

The image features a vibrant, slightly blurred background of a green field under a bright blue sky with scattered white clouds. In the center-right, a black signpost stands in the field, holding a white rectangular sign. The sign displays the 'SOLARUS' logo, where the 'O' is a stylized orange sun with a gradient. Below the logo, the tagline 'Unlocking Solar Energy' is written in a blue, sans-serif font. An orange horizontal bar is positioned at the top left of the image.

SOLARUS
Unlocking Solar Energy

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Solarus provides the next generation solar energy technology to professional large-scale users. Our ingenious solar panel solutions enable our worldwide customers to harvest heat and power from the sun.

We have three types of systems in our portfolio: thermal panels, PV panels, and hybrid panels (PVT). The MaReCo (Maximum Reflector Collector) technology coupled with additional innovations we have brought forward is the basis which makes Solarus panels competitive compared to respective peers for all three platforms in terms of cost, performance and features.

The solar panels from Solarus are based on a concentrating solar capture technology that has evolved over approximately 15 years. The R&D projects were put together by several major Swedish companies and top research institutions. The findings of their research inspired and made it possible for Solarus to bring forward high performance solar panels with cost-effective design and material-efficient structures

Solarus thermal and hybrid panels both enjoy high system efficiency and low heat loss at a wide range of temperatures. The ability to maintain high performance at high temperatures allows our panels to be suitable for more demanding applications such as water treatment and desalination as well as cooling. On the other hand, the use of expensive silicon is reduced in Solarus' PV panels compared to traditional PV panels, which reduced our cost of production and give our customers a shorter investment payback time.

Apart from high quality and cost saving, we endeavor to offer additional important values. Our design has many unique advantages, such as low weight, straightforward installations and high efficiency under diffuse light environment. All of which allows the panels to be used in many different scales and geographic regions. Lastly, by making use of recycled materials, we managed to produce truly green products with extremely low material content.

District Heating centers

A calculation done in Sweden showed that a district heating project powered by 2400 square meters of our solar thermal collectors could achieve a price of 0.163 SEK/ kWh. In global market, even without any subsidies, similar district heating projects could produce heat at less than 0.07 US Dollars/kWh, considering 10 years pay back time

Hotels and Office Buildings

A system with 10 solarus thermal or hybrid panels coupled with central heating/cooling devices is able to provide three comfort solution for 200-300 sqm space by covering 6 000 kWh of energy required for cooling, 9 000 kWh of energy required for heating, and electricity saving worth 1300 Euro in many countries. We believe such a system would be ideal for hotels and office buildings to cut down their operating cost and achieve high environmental profile at the same time.

Residential

Our hybrid is an all-in-one affordable solar solution for homeowners. For a typical household of four people, 8 to 12 panels would be sufficient to cover hot water and electricity need, and a portion of room heating need in the winter. The payback time for such a system is less than 5 years in countries with Feed in Tariffs.

Production Facilities

Solarus thermal panels are the ideal solution for production facilities that require high temperature heating. Many existing solar thermal collectors are either not able to maintain the high efficiency level beyond 100 °C or too expensive to be adopted as an economically viable solution. Our panels on the other hand have unprecedented high efficiency level up to 250°C with a price lower than normal vacuum tube thermal collectors.

Solar Farms

The lower cost per Watt achieved by our PV panels would allow our customers to increase their profitability. In addition, for a large scale system of 100,000 sqm of our panels only 209 actuator motors is needed. The system power that our tracker panels spend on motors are only 0.1% of the total power output, compared to about 2-10% of other typical heliostat structures.

