

News for the month of March 2016

State Bank of Patiala launches scheme for Concentrated Solar Heating systems



The Micro, Small and Enterprise department of State Bank of Patiala (SBP) has launched a new scheme for financing concentrated solar thermal systems by according "Priority Lending" status vide Circular No. ADV/SME/75/15-16 dated 2nd February 2016. It will be applicable to any industrial/ commercial/ religious entity. This new scheme has been designed on similar lines as per Reserve Bank of India (RBI) guidelines. RBI has issued guidelines to classify loans up to ₹ 15 crore to Solar based power generation, biomass based power generation, wind mills etc. as priority sector advance.

Any Industrial/ Commercial/ Religious entity is eligible to apply for loan under the scheme subject to CST project is implemented by Ministry of New and Renewable Energy (MNRE) empaneled channel partner(s) and receiving in-principal sanction from MNRE.

After MNRE has performed due diligence and appraisal of project SBP will provide at least 70% of total project cost with maximum 10 years tenure equivalent to 120 Equated Monthly Instalments (EMI) including maximum moratorium period of 6 months. Both MNRE and United Nations Development Programme- Global Environment Facility (UNDP-GEF) programme will release subsidy payments of 30% and 15% respectively in the account of SBP. SBP will subsequently reduce the loan tenure (less than 120 EMIs). The payment of subsidy received by bank will be considered as pre-closure payment without any prepayment charges.

The loan will be repaid in equated monthly instalment with maximum repayment period of 10 years including maximum moratorium period of 6 months. Interest will not be served during moratorium period.

Primary Assets created/ implemented out of bank loan will be considered as primary security against the loan. Besides Tangible collateral security for at least 50% of the loan amount will also have to be given

During the disbursement period monthly inspection will be made to ensure end use of funds. In case of irregular and non-performing assets accounts frequent inspection will be carried out. The Minimum value of loan will be ₹10 Lac per industrial unit with a limit on Maximum value not exceeding 85% of the total project cost sanctioned by MNRE or 6 times of cash accruals (Profit after tax + depreciation) as per latest balance sheet and profit & loss statement For loan up to ₹50 lac minimum margin should be 15% of the total project cost. For any loan amount greater than ₹50 lac, margin should be 20% of the total project cost. Total project cost as per MNRE sanction. However loans amount up to ₹15.00 Crore will be classified as Priority Sector.

The beneficiary can also avail of the capital subsidies provided by MNRE and United Nations Development Programme (UNDP) will provide capital subsidy to the project under the scheme on successful implementation.

<https://www.sbp.co.in/>

Solar cooking demonstrates success at Gurudwara Karmasar Rara Sahib



Photo: Solar thermal cooking system at Gurudwara Karmasar Rara Sahib, courtesy: Taylormade Solar Solutions

The Scheffler type solar thermal cooking system commissioned at Gurudwara Karmasar Rara Sahib in Ludhiana in Punjab state is successfully demonstrating ever since commissioning in April 2013. As against the anticipated 17,000 kgs. of Liquefied Petroleum Gas savings it is in fact saving much more informs Baba Baljinder Singh, chief caretaker at the temple. The project was set up at a cost of ₹38.50 lakh and has availed of the central capital subsidy besides the additional financial support under UNDP-GEF.

There are 14 concentrator dishes with a receiver area of 224 m² of collector area **generating** 880 kgs of steam daily at a temperature up to 120°C. It is integrated to a 1.5 ton boiler where hot water is stored and delivers the necessary heat whenever sunlight is active. The system caters for daily meals of about 1,000 devotees. According to Taylormade Solar Solutions Pvt. Ltd., suppliers of the system, the daily quantum of food cooked is around 80 kg of rice, 50 kg of vegetables and 60 kg of pulses. The solar steam cooking system is meeting nearly 30% of the heating demand.

Having ensured proper post sales service by the suppliers and maintenance the system has so far been operating trouble free and is also becoming centre of the attention of the devotees. With almost 3 years of completion the system is past halfway mark of its investment.

The success of the system at Karamsar Rara has prompted other Gurdwaras to follow suit as many more Gurudwaras in the country have either already installed solar steam cooking system or are under various development stages.

