

# INOMA: A real case of entrepreneurship in Renewable energies sector.

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[www.inoma.es](http://www.inoma.es)



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[www.dalilaproject.eu](http://www.dalilaproject.eu)

### WHAT IS INOMA?

INOMA Renovables S.L. is a spin-off company from the University of Cádiz (Spain), highly specialized on the Engineering of Energy Systems in General, and in Renewable Energy Systems in particular. Our company has been advising companies and large clients for more than 15 years in the energy sector.

We define ourselves as a technological partner, with a global commitment in the whole process of generating energetic solutions to our customer's problems, from the investment, to the implementation of projects and facilities.

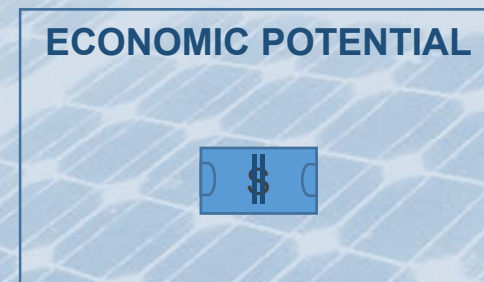
We advise on attracting investment funds, international financial markets and application of funds in the Spanish market in accordance with national and EU regulations.

We are technological consultants in the energy sector, with specialization in photovoltaic, from the procedures and "Due Dilligences", to the detailed engineering, commissioning, maintenance and operation of photovoltaic plants



## WHAT IS A SPIN OFF COMPANY?

A spin off is a new creation company, promoted by members of the University community (students, faculty, staff...). The purpose of spin off companies is to transfer to the market generated knowledge, technology or the result of research, with the consideration of being generated in the University environment. This transfer has the particularity of having a high added value and an important economical potential.





## WHY TO CREATE A SPIN OFF COMPANY?

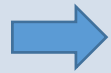
- ➔ Development of a technology, or knowledge, generated in the University until the final product, which allows hiring personnel directly related with the development of the product or business.
- ➔ Transference of knowledge through the results of the research, and generation of economic return that otherwise would not have been generated if the investigation does not reach the market.
- ➔ Generation of highly-qualified employment promoted by the spin off companies.



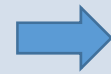
## WHAT DO YOU NEED FOR CREATING A SPIN OFF COMPANY?



**Product or service**



**Business plan**



**Team**



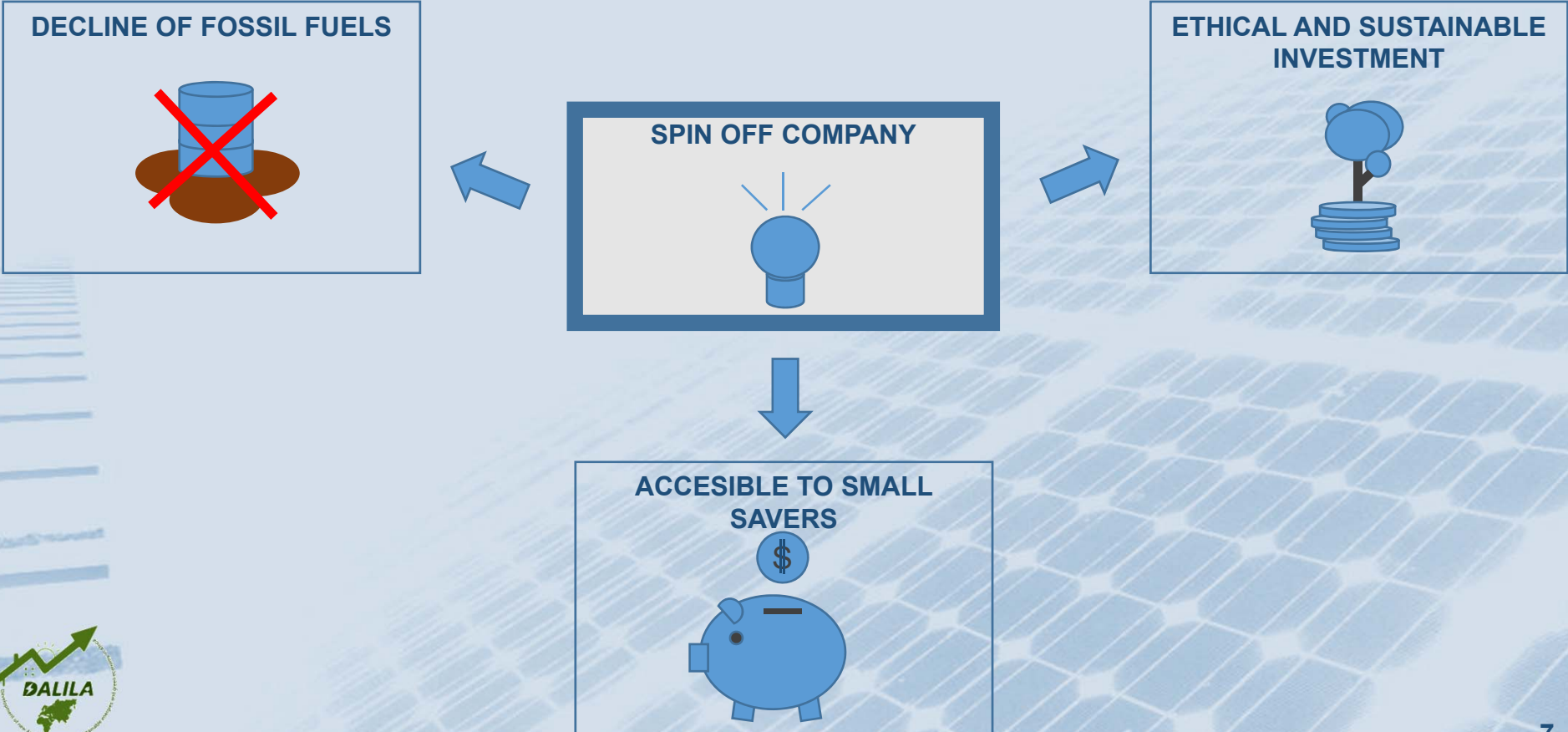
## WHY TO CREATE A SPIN OFF COMPANY ON RENEWABLE ENERGIES?

