

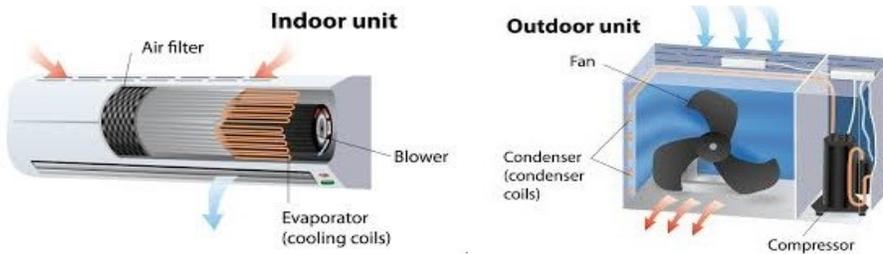
## A Consumer Guide on selecting an Air Conditioner (AC) - (Part 1)

### 1. Type of AC - Window AC or Split AC

From an energy perspective, both window AC and split AC will consume nearly the same amount of energy. The main difference between the two is that window ACs contain a single unit and split ACs contain two units - indoor and outdoor units. Split ACs operate with lesser noise and have a variety of models.

### 2. Inverter-based ACs

Based on the type of technology, ACs can be further categorised into inverter type and non-inverter type AC technologies. Inverter-based ACs are more energy efficient. However, inverter-based ACs are expensive and mentioned as "[variable type compressor](#)" in energy star rating labels.



### 3. AC Capacity

There is no thumb rule to determine the capacity or tonnage of the AC required for a room. Many factors such as room size, location, placement of the AC unit, etc., play a part, that will give cooling and [impact the electricity consumption](#). As per [MNRE](#) advisory, 1 ton AC is sufficient for 150 square feet room and 2 ton AC will be sufficient for a 300 square feet room. A residential consumer can use this [calculator](#) to ascertain the capacity of the air conditioner.

### 4. Copper or Aluminum condenser coils

Condenser coils are an essential part of the AC as they help to draw out the heat from the room. Nowadays, we get to hear about condenser coils being made of copper or aluminum, in advertisements for ACs. Consumers should choose copper-based condensers over aluminum for the following reasons:

Characteristics	Copper coil	Aluminium Coil
Corrosion	Can corrode but repaired in case of corrosion	Can also corrode but need to be replaced in case of corrosion
Cost	Costlier	Cheaper
Durability	More durable	Less durable. Needs heavy cabinet for protection
Ease of maintenance	Cleaned and maintained easily	Difficult to clean due to the heavy cabinet
Ease of repair	Easy of repair	Difficult to repair and should be replaced in case of clogging

(to be continued)

#### INSIDE THIS ISSUE:

Editorial	1,2
Tamil Nadu News	3
India News	3
Consumer Focus	4
ECC Voice	4
World News	5
Publications, Statistics	5

Please send your feedback to [ecc@cag.org.in](mailto:ecc@cag.org.in)

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# The Do-It-Yourself Energy Audit Series

## For Household Consumers (Part 3)

### KEEP COOL, THE PASSIVE EFFICIENT WAY

This edition of the DIY Energy Audit Series will provide household consumers with tips and tricks to adopt **passive cooling techniques** or methods to maintain a comfortable indoor temperature, without using electrical appliances.

#### 1.Improve natural ventilation in your home:



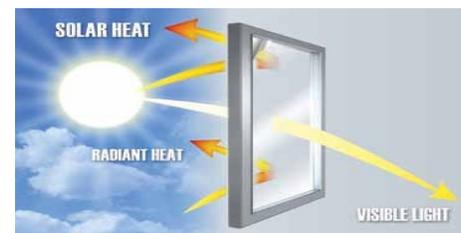
[Natural ventilation](#) uses the natural forces of wind and buoyancy to deliver fresh air into buildings. At a building design level, natural ventilation can be enhanced by (i) having high ceilings, (ii) placing openings in opposite pressure zones and providing for air vents. Natural ventilation can be improved by regularly opening doors and windows which ensure delivery of fresh air, better air circulation and enhanced cooling.

**Best Practice: Keep doors and windows open during the day, as much as possible**

#### 2. Reduce the sun's glare on windows and roof:

Most of heat gained in households is due to direct solar radiation that enters the building through windows and roof. Therefore, shading (covering the surface) of the windows and roof with heat reflective materials can help maintain the indoor temperature at an optimal level.

**2.a.Windows:** A sun control film can cut down nearly [78% of the heat coming through the window](#) and in-turn ensure effective cooling in your room. Choosing the right curtains and blinds for the room can also help reduce heat gained because of direct sunlight from the window.



**Best Practice: Apply sun control film on your window glass or use [roller blind curtains, awnings or louvres](#) to enhance thermal comfort**

**2.b.Roof:** While covering the roof surface to reduce heat gain is highly recommended, it is important to make sure that the materials used do not interfere with night-time cooling.



