Applications

Pere Soria
Renewable Energy Area

Energy efficiency, self-consumption and electric vehicle charging

The perfect formula to improve the sustainability of companies

The agreement signed in February 2014 between **FEC** (Future Energy Consulting Services GmbH) and **CIRCUTOR** to promote and develop activities related to marketing energy efficiency and solar energy solutions has begun to see results.

Photovoltaic installations for self-consumption with zero injection into the grid are a legal reality not just in Spain but in many other countries as well, and represent a unique opportunity for companies to reduce their energy costs and stabilise them over time.

The perfect formula to improve the sustainability of companies

▶ The agreement signed in February 2014 between **FEC (Future Energy Consulting Services GmbH) and CIRCUTOR** to promote and develop activities related to marketing energy efficiency and solar energy solutions has begun to see results.

This first year of working together has resulted in the development of three projects that deliver the perfect combination of environmental sustainability, economic viability and social outreach for companies as varied as a car dealership and a vegetable processing and packing plant in Southern Spain.

The **FEC** group includes the development company **PROCONSULT** and the **SOLAREC** engineering company specialised in implementing solar energy systems. They have both worked with **CIRCUTOR** on the design, construction and start-up of the first three projects of a long list that will be refined in the upcoming months.

PROCONSULT's solutions for companies come together under the term **SUN TOWER**, which encapsulates the concepts of:

❶ Improved building energy efficiency through the implementation of an energy monitoring application with **POWER STUDIO SCADA.**

❷ Harnessing the building's potential for energy self-production through the installation of photovoltaic solutions like the **SUN TOWER** solar tracker, rooftop solar systems and **CIRCUTOR's PVing Park** photovoltaic canopies.

❸ Adapting the building for the arrival of electric vehicles through the installation of **CIRCUTOR's RVE2-P** charging points in a solar parking area.

The solution is backed by a guarantee to offer each client the best solution adapted to their consumption needs and available spaces. Mature solutions, proven technology and suppliers with financing available. This means that projects can be undertaken by companies with confidence that resulting savings will offset the investment made and that financing is guaranteed.

Energy costs currently account for a high percentage of company spending, with the added uncertainty that future

instability could jeopardise competitiveness. The strength of these solutions is that they allow the building to use sunlight to generate between 30 and 50% of the energy required on-site and reduce energy requirements to a minimum with consumption monitoring that makes it possible to define actions to be implemented and quantify their results.

All these projects have been formalised under the heading of photovoltaic energy installations connected to the grid with zero injection of surplus energy. This formula significantly eases the administrative requirements of solar installations designed for the self-sufficiency of buildings. The system aims to reduce internal electricity consumption, achieve energy independence, and generate energy locally, not for injection into the distribution lines.

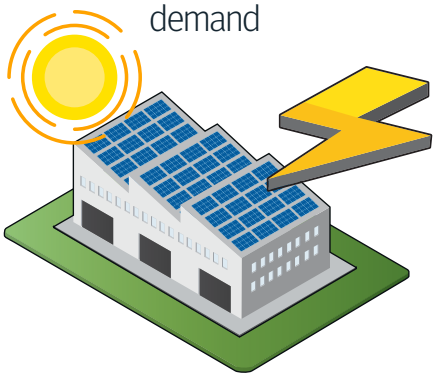
The solar production is regulated through the **Dynamic Power Controller (CDP) designed by CIRCUTOR**. This device sends a power modulation order to the solar system inverters so that they adapt the generated power to a maximum value that is always less than the instantaneous power demanded by the loads in real time.