Global investments in renewable energies: from 50,000 M\$ (2004) to 300,000 M\$ in recent years (3 times more than investment in fossil fuels). (IRENA)

- ➔ World demand of energy is increasing
- ➔ Importance of technological development
  - Guarantee the supply of energy
  - “Green” companies more respectful with the environment
- ➔ Participation of local stakeholders



**WHY TO INVEST IN RENEWABLE ENERGIES?**





**SUSTAINABLE BUSINESS MODEL**

Sustainable business models not only are sustainable under an economic point of view, but also offer solutions for the creation of **SOCIAL** and **ENVIRONMENTAL** value.

Sustainable entrepreneurship should solve both social and environmental problems but applying business principles.





## POTENTIAL OF SPIN OFF COMPANIES

- Detection of market opportunities.
- Transference of knowledge from the University to the Society.
- Creation of employment of quality.
- Retention of talent.
- Investment in a project of future.
- Contribution with local and regional economic development.



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## ORIGIN AND EVOLUTION OF AN IDEA

Realistic analysis of  
the RR.EE. sector



Identification of an  
opportunity



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### *Mission and Vision*

Our VISION is of a more sustainable world with industrial activity responsible for the efficient use of clean energy resources, implementation of industrial facilities friendly to the environment and the application of new energy technologies for local development of all peoples of the planet.

We take MISSION to value knowledge generation, moving to the global market that technological development that meets needs of sustainable and responsible manner.



### STRATEGICAL POSITION OF INOMA

#### **Intensive knowledge. R & D**

Creating structures R & D to prototype development and projects.  
Ability to generate new patents.  
Collaboration with the UCA by OTRI contracts (research groups)

#### **Knowledge transfer UCA - INOMA**

Joint R + D + i apply to the target sector group.  
Increase the Know-How of INOMA continuously.

#### **High specialization - Differentiation within the sector**

Incorporation of technologists (Torres Quevedo program, INNCORPORA ...)  
Offer of skilled jobs for college graduates and research centers.

#### **Flexibility of tight structure by EBT - Support group in INOMA**

Sharing common management structures and facilities belonging to the group.  
Rapid adaptation to changes in the sector to be able to receive or transfer human resources

#### **Commitment to internationalization of the group**

Search for new markets outside the Spanish market.  
Support through local partners and trade agreements on technical and trade cooperation: Czech Rep., Balkan countries, Russia, Morocco, Guatemala, Mexico, Panama and Chile.