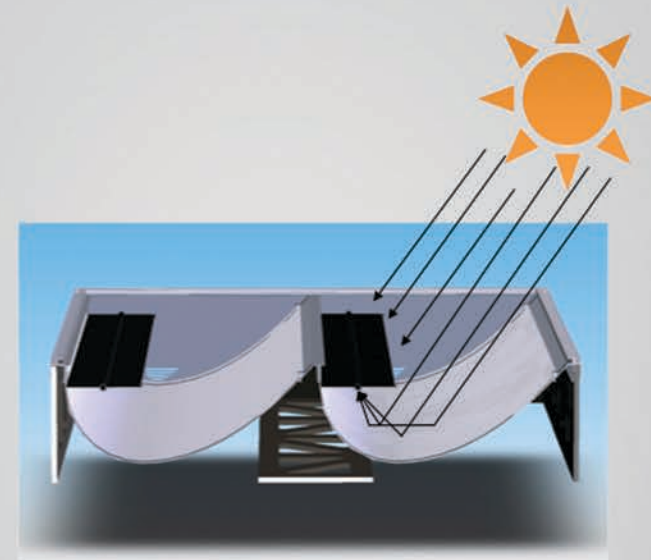


Stand-alone Micro systems

Solarus is also active in promoting the usage of solar energy in developing countries where cost of solar panels are too prohibitive. We have developed a 300W stand-alone hybrid system that is sufficient to take care of the basic electricity and hot water needs of small households.

Our 300w system standing alone is enough to power basic lighting of the house and a few electronic appliances such as TV and radio. In addition to power, the systems produce heat that could be used to provide domestic hot water or room heating.

The Micro System is extremely robust and also has a low weight, so that it can be installed without strengthening of the rooftop and maintained with little efforts. The system performs well even under diffused light, which makes it suitable for customers who live in areas with large rainfall and clouded weather. Moreover, the panel is dust-prove, which allows it to be able to stand haze and other hazards.

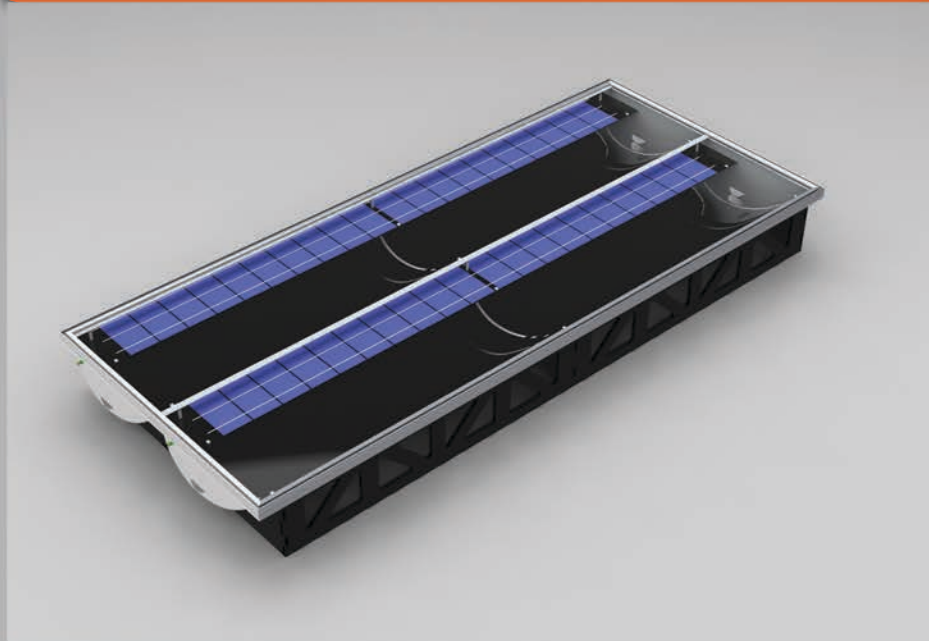


The technology and product development within Solarus has focused on the simple objective of making solar energy a major source of global energy supply. The constant innovation on product and production method, led by our technical team, allowed our panels to achieve high competitiveness and quality.

Solarus' technical team pioneered MaReCo technology (also known as Maximum Reflection Concentrator) nearly fifteen years ago in a joint research and development project by accomplished Swedish research institutions and companies including Uppsala and Lund Universities, Vattenfall and the Swedish Energy Agency. The inventor and the CTO of Solarus, Stefan Larsson and his engineering team is one of the most experienced engineering teams when it comes to solar applications. They use a combination of the old knowledge regarding concentrating solar collectors that has been around for more than twenty years and the latest cutting edge technologies such as carbon fiber and silicon ribbon manufacturing.

Solarus has also solved a problem that many of our competitors face, namely that when sunlight heats up the solar cells to high temperatures the electricity becomes unstable. In our systems, there are features built into the design that helps to keep the solar cell at temperature levels where they function optimally.