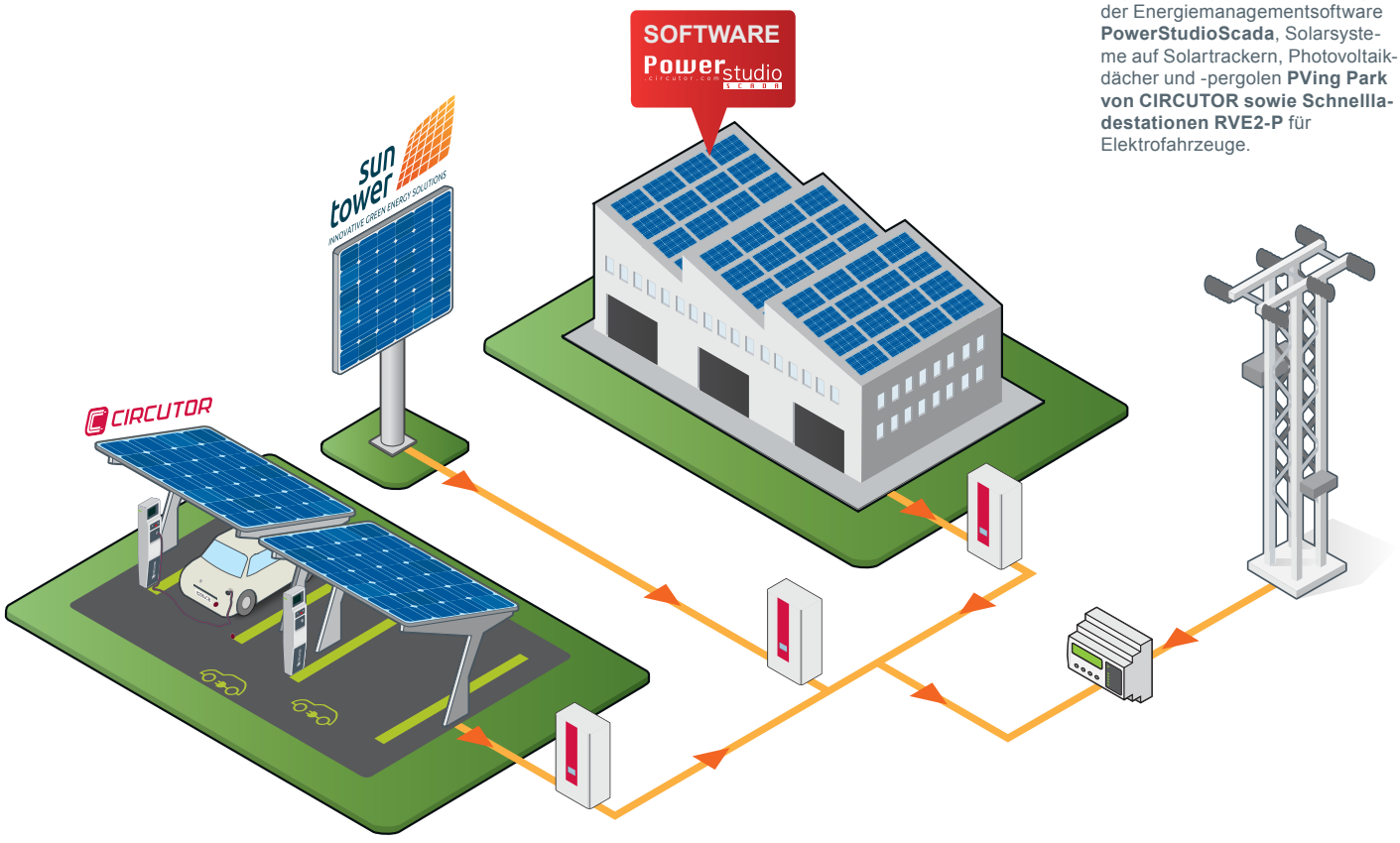
The fact that self-consumption photovoltaic systems produce part of the energy required by buildings and do not inject surpluses into the grid allows government to assign them an energy savings role, facilitating their processing. Likewise, having no grid injection frees these systems from maximum installable power restrictions based on the discharge capacity of the distribution lines.

PV system can add around

50%

the energy demand





Der Begriff **SUN TOWER** umfasst in groben Zügen die Einrichtung der Energiemanagementsoftware **PowerStudioScada**, Solarsysteme auf Solartrackern, Photovoltaikdächer und -pergolen **PVing Park von CIRCUTOR sowie Schnellladestationen RVE2-P** für Elektrofahrzeuge.

Solar photovoltaic systems for self-consumption with zero injection into the grid are supported by a growing number of governments that provide for legal installations in a simple, quick and economical way without the need for prior approval processes with the utility companies.

The integration of all the activities from the various projects into a single platform through the **POWER STUDIO SCADA** monitoring and supervision application allows you to not only quantify the solar production of each of the systems, but also tracks the evolving consumption of each productive section of a company as well as the impact of the different energy savings actions that have been implemented.
The SCADA application enables **SOLAREC** to perform corrective and preventive maintenance in order to guarantee the results of each of the projects as well as design future energy strategies for each user. By performing simulations to generate the energy bill and calculate the impact of the savings provided by solar production, you can verify the profitability of investments as well as the specific energy costs of each business process in every industry.

