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## Concentrix™ technology : Q&A

[What are the differences between Soitec's Concentrix technology and conventional photovoltaic technology?](#)

[What are the advantages of CPV technology compared to other solar technologies?](#)

In regions with high Direct Normal Irradiation (DNI), CPV is the most cost-effective way to generate solar electricity. In addition to cost, the technology offers a number of other advantages:

- **Energy production fits with demand:** the combination of high efficiency and dual-axis tracking ensures high energy yields throughout the day.
- **Smallest environmental footprint:** CPV limits CO<sub>2</sub> emission, has a very short energy payback time and allows low land coverage without permanent shading. The technology does not need cooling water.
- **Outstanding durability:** The robust glass-glass design without laminate material prevents degradation due to yellowing. The multi-junction solar cells offer a clear advantage in hot regions due to a very low temperature coefficient compared to other photovoltaic technologies.

[How much does it cost to generate electricity using a Soitec CPV power plant? How do these costs compare to conventional photovoltaic technologies?](#)

To have a useful comparison, it is important to look not at system costs, but rather at electrical production costs, which are calculated by depreciating the initial investment costs, adding operating and maintenance costs, and factoring in annual energy yield. There is a much stronger relationship between cost and plant location (i.e., the available solar radiation) than for conventional photovoltaic systems. In hot and sunny regions with high DNI, CPV typically has a lower cost of electricity than traditional photovoltaic.

[Who developed Concentrix technology?](#)

[What is the advantage of using glass for the Concentrix Soitec CPV modules' top and bottom plates?](#)

[What efficiencies does Concentrix technology offer?](#)

[What is the energy yield of a Soitec CPV power plant?](#)

The amount of electricity produced is firstly dependent on the location. Concentrix technology is especially suitable for use in regions having a large fraction of direct normal irradiation and guarantee large energy outputs even at high ambient temperatures.

[What maintenance is required for a Soitec CPV power plant?](#)

The modules have to be cleaned periodically and the trackers require basic gear and motor maintenance.

[Where are the target markets for Soitec's CPV power plants?](#)

The efficiency of the technology is dependent on high Direct Normal Irradiation (DNI). Therefore, the technology is best suited to very sunny countries like the North and South of Africa, the Middle East, Australia, part of South America and the Southwestern United States. As an example in North Africa many sites offer excellent DNI of around 2,500 kWh/m<sup>2</sup>·yr.

[Is there a minimum system size or minimum purchase requirement?](#)

CPV is designed for utility-scale power plants between one and hundreds of megawatts. Due to the modular approach it is easy scalable. For demonstration projects smaller units can be installed.

[How much space is needed for a plant?](#)

The ideal space consumption for a CPV power plant balances cost of land (motivating closer spacing of CPV systems) and shading losses (motivating wider spacing). Therefore the CPV system spacing is usually calculated for each power plant project individually. The space needed for a CPV power plant with 1 MWp results in an area between 1,7 and 2,4 ha. Shading losses are minimized with a power plant area of 2,4 ha.

[Can I buy single CPV modules from Soitec?](#)

Yes. In September 2012 Soitec launched a module-only solution for utility-scale power plants. This solution gives our customers the flexibility to integrate Soitec CX-M500 modules in own CPV systems. The modules-only solution includes proactive humidity control with the air drying unit CX-AD1 and module brackets for installation. A requirement for high power output and reliable operation is a suitable tracker with a high precision tracker control unit.

[Can I install Soitec CPV modules on my home or business rooftop?](#)

No. Since the modules can only use direct solar radiation, they have to track the sun using dual-axis tracking. Therefore they are not suitable for installations on buildings. In addition, the system is too big and too heavy to install on the roof of a house.

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