Success story

PVingPARK solar canopy project for self-consumption at 8.4 kWp and 10 kWp fitted with recharging points in the Metropolitan Area of Barcelona

JUNE 2019
AMB (Metropolitan Area of Barcelona) is the public administration of the metropolitan area of Barcelona with powers on territorial, transport and mobility, environmental and sustainability, housing, economic development and social cohesion matters.

With the aim of bolstering energy transition, AMB leads a project that prescribes the installation of several Solar-Powered Charging Points spread throughout the Metropolitan Area. This project’s aim is the installation of photovoltaic solar canopy, whose electric generation is intended for two types of consumption:

1. The adjacent public equipment buildings.
2. The charging of electric vehicles which use the Solar-Powered Charging Points as Park & Ride services to commute with rail transport and thus access central Barcelona by public transport.

PVINGPARK SOLAR PHOTOVOLTAIC CANOPIES

In order to successfully carry out the aims set forth by AMB, CIRCUTOR supplies the PVingPARK photovoltaic solar canopy solution. This shelter allows to integrate within its own structure the photovoltaic installation with the recharging of electric vehicles. The system is specially designed for the mechanical assembly of the PV modules, guaranteeing the impermeability of the roofing, as well as the channeling of all the wiring.

For this purpose, CIRCUTOR designs two PVS2 model solar canopy running at 8.4 kWp (30 PV polycrystalline modules of 280 Wp) and 10.23 kWp (33 PV monocrystalline modules of 310 Wp), for 4 parking spaces.

The solution also integrates the CIRCUTOR RVE-WBS-SMART recharging points (with a Schuko 3.6 kW single-phase socket) and RVE-WBM-SMART-TRI (with a 22 kW Type 2 three-phase socket), offering one recharge outlet for each place in the same structure of the solar canopy.

SUPPLY OF CIRCUTOR MATERIALS

As mentioned earlier, CIRCUTOR has provided the following material:

› PVingPARK PVS2 solar canopy running at 8.4 kWp and 10.23 kWp.
› PV Modules
› PV inverters.
› Wallbox model recharging points for electric vehicles.
› AC & DC protection panels for the PV installation.
› Protective frames for recharging electric vehicles.
› Monitoring and control equipment.

COLLABORATING COMPANIES:

For the complete attainment of the project, CIRCUTOR has worked in tandem with the following companies:

› Melfosur, electrical installer.
› Arkenova for the optional management of the works.
› SmartDataSystem for the monitoring system.
ENERGY MONITORING PLATFORM

The SmartDataSystem energy monitoring platform allows for AMB to accurately monitor and calculate solar energy production and the performance of the installation and charging points both in real time and remotely. In this way, it is possible to detect problems before they occur, allowing thus for predictive maintenance with consequent cost savings.

In order to offer a turnkey solution, the SmartDataSystem is natively integrated with the Sentilo platform. The solution collects information of photovoltaic energy generated, energy consumed by the recharging points and energy exchanged with the network, and sends it through the CIRCUTOR EDS gateway directly to the platform.

With this information the SmartDataSystem offers the AMB:
› Real-time display of the status of each installation
› Calculation of KPIs of global performance and by installation
› Global overview of all managed installations.
› Representation of data on local display screens
› Alert management

RESULTS:
Once the project is finished, the following results are expected:
› Forecast of energy savings: €5,043 the first year. (33,625 kWh x €0.15).
› Estimated annual energy production: 33.6 MWh/year.
› Reduction of CO₂ emission: 7.5 tons/year.
› Generation of enough daily photovoltaic energy to allow the recharging of electric vehicles that cover distances of up to 615 km/day with emission-free energy.

INSTALLATIONS IN:
› MUNICIPAL SPORTS CENTER
  C.Sant Antoni Maria Claret 1- BIS de MOLINS DE REI
› TRAIN STATION
  Passeig Rafael Casanova s/n de SANT ANDREU DE LA BARCA
› TRAIN STATION
  Avda. Carrilet, 312 de L’Hospitalet de Llobregat