News for the month of February 2016

UNDP-GEF support hiked to 20%

Photo: Secretary MNRE chairing meeting of manufacturers

UNDP-GEF support for concentrated solar heating (CSH) projects is hiked to 20% of MNRE benchmark cost. This should come as a relief in wake of the falling crude oil prices so as to provide viability. The announcement was made by Dr. A.K. Singhal during the meeting with manufacturers and Consultants on 10th February, 2016.

India is perhaps one of those few countries to have showcased successful solar thermal high temperature systems. About 15 million tones of fuel oil in industries requiring heat up to 250 ^{O}C and 5,000 trillion units of electricity in various sectors for heating water & air being consumed per year. Assuming just 1% savings through CSTs due to space constraints and low DNI at various places, over 2.5 million m^2 of CST potential could be estimated. This is equivalent to around 1 lakh systems each of 250 m^2 on an average.

Considering the rich solar radiation received that can help met some demand of solar heating, Ministry of New and Renewable Energy is mooting a national level policy. Secretary, MNRE Shri Upendra Tripathy while addressing the manufacturers and consultants on market development announced that such a national policy be framed which will give a direction to explore the markets for meeting heating requirements largely in process industries. Solar Thermal Federation of India (STFI) is being entrusted the task to draft the policy. Besides STFI will also explore possibility how solar thermal obligation can be put in the policy framework on similar lines of Perform Achieve and Trade (PAT) scheme of Bureau of Energy Efficiency (BEE). The draft policy will be prepared by early March 2016. Manufacturers have welcomed this initiative and expect some incentive also be extended to end users for generating solar heat.

According to MNRE the country has installed a cumulative close to 45,000 m2 high temperature solar thermal systems for cooking and process heat applications. The UNDP-GEF program targets 45,000 m^2 of installed area until March 2017 and so far close to 25,000 m2 is already achieved. Besides UNIDO is also executing another program that targets additional 45,000 m^2 for process heat to be achieved by the year 2019.

http://www.cshindia.in

Zytex commissions concentrated solar air dryer

Photo courtesy: CST system installed at Zytex, VadodaraZytex

Zytex Biotech Pvt Ltd, producers of industrial enzyme and biotech products, has commissioned a solar thermal process air dryer using a parabolic trough collector at an estimated project cost of ₹27 lakh. It is primarily used for drying Probiotics and Prebiotics for food and feed segment. It uses OptiTrough 300 parabolic trough supplied by Ultra Conserve Pvt. Ltd, with an area of 136 m2 solar concentrating collectors, with fully automatic solar tracking. The temperature derived from the concentrated solar thermal collector is around 170 ^{O}C.

The Solar Concentrating Collector focuses the direct beam of sunlight on to central receiver. The Direct Normal Irradiation (DNI) remains focused on the central receiver tube through which thermic fluid is heated. Using a heat exchanger the heated thermic fluid is pumped in a heat exchanger. The heat exchanger receives air at a fixed velocity from an inlet blower which gets heated up and is passed through the Spray Dryer cyclone. Product in liquid form is atomized and is sprayed through an atomizer in the form of minute droplets. The droplets come in contact with hot air and instantly turn in to dry powder and fall down in to a silo. Inlet and outlet temperature of air is controlled by regulating air flow through inlet and vent blowers.

As per the system supplier, solar thermal heating system is fully integrated with the existing air heating process. This is done by installing a Solar Air heater before the existing Steam based Air Heater (Radiator). The two Air Heaters are placed in series, thus ensuring maximum utilisation of solar thermal energy for the process.

Prior to this heat was generated by heating ambient air with steam produced by an LDO fired boiler. The solar thermal system is anticipated to save between 17 to 35 litres of diesel depending on the sun radiation. Zytex has also availed of the capital subsidy scheme offered by Ministry of New and Renewable Energy and UNDP-GEF programme and as a result payback is within 5 years.

Jaswinderjit Singh, Head of Manufacturing said “the objective behind using Solar Energy Based Air Heating system was to reduce dependency on fossil fuel used for air heating by utilizing steam from diesel fired boiler. As we get enough sun shine throughout the year, it was appropriate to exercise this option”.

http://www.zytex.com

Thermosol Glass sets up Parabolic Trough Mirrors manufacturing

Photo: Manufacturing unit of parabolic trough mirror at Kutch, Gujarat

Thermosol Glass (TG) Private Limited (A Cargo Group Company), Ahmedabad has set up a state of the art parabolic tempered mirrors manufacturing. The annual production capacity is 10 lakh m^2. The plant with investment of over ₹ 8.50 crore is equipped with one of the global best facilities comprising of tempering & bending furnace, mirroring line and fully automatic robotic and PLC controlled conveyors. This will make it amongst one of the world's major solar thermal mirror manufacturer.

