



## Key-note of Eduardo Zarza

**Title:**

***The role of concentrating solar thermal systems in the decarbonisation of the energy sector***

**Summary:**

Concentrating solar thermal systems deliver clean energy that can be used for either electricity production (the so-called “solar thermal power plants”) or thermal energy supply to industrial processes consuming thermal energy (the so-called “solar heat for industrial processes”, SHIP). The affordable and reliable thermal energy storage systems currently used in these solar systems make electricity generation at night more cost effective than electricity produced overnight with other renewable energies (e.g. photovoltaic plants or wind farms using batteries to store electricity during the day). However, the electricity produced during sunlight hours with photovoltaic plants is the cheapest renewable electricity at present. Therefore, there exist an excellent complementarity between photovoltaic plants to produce electricity during the day and solar thermal power plants with thermal storage systems to produce electricity at night.

On the other hand, SHIP systems are an affordable option to deliver thermal energy to industries in a wide range of temperature, up to more than 1000°C. Since 74% of the world energy consumption of the industrial sector is in form of heat, SHIP systems can significantly contribute to the decarbonisation of the industrial sector. Therefore, concentrating solar thermal systems can provide clean electricity and heat at affordable costs, thus contributing to the decarbonisation of the energy sector.

The several technologies available for concentrating solar thermal systems will be presented in this key-note, and their commercial potential for electricity generation and thermal energy will be analysed.