



Concentrated solar thermal for process heat

Utilise the energy of the sun
to reduce fuel costs and increase profits



Laundry | Community Cooking | Dairy | Textile

Solar power is an inexhaustible, free source of energy, and India receives plentiful solar radiation. A.T.E. has developed an innovative Concentrated Solar Thermal system that can provide process heat for various industrial and commercial applications. A.T.E.'s unique approach to combine energy efficiency with renewable solar energy delivers the largest savings in carbon-intensive fuels, and directly influences the bottom-line.

A.T.E.'s solar thermal concentrator automatically follows the sun throughout its motion in the sky. It reflects and concentrates sunlight onto a “receiver” filled with water and mounted at the focal point of the concentrator, thereby generating steam. A.T.E. is empanelled as a manufacturer with the Ministry of New and Renewable Energy (MNRE), Government of India. MNRE's Regional Test Facility at the University of Pune has certified the performance of the A.T.E. solar concentrator.

User benefits



Customised to the application



Attractive payback



No special skills required for operation



In-built safety features



Low maintenance costs

General data

Particulars	Value
Aperture area	25 m ²
Receiver aperture diameter	0.35 m
Focal length	4 m
Operating temperature range	50-180 °C
System weight	1800 kg
Maximum wing speed under tracking	10 m/s
Useful life of structure	20+ years
Receiver absorptivity	95%
Mirrors	Solar-grade, >85%

Thermal performance

Particulars	Value
Quantity of steam generated/day*	100 kg
Dryness fraction of steam	>85 %
Annual steam generation	24000-30000 kg/y
Rated thermal power**	13.75 kW