<http://www.rarasahib.com/>

More beneficiaries opt for Repair and Maintenance Scheme



Photo: 160 m² system at Santikunj Haridwar, courtesy: ARS Glasstech

After getting the breakthrough for the first renovation provided by Kailash Cancer Hospital to replace all the existing 1,250 m² area mirrors used for their solar thermal air-conditioning system ARS Glasstech has received three more offers from past beneficiaries to replace the damaged mirrors. The replacement will be carried under the Repair & Maintenance scheme offered under UNDP-GEF programme. The scheme applicable for for 5 years old systems offers 20% of approved project cost with a maximum support of Rs. 15 lakhs subject to the condition that equal amount is spent by the beneficiary.

Manthan Handicap School (64m² area), Gandhinagar; Shantikunj Community Center, Haridwar (160 m² area) and Vocational Training Center, Valsad (64m² area) are the three beneficiaries all for steam cooking.

Delivering promise on “Make in India” cause of the government of India, ARS Glasstech based in Gujarat state in western India has become the first domestic high temperature glass mirror manufacturer catering to high temperature solar thermal systems in the country.

Until now India was relying on imports of the mirrors for its high temperature solar thermal systems. Transporting such large sizes of mirrors is also expensive.

The uniqueness of ARS Glasstech is it caters to client’s requirement by providing desired sizes of mirrors. Glass is cut using special CNC glass cutting machines and sealed from the sides. The back coating is done using special coat. They carry a warranty of 5 years and have certification from by SGS Laboratory, Switzerland, National Institute of Solar Energy, Gurgaon and SISECAM, Turkey. The company claims its mirrors are 50% cheaper than imported mirrors.

Already the replaced mirrors at Muni Seva Ashram are performing to the best of their expectations, informs Rajesh Verma of ARS Glasstech.

<http://www.arsglasstech.com/>

Testing of 30 kW-thermal Cross Linear CSP system commences



Photo: 30 kW-thermal CLCSP system, courtesy, RGTU, Bhopal

A 30 kW-thermal Cross Linear concentrated solar power (CL-CSP) test unit is successfully installed at the Rajiv Gandhi Proudyogiki Vishwavidyalaya (RGPV), Bhopal at a cost of ₹ 10 crore. This unit is established as part of the collaborative research projects of academia /institution and industry from India & Japan. This project is installed under the joint venture of Ministry of New and Renewable Energy, Govt. of India, Bergen Solar Power & Energy Ltd., SolarFlame Corporation, Japan and Toyo Engineering Corporation, Japan with RGTU as the implementing institute. MNRE has provided financial support to the tune of ₹ 2.5 crore and an equal amount by RGPV while the Japanese firms have contributed cumulative ₹ 4 crore. Bergen Solar has contributed ₹ 1 crore.

The objective of the project is to showcase the demonstration CL-CSP technology generating heat high temperature in excess 600°C suitable for solar thermal power generation and further upgrading to Megawatt scale. The project also aims to demonstrate the power tariff based on this technology to be competitive to solar PV, developing indigenously and consider scaling up.

The new Cross linear concentration system, with a temperature range of 300-600 °C is invented by Prof. Yutaka Tamaura at Tokyo Institute of Technology. It is a dual axis system and has virtues of both conventional Linear Fresnel and Tower technologies. It has higher optical efficiency (than Trough and Linear Fresnel) and thermal efficiency

This concentration system is situated between point and linear focusing concentration. Hence the system can get a higher temperature around 600°C by applying linear Focussing method. Owing to high thermal efficiency, it can help in establishing cost effective thermal storage system. It is adaptable for high temperature requirement from steam turbine generators in case of hybrid power.

The testing of the system has already commenced and is hoped to give a new direction to solar thermal power generation in the country.

<https://www.rgpv.ac.in/>

Industry demand goes unheard



The Union Budget for 2016-17 announced by the Finance Minister on 29th February 2016 has hiked the basic customs duty (BCD) on industrial solar water heater from 7.5% to 10% under the Harmonised System (HS) code 84191920. The description of items under this HS code is machinery, plant or laboratory equipment, whether or not electrically heated (excluding furnaces and ovens), for the treatment of materials by a process involving a change of temperature such as heating, cooking, roasting, distilling, rectifying, sterilising, pasteurising, steaming, drying, evaporating, vaporising, condensing or cooling, other than machinery or plant of a kind used for domestic purposes; instantaneous or storage water heaters, non-electric. Except for solar thermal items imported under this code all others will have BCD of 7.5%.

