Solar PV and Project Financing

Global Workshop on Grid Connected Renewable Energy

USEA / USAid

Washington, DC • September 1st 2009

The Company

Solarpack is a Solar Photovoltaic developer specialized in mid-sized Solar PV plants (2MW to 20MW installed power, 20 Acres to 200 Acres in surface area)

The Company started in 2005, and currently has 30 employees

Headquartered in Getxo (Spain), we have offices in Seville (Spain), Nîmes (France), Santiago (Chile) and Lafayette (CA, USA)

We have developed 21.5 MW which have been in operation since 2007
We currently have a large pipeline of projects under development

We are proud partners in business with Landowners, Utility Companies, Equipment Suppliers, Investors, Banks, Law Firms and Consultants, all of whom without we would be unable to achieve our goals

Our Activity

Development of Solar Photovoltaic Power Plants

Investments in renewable power plants with own or third parties' equity

Consulting and advising on renewable energy projects to developers, technology providers, financial institutions, owners and contractors

Services related to development, technical evaluation of a project, due diligence, construction supervision, operation & maintenance and administration

Solar Photovoltaic, because

- it is simple, easy and fast to deploy
- it does not consume water or fuel…just sunlight
- it is efficient at small or large scale
- it is modular
- it has solid prediction patterns of generation
- it has minimum visual impact
- it is generated closer to the consumer than any other energy
- it is robust and consistent (availability > 99%)
- it lasts longer, with almost no maintenance

…but especially because

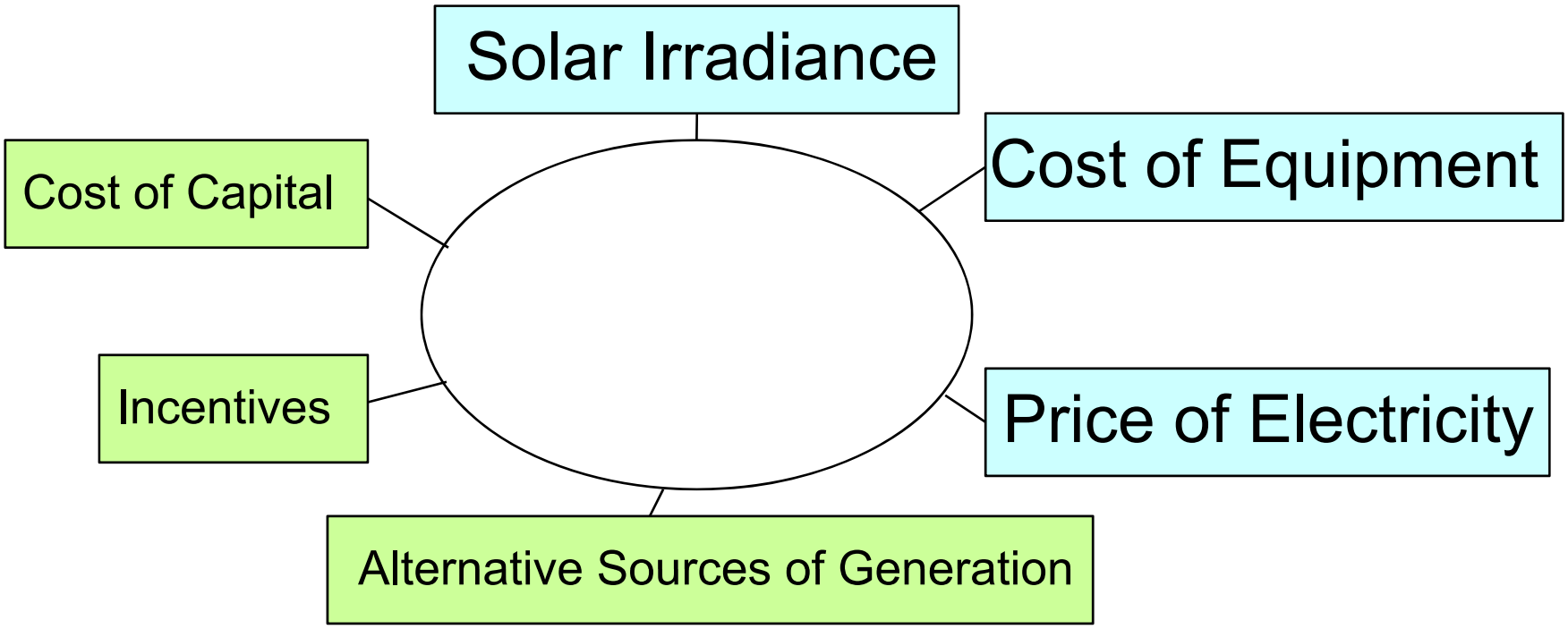
- **it is quickly becoming *cost-competitive* at a rate which makes not only other renewables tremble, *but* even that of traditional forms of energy generation…**