* Average rated conditions DNI (Direct Normal Irradiance) 5 kWh / m² / day

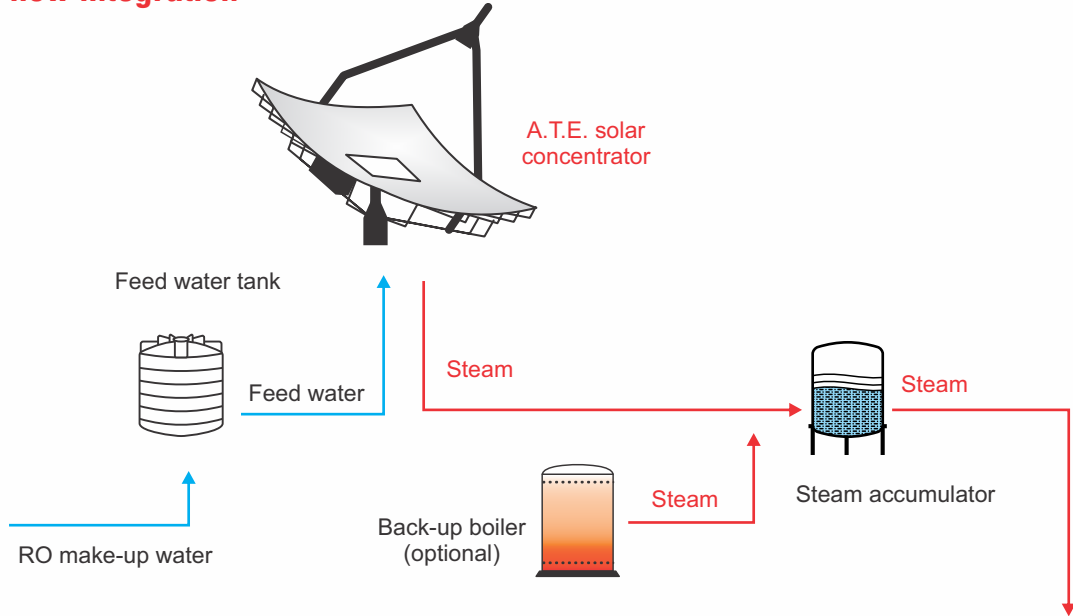
** Rated conditions at DNI 1000 W / m²

A.T.E. is a value-driven and socially conscious organization that has served the nation's needs for 75 years. A.T.E. firmly believes that sustainable development is possible only when corporates get involved in sustainable business practices. Through this passion and commitment, A.T.E. has invested in and developed technologies and products such as energy-efficient cooling solutions, effluent treatment, machine-to-machine solutions, and solar concentrators. These products enable our customers to meet their business and sustainability goals. A.T.E.'s commitment to the environment goes beyond its environment-friendly products and solutions to green work spaces and its green practices. Its latest facilities in Ahmedabad and Pune are IGBC LEED 'Gold' certified for conforming to the eco-friendly norms for buildings laid down by the Indian Green Building Council (IGBC).



