

AMARELEJA PHOTOVOLTAIC SOLAR PLANT

A WORLD BENCHMARK IN THE DEVELOPMENT
OF RENEWABLE ENERGIES



THE BIGGEST PHOTOVOLTAIC PLANT IN THE WORLD WITH SOLAR TRACKING

The 46 MW Amareleja photovoltaic solar plant is the world's highest-capacity PV plant equipped with solar tracking: More than 2,500 trackers automatically follow the sun every day of the year, providing optimal energy production.

The facility was developed and built and is owned and operated by ACCIONA, a global leader in renewable energy sources. The Company has a presence in seven clean technologies and operates in fourteen countries on the five continents.

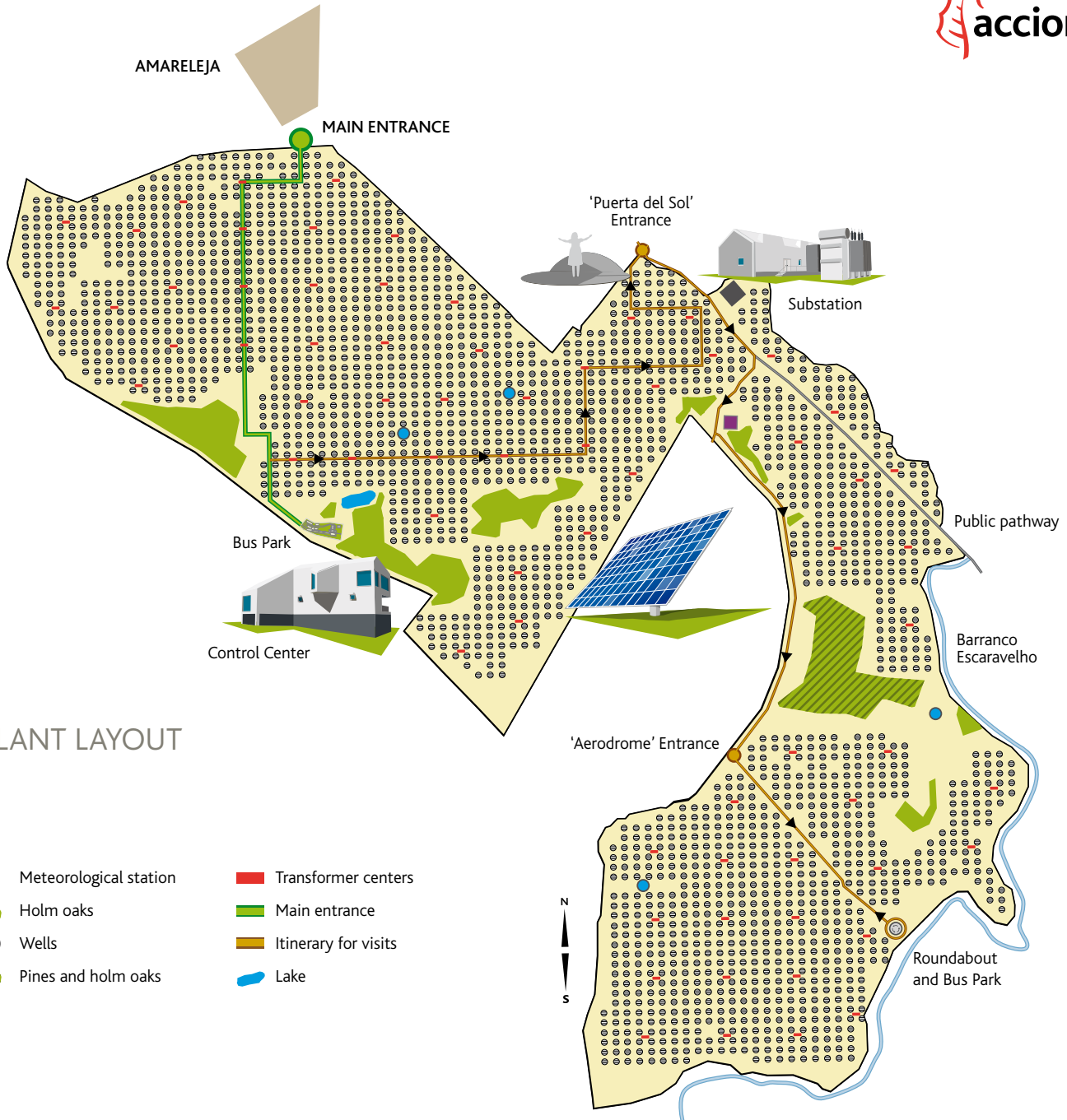
Mitsubishi Corporation holds a 34% stake in the development company (Amper Central Solar, an ACCIONA subsidiary), within the framework of the strategic alliance formed by both groups in the field of clean energy sources.

The Amareleja plant, located in Moura, Portugal, demonstrates ACCIONA's ability to successfully take on large-scale PV projects and makes the Company an international benchmark in this type of installations.

