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🖱 www.cnim.com/centrales-solaires-concentration.aspx

Concentrated Solar Power (CSP): design, construction, financing & plant operation

COMPANY



CNIM Solar Energy Division supplies turnkey concentrated solar power plants providing design, construction and plant operation in the fields of the Fresnel mirrors and solar tower.

CNIM is a pioneer in CSP (since it designed and built the Themis boiler in the 1980s) and becomes a key player in the revival and development of the solar power sector.

The CNIM Group designs and produces turnkey industrial solutions with high technological content, and offers expertise, services and operating solutions in the fields of Environment, Energy, Defense, Life Sciences and Industry. It is

a medium sized company present in 15 countries with 2,772 employees. Listed on a public regulated market, Euronext Paris, CNIM is based on a stable family shareholding. The 2012's revenue was 722 Million € (59% from exports).

CNIM Group is organized into three business sectors: Environment, Innovation & Systems, Energy.

SERVICES

CNIM Solar Energy Division develops turnkey projects for solar power plants and draws on the skills of the entire CNIM Group to offer a range of innovative technologies. CNIM is active in this field in a number of ways:

- Design and construction: CNIM designs and builds the concentrated solar power plant based on Fresnel technology. CNIM can also provide plant operators with any technical assistance they require.
- Design, construction and operation: CNIM designs, builds and operates the concentrated solar power plant.
- Design, construction and financing; Plant operation and sale of generated power: CNIM takes full responsibility for the concentrated solar power plant.

CNIM designs the essential components of the plant in detail according to its own in-house procedures, including in particular the solar field, thermal energy storage, power generation and integration with existing systems (hybridization).

PRODUCTS



Mirrors are used to concentrate the sun's rays onto a receiver tube in order to turn water into steam.

The steam thus produced can be used for:

- Power generation, via a turbo-generator group (a steam turbine or ORC group). CNIM's solutions range from a few megawatts up to several tens of megawatts of electricity. The power stations can easily be integrated into the existing grid, or can equally be used in so-called isolated sites.
- Heat generation: process steam for industrial applications of all kinds, in the food industry, metalworking, chemical and other sectors. CNIM solar boilers can also be hybridized with the steam networks of existing thermal plants, as boosters.
- Cold generation, via sorption cycle equipment using absorption or adsorption.
- Producing fresh water.

REFERENCES

Completed projects



Thémis solar boiler in Targassone, Pyrénées Orientales in the 1980s (10 MWth / 2.5 MWe)



The CNIM CSP Module, operating automatically at the Seyne-sur-Mer since its official opening by the Minister for Industry in 2010

Current projects



eCARE: Preindustrial demonstrator of concentrated solar power plant in Morocco, 1 MWe with ORC & thermal storage



eLlo: CSP plant in the Eastern Pyrenees, France, 9 MWe with thermal storage



Architectural view of the eLlo project

INTERNATIONAL PRESENCE

Target countries for CNIM technology are located in the MENA (Middle East and North Africa).

The Moroccan institute IRESEN is a partner of the eCARE projet (Innotherm I & Innotherm II tenders).