**RELATIONSHIP UNIVERSITY – SPIN OFF COMPANIES**

- Knowledge → Prototype → Patent → Product
  - Development of patentable prototypes as one of the activities of the company
  - Design of the manufacturing process and searching of commercialization channels for the new products.
- Colaboration:
  - Final Degree Projects
    - Participation in initiatives for proposal of applied Final Degree Projects.
    - Developing of F.D.P. from the University
  - Thesis
    - Developing of Thesis (e.g. new technologies of solar high concentration, high precision system of solar tracker...)
- Group of research from the University
  - Through contracts with the Research Results Transfer Office (R.R.T.O.) OF UCA



## SWOT ANALYSIS (DAFO)



### **S**trengths (Fortalezas)

- Young company
- High level of specialization of the INOMA Staff
- Promoters' consolidated experience
- Promoters' research experience in R&D, university and business projects.

### **W**eaknesses (Debilidades)

- Rapidly evolving technological environment, continuously updated is required
- Investment is required to some business lines, and need find external investors

### **O**pportunities (Oportunidades)

- Human resources with high technical qualification
- Knowledge and experience in the renewable energy sector from the company
- Ability to quickly transfer knowledge between INOMA and the University of Cádiz (Spin-Off)
- High potential demand for the products and services offered by INOMA

### **T**hreats (Amenazas)

- High number of competitors in some of the business lines
- No very clear policies in a long term to promote and support renewable energies
- Current situation of economic uncertainties on a global scale, difficult to search funding



## R+D+i KEY STRATEGY

- **Contacts with research groups**
  - **Contacts and previous work done with different research groups from UCA, which frequently collaborate with INOMA.**
    - Environmental technology Group TEP-181 (Solar Energy Laboratory)
    - Automation, Signal Processing and Systems Engineering Group TIC-196
    - Electrical Technology and Metrology Group TEP-224
- **R+D+i projects from public institutions**
  - **Technological based Company, supported by Public Institutions**
  - **Participation in R+D+i projects to be submitted according to different innovation business calls.**
- **Other R+D+i projects**
  - **Financed from private companies**





TECHNICAL SERVICES OFFERED



**Energy Sector Training**

INOMA Renovables has all the necessary resources, as well as sufficient experience, to undertake with solvency the training of professionals, both those who have already started their activity and intend to update their knowledge, as well as those who require specialized training to access to the labor market or launch new projects.

In this sense, INOMA Renovables maintains a framework of collaboration with the University of Cádiz (UCA), the University Enterprises Foundation (FUECA) and the Free Trade Zone of Cádiz, thanks to which it has sufficient technical and human resources to organize this type of training activities, even customized to the needs of our customers.





TECHNICAL SERVICES OFFERED



**R&D Consulting and management**

INOMA Renovables develops functions of R&D Consulting Engineering to support companies that are interested in developing R&D projects seeking to improve their competitiveness based on knowledge and experience.

Likewise, we have experience in defining the project, processing the request for incentives to regional, national and European programs, including searching for partners to set up the consortiums required, advising the SME in the development of the project, obtaining the results expected and final justification.

INOMA Renovables participates as a partner in several European consortiums, working on LIFE+ and ERASMUS+ projects, among others, with national and European partners, together with Spanish and European universities.





## TECHNICAL SERVICES OFFERED



### Engineering projects and technical office

INOMA Renovables is positioned in the sector as an engineering specialized in renewable energies, engineering projects and reports and technical certificates. This new engineering concept represents a firm commitment to innovation and development of new designs and systems, incorporating the advances in computer-aided design, 3D rendering and calculation simulators of the highest level, which allow the building integration of the designed facilities and the aesthetic improvement of them.

Among the services offered by the Technical Office, we can mention:

- Elaboration of engineering projects
- Studies of renewable energy production and economic viability.
- Legalization of industrial facilities of all kinds.
- Processing of connection to the grid connected installations for the production of electric energy with renewable sources, including self-consumption mode.
- Evaluation of environmental impacts and determination of corrective measures for industrial facilities, as well as the issuance of the corresponding reports and certificates. (in collaboration with UCA researcher)



**TECHNICAL SERVICES OFFERED**



**Execution of industrial works**

INOMA Renovables has established as an installation company very specialized in renewable energy installations, with many years of experience in electrical, thermal and power electronics industrial installations.

Execution of works of industrial facilities, and deserve special mention of solar energy, by specialists and their subsequent maintenance presenting the following services:

- o Project Execution
- o Construction management
- o Quality control of maintenance plans
- o Quality control in the execution of works





TECHNICAL SERVICES OFFERED



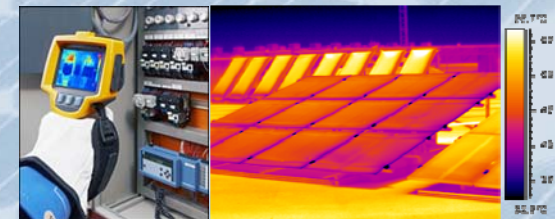
**Maintenance of industrial installations**

- o Maintenance, monitoring and monitoring of existing renewable energy installations.
- o Assistance in the operation of grid connection photovoltaic plants.
- o Application of IR thermography analysis and other advanced methods of failure analysis.
- o Use of industrial maintenance instrumentation and fault analysis to provide a comprehensive maintenance, predictive, preventive and corrective service.