Difference in tariffs for rooftop & ground-mounted in EU/USA

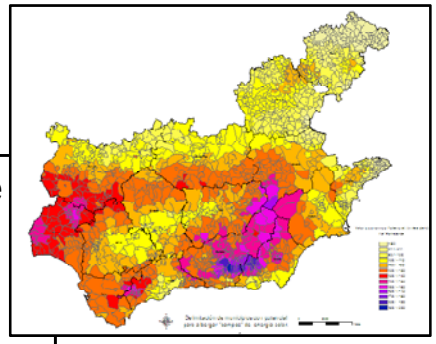
- Germany + 35%
- Italy + 36%
- Greece +12%
- France + 46%
- Spain + 6%

- The difference in average installation costs in California (USA) is 5.7$/W commercial and 8.4$/W residential (California Solar Initiative, January 2009) (+47%)

Drivers of Solar PV Cost Competitiveness



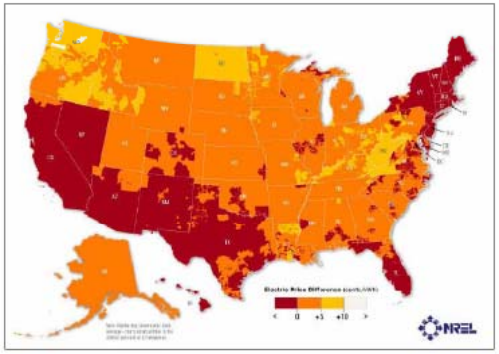
Solar Irradiance



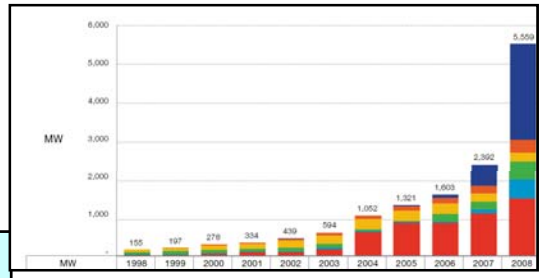
- Income is directly proportional to solar irradiance corrected by temperature and plant efficiency factors
- kWh/kWp with one Axis tracking system and % against Williamsburg, VA

North Chile	**2543 (162%)**	Williamsburg	1574 (100%)
Mojave	1985 (126%)	Singapore	1479 (94%)
Los Angeles	1878 (119%)	New York	1465 (93%)
Seville	1802 (114%)	Munich	1177 (75%)
Athens	1626 (103%)	London	887 (56%)

- Depending on the size, it typically connects to distribution infrastructure
- In some areas in the world, Solar PV is already competitive without incentives