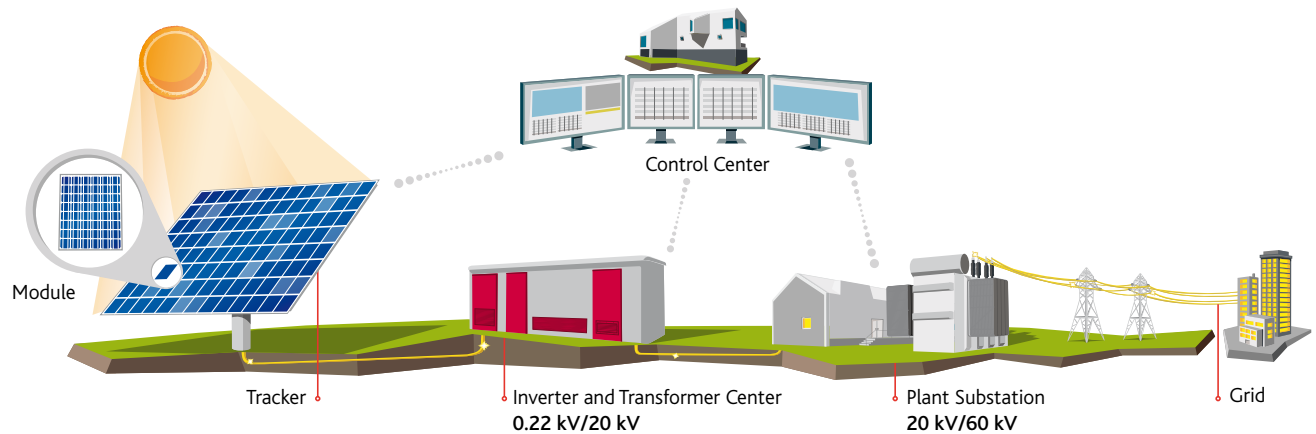
THE AMARELEJA PLANT IN FIGURES

- **Technology:** Photovoltaic solar with azimuth tracking
- **Peak capacity:** 45.78 megawatts (MWp)
- **Estimated production:** 93 million kilowatt-hours
- **CO₂ emissions avoided:** 89,373 metric tons/year
- **Equivalent consumption:** 30,000 homes
- **Investment:** 261 million euros
- **Start of construction work:** November 2007
- **Grid connection:** Completed in December 2008
- **Surface area:** 250 hectares
- **Solar trackers:** 2,520 (ACCIONA Buskil K18)
- **Jobs created:** 365 (350 construction and 15 operation)
- **Location:** Amareleja (Moura), Portugal





12.5 MILLION CELLS CONVERT THE SUN'S RAYS INTO ELECTRICITY



TRACKERS

Solar trackers follow the sun across the sky to optimize energy capture

2,520 ACCIONA Buskil K18 trackers

- Dimensions: 13.05 x 10.78 m
- Surface area: 140.76 m²
- Crown height: 5.81 m.
- Capacity: 18,720 Wp
- Angle of tilt: 45°
- Azimuth turn tracking: +/- 135° East-West
- Wind resistance: Up to 140 km/h

MODULES

Used for capturing energy from the sun's rays

262,080 modules (YL-170 and YL-180 models)

- Modules per tracker: 104
- Dimensions: 1.335 x 0.99 m.
- Monocrystalline silicon cells per module: 48
- Total cells: 12,579,840

INVERTERS

They convert the direct current generated by the module into alternate current

70 inverters of 500 kW (Ingecon Sun 4 x 125TL)

- Each inverter receives energy from 36 trackers

TRANSFORMER CENTERS

Raise the voltage of the electricity from 0.22 to 20 kilovolts (kV)

CONTROL CENTER

Monitors and controls the operation of the whole plant

PLANT SUBSTATION

Raises the voltage from 20 kV to 60 kV

- This is so the energy produced can be injected and transmitted through the grid to the points of consumption

ENERGY FOR 30,000 PORTUGUESE HOMES





INITIATIVES RELATED TO THE PLANT



Restoration of four existing traditional wells.



Recovery of an old lake. Now a park with waterfowl and used to control the temperature of the Control Center.



Conservation of local tree species; environmental compensation program involving the replanting of 22 hectares of holm oaks in the parish of Póvoa de São Miguel, and conditioning of the Barranco de Escaravelho, improving its sides.



Tribute to the creators of the Cifka Duarte aerodrome, opened in 1935 on land now belonging to the plant site.



The plant's Control Center imitates the local architectural style. The building features geothermal climatization based on thermal solar panels.

HELPING TO ACHIEVE SUSTAINABILITY IN PORTUGAL

The Amareleja plant represents a milestone in Portugal's commitment to progress towards a **sustainable energy model** that will slow down climate change and contribute efficiently to the security of supply.

The plant uses local and renewable resources, contributing to **local development and employment, particularly in rural areas.**

The following figures show how the Amareleja PV facility contributes to these objectives:

- It produces enough clean energy from the sun to supply around **30,000 homes a year.**
- It avoids the emission of 89,373 metric tons of CO₂, equivalent to the cleaning effect on the atmosphere of:
 - **4.5 million trees**
 - or of taking **40,000 vehicles** off the road.
- Cuts Portugal's oil imports by around 55,000 barrels a year, a saving of about **4 million euros.**
- It has created **350 jobs in the construction phase and 15 in the operational phase**, linked to a renewable technology that looks to the future.



PANEL ASSEMBLY PLANT

ACCIONA has carried out several actions aimed at adding value to the local community.

- It was behind the installation of a 15 million euro PV **solar panel assembly plant** at Moura – operated by Fluitecnik Group - and the creation of 100 jobs.
- It set up a 3 million euro **social fund** to foster development initiatives linked to renewable energy sources in areas such as R&D (a research laboratory), vocational training, community awareness, and support for microgeneration projects.



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