



PHOTOVOLTAIC SOLAR ENERGY



- 1. SENERCO ENERGY SERVICES PRESENTATION**
- 2. REFERENCES PHOTOVOLTAIC SOLAR ENERGY**
 - PV SYSTEMS ON FLOOR**
 - PV SYSTEMS ON ROOF**
- 3. SENERCO PHOTOVOLTAIC SERVICES**
 - PRECONSTRUCTION**
 - CONSTRUCTION**
 - POSTCONSTRUCTION**

1. SENERCO ENERGY SERVICES PRESENTATION



SENERCO is an engineering and consulting company specializing in project management in the energy sector, which makes available to its customers a full team of people with extensive experience in the renewable energy sector, able to solve any technical aspect of the facilities.

SENERCO has a solar photovoltaic experience of more than **14 MW** built and developed over **50 MW**.

SENERCO offers clients EPC (Engineering, Procurement and Construction) from engineering to the O & M (Operation and Maintenance) projects.

2. PHOTOVOLTAIC SOLAR ENERGY REFERENCES



PV SYSTEMS ON FLOOR

- ✓ **Technical, economic and legal assessment of 5 photovoltaic projects of 43.75 MW total power, called, Photovoltaic Southern PSF, PSF Generations Energy, Photovoltaic Los Prados PSF, PSF and PSF Photo Sol Solar Energy, all located in Honduras. Year 2014**
- ✓ **Project PV-diesel hybrid installation 1 MW in Buenos Aires, Argentina. Year 2014**
- ✓ **Projects Photovoltaic-Diesel hybrid installation 1 MW Atacama, Constitution and Santiago, Chile. year 2014**
- ✓ **Project PV-diesel hybrid installation 1 MW in Santo Domingo, Dominican Republic. year 2014**

- ✓ **Project PV-diesel hybrid installation 1 MW in Choluteca and Olancho, Honduras. Year 2014**
- ✓ **Project PV-diesel hybrid installation 1 MW in Bogotá, Santa Marta, Boyaca and Guajira, Colombia. Year 2014**
- ✓ **Project PV-diesel hybrid installation 1 MW in Uruguay. Year 2014**
- ✓ **Project PV-diesel hybrid installation 1 MW in Tijuana and Mexico City, Mexico. Year 2014**
- ✓ **Project PV-diesel hybrid installation 1 MW in Islamabad, Pakistan. Year 2014**

- ✓ Photovoltaic Solar Plant Project 5 MW grid-connected photovoltaic generation called "BLOUPUTS PV" in South Africa. Year 2014
- ✓ Photovoltaic Solar Plant Project 5 MW grid-connected photovoltaic generation called "HOOGEEGEN PV" in South Africa. Year 2014
- ✓ Photovoltaic Solar Plant Project 5 MW grid-connected photovoltaic generation called "ONTSEEPKANS PV" in South Africa. Year 2014

- ✓ **Photovoltaic Solar Plant Project 5 MW grid-connected photovoltaic generation known as "Boegoeberg PV" in South Africa. Year 2014**
- ✓ **Photovoltaic Solar Plant Project 5 MW grid-connected photovoltaic generation known as "Pofadder PV" in South Africa. Year 2014**
- ✓ **Photovoltaic Solar Plant Project 5 MW grid-connected photovoltaic generation known as "Bokpoort PV 2" in South Africa. Year 2014**

- ✓ **Technical Inspection Report and constructive aspects of 1.26 MW photovoltaic plant in Ribaforada (Navarra-Spain)**
Year: 2012
- ✓ **Technical Inspection Report and constructive aspects of 1.26 MW photovoltaic plant in Cintruénigo (Navarra-Spain)**
Year: 2012

- ✓ **Photovoltaic Installation of 10 MW in Alcalá del Río (Sevilla-Spain)**
Client: ELEMENT POWER
Year: 2011
- ✓ **Photovoltaic Installation of 10 MW in Mairena del Alcor (Sevilla-Spain)**
Client: ELEMENT POWER
Year: 2011
- ✓ **Photovoltaic Installation of 8 MW in Bollullos de la Mitación (Sevilla-Spain)**
Client: ELEMENT POWER
Year: 2010

- ✓ **Solar Plant of 1.89 MW in Estepa (Sevilla-Spain)**
Year: 2007
- ✓ **Solar Plant of 1.89 MW in Alcalá de Guadaira (Sevilla-Spain)**
Year: 2007
- ✓ **Solar Plant of 3.78 MW in Fascinas Tarifa (Cádiz-Spain)**
Year: 2007
- ✓ **Solar Plant of 1.8 MW in Sanlucar de Barrameda (Cádiz-Spain)**
Year: 2007
- ✓ **Solar Plant of 1 MW in Osuna (Sevilla-Spain)**
Year: 2007

PV SYSTEMS ON FLOOR



✓ Photovoltaic Installation of 3,0 MW in Paradas (Sevilla-Spain)

Start-up: March 2008

Investment: 24 million \$



PV SYSTEMS ON FLOOR



- ✓ **Photovoltaic Installation of 1,65 MW in Fuentes de Andalucía (Sevilla-Spain)**
Start-up: July 2008
Investment: 15.6 million \$



