

SOLAR THERMAL HEATING SOLUTIONS

ENERGY EFFICIENT ENVIRONMENT-FRIENDLY
SOLAR THERMAL SOLUTIONS



SolPac™ NI30 Non-Imaging Collector

SolPac™ NI30, the non-imaging collector from Thermax, caters to heating applications up to 95°C. Secondary reflector which is placed beneath the evacuated tubes ensures maximum solar radiation capture across seasonal variations. Thus, SolPac™ NI30 is best suited for industrial and various heating applications.

SALIENT FEATURES

- Solar grade parabolic shaped secondary reflector > 90% reflectivity
- Product complies to DIN, EN-12975 and ITW
- Seamless integration with existing system
- Mountable on ground as well as flat or inclined roofs
- Proven technology, modular design with No tracking requirement
- Forced circulation system
- Reduced footprint with light weight design

BENEFITS

MNRE, Government of India provides subsidy up to 30% of Project Cost or Rs. 3600/m² of reflector area (whichever is lower).

Tax benefit : Accelerated depreciation benefit up to 80% in the first year & 20% in the second year.

Attractive payback period with fuels like HSD, FO, LPG and electricity.

Maintenance free: No dedicated manpower required.

Zero energy cost.



TECHNICAL SPECIFICATIONS

Reflective area - 3.4 m²

Aperture area - 3 m²

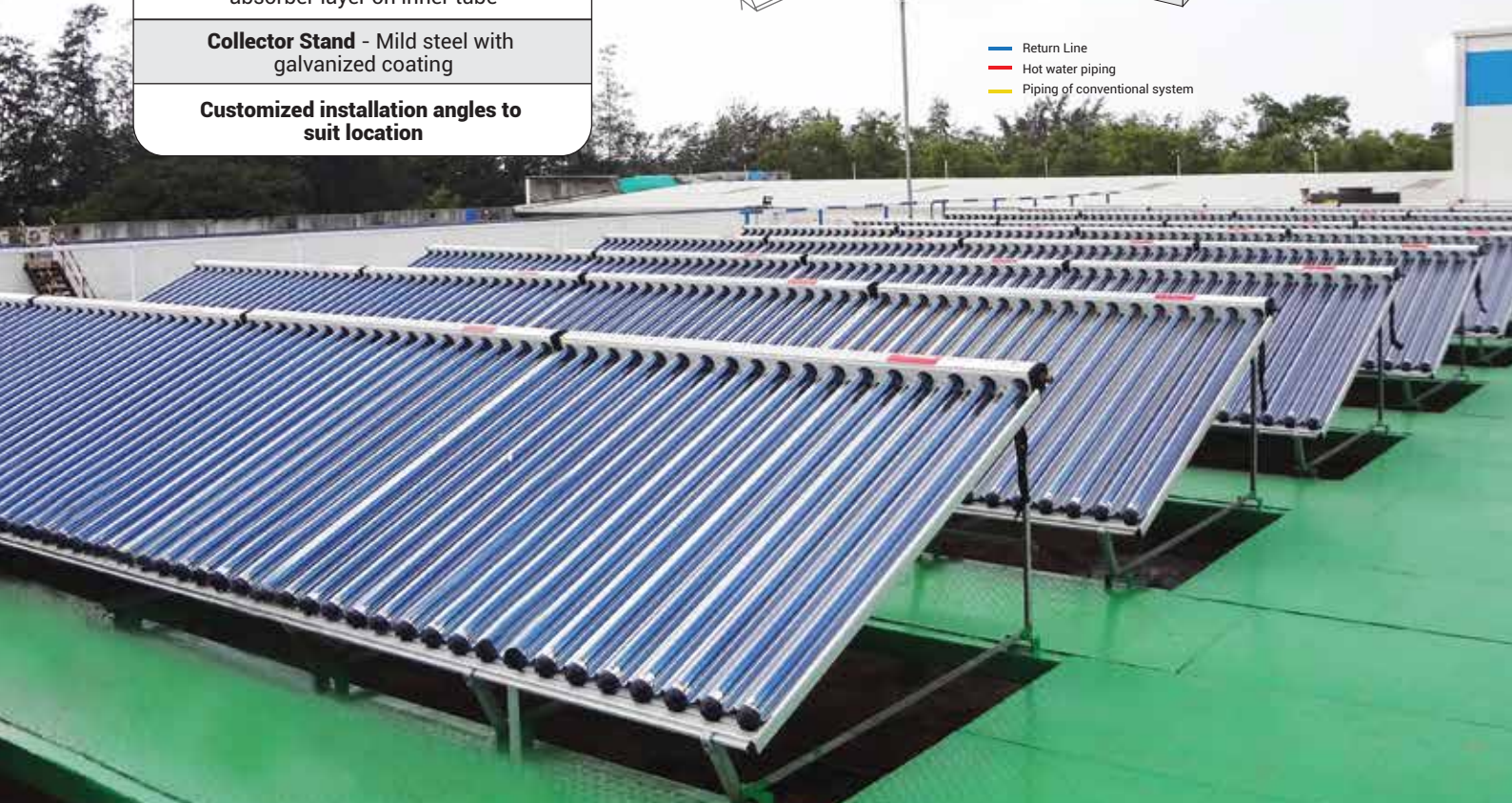
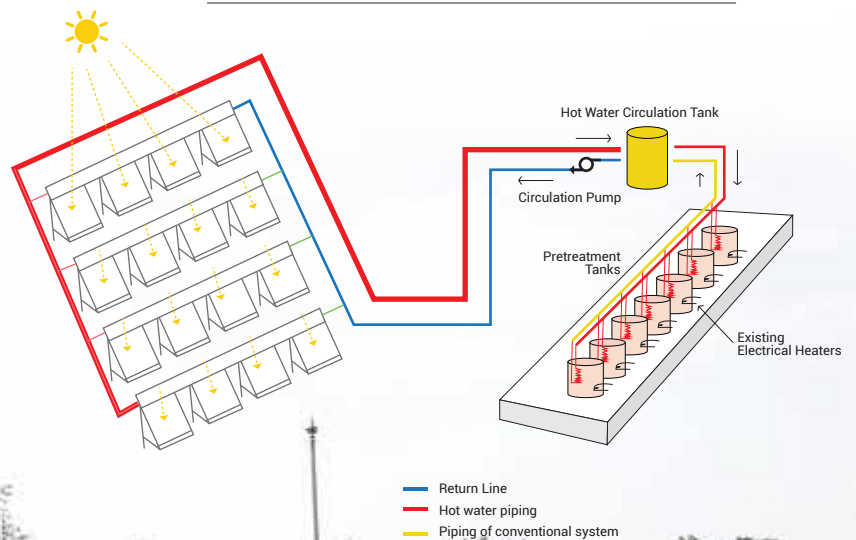
Shadow free footprint requirement - 6.5 m²

Dead weight of collector - 54 kg

