

# What is Solar Paraboloid Technology?

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## About Solar Paraboloid Technology:

- It is an **advanced form of concentrating solar power (CSP)** technology.
- It not only **enhances the efficiency of solar energy capture** but also addresses the limitations that have long plagued traditional photovoltaic (PV) systems.
- **Working?**
  - Solar paraboloids **operate using a Parabolic Trough Collector (PTC) system**.
  - These systems **consist of long, parabolic mirrors** that **focus sunlight onto a receiver tube** placed at the focal line of the mirror.
  - The **concentrated solar energy heats a fluid** within the receiver, which can **then be used to generate electricity or provide direct heat** for industrial processes.
- **Benefits:**
  - Solar paraboloids are highly **efficient in concentrating solar energy**, which means that **more electricity** can be **generated from the same amount of sunlight**.

- This efficiency could lead to **lower costs per unit of electricity produced**, making solar energy more competitive with traditional fossil fuels.
  - Another key benefit is its **ability to operate at higher temperatures, up to 300°C**, which significantly **increases thermal efficiency**. This is achieved by reducing heat losses through a smaller absorbing surface area.
  - The technology can **produce energy even in low-light conditions**, making it a versatile solution for diverse environments.
  - Solar paraboloid systems are **scalable and** can be **deployed in various configurations**, from small-scale applications to large solar farms.
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## Q1: What is a paraboloid?

A paraboloid is a three-dimensional surface generated by rotating a parabola around its axis. It is a fundamental shape in mathematics and has a variety of applications in engineering, physics, and other fields.

**Source:** [Explainer: Solar paraboloid technology – The next frontier in renewable energy](#)

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