SERVICES OFFERED:

- o Preventive and corrective maintenance of electrical, mechanical and electronic industrial installations.
- o Preventive Maintenance + Teleoperation + Operation in photovoltaic plants.
- o Independent audit of maintenance performed by third-party companies
- o Repair and restoration of electrical and electronic power equipment.
- o Thermographic analysis in industrial and especially photovoltaic installations





TECHNICAL SERVICES OFFERED



**PV plants maintenance**

We have all the necessary resources, human and technics, for the execution of predictive, preventive and corrective maintenance of photovoltaic installations and plants, having specific instrumentation such as IV curve plotters, IR thermographic cameras and inverter testers to determine the real efficiency of the same, as well as grid power analyzers, in addition to the basic electrical instrumentation required by specialist installation companies.

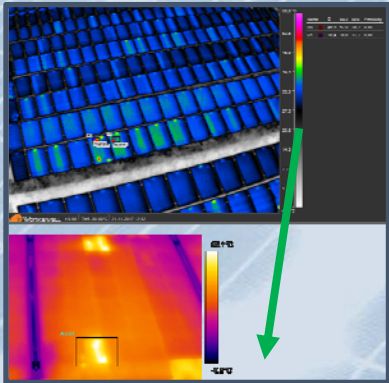
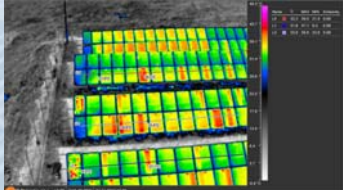


**TECHNICAL SERVICES OFFERED**



**PV plants inspections and PV modules test (Collaboration with UCA)**

- o Visual inspection of the photovoltaic plant, visual inspection of the PV modules.
- Insulation tests on panels according to inspection standards.
- Plot of curves I-V of the panels, and of the complete string to determine the real power of the same. Use of I-V curve plotters.
- Realization of terrestrial IR thermography of photovoltaic fields and panels.
- Thermography analysis of large photovoltaic plants through the use of aerial IR thermography from drones.
- Electrical characterization of photovoltaic panels.
- Test and measurement of the efficiency of photovoltaic inverters.



## ADVISING SERVICE IN THE PV SECTOR INVESTMENTS



### **Develop of large projects in PV generation. National or international**

- Realization of preliminary projects, request of connection points and necessary administrative permissions
- Negotiation of bilateral contracts for the sale of the energy produced, in the Spanish market
- Preparation of mandatory reports and environmental impact studies
- Execution project of the photovoltaic plant
- Selection of offers from the different subcontractors
- Construction management and control of the execution of works of subcontractors







## SOME EXPERTISE EXAMPLES

INOMA Renovables is specialized in design, installation and maintenance of grid-connected photovoltaic installations, integrated into buildings. We have experience in installations of various sizes and technologies and in the processing and administrative legalization of them, both for the sale of energy to the grid and for self-consumption, in accordance with the regulations. Too, we have experience in solar thermal installations to produce hot water for hotels, hospitals, and industrial consumer.





## BUSINESS SKILL LABS TRAINING

Design, execution project, installation and maintenance of several photovoltaic installations on the buildings of fire stations, with powers of 100 kW, 50 kW and 75 kW:

CADIZ 100 kW



SAN FERNANDO 50 kW



CHICLANA DE LA FRONTERA 50 kW



CONIL DE LA FRONTERA 50 kW



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Design, execution project, installation and maintenance of several photovoltaic installations on the buildings of fire stations, with powers of 100 kW, 50 kW and 75 kW:

**SAN ROQUE 50 kW**



**JIMENA DE LA FRONTERA 50 kW**



**ALGECIRAS 75 kW**





## BUSINESS SKILL LABS TRAINING

Design, execution project, installation and maintenance of a 113 kWp photovoltaic plant, Silicon Monocrystal technology in the Faculty of Economic and Business Sciences of the University of Cadiz (Spain).



