

The Solar Cooking (Part-2)

Concentrating Type Solar Cookers

These types of solar cookers generally consist of reflector to focus the falling solar radiation on the cooking pot. It has a turning mechanism to keep the reflector facing the sun. This type of solar cooker makes use of either plane mirrors arranged in a specific manner or metallic reflectors. There are several types of concentrator type solar cookers but only paraboloid concentrator solar cookers have received the commercial attention.



Paraboloid Type Concentrated Solar Cooker

They are capable of generating higher temperature and can be used for a variety of applications. It has a dish type reflector directing most of the intercepted solar radiation to a focal point. A typical parabolic solar cooker has an aperture diameter of 1.4 meter and a focal length of 0.28 meter. The cooking pot or utensil is placed at the focal point. [The temperature of the focal point vary between 150°C to 400°C](#)

depending on the solar radiation and the load. [The temperature achieved at the bottom of the vessel could be around 350°C to 400°C](#) and hence sufficient for roasting, frying and boiling also. The tracking mechanism helps to adjust the position of the parabolic concentrator. For every 10 to 15 minutes it requires adjustment towards the sun so that the focus of the concentrated radiation is maintained at the bottom of the cooking vessel. These types of solar cookers are useful for homes and small establishments.

Trough Solar Cookers



Trough solar cooker uses a reflector with curved parabolic cross-section and continues as a straight trough in other direction for capturing the sunlight. Instead of focusing light at one spot like a typical solar cooker, the light is reflected along what is known as focal line. These reflectors are easy to fabricate when compared with dish type cookers. It requires a long fairly narrow cooking tray enclosed in evacuated tubes. [They can reach temperature up to 250°C and can cook a meal in 20 minutes.](#)

Evacuated Tube Cookers

Evacuated tube means that the cooking vessel is made of two layers of blown glass in the shape of a sealed tube, where the air has been removed between the layers. Heat loss happens by conduction and convection through a medium. [With no air between the layers of glass the chamber is nicely insulated, well suited for retaining cooking heat.](#) The chamber is so effective it often does not require a large reflector to capture sunlight. A slender cooking tray can be inserted from one end. The opposite end is either sealed with a stopper, or has been sealed during the manufacturing process. [It can reach a maximum temperature of 290°C.](#)



(CONCLUDED)

Electricity Contacts

- Call center—1912
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Please send your feedback to ecc@cag.org.in

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Tamil Nadu News

India's Tamil Nadu Plans 500 Megawatt Solar Park



Tamil Nadu has announced plans to set up a 500 megawatt solar power park. This will be the first solar power park the state government has planned under the central government's 40 gigawatt program.

The solar park will be located at Kadaladi. The location was first scouted for a 4,000 megawatt coal-fired power plant. The planned project ran into environmental concerns, with the Ministry of Environment and Forest advising the state not to use sea water from the close by Gulf of Munnar. At least a part of the thermal power plant was to be built in a marine national park, and this was another reason to red flag the power plant.

The state government has now released funds to study the feasibility of setting up the 500 megawatt solar power park at the location. No timeline has been announced yet for auction of this capacity.

This solar park will add to the already 2,000 megawatts of operational and 1,500 megawatts of under-construction solar power capacity in the state.

While several other states have initiated the process of setting up large-scale solar parks under the central government's scheme, Tamil Nadu has lagged in this regard. It has auctioned some solar power plants and has even signed direct agreements with developers to set up solar power projects, but through a solar power park the cost of generation comes down significantly due to shared infrastructure.

While Tamil Nadu has long been leading Indian states in installed renewable energy capacity, it has not led the way in terms of cheap tariffs. The state has had its share of problems with the transmission network which has failed to keep up the rapidly increasing wind and solar power capacity. The financial conditions of state's power utility has also failed to instill confidence among prospective project developers taking part in tenders. As a result, the tariff bids for this solar power park are also expected to be at a substantial premium to the current lowest tariff in the country.

Source: [Cleantecnica](#), January 22, 2018 (edited).

India News

India hits 20GW solar capacity milestone

India has achieved 20 gw (giga watt) cumulative solar capacity, achieving the milestone four years ahead of the target for 2022 originally set in the National Solar Mission. The achievement comes on the back of a major renewable energy push by Modi government, which after coming to power in 2014 had scaled up the target to 100 gw of solar capacity by 2022.

According to the latest India research report by green energy market tracker Mercom Capital, the utility-scale cumulative installations now stand at approximately 18.4 gw, with rooftop solar accounting for another 1.6 gw.