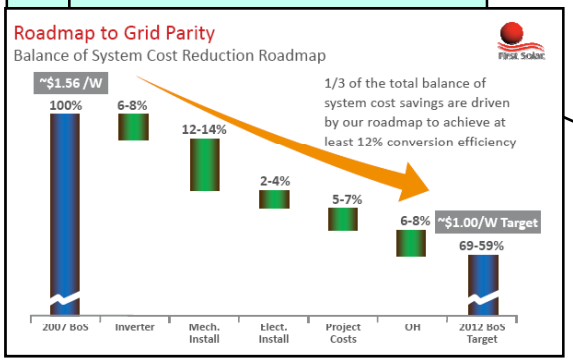


Cost of Equipment

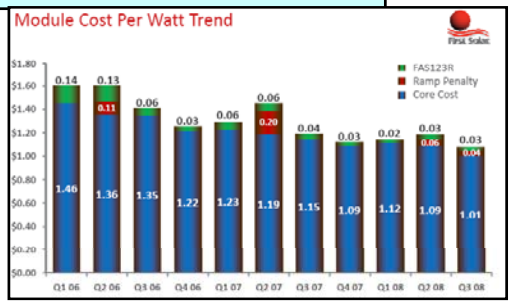


Volume of the Market

BOS Still to Go

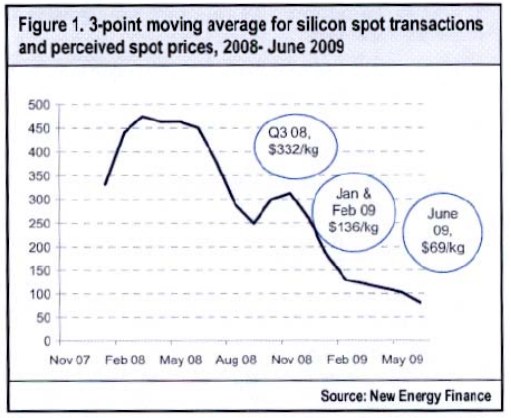


Irruption of Thin Film



From 7.5 $/W (2005) to 4.0 $/W(2009) for 1 axis

Reaction of Si-x



GW Size Players

SunPower	514 + 500 MW
Suntech	1000 MW
First Solar	735 +392 MW

Profile of Renewable Energy Investments

CAPITAL INTENSIVE

ATTRACTIVE RATIO RISK / PROFITABILITY

LONG TERM FIT OR PPA

ELIGIBLE FOR PROJECT FINANCE

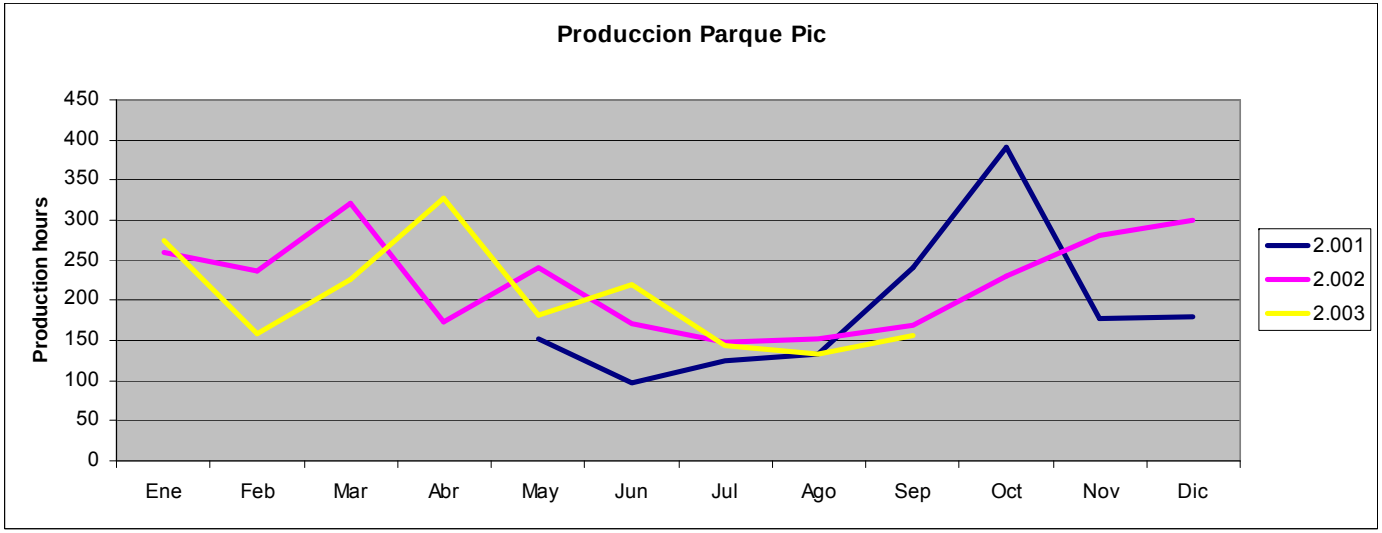
But renewable projects of certain sizes only work if they are bankable