**Project of execution, execution and maintenance of photovoltaic installation on hotel of new construction of the HIPOTELS group in the province of Cadiz (Spain) of 50 kW:**



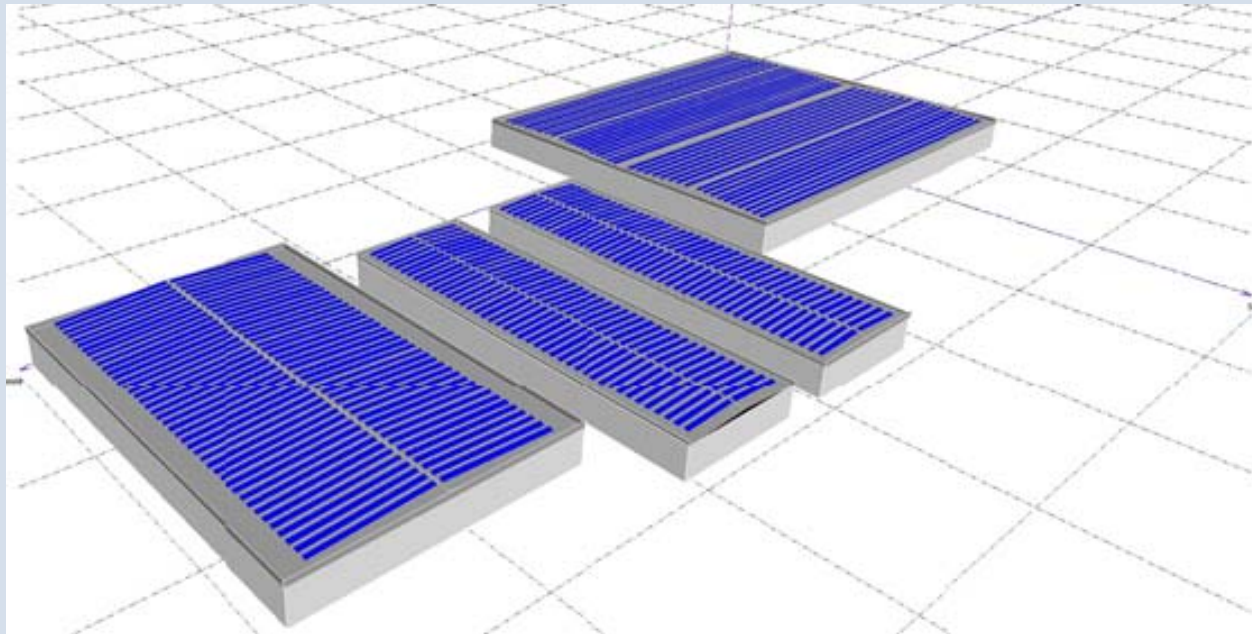


## BUSINESS SKILL LABS TRAINING

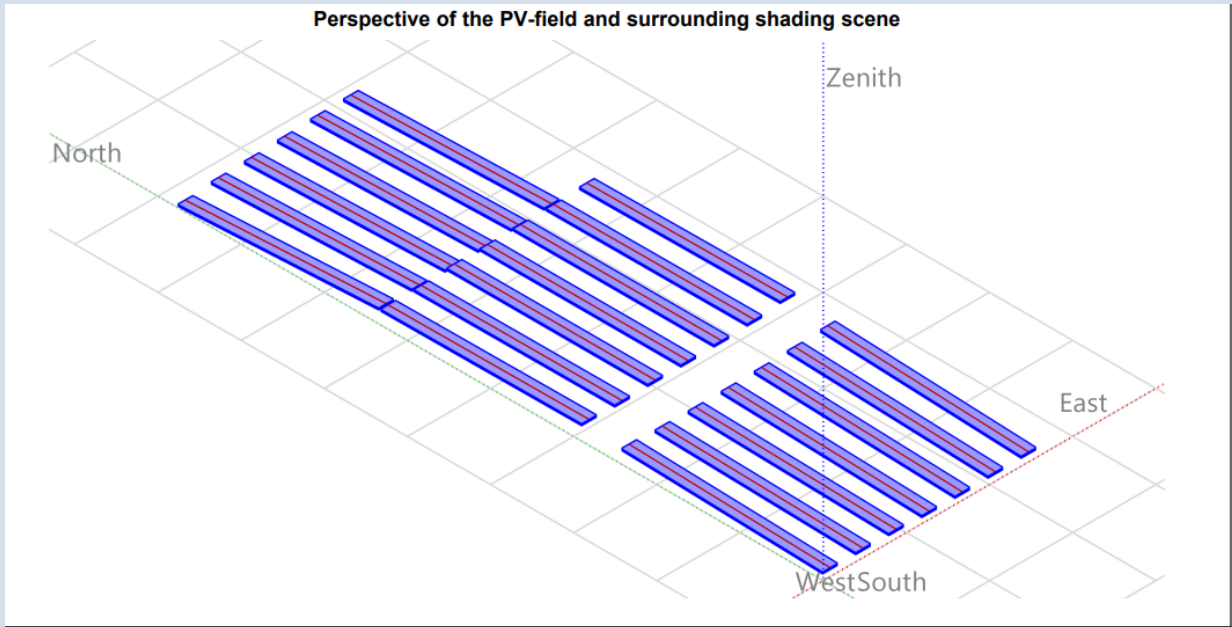
Project of execution, execution and maintenance of photovoltaic installation on hotel of new construction of the PARADORES NACIONALES group in the province of Cadiz (Spain) of 100 kW