✓ Photovoltaic Installation of 1 MW in Osuna (Sevilla-Spain)

Start-up: August 2008

Investment 9.21 million \$



- ✓ **Photovoltaic Installation Las Cañas, of 4 MW in Jerez de la Frontera (Cádiz-Spain)**

Start-up: Year 2008

Investment: 38.48 million \$



- ✓ **Photovoltaic Installation Santa Amalia, of 2 MW in Santa Amalia (Badajoz)**

Start-up: Year 2008

Investment: 19.24 million \$



2. PHOTOVOLTAIC SOLAR ENERGY REFERENCES



PV SYSTEMS ON ROOF

- ✓ **Analysis and Technical review of two photovoltaic plants in Amman, Jordan. Year 2013**
- ✓ **Analysis and technical evaluation of the 1.8 MW photovoltaic plant owned by GRUPOTEC on the covers of Mercalaspalmas in Las Palmas. Year 2013**
- ✓ **Feasibility Study. Assessment solution supply electricity through PV plant, building and floor coverings available on property owned by DEMASA in Costa Rica. Year 2013**

PV SYSTEMS ON ROOF



- ✓ Study of technical and economic feasibility for PV system at the Plaza Mall World, Soyapango, San Salvador, El Salvador. ACRISAL estate property in El Salvador. Year 2013



- ✓ Study of technical and economic feasibility for PV system PETTENATI, El Salvador. Year 2013

- ✓ **Study of technical and economic feasibility for the company Jordan Industrial Estate Company (JIEC) in Abdullahz - Jordan. Year 2013**
- ✓ **Study of technical and economic feasibility for the company Jordan Industrial Estate Company (JIEC) in Muwaqar - Jordan. Year 2013**
- ✓ **Feasibility Study. Assessment solution power supply by 0.25 MW PV plant. Ownership: DEMASA, Costa Rica. Year 2013**



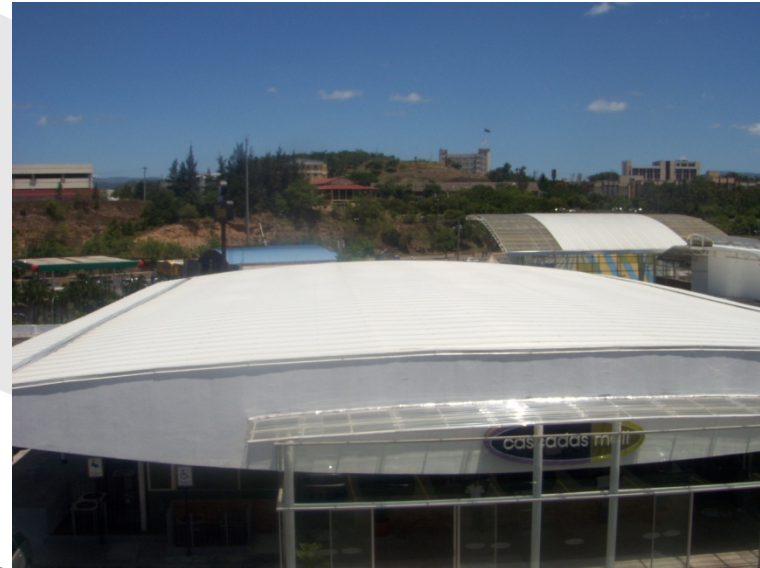
- ✓ **Study of technical and economic feasibility of 0.60 MW photovoltaic plant located in the Liberia Airport in Costa Rica. Year: 2013**



- ✓ **Project design, definition and technical-economic proposal photovoltaic system on the roof of 3.68 MW mall called Cascades. Property: SPECTRUM and located in Honduras. Year: 2012**

- ✓ **Technical Proposal for Photovoltaic Installation in Miraflores Mall, 2.47 MW, Guatemala City (Guatemala). Year: 2012**
- ✓ **Technical Proposal for Photovoltaic Installation in Management Center DAISIES, 0.14 MW, Guatemala City (Guatemala). Year: 2012**
- ✓ **Technical Proposal for Photovoltaic Installation in Oakland Mall, 0.94 MW, Guatemala City (Guatemala). Year: 2012**

- ✓ **Technical Proposal for Photovoltaic Installation in PORTALS Mall, 1.7 MW, Guatemala City (Guatemala). Year: 2012**