India imports solar water heaters using several HS codes as detailed in the table below. The BCD also varies for different HS codes

	84191910	84199010	84199090	84191920
Description	Domestic Type	Parts: Domestic Type	Parts: Other	Other
Basic Customs Duty (%)	10.00	10.00	7.50.00	10.00
Contravailing Duty [CVD] (%)	12.00	12.00	12.00	12.00
Special CVD (%)	4.00	4.00	4.00	4.00
Product Terms	Common products terms are solar water heater, water heating systems, thermosiphon	Common products terms are water heater, solar water, gas water, spare parts, water heating	Common products terms are heat exchanger, spare parts, laboratory equipment, plate heat, mass transfer	Common products terms are solar water heater, laboratory equipment, water heaters, oil heater

Table1: HS codes for imports of solar thermal systems with description

Until now there was no specific category as Industrial solar water heater since the components used like evacuated tubes, tanks, piping, etc. were imported as spare parts and later assembled for final use, which could be residential or industrial/commercial.

Manufacturers do not see any tangential benefit from this action, as nobody will declare the imported spares for industrial and would rather now declare for domestic use and can later implement them for industrial/commercial purpose. Notably there no imports are reported under the HS Code 84191920 since 1st March 2016 ever since the announcement was made.

Members of the national industry body Solar Thermal Federation of India had made a plea to the government asking for separate HS code only for evacuated tubes and another for other components. Subsequently the duty on other components should be much higher than evacuated tubes, as tubes are not made in India. This will protect domestic manufacturing. It seems the industry plea has either gone unheard or misinterpreted. This will augur cheaper imports.

A spokesman of Solar Hi-tech Geysers stated that failure to revise the customs duty structure will only result in rise in imports and it won't be a surprise of Indian manufacturers become dealers of non-Indian manufacturers, largely Chinese.

Unless the government does not intervene the new national program "Make in India" designed to transform India into a global manufacturing hub will be challenged.

On a positive note the government has however hiked the cess on coal from ₹ 200 per tonne to ₹400/tonne. The financial support available for renewable energy in India is also increased to ₹ 5,060 crore during the financial year 2016-17 and is by far one of the largest in the world. Also the customs duty on glass used in manufacture of solar panels is raised to 5% besides additional Special Additional Duty of 4%. This will certainly be a boost to domestic manufacturing.

<http://www.cbec.gov.in/htdocs-cbec/customs/cs-tariff2015-16/chap-84.pdf>
<http://pib.nic.in/newsite/PrintRelease.aspx?relid=137225>
<http://www.cbec.gov.in/resources//htdocs-cbec/ub1617/do-ltr-jstru1-revised.pdf;jsessionid=29DAA358181C01761CAAE68A1D963860>

EnergyNest launches revolutionary energy storage concept



Photo courtesy: Masdar Institute, Abu Dhabi

Norwegian start-up EnergyNest has developed innovative thermal energy storage (TES) system that will store energy from the "Beam-down" solar power plant in Masdar City. During a test period of several months, EnergyNest was able to prove the functionality of its new storage solution with valid performance results. In the future the modular storage system will make it possible to store large quantities of energy at unprecedented low cost. The proven technology offers huge potential when it comes to solving global energy challenges.

The commercially validated pilot project involved the integration of two 500 kWh storage modules in the Masdar Institute's "Beam Down" solar power plant. The power plant currently has a total capacity of 100 kW, whilst EnergyNest's TES boasts a capacity of 1 MWh of thermal energy.

"We have written history in innovation" said Dr. Christian Thiel, Chief Executive Officer at EnergyNest. "What we have is a low-cost storage solution that is easily scalable, which contains a high portion of local content, requires virtually no maintenance, has no performance degradation, and is capable of handling very high temperatures. Our TES installation at the MISP can store enough energy to power 70 000 cellphones and at the same time produce 10 000 liters of freshwater by desalination. Compared with existing solutions, we are able to store energy at a fraction of the cost. This could not have happened without a great team and a great collaboration with the Masdar Institute" informed Dr. Thiel.

The new storage solution can easily be scaled up to several gigawatt hours and is also extremely cost-efficient, with costs barely 10 percent of those of a battery system. The system can handle both thermal oil and steam as a heat transfer fluid, and can operate within a very broad range of temperatures. In comparison to other large-scale thermal storage solutions, its low investment and operating costs are truly impressive.

The core of the new storage system is the special concrete HEATCRETE®, developed in cooperation with HeidelbergCement, which can store large quantities of thermal energy over long periods of time with virtually no performance degradation. In comparison to batteries and other forms of storage, the TES particularly stands out for its very broad application spectrum.

<http://www.energy-nest.com/news/detail/news/detail/News/thermal-energy-storage-pilot-project-inaugurated-in-abu-dhabi/>