

Project: Thermo Solar Power Project (138 MW) in Greece and Cyprus

Location: Greece and Cyprus.

The Market:

The global concentrated solar power (CSP) market is expected to grow at a CAGR of more than 4% during the 2021-2028 period. As of 2018, the global installed capacity of concentrated solar power market was approximately 5.46 GW. Factors such as declining cost of CSP components, is likely to drive the concentrated solar power market during the forecast period. However, rapid decline in installation costs of solar photovoltaic (PV) plants, coupled with increased capacity factors, has improved the economic competitiveness of solar photovoltaic (PV) projects, worldwide. This makes CSP less lucrative, when compared to solar PV, due to several drawbacks, including high CAPEX, OPEX, and its limitation to utility scale. This is expected to hinder the market for CSP during the said period.

The molten salt technology accounts for 75% of the thermal energy storage developed for electricity applications worldwide. These applications also support CSP projects and dispatch electricity outside peak sunshine hours. This heat transfer fluid technology is expected to dominate the market in during the forecast period.

The Middle-East and Africa is expected to provide more opportunity for CSP market in the near future. This is due to the planned investment which is focused on mobilizing concessional financing and grants to help CSP scale up in the region.

Europe has dominated the concentrated solar power market, with the majority of the demand coming from Spain.

European countries received the maximum hours of sunshine. The region primarily had an essential role in the development of solar power. Substantial prices for grid-connected solar power were provided to encourage the industry.

Europe's installed CSP capacity is predicted to rise from 2.3 GW at the end of 2017 to 4 GW by 2030, based on current costs and market frameworks.

In Europe, Spain has been leading in the CSP markets after the United States, driven by government support schemes and feed-in tariffs in Spain.

The country has been the undisputed world's largest market for concentrated solar power installation since 2010, as the whole of concentrated solar thermal power plants in the country accounted for 72.85% of total installed capacity in the world.

Companies and research centers in Spain are taking the prime lead in the recent restoration of concentrating solar power (CSP), a type of solar thermal power.

Hence, with the increasing installed capacity, the Europe is expected to dominate the CSP market during the said period (2021-2028).

Solar Energy Resources in the Mediterranean countries and especially in Greece are among the finest in the world.

Greece offers excellent conditions for solar operations, with global electricity production levels between 1400 and 1800 kwh per Kw Installed.

Greece is a country with extremely high potential for solar applications, mainly due to:

- the high insolation all year round (among the highest in Europe)
- the electricity needs in the islands are mostly covered by diesel/heavy oil generation units, thus resulting in high operation costs and environmental pollution
- the significant tourism activity during summer (environmental burdens in some islands increases by more than 100%), thus offering significant seasonal correlation between energy demand and solar power generation.

However the solar power market is not adequately developed compared with other EU markets. In order to create more favorable conditions, nowadays a positive legislative and financing framework has been formulated (Operational Programme for Competitiveness – OPC-, Operational Programme for Energy –OPE-, deregulation of the energy market, new development Law, etc).

The Project:

The Project consists of two Thermo-Solar Power Plants with a total capacity of 138 MW in Greece and Cyprus. The projects are CSP (Concentrated Solar Power) thermal power plants fully permitted with Licenses for construction of solar thermal Power systems, located in Greece and Cyprus.

In Greece, the “Maximus Project”, totaling 88 MW, is in a ready for construction maturity stage, having secured a 25-year PPA at the extremely favorable price of 268 €/MWh. On top of that, the project has an approved subsidy of 92.4 million € from the Greek State.

In Cyprus, the Project is a 50 MWe CSP thermal power plant with 7-hour molten salt storage capacity in Cyprus, planned for 24 hours of continuous power generation. To achieve this a natural gas supplemental combustion system whose heat exchange power is consistent with the heat exchanger of the CSP project is combined with the CSP system to generate electricity.

1. MAXIMUS Project (88 MW) in Greece

- CAPEX : 302 €m
- OPEX : 6,7 €m Average per year (25 Years)
- Power Production : 178,088 MWh
- Power Selling Price : 268 € / MWh without subsidies
- Project IRR range : 12,9%
- Total Turn Over (25 years) 1,17 B EUR – Net Income 526 M EUR

2. Hybrid CSP Plant in Cyprus 50 MWe

Technical Assumptions

CSP Plant Capacity	50MWe
Storage Capacity	7hrs
Total CSP Annual Output	155GWh
Total CSP Annual output with the support of the natural gas combustion system	483GWh
Lifetime of the project	30years

- EBITDA: Between approx. €22.2m to €24.8m per year over the lifetime of the project.
- Net Profit: Between €12.1m to €15.6m over the lifetime of the project
- Cashflow: Approx. €7m per year throughout the 20-year payback period

Current Status:

- Ready for Construction.

To Do:

- Due diligence for each project (technical, legal, financial)
- Acquisition of the project through the acquisition of FN Development