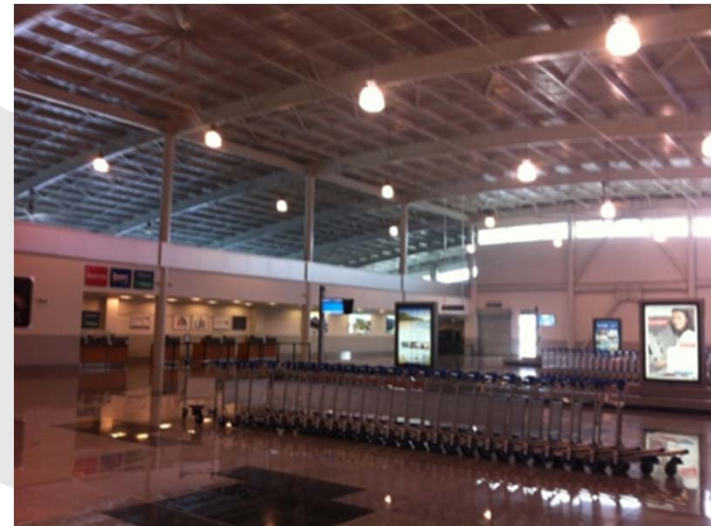


- ✓ **Technical Proposal for Photovoltaic Installation in CASCADAS MALL Mall, 3.68 MW, Tegucigalpa (Honduras). Year: 2012**

- ✓ **Analysis and Technical Review two photovoltaic plants in Amman, Jordan**
Year: 2013
- ✓ **Feasibility Study. Evaluation of solution power supply by PV plant, in roof and floor of DEMASA facilities in Costa Rica.**
Year: 2013

- ✓ **Study of technical and economic feasibility of photovoltaic plant located in Liberia Airport in Costa Rica.**

Year: 2013



- ✓ **Project design, definition and technical-economic proposal photovoltaic on the roof of the mall named Cascadas, of 3.68 MW, owned by the Company Spectrum and located in Honduras.**

Year: 2013

✓ **Technical Proposal for Photovoltaic Installation
MIRAFLORES Mall, of 2.47 MW in Guatemala City
(Guatemala)**

Year: 2012

✓ **Technical Proposal for Photovoltaic Installation LAS
MARGARITAS Mall, of 0.14 MW in Guatemala City
(Guatemala)**

Year: 2012

✓ **Technical Proposal for Photovoltaic Installation OAKLAND
Mall, of 0.94 MW in Guatemala City (Guatemala)**

Year: 2012

✓ **Technical Proposal for Photovoltaic Installation PORTALES Mall, of 1.7 MW in Guatemala City (Guatemala)**

Year: 2012



✓ **Technical Proposal for Photovoltaic Installation CASCADAS Mall, of 3.68 MW in Tegucigalpa (Honduras)**

Year: 2012

- ✓ **Performing procedures for photovoltaic Installation of 20kW named Mairena Césped in Mairena del Alcor (Sevilla-Spain)**
Client: Private
Year: 2011
- ✓ **Project and Performing procedures for photovoltaic Installation of 20kW in Dos Hermanas, La Luisiana y La Roda de Andalucía (Sevilla-Spain)**
Year: 2011
- ✓ **Solar Plant of 100 kW in La Roda de Andalucía (Sevilla-Spain)**
Client: Private
Year: 2006

- ✓ **Photovoltaic Installation of 40 kW in San José de la Rinconada (Sevilla-Spain)**
Client: Rondón Energías
Year: 2010



- ✓ **Photovoltaic Installation of 60 kW in Cantillana (Sevilla-Spain)**
Client: Rondón Energías
Year: 2010

✓ **Photovoltaic Installation of 118 kW in Puerto Real (Cádiz-Spain)**

Client: Almacenes Marítimos del Sur
Year: 2009



✓ **Photovoltaic Installation of 112 kW in Puerto Real (Cádiz-Spain)**

Client: Grupo Portillo
Year: 2008



✓ Photovoltaic Installation of 346 kW in Sevilla(Spain)

Client: UTE Metro de Sevilla

Year: 2007



✓ Photovoltaic Installation Pabellón de Chile of 5 kW in Sevilla (Spain)

Client: BECOSA

Year: 2005



3. SENERCO PHOTOVOLTAIC SERVICES



PRECONSTRUCTION

DESIGN

ENGINEERING

ENERGY PRODUCTION STUDIO

FEASIBILITY STUDY TECHNICAL-ECONOMIC

FINANCIAL MODEL

EPC CONTRACT AND O&M

3. SENERCO PHOTOVOLTAIC SERVICES



CONSTRUCTION

TURNKEY CONTRACT

CONSTRUCTION SUPERVISION

COUNSELLING AND PURCHASE OF MATERIALS

PROJECT MANAGEMENT

QUALITY CONTROL

3. SENERCO PHOTOVOLTAIC SERVICES



POSTCONSTRUCTION

AS-BUILT DOCUMENTATION

ASSISTANCE CAP (PROVISIONAL ACCEPTANCE CERTIFICATION)

O & M (OPERATION AND MAINTENANCE)

PRODUCTION MONITORING

REPORTING

COLLATERAL MANAGEMENT

ASSISTANCE CAD (FINAL ACCEPTANCE CERTIFICATE)



Parque Industrial Chaparreo · C/Irlanda, 13 · Edificio Chaparreo, Oficinas 4-5 · 41500 Alcalá de Guadaíra (Sevilla) Spain

José Manuel Rodríguez Martín, +34 629 132 145
jmrodriguez@senerco-es.com

Íñigo Argüeso Bejarano, +34 638 033 793
iargueso@senerco-es.com