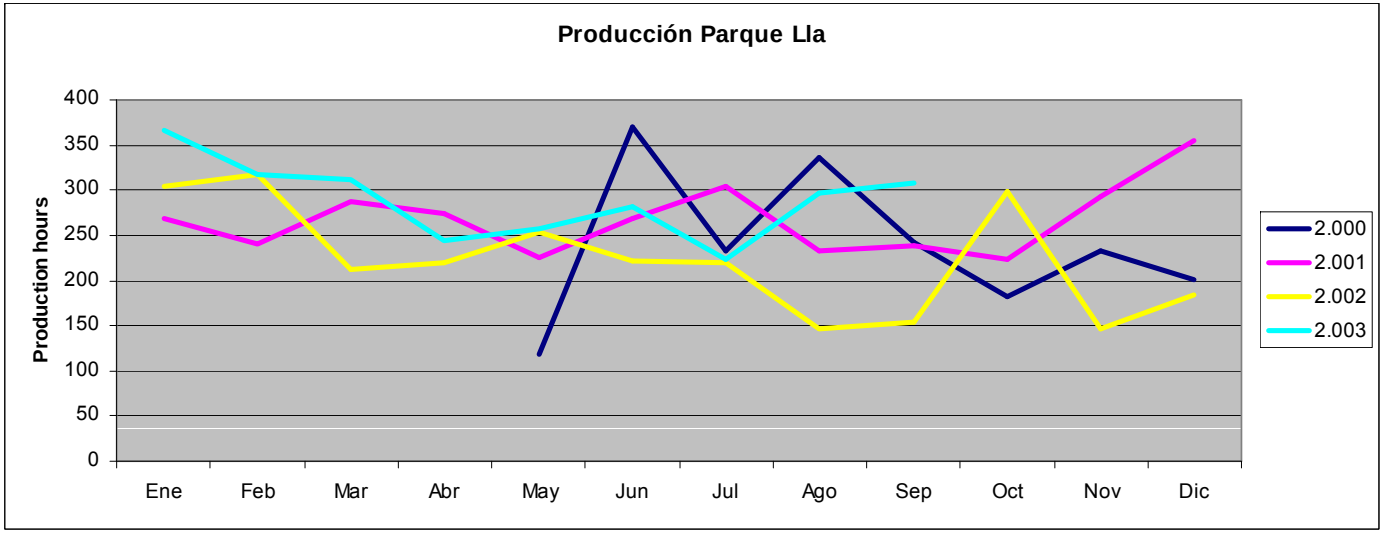
- Long term Power Purchase Agreement contracts with a reliable buyer (typically 20 years) or Feed-in-Tariff in place with utility or State guarantee
- Due diligence covering technical, legal, permitting and insurance aspects of the project
- Financial case to have a debt service coverage ratio of 1.20/1.25
- Interest swap to cover at least 80% of the interest expense in the project
- Track record of developer and integrator/contractor
- O&M contract to cover several years of service
- Sound Investor/Owner

Profile of a Typical Solar PV Project Finance Scheme

- Non-recourse financing. Only guarantees: those provided by the project
- The assets to be isolated from other risks through a Special Purpose Vehicle
- All the assets and rights of the project are pledged in favor of the lender
- Term of the Finance: 15-20 years
- Leverage 75%+
- Cost: Libor/Euribor + spread + interest swap
- Reserve fund to be provided to cover 6 months debt service
- Finance of VAT associated with investments
- Bridge loan during construction

Wind Farms in Spain





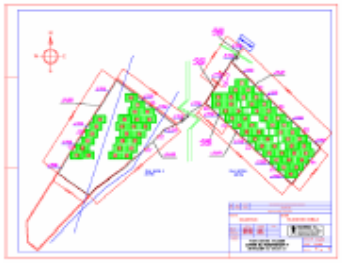
Promociones Solarpack

Isla Mayor (Sevilla)

Potencia total 8,4 MWp
Producción 14.516.000 kWh/año
Contratista: SunPower
FFPP: 70 inversores privados

Financiación: Santander 150

Terminado Octubre 2007
O&M SOLAR
Servicios Adm. SOLAR



Enero 2008

Lebrija (Sevilla)

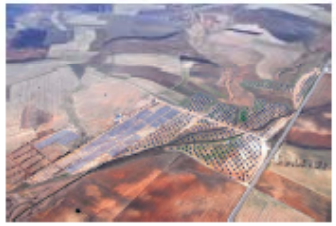
Potencia total 3,8 MWp
Producción 6,570,000 kWh/año
Contratista: SunPower
FFPP: 32 inversores privados

Financiación: Santander 150

Terminado Diciembre 2007
O&M SOLAR
Servicios Adm. SOLAR

Enero 2008

Llerena 1 (Badajoz)

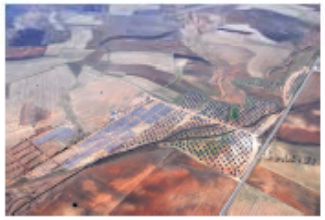


Potencia total 4,8 MWp
Producción 8.539.000 kWh/año
Contratista: SunPower / SOLAR
FFPP: 40 inversores privados

Financiación: BARCLAYS

Terminado Diciembre 2007
O&M SOLAR
Servicios Adm. SOLAR

Llerena 2 (Badajoz)