Receiver - U-shaped Cu tube with Aluminum heat transfer plate enclosed in an evacuated glass tube with highly selective (Al/AIN) absorber layer on inner tube

Collector Stand - Mild steel with galvanized coating

Customized installation angles to suit location



REFERENCE INSTALLATION

SolPac™ NI30 IN AUTOMOTIVE INDUSTRY - NAGPUR

Thermax's Concentrated Solar Thermal (CST) Project in Process heat application in leading automotive company, Nagpur



● INSTALLATION DETAILS ●

Application	Engine component cleaning
Temperature	Upto 85° C
Size & Number of concentrators installed	442 sq.m, 130 Non imaging concentrators
Heat delivery on a clear day	650~950 kWh / day depending on average monthly radiation
Energy Savings	2.9 Lacs electrical units / year i.e ₹ 25 Lacs per year

Nominated for MNRE's CST Technology Excellence Awards 2013
for best industry under Process Heat application category

SolPac™ P60 Parabolic Trough

SolPac™ P60, the solar parabolic trough from Thermax, is a parabolic concentrator assembly consisting of a reflector, glass covered receiver tube placed at the focal point of parabolic profile, automatic single axis tracking system and support structure. Solar radiation concentrated on receiver tube heats working fluid flowing through the tube. This product is suitable for steam generation up to 18 kg/cm²(g) pressure or for pressurized hot water generation up to 210°C.

