



A new horizon for solar energy

Soltigua presents PTMx,
the parabolic solar collector
for a wide range of applications.





PTMx: the parabolic trough for a wide range of applications

PTMx

PTMx, Soltigua's parabolic trough, is developed and produced in Italy. Due to several innovations, PTMx includes all the advantages of solar concentration that used to be available exclusively in large solar thermal power stations.

Today, this innovative technology becomes available for a wide range of applications.

Industrial process heat

Soltigua's PTMx parabolic solar collector harvests the energy of the sun to provide heat to industrial processes for generating hot water, steam, hot oil and hot air.

Thanks to the abundant solar radiation available throughout the solar belt, a vast number of industrial processes can integrate traditional energy sources with solar energy. Energy savings and environmental pollution reduction are particularly efficient in processes where daily and annual demand for heat is constant, or where peaks of demand are reached during summer (e.g.: dry-cleaning facilities for tourist resorts).

PTMx can generate process heat up to 250°C by heating steam, thermal oil or water, both directly or indirectly depending on what is best for each industrial process. PTMx modular design makes it simple to integrate solar energy also into existing industrial systems.

Solar cooling

Solar cooling generates air conditioning from solar energy and takes advantage of summer high solar radiation and the need for air conditioning during the same period, thus reducing significantly energy consumption during peak hours.

By feeding high temperature heat to a double effect water-lithium bromide absorption chiller, PTMx permits the maximum exploitation of the solar potential with an energy efficiency which can not be reached by other solar technologies. PTMx can be integrated into a complete HVAC system that contributes also to hot water production and winter heating.

Furthermore, by using clean and renewable solar energy, concentrating collectors such as PTMx represent the most appropriate technology for realising solar district heating and cooling systems.

Further applications

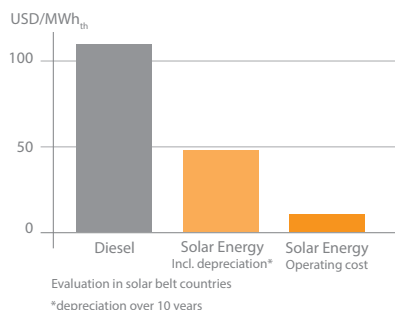
PTMx can also be applied in:

- localised power station plants;
- industrial refrigeration at temperatures below 0°C;
- seawater desalination plants.



1 m² of PTMx can produce over 1000 kWh annually at 150°C, hence avoiding the emission of over 200 kg of CO₂ into the atmosphere¹.

Cost savings



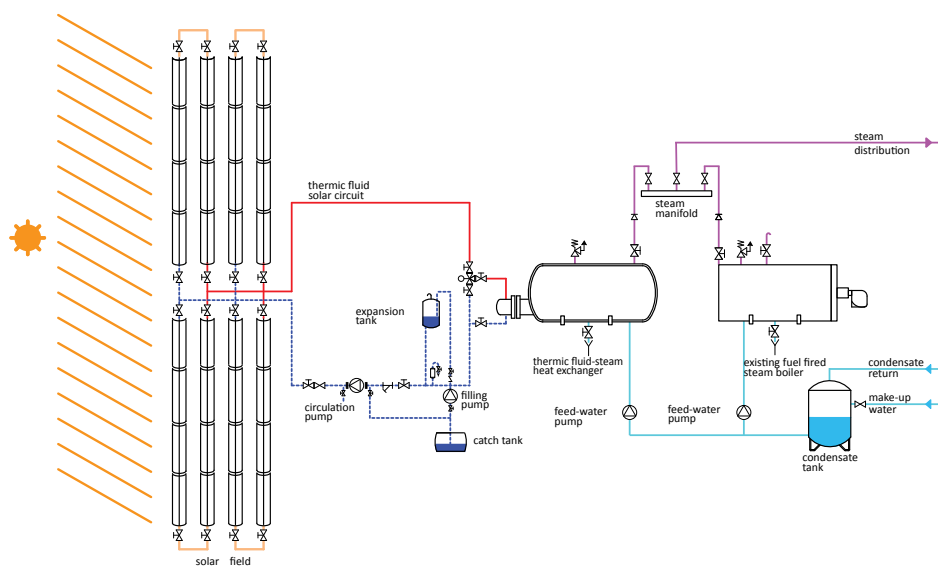
Integrating Soltigua collectors in the existing heating process is a convenient option which gives:

- Rapid return on investment
- Energy coverage up to 70%
- Strong operating cost reduction
- Reduction of CO₂ emissions
- Independence from volatile fuel markets

The fuel replacement fraction depends on several factors such as the radiation available on site, the working conditions, the space available.

Case study

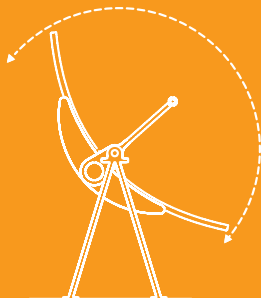
A steam process for the pharma industry in India, which consumes more than 400'000 liters of diesel per year can offset more than 30% of its annual bill by installing a solar field with a collecting surface of 1'134 m².



- Fuel savings: 132'000 lt/year
- Cost reduction: -59% (inc. 10-year depreciation)
- Operating cost reduction: -96%

¹ The above-listed energy data of the parabolic troughs are purely indicative.

The efficiency of the solar concentrators could vary depending on the installation's location and orientation, climatic conditions, plant design adopted and the fossil fuel which is being substituted.



Technical overview

PTMx is available in four basic models of different size, that can be combined in order to realize customized solar fields, starting from few hundred square meters of collecting surface.

Model	PTMx -18	PTMx-24	PTMx-30	PTMx-36
Net collecting surface [m ²]	41	54	68	82
Aperture width [m]	2,4			
Length [m]	20,7	27,2	33,2	39,6
Reference thermal capacity* [kWt]	23	31	39	47
Mirrors	Weather resistant highly reflective tempered glass			
Receiver	Not evacuated and selectively coated receiver			
Working temperature	Hot water up to 110°C; thermal oil up to 250°C			
Heat transfer fluid	Hot water or thermal oil			
Pressure	Up to 10 bar			

*= corresponding to a specific power of 537 W/m² at the following operating conditions: T_{Outlet} = 200°C; T_{Inlet} = 180°C; T_{External} = 30°C; DNI = 900 W/m²; Longitudinal Angle = 0°.

Further features of Soltigua PTMx collectors include:

- Maximum efficiency for solar cooling
- High energy savings
- Reduction of CO₂ emission
- Elimination of environmental impact
- Modern design for a sustainable architecture
- Wide range of working temperature, unreachable by traditional collectors
- Adaptable to all sizes, from mini to maxi



Soltigua concentrating collectors can supply solar energy to thermal processes up to 320°C. By manufacturing both parabolic troughs and Fresnel collectors, Soltigua can offer the most suitable solution for the specific client needs.

For further information and request for proposals please contact: info@soltigua.com



Via Roma, 54 - 47035 Gambettola (FC) - Italy
Tel. +39 0547 52600 - Fax +39 0547 52756
info@soltigua.com - www.soltigua.com