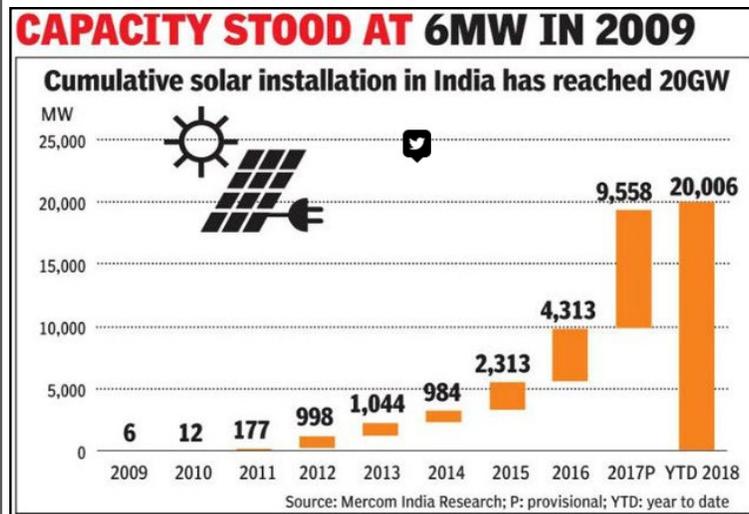
For the first time, solar was the top source of new power capacity additions in India during the calendar year 2017, with preliminary figures showing solar installations reaching 9.6 gw in this period and accounting for 45% of total capacity additions. But the country has reached the milestone at a time when protectionist measures threaten to slow down activity in the industry. The pace of overall solar installations is expected to be less impressive in 2018 as several protectionist government policies appear poised to increase costs and uncertainty.

"The government's revised solar installation target of 100 gw by 2022 has recently been clashing with PM Modi's 'Make in India'

initiative to promote domestic manufacturing. The recommendation for 70% safeguard duty on (solar panel) imports, the ongoing anti-dumping case, and a 7.85% port duty on imported modules are together creating an atmosphere of regulatory uncertainty that is taking a toll on the industry and slowing down installation activity," the Mercom report quoted CEO Raj Prabhu as saying.

The rooftop solar sector also witnessed steady growth in 2017 alongside the rise in grid-connected utility-scale capacity. In a display of government's commitment to this segment, solar power producer Azure Power on Tuesday won a project to electrify 152 schools with rooftop solar projects of 11.35 mw. The company will sign the agreement with Navodaya Vidyalaya Samiti, an autonomous body under human resources development ministry.

Source: [The Times of India](#), January 31, 2018.



Consumer Focus

FACTS

A transformer was erected right in front of the petitioner's house without maintaining appropriate gap between the pole and their residence. The petitioner approached the forum to find a remedy to the problem.

CONTESTATIONS

Appellant: The petitioner stated that a transformer is placed right in front of the apartment without maintaining appropriate distance between the pole and their house. It causes damage to vehicles and people walking towards the apartment. The petitioner requested to rectify the same. The petitioner also complained about frequent power failure.

Respondent: The respondent reported that the Ceebros TP structure with 500KVA distribution transformer was erected inside the premise which is next to the petitioner's apartments. There is adequate clearance surrounding the structure inside the premises and the vertical distance between nearby flat and the structure is 4 mtrs. On 3rd June 2017, there occurred breakdown in above transformer structure due to incoming cable fault due to which PT flash over had occurred. However, the same was replaced immediately and supply was subsequently restored. The structure was being well maintained at regular intervals supply with no other abnormal incidents occurring so far in the structure. Also it was ascertained that normal supply was being maintained.

OBSERVATIONS AND JUDGMENT

It is learnt that the operating pipe of the structure under discussion was inside the premises of the petitioner. TANGEDCO may ensure the shifting of the handle away from the petitioner's premises and maintain the structure properly. It was also ordered to look into the possibility of the conversion of the above outdoor structure into RMU in Coordination with the owners of the building in which the structure is erected. With this order the petition was disposed of.

