

## News for the month of April 2015....

### Manufacturers demand loan on working capital



The UNDP-GEF Concentrated Solar Heating (CSH) project has formed a platform comprising of Ministry of New and Renewable Energy (MNRE) & IREDA officials, manufacturers, stakeholders and consultants. It will address issues related to deployment of CSH projects and find solutions of large scale promotion in the country. The first such meeting was held on 21<sup>st</sup> April 2015 in New Delhi and was well represented by majority of the prominent industry players as well as stakeholders.

Dr. Singhal gave update of the activities being carried out under the UNDP-GEF CSH project. Ever since the project started in March 16,373 m<sup>2</sup> of systems have been commissioned for process heat, cooking and cooling. Of these 11,247 m<sup>2</sup> (69%) are for process heat applications and balance 5,126 m<sup>2</sup> (31%) for large scale cooking. Until December 2014 41,695 m<sup>2</sup> of CSH systems are commissioned.

All those present from the manufacturing side revealed that wherever government institutions or public sector companies were placing orders the payments are released only after completion of the commissioning. Considering the magnitude of capacities a huge working capital is required. Usually the gestation period ranges between two to twelve months and puts a burden on the company finances. Further if the payments are delayed it blocks the capital. Hence IREDA or banks must lend money for this working capital and MNRE must support the guarantees against loan.

Siddharth Malik strongly requested IREDA to relax norms for financing concentrated solar thermal systems since they are emerging technologies and involve high capital cost. Abhilakh Singh from IREDA gave overview of the IREDA financing schemes wherein even CSH projects can avail loan. However he said that there is no specific scheme to provide loan for working capital.

MNRE under the programme will shortly initiate series of workshops to address the issues of financing and it is hoped that the support for working capital will top the agenda. On the occasion Dr. Singhal also announced a separate meeting of all manufacturers in presence of IREDA and other prominent financial institutions to find a solution to the problem.

The UNDP-GEF CSH is a USD 23.75 million project targeting 45,000 m<sup>2</sup> of CSH systems through Demonstration & Replication projects resulting to 39,200 tons of CO<sub>2</sub> emission reduction and 3.15 million liters of fuel oil avoided annually.

<http://www.mnre.gov.in>

## Muni Seva Ashram undergoes revamping using indigenous mirrors



There are 100 dishes of 12.5 m<sup>2</sup> area each at Muni Seva Ashram commissioned for cooling and all of them have undergone revamping with all the 78,000 mirrors each of 4 " x 6 " replaced. The entire operation took about 6 months. The total investment for re-furbishing the dish would be around Rs 35 lakh. MNRE has provided Rs 15 lakh under the repair and maintenance scheme and the balance is borne by the trust. The old mirrors will be sold as scrap to defer some of the expenses.

Informing Deepak Gadhia, one of the trustees "A special curtain coating with suitable side edging is developed by the indigenous manufacturer ARS Glass, Vadodara which has given hopes for a longer life of mirrors. After passing the various tests it will surely last for 5 years but we expect it to last 10 years." This is for the first time an indigenous manufacturer is supplying mirrors for a concentrated solar thermal system, which until now was imported besides their personnel will also carry the replacement work on site. Thus the "Make in India" concept has been fulfilled with this enhancement.

It is hoped that this will resolve to a greater extent the impending dilemma of always importing mirrors and not receiving more than a year's warranty. International solar grade mirror manufacturers were unable to supply mirrors of the desired smaller sizes in India had had to be cut, which resulted in their degradation due to the resilient environment conditions in India. Also the cost of imported solar grade mirror goes up by factor 3-5 making it unviable.

ARS Glass has carried out various tests as per international norms like spray test, humidity tests etc. to ascertain that the mirrors would last long sustainable Make-in-India solution by offering Mirrors for Solar use with long life. It has been a great and satisfying team effort and or gift to Solar Industry.

The system installed at the Ashram produces 400 kg/ hr steam at 10 kg/cm<sup>2</sup> pressure to run 100 tons refrigeration (TR) Vapour Absorption Chiller - double effect using Lithium-Bromide.

<http://www.greenashram.org/>

## Successful solar cooking system validated



Larsen Toubro Plastics division at Chennai has successfully demonstrated the working of its 64 m<sup>2</sup> concentrated solar thermal cooking system, which has almost completed 40 months of operation ever since it was commissioned in December 2011 at a cost of Rs. 10 lakh. They also availed of the 30% capital subsidy from Ministry of New and Renewable Energy (MNRE).