Fully automated moving-focus paraboloid concentrator technology

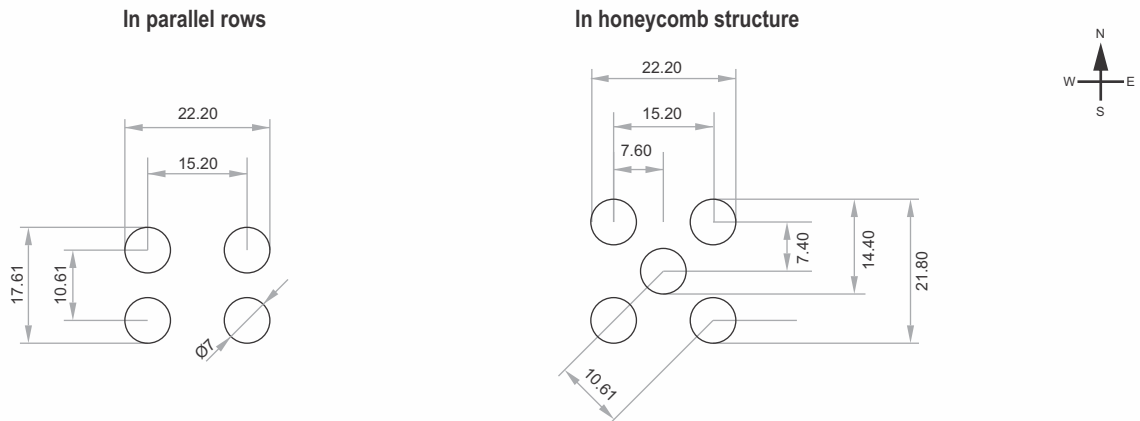
Process flow integration



Applications



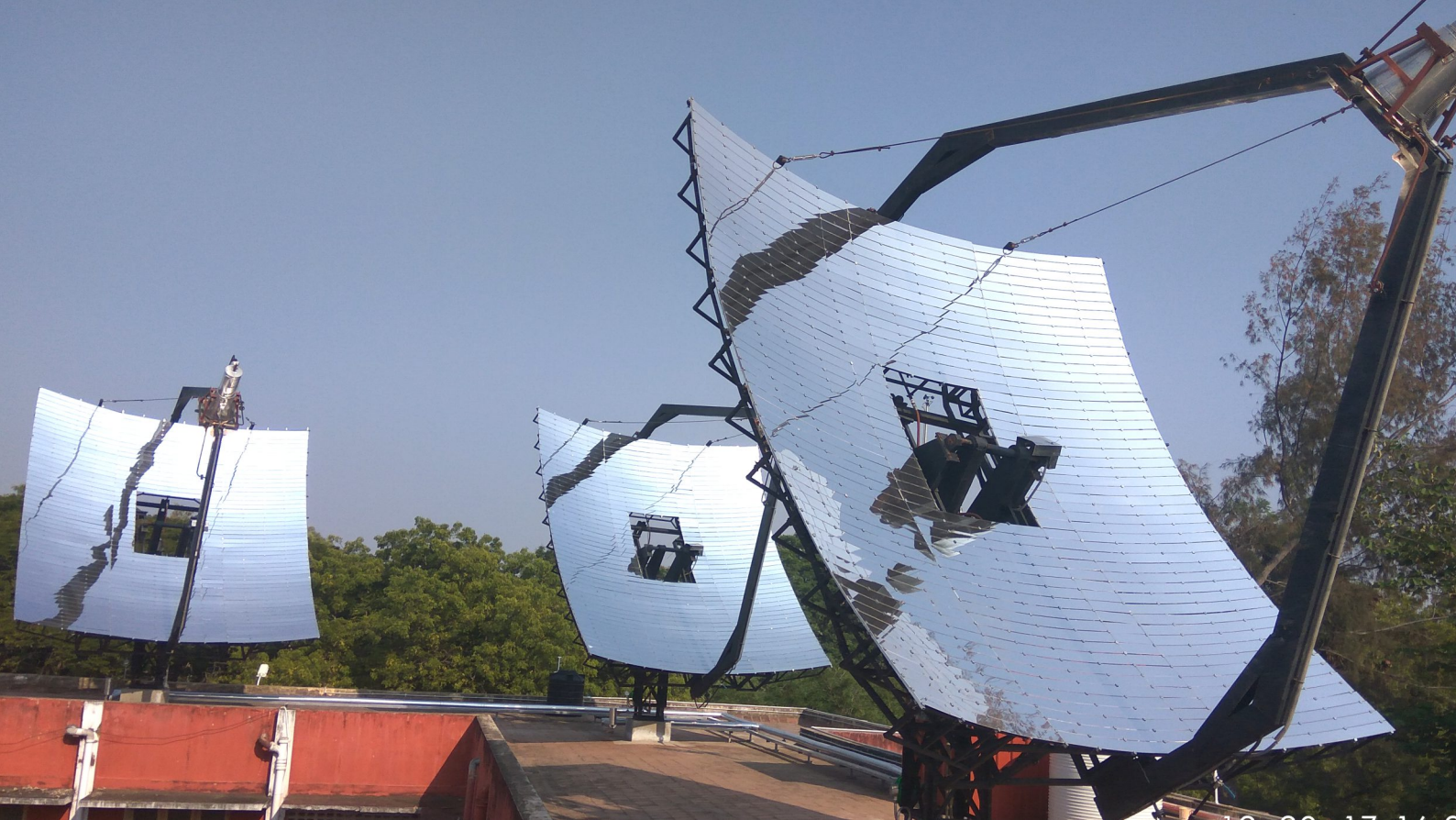
Solar field schematic layout (all dimensions in metres)



Typical savings* for 100 m² installation

Fuel type	Fuel savings/day	Cost of fuel, Rs./unit	Savings, Rs./day	CO ₂ avoided, kg/day
Electricity	341 kWh	Rs. 7/kWh	Rs. 2388	375 kg
LPG	28 kg	Rs. 65/kg	Rs. 1844	84 kg
Diesel	30 l	Rs. 57/l	Rs. 1705	95 kg
Coal	176 kg	Rs. 8/kg	Rs. 1408	325 kg
Furnace oil	32 l	Rs. 30/l	Rs. 971	100 kg

* At rated conditions



Our successes

“ A.T.E. Solar’s steam-based cooking solution not only eliminated our need of firewood, but also reduced cooking time and drudgery. The cooking staff now work in a clean environment and go home early to spend quality time with their families.”

Principal, Nareshwadi School, GVET, Dahanu, Maharashtra

“Buying large quantities of diesel for our factory operations was a huge drain on our income, and slowly drove down the laundry’s profits. ...Fuel cost is now under control, thanks to usage of A.T.E. Solar’s thermal concentrator solution.”

Owner, Lakaki Dry Cleaners and Art Dryers, Margao, Goa

“A.T.E. Solar’s concentrator has helped improve my laundry’s profitability by more than Rs. 25,000 per month.”

Owner, Snow White Drycleaners, Parbhani, Maharashtra

Industries



Textile



Dairy and Food



Automobile



Distillery



Chemical



Educational
Institutions



Pharmaceutical



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partnering
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