SALIENT FEATURES

- Indigenously developed technology through extensive R&D
- Automatic single axis tracking
- Boltable construction - site welding not required
- Reduced footprint with light weight design
- Flexibility in terms of working fluid usage
- Seamless integration with existing system
- Mountable on ground as well as flat roofs
- Solar grade parabolic shaped Aluminium reflector > 90% reflectivity, imported from Germany

BENEFITS

MNRE, Government of India provides subsidy up to 30% of Project Cost or Rs. 5400/m² of reflector area (whichever is lower).



Tax benefit : Accelerated depreciation benefit up to 80% in the first year & 20% in the second year.



Attractive payback period with fuels like HSD, FO, LPG and electricity.



Zero energy cost.



TECHNICAL SPECIFICATIONS

Reflective area - 6.41 m²

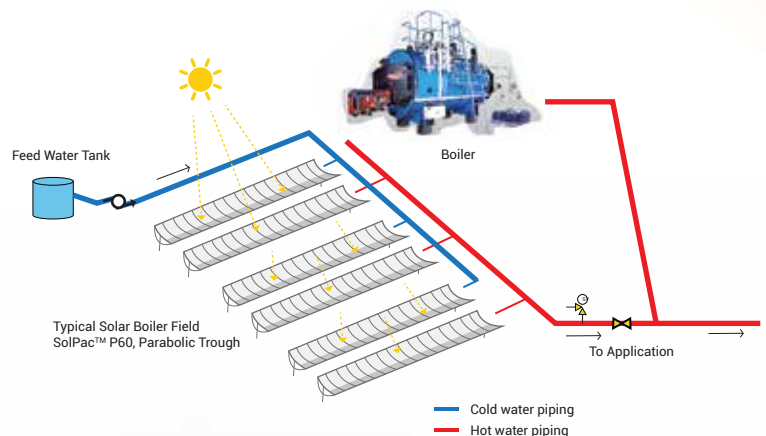
Aperture area - 5.9 m²

Shadow free footprint requirement - 12.5 m²

Dead weight of collector - 200 kg

Receiver - SS 304 with selective absorber coating (black) enclosed in anon-evacuated glass tube with anti-reflective coating

Collector Stand - Mild steel with anti rust 3 coat paint / galvanized



REFERENCE INSTALLATION

SolPac™ P60 IN DAIRY INDUSTRY - GANDHINAGAR

Thermax's Concentrated Solar Thermal (CST) Project in Dairy Industry for Steam Generation



● INSTALLATION DETAILS ●

Application	Fluid Heating system for steam generation integrated with existing high pressure NG fired boiler
Pressure	17kg / cm2(g)
Size & Number of concentrators installed	615.36 sq.m , 96 Parabolic Troughs
Steam Generation	280~325 kg / hr of steam depending on average monthly radiation
Energy Savings	32800 SCM of NG / year i.e ₹ 16 Lacs per year

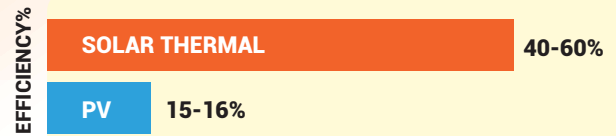
This project has been honored with MNRE's CST Technology Excellence Award 2016.

Gujarat Energy Development Agency (GEDA) had nominated this project to Thermax Limited as system designer & project executor for implementing Solar Based Project in Gujarat.

SOLAR THERMAL VS SOLAR PHOTOVOLTAIC

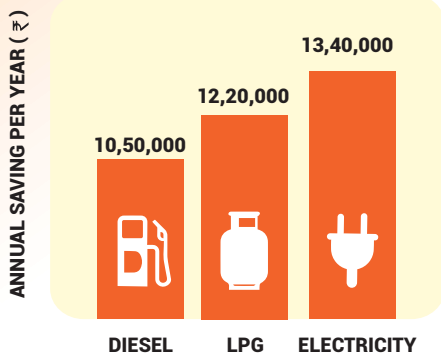
- Solar thermal technologies convert solar energy into heat and conversion efficiencies of different Solar thermal technology lie in the range of 40-60%.
- Solar Photovoltaic converts solar energy into electricity and conversion efficiencies of different PV technology lie in the range of 15-16%.
- For industrial Heating Solar thermal is more area efficient.