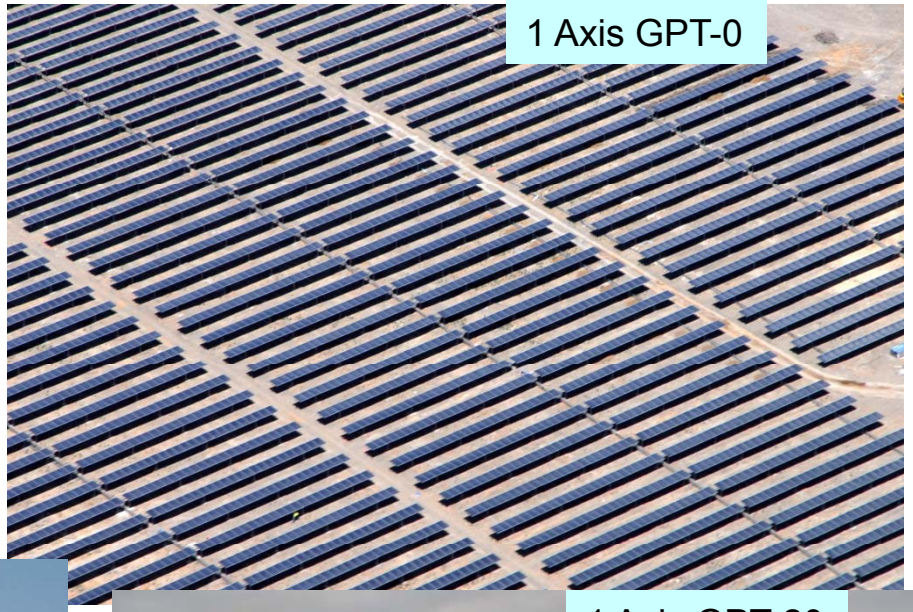
Potencia total 4,0 MWp
Producción 8.304.000 kWh/año
Contratista: Solon AG / SOLAR
FFPP: 40 inversores privados

Financiación: BARCLAYS

Terminado Diciembre 2007
O&M SOLAR
Servicios Adm. SOLAR

Fixed Tilt Structure

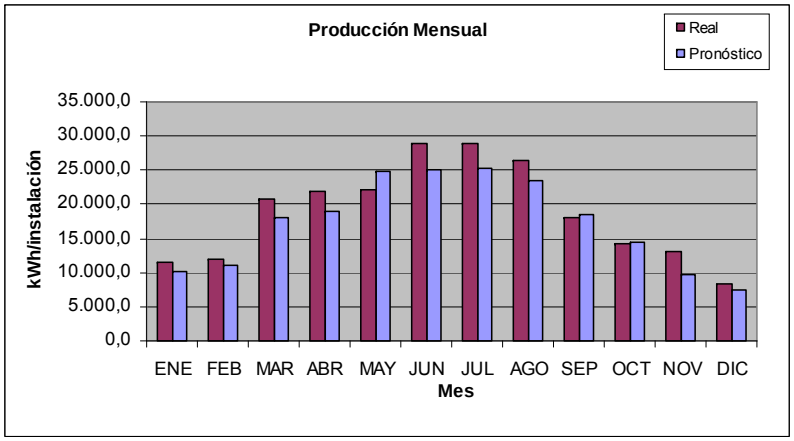
1 Axis GPT-0



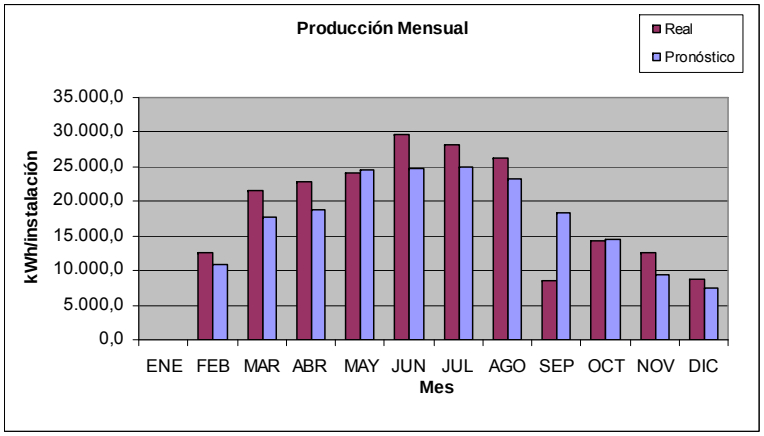
2 Axis Solon

1 Axis GPT-20

Isla Mayor (Seville)



Lebrija (Seville)