ECC Voice

மின் வாரிய பணியாளரின் மெத்தனப்போக்கு

கடந்த ஜனவரி மாதம், மின்னளவு எடுக்கும் மின்வாரிய பணியாளர், திருநெல்வேலி டவுனில் வசிக்கும் திரு. இசக்கி முத்து அவர்களின் வீட்டின் மின்னளவினை எடுக்காமல் சென்றுவிட்டார். இது சம்பந்தமாக திரு. இசக்கி முத்து மின் வாரிய அலுவலகத்தினை தொடர்பு கொண்டு தகுந்த நடவடிக்கை எடுக்குமாறு வேண்டியுள்ளார். ஆனால், இவரது புகாரின் மீது மின் வாரியம் எந்த நடவடிக்கையும் மேற்கொள்ளவில்லை. இதனால், திரு. இசக்கி முத்து தொலைபேசி வாயிலாக திருநெல்வேலி மின் நுகர்வோர் சேவை மையத்தில் புகார் ஒன்றினை அளித்தார். இந்த புகாரின் அடிப்படையில், மின் நுகர்வோர் சேவை மையம் மின்வாரியத்தின் அதிகாரிகளிடம் திரு. இசக்கி முத்துவின் வீட்டின் மின்னளவு எடுக்க நடவடிக்கை மேற்கொள்ள வேண்டும் என புகார் தெரிவித்தனர். மேலும், அந்த பகுதி மின்பொறியாளரையும் தொலைபேசி வாயிலாக தொடர்பு கொண்டு பேசினர்.

மின்பொறியாளர் உடனடியாக மின்வாரிய பணியாளரிடம், மேற்கண்ட நுகர்வோரின் வீட்டில் மின்னளவினை குறிக்காததற்கான காரணத்தை அலுவலகத்திற்கு தெரிவிக்குமாறு கேட்டுக்கொண்டார்.

மின் வாரிய பணியாளர் நுகர்வோரின் வீட்டின் மின்னளவு கருவி "Stuck up" ஆக உள்ளது என்றும் அதனால் மின்னளவினை வெள்ளை அட்டையில் குறிக்கவில்லை என்று தெரிவித்தார். மேலும், அவர் மின்னளவு கருவியில் குறைபாடு இருப்பதானால் திரு. இசக்கி முத்து தனது மின் இணைப்பிற்கு கடந்த மாதங்களில் அதிக அளவு செலுத்திய தொகையை செலுத்த வேண்டும் என்று வெள்ளை அட்டையில் பதிவு செய்தார். மின் நுகர்வோர் சேவை மையத்தின் தலையீட்டிற்குப் பின்னரே அவர் இத்தகவலை தந்தார்.

மின் வாரிய பணியாளர்கள் மெத்தனமாக இல்லாமல், நுகர்வோர் பிரச்சனைக்கு விரிவான பதிலையும் மற்றும் விளக்கத்தினையும் அளித்து, நுகர்வோர் நலனில் அக்கறை கொண்டு பணியினை மேற்கொள்ள வேண்டும்.

- திருநெல்வேலி மின் நுகர்வோர் சேவை மையம்

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Citizen consumer and civic Action Group (CAG) is a non-profit, non-political and professional organization that works towards protecting citizen's rights in consumer and environmental issues and promoting good governance processes including transparency, accountability and participatory decision making.

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World News

Electricity consumers to get 'capped bills' to address issues of estimated billing

The Nigerian Electricity Regulatory Commission (NERC), in a new regulatory code, has said it will develop an order on capping of unmetered customers' bills to address the issue of estimated billing.

Contained in NERC's Draft Meter Asset Providers Regulations 2017, the Commission said the order would be developed within 90 days after the approval of the new regulatory code.

The Commission shall within 90 days of the approval of these Regulations, develop an order on capping of unmetered customers bills to address the issue of estimated billing in the NESI. This creative regulatory initiative is expected to bridge the metering gap in NESI," NERC said.

According to the new regulatory code, every electricity consumer shall have the right to a meter, installed to ensure proper energy accounting, but where a customer chooses the option of self-financing of the meter, the Distribution Licensee shall own such meters and repay the customers through energy credits over a period of time.

"Where the customer chooses the option of self financing of the meter,

the Distribution Licensee shall provide the customer with authorization specifying the amount to be paid for installation of a meter after inspection of the customer's premises.

The customer shall pay to the MAP [Meter Asset Provider] the full price of the meter as specified in the Distribution Licensee's authorization.

The MAP shall supply and install such meter at the premises of the customer within 21 working days of the Customer's payment.

The Distribution Licensee shall own such meters and shall repay the customers through energy credits over a period not exceeding 5 years," the NERC new regulatory code read.

NERC further stated that if a customer's metering system develops fault, the MAP will provide urgent metering services to repair or replace the meter and its accessories within two (2) working days.

Where there is a dispute, the customer has a right to fair resolution in accordance with the Metering Code and other applicable Regulations," NERC stated. Source: THENEWSGURU, January 22, 2018

Publications/Regulations

- Renewable Energy Market Analysis: Southeast Asia, January 2018, [Click here](#)
- Financing Solar for Irrigation in India: Risks, Challenges and Solutions, January 2018, [Click here](#)

World Energy Outlook—2017

[World Electricity Generation from 1971 to 2015 by Fuel \(TWh\)](#)