Project for the execution of a 2 MW photovoltaic solar installation of nominal power on a warehouse for a vehicle dealer in Jerez de la Frontera (Cadiz) (Spain).



Project for the execution of a 6 MW photovoltaic solar installation of nominal power in Cadiz province (Spain).



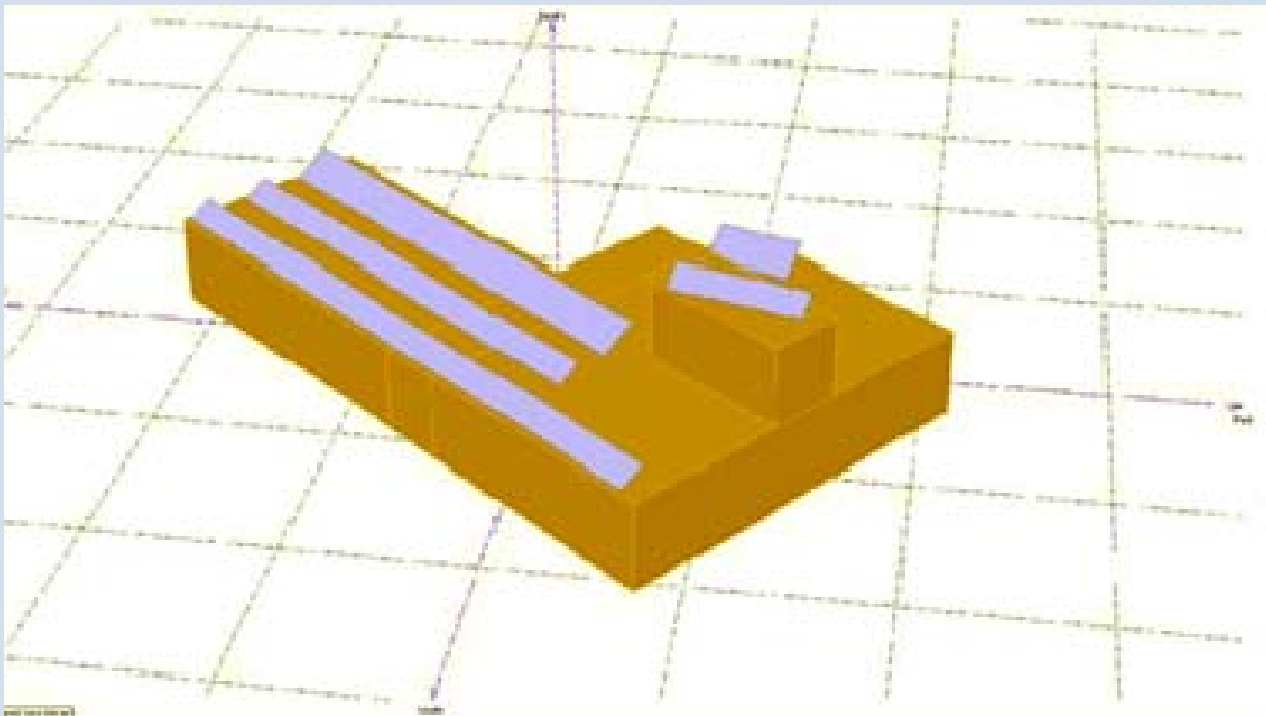


Execution project of photovoltaic solar installation of 360 kW of nominal power on roof with amorphous silicon technology in the province of Cadiz (Spain).

