

Analyzing the Emerging Technology of Concentrated Solar Power

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Abstracts

With the advent of technology, a new generation of power plants has emerged. These power plants, with concentrating solar power systems, use the sun as a heat source. There are three main types of concentrating solar power systems: parabolic-trough, dish/engine, and power tower.

Concentrating solar power systems utilizes concentrated solar radiation as a high temperature energy source to produce electrical power and drive chemical reactions. These clean energy technologies are advantageous for Sunbelt applications where direct solar radiation is high. The first commercialized plants have been in operation in California since the mid-1980s, providing the 354 megawatts of the world's lowest-cost solar power.

There are many types of systems being developed for different markets and these vary according to the concentration devices, energy conversion methods, storage options and other design variables. Much attention is centered on the multi-megawatt systems that are appropriate for the on-grid market, complementing the other major solar technology, photovoltaics, most appropriate for smaller, off-grid applications.

Concentrating solar power's relatively low cost and ability to deliver power during periods of peak demand - when and where it's needed - means that it can be a major contributor to the world's future needs for distributed sources of energy.

Aruvian's R'search analyzes the Emerging Technology of Concentrated Solar Power. This research report is a comprehensive analytical compilation which analyzes the basics of solar power, the pros and cons of solar power, availability of solar power, and the various uses of solar power. It is very necessary to understand the basics of solar

power in order to build on that knowledge and analyze concentrated solar power.

The section on concentrated solar power begins with a historical analysis of concentrated solar power, the conversion of solar heat into electricity (that is, the primary benefit of CSP), the section further analyzes why concentrated solar power is necessary in today's energy-hungry world. An analysis of the technology behind CSP follows after this. The technologies analyzed in Aruvian's report include Central Receiver/Solar Tower, Parabolic Troughs, and the Parabolic Dish. Case studies of projects utilizing these technologies are included in the report.

CSP developments in various countries such as Australia, Algeria, Egypt, India, Israel, South Africa, Spain, and the United States among others, are analyzed in the research report. Industry barriers and opportunities also are included.

Aruvian's report *Analyzing the Potential of Concentrated Solar Power* analyzes the leading 73 companies involved in this industry. Major industry players such as Q-Cells, Solarwatt, TerraSolar, Unisolar, GT Solar, Coolearth Solar, and many others are analyzed.

Summing up, the report concludes with an analysis of the various projects going on in the industry, which are setting new standards for CSP technology worldwide. *Analyzing the Potential of Concentrated Solar Power* is a complete analysis of the lucrative technology called Concentrated Solar Power.

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