TECHNOLOGY



THE UNTAPPED POTENTIAL OF SOLAR THERMAL

If existing 100000 kCal/hr thermal system is supplemented by solar energy, annual savings ranges from ₹10.5 to 13.4 lacs, depending on fuel used. It also provides an opportunity to reduce oil import and carbon footprint.



OIL IMPORT

111 100000 kCal/hr SOLAR THERMAL

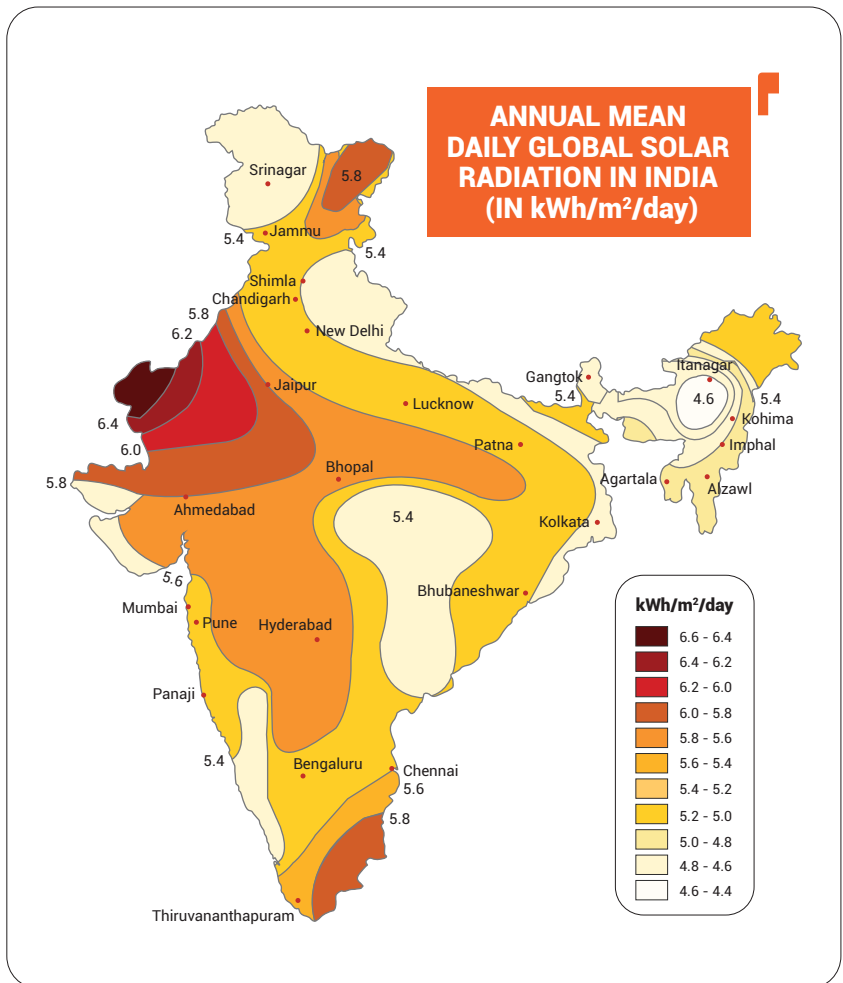
SAVE 85 BARRELS OIL PER YEAR

CO₂ EMISSION TONS PER YEAR

REDUCE CO₂

38.6 | 33.6 | 134

BY SUBSTITUTION OF **DIESEL | LPG | ELECTRICITY**



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Thermax Business Portfolio

- Heating
- Cooling
- Power Generation
- Air Pollution Control
- Chemicals
- Water & Wastewater Solutions
- Solar
- Specialised Services