Up to 400 people work and have meals at this plant. The kitchen has a LPG fired steam boiler delivering 100kg/hour mainly for steam cooked items and milk. It consumes about 60 kgs of LPG per day. The company wanted to explore alternative sustainable means of heating for cooking needs hence opted for solar thermal system. Dr. Prashant Bhat of Arier Natura who commissioned the system informs that lack of space put constraint on the number of dishes each of 16 m<sup>2</sup> from six to four. These four dishes are saving up to 4,000 kgs annually and thus resulting in annual saving of close to Rs. 3 lakh.

Dr. Bhat further shares “The project had some initial hic ups like the solar grade mirrors supplied by Saint Gobain deteriorated within 18 months. Due to warranty on mirrors, they were replaced and also the design of the dishes was also slightly altered after evaluating the engineering aspects. A typical Scheffler system has a header cum storage tank, and the water is filled only once or twice a day. They tried modifying the engineering for automatic feeding of the by altering the size of header and using an automatic water switch to feed water. This design however did not work as expected and hence replaced back with conventional design

The system has been now successfully running due to the trained personnel by the client who are maintaining the system on a regular basis. This goes to prove that if properly trained manpower is kept systems can perform well and justify value for money.

The investment has almost paid back the investment and is an established case of client is successfully running the system. What is worthwhile is that the entire system was self funded without borrowing loan.

<http://www.larsentoubro.com>

## Revised guidelines under UNDP-GEF support for CST systems



Ministry of New and Renewable Energy (MNRE) has revised guidelines under the UNDP-GEF Concentrated Solar Thermal (CST) project.

The deadline to receive applications under for demonstration projects is extended to June 2015. Under the demonstration projects support of 15% of the project cost subject to maximum of Rs. 75 lakhs, is available. The project cost will, also be taken as the bench mark cost of MNRE and not the actual cost which was there in the earlier support pattern.

The UNDP-GEF project support of Rs. 2 lakh will be available for projects below 64/45 m<sup>2</sup> area to state nodal agencies/ beneficiaries by combining the CSTs area, if there are more than one such projects sanctioned in the State through tendering or beneficiary's premises respectively.

To give a helping hand for Concentrated Solar Technology (CST) based projects MNRE had announced support under Energy Service Company (ESCO). Under this mode monthly/ quarterly installments to be paid by beneficiary on savings has been increased from 5 to 7 years. In case beneficiary cannot commit to bear initially minimum 20% of the project cost in this mode the reason for the same has to be provided.

The UNDP-GEF CSH project targets 45,000 m<sup>2</sup> of systems installed in 90 establishments through Demonstration & Replication projects in the period April 2012-March 2017 resulting in 39,200 tons of CO<sub>2</sub> emission reduction and savings 3.15 million liters of fuel oil annually.

Further details on the revised additional support available can be viewed at [www.cshindia.in](http://www.cshindia.in)

## Concentrated solar thermal industry seeks allocation in RGO



Secretary Ministry of New and Renewable Energy (MNRE), Govt. of India Shri Upendra Tripathi while addressing at the National Workshop on Accelerating Clean Energy Deployment through Innovative Policies and Regulations organized by USAID said the government was actively considering introducing Renewable Generation Obligation particularly those industries and commercial organizations that use thermal energy. He divulged that industries will have to generate 10% of their energy through solar energy.

Nearly 80% of India's energy needs is met using thermal energy like coal oil and gas. This move is likely to benefit the solar thermal industry. Solar thermal energy conserves energy unlike other renewable energy sources that directly generate power. Any solar thermal heat energy cannot be directly measured in terms of kWh hence unfortunately seldom gets attention to be adjoined as a Renewable Obligation technology.

Majority of the manufacturers of solar thermal system want solar thermal projects to be benefitted by way of any Obligation since they assist in reducing the fossil fuel. The quantum of number of solar thermal projects in the country may be insignificant to qualify them under any Renewable Obligation but it is important that they are equally vital for indirect generation of renewable energy.

Dharmendra Gor of Taylormade Solutions counters the argument and says that it is possible to directly co-relate the kWh generated by converting the thermal heat to electrical units. Shivanand Nashi of Unisun Technologies also shares the opinion that solar thermal should be made part of all renewable energy obligations and the tangential energy savings should be accounted.