The reflecting mirrors used in concentrating solar thermal systems were completely imported. Buoyed by the "Make in India" initiative of the government TG took the initiative to produce the required mirrors indigenously.

In order to ensure quality TG has also set up in-house modernized test laboratory facility using globally reputed equipment. The laboratory will comprise of environmental test chambers, online optical test equipment and Offline solar efficiency test. The tests are benchmarked to the DLR & CSP standard labs.

As per TG the mirrors will have 30+ years of assured durability coating, 94% Reflectivity using solar grade low iron glass and highly optically efficient and mechanically correct dimensional controls. The glass tempering makes the mirrors safe and 5 times rouged than normal glass mirrors

"Cargo Group has over two decades of experience in handling and processing glass and glass technologies hence we started from solar mirror at first in the concentrated solar thermal system. We are hopeful that these mirrors will fulfill the crucial need of sector to make the products and projects standardized and modular bringing back the trust of industries. The rightly engineered optimized integration technology will enhance the acceptance in the sector" said Chairman and Managing Director, Jayant Nanda. Since the mirrors developed by TG designs and technologies are ideal for concentrated solar thermal power plants SP plants hence they are quite encouraged and optimistic to explore exports.

India is targeting 90 thousand m2 of concentrated solar thermal systems development under the UNDP-GEF and UNIDO programmes and the availability of indigenous mirrors will give a great reprieve to the manufacturers to achieve their target.

http://www.thermosolglass.com

Goodricke commissions solar thermal heating system

Photo: CPC installed at Goodricke Tea Co., Jalpaiguri

Goodricke, one of the leading tea brand in India a market leaders in tea in West Bengal has commissioned a 700 m2 Compound Parabolic Concentrator (CPC) at their factory near Jalpaiguri at an estimated cost of ₹ 1 crore. The system commissioned in October 2015 is delivering around 5,000 liters (2 to 2.5 Lakh kilocalories/hour) of hot water up to 90°C. It is integrated to the existing coal fired boiler.

While flat plate collector and ETC could satisfy industrial requirement of hot water around 70 ^{0}C and concentrator provide steam up to 8 bar pressure but only during limited days in a year hence Compound Parabolic Concentrator (CPC) was considered as an intermediate technology which combines ETC and limited concentration could provide pressurized hot water or thermal oil in the intermediate temperature range of rise in temp 60 ^{0}C to 100 ^{0}C.

For preparing tea infusion hot water around 90°C is required continuously in the process. The CPC delivers this necessary heat when sunlight is active through a heat exchanger mechanism. The coal fired boiler takes care during non-sunlight hours.

The CPC system is expected to save 169 tons of coal annually. As per the suppliers SunBest the unit has already saved 50 tons of coal in 5 months since its installation in October 2015.

After accounting for the central subsidy and the additional incentive under UNDP-GEF programme the payback period is estimated around 3 years.

http://www.goodricke.com/

STFI proposes upfront 50% subsidy release

Photo: Meeting of Solar Water Heater Channel Partners

Channel Partners of solar water heater systems who are battling to get back their pending subsidy amount and most of them members of the national industry body Solar Thermal Federation of India have proposed the Ministry of New and Renewable Energy (MNRE) to release upfront 50% of all the pending subsidy claims uploaded on "SOLARWIN" software which was as per the original order of MNRE while announcing capital subsidy scheme. This will give relief to the manufacturers in their balance sheet.

The outstanding capital subsidy that the government owes to all the Channel Partners is in excess of ₹400 crore and so far only ₹150 crore has been disbursed by IREDA, the agency designated by MNRE for clearing the dues. MNRE officials have however given assurance to settle all the pending claims by March 2016 despite repeated pleas by Channel Partners to immediately settle without further delay. Jt. Secretary (Solar), MNRE informed that by March 2016 MNRE (Ministry of New & Renewable Energy) will try to settle all the pending subsidies subject to completion of documentation by IREDA.

STFI members strongly pitched to immediate come out with BIS standards for Evacuated Tube Collectors (ETC) as this will vastly check the spurious imports. Besides there was unanimous opinion from the manufacturers for mandatory compliance in all upcoming residential buildings and to make property tax and electricity bill rebates mandatory in the country as an alternative to capital subsidy and will act as driver for business growth.

Mr. M.D Akole of Akson's Solar said the issue of storage tanks leakages still prevails owing to hard water and suggested NISE may take an R& D project to develop a low cost material tank to overcome the problems.

Jt. Secretary (Solar) assigned STFI to collect the annual achievements from all registered manufacturers on priority. He also invited STFI to undertake capacity building workshops targeting 600 technicians. This could be largely for developing plumbers for installations and maintenance. He further informed that MNRE will provide partial subsidy for unique demonstrative projects and invited manufactures to provide their proposals.

http://www.stfi.org.in