

Indian patented technology - ARUN® - an integral part of a joint project of MNRE and UNDP to promote solar thermal energy

Programme to facilitate installation of 45,000 sq. m. of solar concentrator area

Mumbai: Clique Solar, pioneer in expanding the role of solar technology in the industrial process heating and comfort cooling (IPH&C) applications, is proud to have its patented technology included in the MNRE-UNDP's latest project in India.

The new project titled- "**Market Development & Promotion of Solar Concentrator based Process Heat Applications in India**" - has been launched by MNRE with support from UNDP (United Nations Development Programme). The objective of the project is to promote and commercialize Concentrating Solar Technologies for Industrial Process Heat (IPH) applications in India. IPH includes applications like steam required for pasteurization of milk, cook meals in large numbers, heat required for desalination or effluent evaporation etc. More information can be obtained on our [website](#).

This is the first such project by UNDP for promoting the use of solar concentrator based applications in the industry. The project will include two kinds of installations – **demonstration projects and replication projects** (details are given below). The target is to facilitate installation of 45,000 sq. m. of solar collector area by March 2017 through 30 demonstration and 60 replication projects. During this 5 year period, these projects/ installations will help in reducing the direct emission of CO₂ by 39,200 tonnes.

The initiative will help the CST (concentrated solar thermal) industry immensely. Due to the increasing cost of industrial fuels like furnace oil, Diesel, LPG, etc, many industries are feeling strains on the balance sheets. Concentrated Solar Thermal (CST) technologies can offer a suitable substitute for at least partially fulfilling the thermal energy needs of industries. It can fulfill the requirement of steam and hot

water in a range of industries like – dairy, hotel and hospitality, community cooking, pharmaceuticals, chemicals, automobiles including others.

While appreciating the project, Mr Ashok Paranjape, Director Cliques Solar, said, “Concentrated Solar Thermal domain has suffered greatly due to lack of innovation. Almost every manufacturing facility requires steam, which if obtained through solar energy can save costs significantly and add to the bottom-line of the company. Unfortunately, in India technologies didn’t exist, until ARUN was invented, that could provide steam or hot oil up to pressures and temperatures of 20 bar and 300°C respectively.

Industrial process heat (IPH) applications below 250°C contribute to about 15 to 20% of India’s total oil consumption (almost 80%-90% of which is imported). Due to the scarcity of fossil fuels, their rising costs, the related pollution problems and the ever increasing power shortage, there is a dire need to make use of renewable sources of energy to meet these demands of IPH and energy for comfort cooling. It will also help India reduce its forex burden, thus helping reduce its trade deficit.

The following solar concentrator technologies will be considered under demonstration projects:

- Parabolic trough concentrators
- Dual axis tracked paraboloid dishes
- Dual axis tracked Scheffler dishes
- linear Fresnel reflectors
- Non-imaging concentrator
- Single axis tracked Scheffler dishes
- **ARUN® technology with dish area below 100 sq. m.**
- **ARUN® technology with 160 sq. m. of dish area**

In the above, only ARUN®160 and Single axis tracked Scheffler dishes fall under commercially and technologically proven technologies which can fall under

replication projects. The other technologies will be considered under demonstration projects.

Demonstration Projects

To develop demonstration projects, UNDP-GEF support of Rs. 15 lakhs per project or 10% of the project cost (whichever is less) will be available for selected demonstration projects.

Replication Projects

Support up to Rs. 4 lakhs will be available for each of the selected replication project which will cover performance monitoring of the system and expenditure incurred on feasibility study, if any.

This support will be in addition to 30% support available from MNRE for installation of the systems which is currently being provided. Commercial organizations will also be eligible to get accelerated depreciation benefit. Minimum size of the project will be 250 sq. m.

The details of the application process for this project are available on the [MNRE website](#).

About Clique Solar

Clique Solar is in the domain of Solar Concentrated Technology and works towards addressing needs of the industrial and commercial sectors in the space of heating and cooling with its indigenous and commercially proven solar concentrating technologies.

The inquisitive and curious minds led by Dr Shireesh Kedare and Mr Ashok Paranjape, have been working relentlessly towards making energy self-sufficiency part of reality around us. The vision and thought is reflected in our innovation – ARUN® dish.

After spending over a decade in understanding and aligning needs of the companies with rigorous engineering, the team has launched a viable solar concentrator system – ARUN - a Fresnel paraboloid solar concentrator system. It has received developmental support from the Ministry of New and Renewable Energy (MNRE) and I.I.T. Bombay.

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