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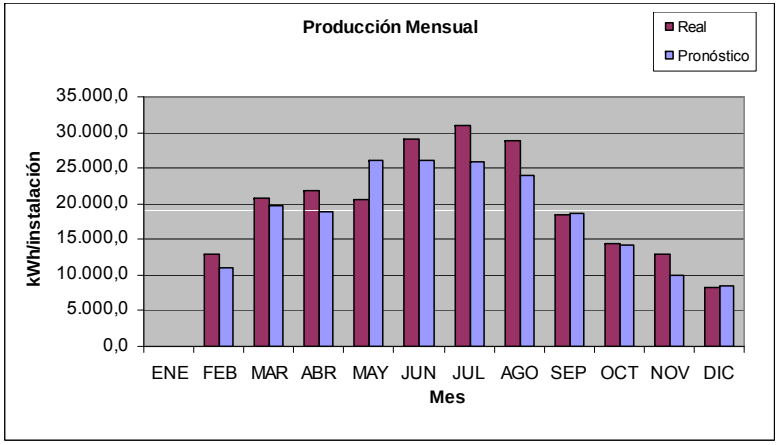
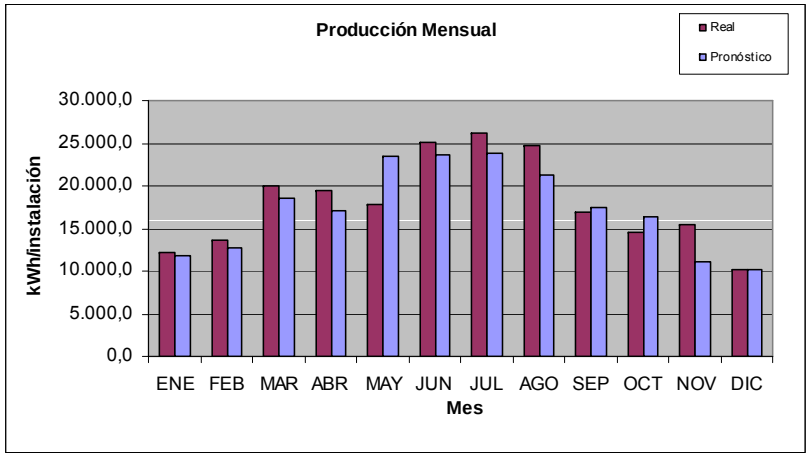


Llerena 2 (Badajoz)



Obstacles for Project Finance in Developing Countries

- Rare long-term commercial financial instruments in local currency
- If € or $ is used and PPA is in local currency, exchange rate risks play a role
- Off-taker guarantee and/or country risks
- Country stability is critical for long term investments

…add to typical renewable energy problems

- Electricity prices are kept under the cost level for political reasons

Solarpack Projects in Africa

Pan-African University Project

In Lagos, Nigeria

Among 50 best MBA centers in the world (FT)

Co-development with University

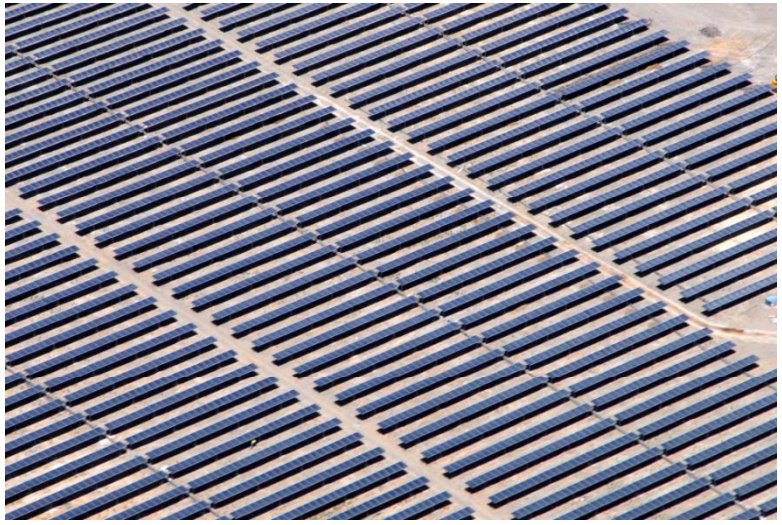
Total Power 0,4 MWp Solar PV

Hybrid installation with existing gen sets

Supplying the University needs

Confined environment with enough security

Excellent visibility for a successful project



Status: feasibility technical and financial

Financing: EU, private foundations, University

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