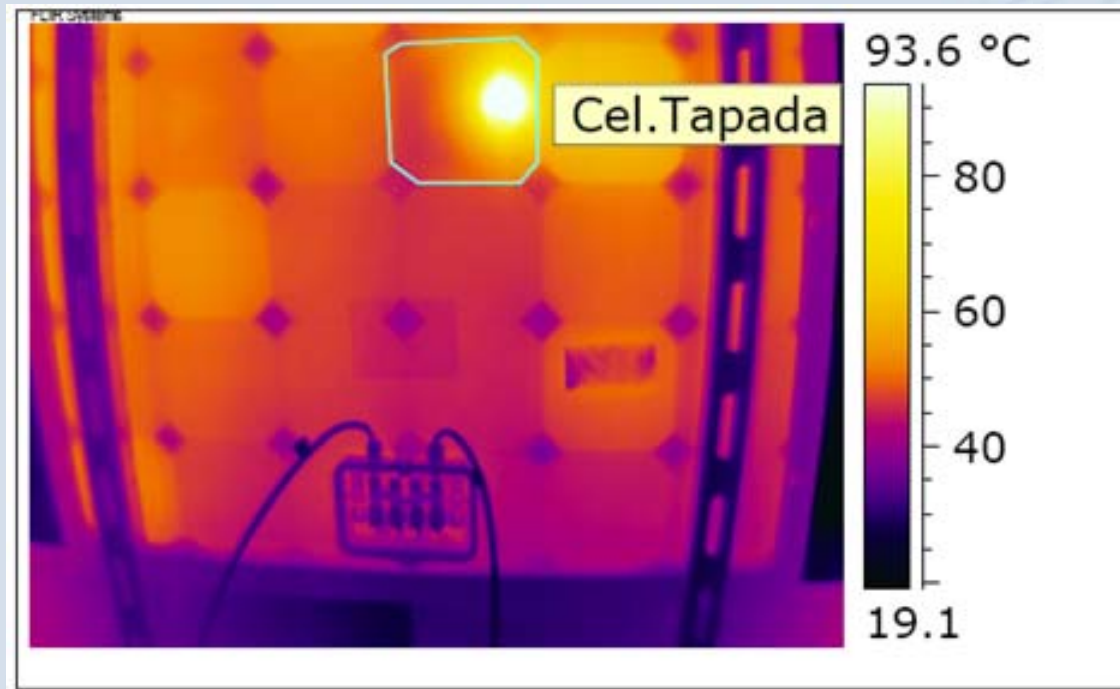




Feasibility analysis for photovoltaic installations in various water supply companies.



PV panels testing using IR thermography techniques and issuing a technical report of the characteristics of different models of photovoltaic modules belonging to the installation of 620 kW of nominal power in the province of Cordoba (Spain).



**Implementation project for the installation of solar thermal energy for pool climate and supply of Hot Water in the pool located in Puerto Real (Cadiz) (Spain).**