**Best Practices: Cover the roof with plants, canvas or earthen pots etc. (or)**

**Paint the roof with white reflective paint or fix white reflective tiles for effective roof shading.**

#### 3. Other Passive Cooling Tips:

3.a. Paint your home's exterior with light hues to reflect the sun's rays and reduce heat gained thereby.

3.b. Plant [shade trees](#) and creepers around your homes for effective shading and enhanced cooling.

*(to be continued)*

## Tamil Nadu News

### TANGEDCO's losses rose to ₹7,582.56 cr. in FY 2018: report

Losses of Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO) widened in financial year 2018 to ₹7,582.56 crore from ₹6141.54 crore in the financial year 2017, according to a report from India Ratings and Research. Lower sale of power, drop in collection efficiency and higher cost of power led to the higher losses, the report said.

According to sources, the release of the results was delayed and the financials are contrary to the government expectations of achieving a break-even in FY18.

The financials sourced from TANGEDCO by India Ratings showed that the DISCOM's revenue from sale of power declined 0.63% to ₹43686.77 crore in FY18 from the previous year. Sale of power accounts for 78% of TANGEDCO's total income.

TANGEDCO's operating earnings before interest, tax, depreciation and amortization (EBITDA) were negative ₹607 crore in FY18, compared a positive level of ₹2,325 crore in FY17, as per the report. The EBITDA margin fell to 3.13% in FY18, compared to 7.64% in FY17 on account of the rise in power cost. The cost of power increased to ₹41,071.77 crore in FY18 from ₹37,384.59 crore in the same period last year. TANGEDCO's collection efficiency dropped to 97.78% in FY18 from 100.02% in the previous year, while the aggregate technical and commercial loss increased to 15.96% from 15.39% for the same period.

Source: [The Hindu](#), February 09, 2019

## India News

### India's solar capacity at 28 GW at Dec-end : Bridge To India report

The country's total solar power generation capacity, including 3.85 gigawatt (GW) rooftops, stood at 28.05 GW while 17.65 GW was under implementation as on December 31, 2018, according to a report by Bridge To India (BTI). The quarterly market report, titled 'India Solar Compass Q4 2018', gives a detailed analysis of capacity addition, tender issuance, market players, price trends for the past quarter and the whole year 2018. India's total solar installed capacity and pipeline stood at 28,057 MW and 17,658 MW as on December 31, 2018, according to the report. This capacity is split between utility scale and rooftop solar as 24,202 MW and 3,855 MW, respectively.

It said only 1,446 MW capacity was added in the October-December 2018 period, 990 MW in utility scale solar and 456 MW in rooftop solar. The utility scale solar capacity addition has been sluggish since the second quarter ended June 30, 2018, and is down 46 per cent over the fourth quarter of 2017. In contrast, the rooftop solar market is growing strongly and is up 47 per cent over previous year, it said. In the December 2018 quarter, the highest capacity (200 MW) was added in Andhra Pradesh and Gujarat. Karnataka (5,328 MW), Telangana (3,501 MW) and Rajasthan (3,081 MW) continued to be the top-three states by commissioned capacity for utility scale solar.

In 2018, Adani (740 MW), Acme (720 MW) and Essel Infra (460 MW) were the top-three developers by commissioned capacity. GCL, Risen Energy and JA Solar (all Chinese suppliers) were the leading module suppliers, while Sungrow, ABB and Huawei were the leading inverter suppliers. "2019 is expected to be better but the new government will have to work hard to re-build investor appetite. Rooftop solar remains a bright spot but even this market has seen some serious policy reversals in the last few months," it added

Source: [Economic Times](#), February 19, 2019

## Consumer Focus

### Facts

The petitioner is a domestic consumer having a 3 phase service under Tariff I-A. He had installed rooftop Solar PVs after paying the required charges to the TANGEDCO. The petitioner registered the application with TANGEDCO on 23<sup>rd</sup> September 2016 for the solar Bi-directional meter instead of the normal meter. Till 31<sup>st</sup> December 2016, he was not able to use the solar energy, due to the non-availability of Solar Bi-directional meter. Hence, the petitioner approached CGRF.

### Contentions

#### **Petitioner**

The petitioner stated that he had installed the rooftop Solar PV panels and has paid all the charges requested by the TANGEDCO for availing the Solar Bi-directional meter to his connection. He could not use solar power even after three months of installation.

#### **Respondent**

The respondent stated that there was a delay because of the non-availability of 3 phase solar bi-directional meter. Once the meters are received and allotted by the head office, it will be provided to the petitioner.

### **Observation/Judgement**

CGRF observed that TANGEDCO should issue the solar net metering service within 15 days from the date of this order to the petitioner. If the problem still persists, then the licensee has to make arrangements to get approval from the headquarters for accepting the consumer meter and provide solar net metering facility to the petitioner within a week. The licensee is further directed to effect the service for solar power with net meter within 7 days from the date of receipt of all meter applications received from the consumers.

