in the global airport sector, with the capacity to generate enough energy to power more than 100,000 households.

Aena's 2021–2030 Climate Action Plan

Maurici Lucena has outlined the main targets of Aena's Climate Action Plan (CAP):

- By 2025, Aena had already achieved a 74.4 per cent reduction in its own emissions compared to 2019.
- To achieve carbon neutrality by 2026 through continued emissions reductions and the offsetting of residual emissions.
- By 2030, we will achieve our Net Zero target, bringing forward the sector's global commitment by 20 years and thus strengthening our leadership and credibility within the sector.

The development of the solar farm at Adolfo Suárez Madrid-Barajas Airport is a part of Aena's Photovoltaic Plan, one of the strategic projects of the 2021–2030 Climate Action Plan.

Aena currently has photovoltaic installations at 12 airports within its network: Alicante-Elche Miguel Hernández, Adolfo Suárez Madrid-Barajas, Gran Canaria, Ibiza, La Palma, Madrid-Cuatro Vientos, Menorca, Valencia and Vigo. These installations are located on rooftops and car park canopies, while they are ground-mounted at César Manrique-Lanzarote, Fuerteventura and Tenerife South airports.

Aena also continues to make progress in rolling out new photovoltaic installations. The solar plant at Seville Airport is currently out to tender, while the tenders for Málaga-Costa del Sol, La Gomera, Valencia and Zaragoza have already been awarded. Meanwhile, the construction of the plants at Alicante-Elche Miguel Hernández, Josep Tarradellas Barcelona-El Prat and Reus are currently underway.

This roll-out of photovoltaic installations is part of a comprehensive decarbonisation strategy which also includes other measures such as the electrification of vehicle

Press release

fleets, improving the energy efficiency of facilities and promoting clean technologies that will enable a gradual decrease in the carbon footprint of airport operations.

This project enables Aena to continue making progress towards its goal of establishing a more efficient, sustainable and resilient airport model, one that is equipped to meet future energy challenges while reinforcing the role of Adolfo Suárez Madrid-Barajas Airport as an international benchmark for renewable energy generation in airport infrastructure.