There will have to be a mechanism evolved to identify the annual energy saved from any solar thermal system and directly converted into equivalent electrical units and based on it Renewable Energy Certificates can be issued. Power producers or developers can bundle the solar thermal system along with their renewable energy project and bring it in the fold of Renewable Obligation. This is the best way the market for concentrated solar thermal can be boosted if cumulative of all process heat industries can lend a hand in reducing the fossil fuel utilization. After all any Renewable Obligation is with the aim of reducing fossil fuel.

The Partnership to Advance Clean Energy Deployment (PACE-D) Technical Assistance program is primarily to strengthen Renewable Energy and Energy Efficiency policy and regulatory frameworks

<http://www.mnre.gov.in>

## Germany receives 174 applications for solar process heat

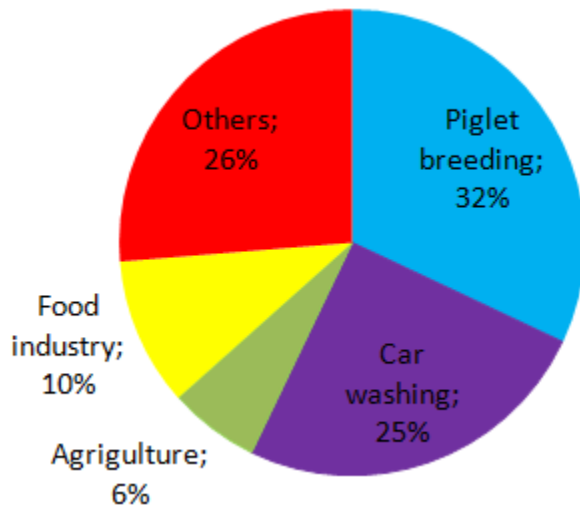


Fig 1.: Sector wise applications received for process heat

Since August 2012, the Federal Office for Economic Affairs and Export Control, BAFA, has received applications for 174 solar process heat for industrial and commercial use, of which 88 have so far been set up by the applicants. The chart shows the customer groups of solar process heat among the 174 applications which have been submitted since the programme Source: BAFA

The German Market Rebate Programme for Renewable Energies, MAP, subsidises half of the net costs associated with solar process heat for industrial and commercial use in Germany. The programme was launched in August 2012.

“The programme started off well, but now the number of applications is stagnating,” Ralph Baller, Head of the MAP division, says. “We have had twice as many requests as applications, so every second project by a potential client has not been realised,” Baller explains. Project funding may also be delayed considerably, as applicants have up to nine months to finish the installation after receiving approval of their application.

The University of Kassel’s additional publicity measures, which address planners and installers alike, are hoped to increase the popularity of the subsidy scheme again.

The table below shows the gap between the number of submitted applications and the number of approved and funded projects

Year	2012	2013	2014	Total
Number of applications submitted	18	70	86	174
Number of projects funded	0	25	63	88
Total collector area of approved and subsidised applications	-	887 m <sup>2</sup>	2,996 m <sup>2</sup>	3,883 m <sup>2</sup>
Average collector area per approved application	-	35 m <sup>2</sup>	48 m <sup>2</sup>	44 m <sup>2</sup>

*Table 1: Year-wise applications received for solar thermal process heat, source: BAFA*

The highest share among the submitted applications is made up of systems for piglet breeding (56 systems). These projects mostly use solar energy for the stable's floor radiator heating, which is not a very specific solar process heat installation. Car washing accounts for a quarter of all submissions and another quarter covers a very broad range of applications. Flat plate collectors are the dominating technology with almost 75% share, with the rest being evacuated tubes and air collectors. There is only one subsidized project with an ESCO model and applications for five more ESCO projects are received.

The University of Kassel carries out the research accompanying the MAP process heat. The lack of specialisation has led the University of Kassel to plan a series of workshops in cooperation with the local chamber of industry and commerce. They will show examples of installations, speak about technical requirements and the economics of solar process heat To raise awareness about the industry among potential clients, BAFA also commissioned the production of a film entitled "Manufacturing with the Sun".

<http://www.bafa.de>

<http://www.ide-kassel.de>

News source: Solarthermalworld ([www.solarthermalworld.org](http://www.solarthermalworld.org))