The Hybrid System



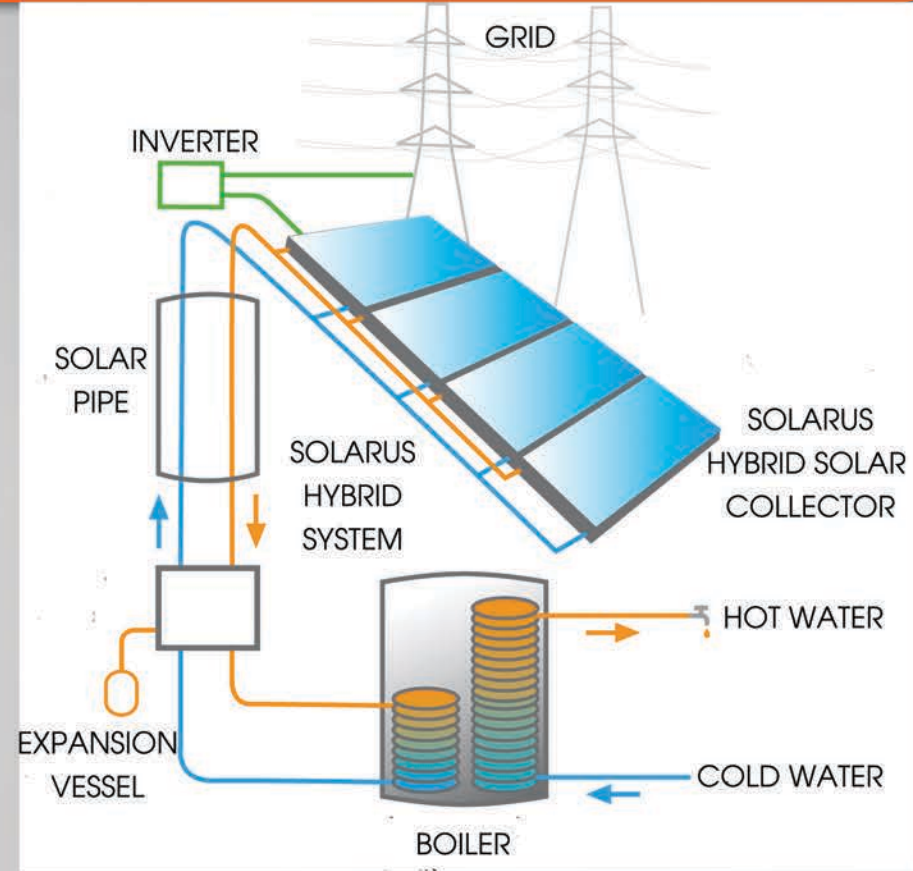
Recently, Solarus has developed a unique solar panel design that incorporates the photovoltaic to the original thermal system. A PV/thermal (PVT) system was by definition a 'combination' system, which produced both electricity and heat from one integrated system using the same surface area.

This type of system is advantageous because it enables the clean production of two types of energy— instead of just one. The value proposition of the PVT system is that it quadruples the energy production of a traditional PV system. It also allows the PV component to operate at its peak electrical output and mitigates the degradation of PV cells due to overheating (which is a common problem). The PVT system produces two types of energy from one surface area, which solves the growing problem of "competing roof space"

For lower price than a normal PV module, our hybrid panel is able to produce the same level of electricity and a substantial amount thermal energy in addition. Thermal energy can be used for heating, cooling, desalination, water treatment etc.

The return of investment in a hybrid will be shared between power and thermal energy production, bringing the price/kWh of power far lower than from any known PV systems of today.

How the System Works?



In a normal PV system, an inverter is usually connected to the PV modules in order to pass the electricity to the grid. However, passing back to the grid is not yet allowed in all countries. A battery is therefore needed to store the electricity generated by the PV panels

As for Thermal system, an accumulator tank (boiler) is necessary to store the heat from the thermal solar collectors in the form of hot water. The hot water inside the boiler could be used directly as tap water or could be channeled into heat exchange elements for room heating.

Our new hybrid system is not more complicated than a combination of the two systems mentioned above with uniform solar panels instead of side by side PV modules and thermal collectors. The heat output from the hybrid panel is transferred through solar pipes to the heat storage boiler while the electricity is transferred to the inverter or to a battery.