The design and implementation of the **POWER STUDIO** application as well as the electrical installations required for these projects have been carried out by **CIRCUTOR's expert** engineering and installations company, **Aseprel, SL (www.aseprel.es)**

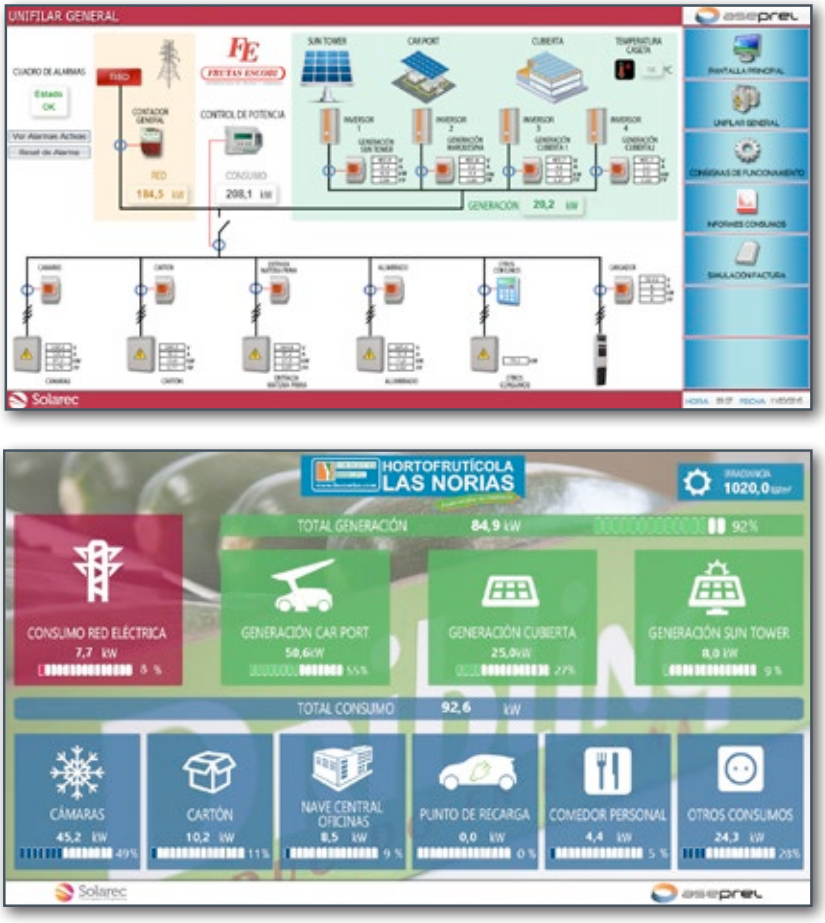
The installation of the **RVE2-P** electric vehicle charging points in the projects not only conveys an image of modernity and environmental commitment to employees and customers of companies, but also serves to adapt the infrastructure to new transitional energy regulations centred on mobility, like the recently-approved ITC-BT-52 of the Low Voltage Electrotechnical Regulation.

The 246 kW of rated power installed in the three completed projects have an annual production potential of nearly 400,000 kWh. This would mean approximate energy savings of €80,000/year and a reduction of 90 tonnes of greenhouse gas emissions into the atmosphere each year. Moreover, the three **QUICK charging points for electric vehicles** will provide the basis for a provincial infrastructure that will enable the development of these vehicles, resulting in greater cost reductions and emissions in the years to come.

These projects have undoubtedly positioned the companies of the **FEC Services** group at the forefront of solar energy technology in buildings and as a sector leader in Southern Spain. This has paved the way for the group to win more projects and expand its activity to other areas with identical needs and great potential for savings.

Based on the experience gained in these first projects, now in operation, FEC Services and **CIRCUTOR** are working to adapt this partnership scheme to Latin American countries where there is a great need to provide solutions in energy efficiency, self-consumption of solar energy and the integration of electric mobility. The first projects are underway in Mexico and Chile. ◗