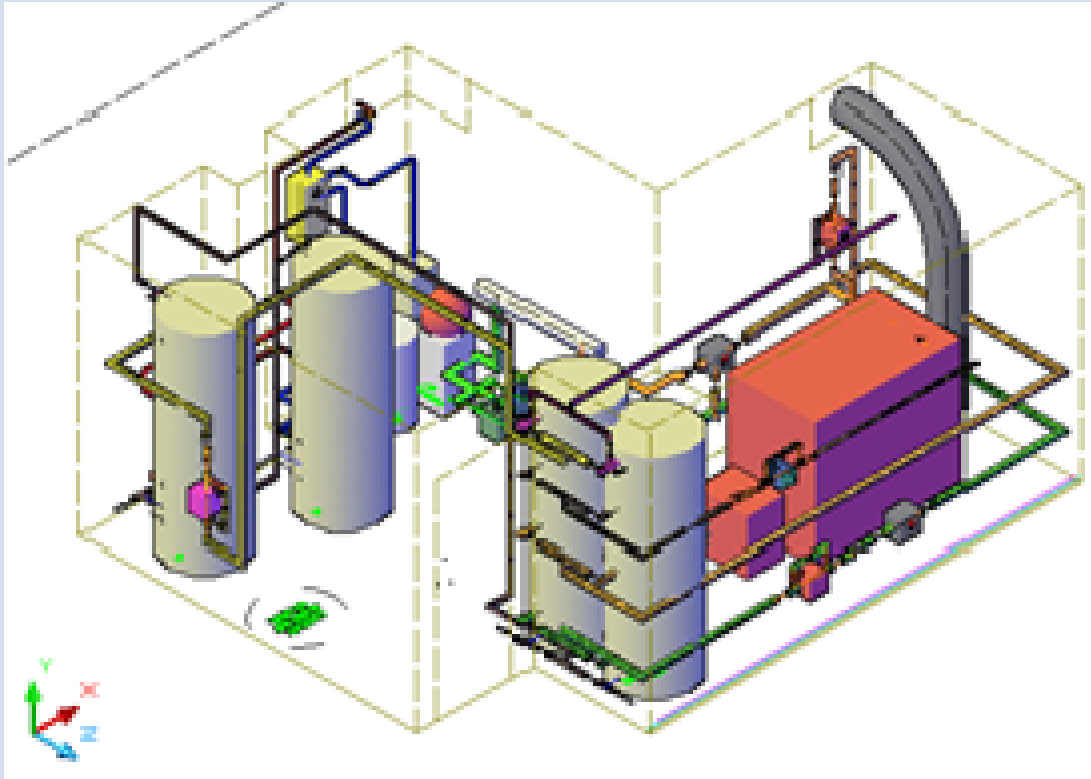




**Installation of Hot Water with high efficiency flat thermal collectors in a hotel on the coast of Cadiz (Spain).**



Design of boiler room, installation of boiler and heating accumulators and Hot Water by solar energy, in a residence located in Madrid (Spain), using high efficiency collectors.



## BUSINESS SKILL LABS TRAINING

Design, construction management and execution of a solar thermal installation for the production of Hot Water and support to the heating system for residence in Sotillo de la Adrada in Avila (Spain).

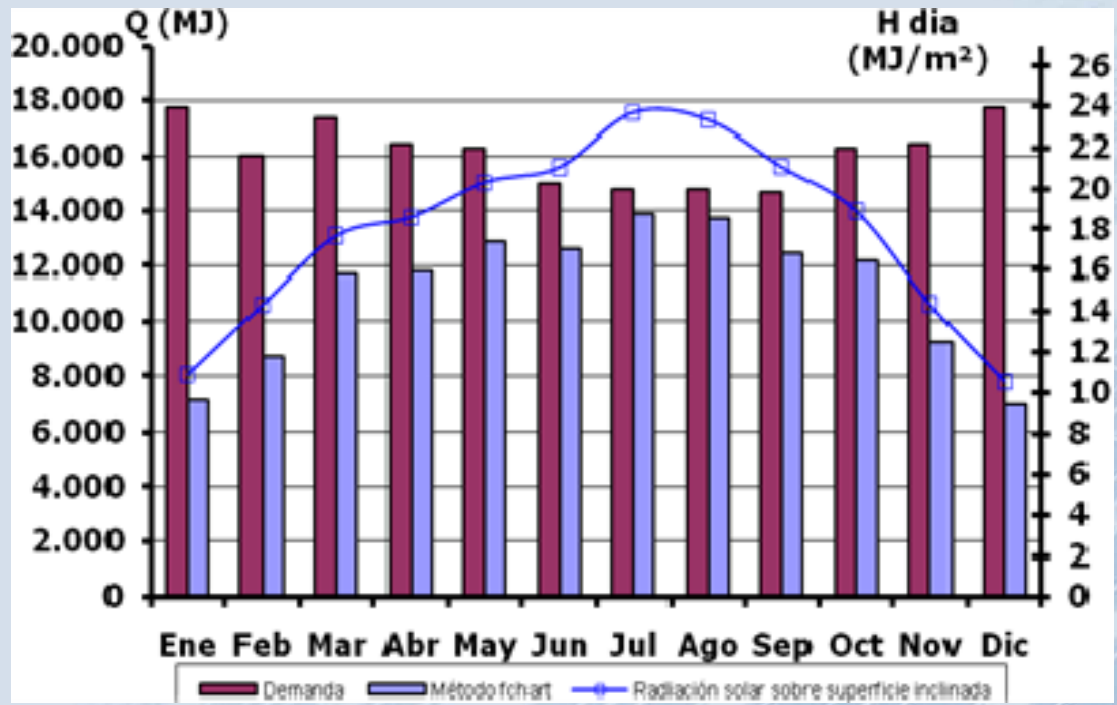


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Reform of solar thermal installation for the production of Hot Water in "AIRBUS" installations in Puerto Real (Cadiz) (Spain).



**Installation of solar thermal energy in a building located in Cadiz (Spain).**



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Design of renewable energies facilities in a fish farm located in Ayamonte (Huelva), 30 kW nominal power photovoltaic installation, 5,5 kW wind system, 33m<sup>2</sup> solar thermal installation and “plug&play” PV compact devices for standing alone applications





THANK YOU FOR YOUR ATTENTION!

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