## ECC VOICE

சேலம் மின் நுகர்வோர் மையம் சார்பில் திறன் மேம்பாட்டு நிகழ்ச்சி காமராஜர் காலனி, அம்மாபேட்டை, சேலம் மாவட்டத்தில் நடந்தது. இந்த நிகழ்ச்சியில் அம்மாபேட்டை பகுதியை சார்ந்த நெசவுத்தொழில் செய்பவர்கள், கட்டிட வேலை செய்பவர்கள், எலக்ட்ரிக்கல் மற்றும் பிளம்பிங் தொழிலாளர்கள் என பலரும் கலந்து கொண்டனர்.

சேலம் 'NIRT RENEWABLE ENERGY" (system integrator- listed by TEDA) நிறுவனத்தை சார்ந்த திரு. சிவக்குமார் சூரிய மின் சக்தியின் பயன்பாடு, சூரிய சக்தி மூலம் எவ்வாறு மின்சாரம் பெறுவது, சோலார் சாதனங்கள் எவ்வாறு செயல்படுகிறது என்பதை பற்றியும் விரிவாக விளக்கம் அளித்தார்.

ROOFTOP சோலாரை அமைக்க முதலில் மின் பயன்பாட்டின் அளவினை தெரிந்து கொண்டு அதற்கேற்றாற்போல் மாடியில் திறந்த வெளிப்பகுதியில் சோலார் பேனலைப் (panel) பொறுத்த வேண்டும் என்றும், எதிர்கால மின் பயன்பாடு சோலார் மின்சக்தியை நம்பியே இருக்கும் சூழல் குறித்தும் பேசினார்.

நிகழ்ச்சியில் கலந்து கொண்ட திரு. தியாகராஜன், ROOFTOP சோலாரை அமைப்பது குறித்து தெளிவாக இந்த நிகழ்ச்சியின் மூலம் தெரிந்து கொண்டார். இதற்கான செலவுகள், மானியம் மற்றும் இதை அமைப்பதால் மின்சக்தி எவ்வாறு சேமிக்க முடியும் எனவும் தெரிந்து கொண்டு, அவரது வீட்டில் ROOFTOP சோலாரை நிறுவ ஒப்புக்கொண்டார்.

இந்த திறன் மேம்பாட்டு நிகழ்ச்சியின் மூலம் நுகர்வோர்கள் சோலார் பற்றிய விழிப்புணர்வு மற்றும் அதனைப்பற்றிய தகவல்களையும் தெரிந்து கொண்டனர்.

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**Initiative of**


*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

### Renewable energy will be world's main power source by 2040, says BP

Renewable energy sources will be the world's main source of power within two decades and are establishing a foothold in the global energy system faster than any fuel in history, according to British Petroleum (BP). The UK-based oil company said wind, solar and other renewables will account for about 30% of the world's electricity supplies by 2040, up from 25% in BP's 2040 estimates last year, and about 10% today.

In regions such as Europe, the figure will be as high as 50% by 2040. The speed of growth was without parallel, the company said in its annual energy outlook. While oil took almost 45 years to go from 1% of global energy to 10%, and gas took more than 50 years, renewables are expected to do so within 25 years in the report's central scenario.

In the event of a faster switch to a low carbon economy, that period comes down to just 15 years, which BP said would be "literally off the charts" relative to historical shifts. But the company, as in previous editions of its report, does not see oil going away any time soon. The outlook's core scenario envisages that oil demand does not peak until the 2030s, though under its greener scenario that milestone could be reached between now and the early 2020s.

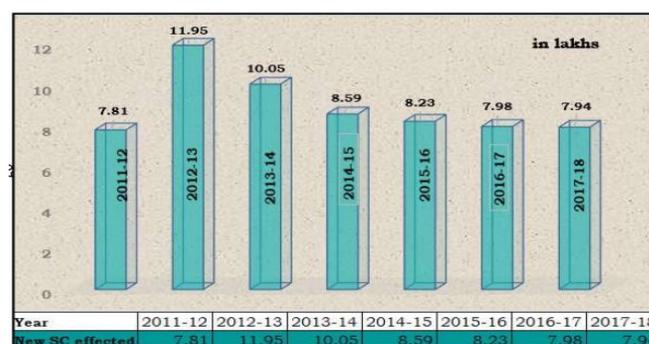
The company said it expected growth in renewables to be driven by government policies, technological change and the falling costs of wind and solar power. Renewables are expected to grow by 7.1% each year over the next two decades, eventually displacing coal as the world's top source of power by 2040.

Source: [The Guardian](#), February 14, 2019

## Publications / Regulations

- Tamil Nadu Solar Energy Policy 2019 ( [TEDA](#) )
- Technical Standards for Connectivity to the Grid (Amendment ) Regulations, 2019 ( [CEA](#) )
- Technical Standards for Connectivity of the Distributed Generation Resources (Amendment) Regulations, 2019 ( [CEA](#) )

### New service connections in Tamil Nadu (upto 31.03.2018)



Source: Energy Department, Govt. of Tamil Nadu, [February, 2019](#)