For contact details and more information:
www.proconsult.es



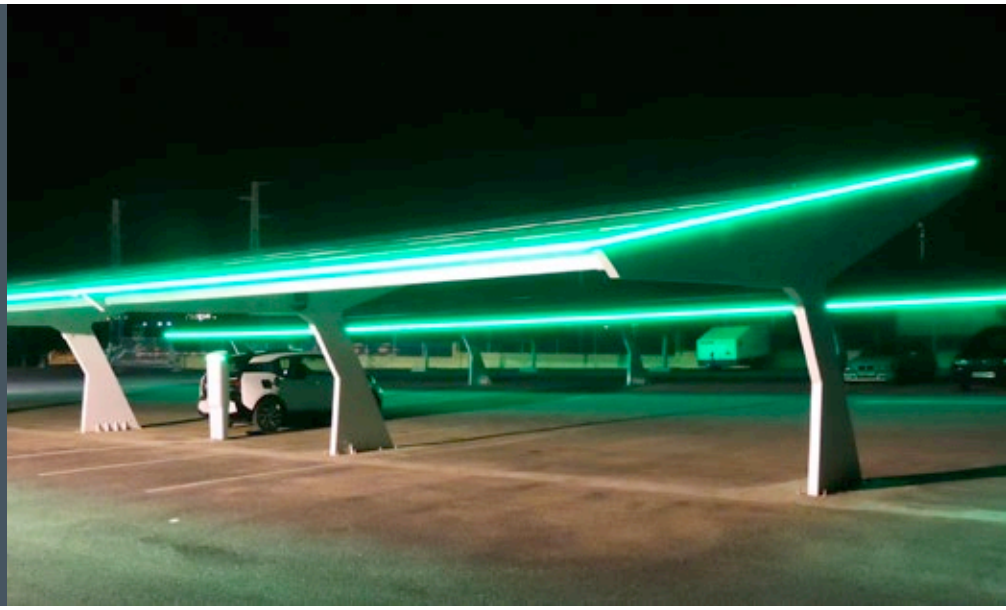
The integration of all the activities from the various projects into a single platform through the **POWER STUDIO SCADA** monitoring and supervision application allows you to not only quantify the solar production of each of the systems, but also tracks the evolving consumption of each productive section of a company as well as the impact of the different energy savings actions that have been implemented.

Information on completed projects:

- Client: **Premium Almería**
- Actions taken:
  - PowerStudioScada software application
  - Installation of a SUN TOWER solar tracker
  - Installation of PVing PARKS photovoltaic canopy with 4 parking spaces
  - Installation of RVE2-P electric vehicle charging point.
- Photovoltaic power installed: 21 kW
- Roll-out: June, 2014
- Location: Huércal, Almeria (Spain)

- Client: **Frutas Escobi**
- Actions taken:
  - PowerStudioScada software application
  - Installation of a SUN TOWER solar tracker
  - Installation of PVing PARKS photovoltaic canopy with 8 parking spaces
  - Installation of rooftop solar system
  - Installation of RVE2-P electric vehicle charging point.
- Photovoltaic power installed: 60 kW
- Roll-out: September, 2014
- Location: El Ejido, Almería (Spain)

- Client: **Hortofrutícola Las Norias**
- Actions taken:
  - PowerStudioScada software application
  - Installation of a SUN TOWER solar tracker
  - Installation of PVing PARKS photovoltaic canopy with 54 parking spaces
  - Installation of rooftop solar system
  - Installation of RVE2-P electric vehicle charging point
- Photovoltaic power installed: 165 kW
- Roll-out: January 2015
- Location: El Ejido, Almería (Spain)



Nuestros Partners :

PROCONSULT
Proyectos & Consulting Almería

Cutting-edge efficient and sustainable energy engineering

PROCONSULT, Provides administrative support before and during project roll-out for the solar photovoltaic energy sector, as well as for sales and installations in Spain. More than 20 years of experience in international consulting attest to the company's excellence and come with the necessary agreements with financial institutions.

sun tower
INNOVATIVE GREEN ENERGY SOLUTIONS

Solarec
Thermography & Engineering

future energy
CONSULTING SERVICES

The **Sun Tower** concept was developed by:

Proconsult
(Proyectos y Consulting Almería S.L.)
Mr. Daniel Royen Padilla
www.proconsult.es

Solarec
Mr. David Royen Padilla
Solarec provides the necessary engineering, carries out energy audits and performs ongoing quality control for the various installations implemented.
www.solarec.es

FEC Services (Future Energy Consulting)
Mr. Marc Royen Peters
FEC Services is a Swiss company with years of international experience in managing photovoltaic projects, specialised in international partnership agreements (joint ventures) between investment funds, EPC contractors and developers. It is also a member of the Supervisory Board of the “Swiss e-Mobility” organisation
www.fecservices.ch