



ESSENTIAL PREPARATIONS FOR AN ENERGY EFFICIENT SUMMER

G.N.BHARATH RAM

As summer approaches, it is essential to prepare for rising temperatures with a focus on sustainability. According to the Indian Meteorological Department, Tamil Nadu experiences its <u>summer season</u> from March to May, with temperatures substantially higher than in other times of the year.

During the summer months, our reliance on major household appliances extends beyond the typical ones like televisions, refrigerators, and washing machines. Cooling appliances, such as air conditioners and fans become essential for maintaining a comfortable living environment. A publication from CAG Citizen consumer and civic Action Group

TABLE OF CONTENTS

Editorial • P. 1

Consumer Focus • P. 5

News • P. 7

Publications • P. 8

Other • P. 9

Page 1

However, it is important to be aware that the increased usage of these energy-intensive appliances, especially ACs, can lead to a significant rise in our electricity bills. Understanding this can help us manage our energy consumption more effectively during the warmer season.

The emphasis on reducing energy consumption or increasing energy efficiency highlights the importance of using electricity wisely. By choosing energy-efficient products and making use of natural ventilation wherever feasible, consumers can experience substantial savings on their utility bills.

Here are several key strategies to ensure your summer preparations are energy-efficient, helping you stay cool while minimising your electricity bills;

Energy efficiency and conservation for the Air Conditioner:

1.Look for the star-labelled products: Energy Star models are recognized as the most energy-efficient options in their respective product categories, with minimum efficiency standards established by the <u>Bureau of Energy Efficiency (BEE)</u>. As we shop, there's a simple guideline to follow: always look for the "Energy Star label". The more stars a product has, the less electricity it consumes, which ultimately leads to lower energy bills.



Figure 1 : Always choose appliances with a high star rating

2. Get the right size: Contrary to common belief, a larger unit isn't always the best option, particularly in smaller spaces. It's important to recognize that the size of the unit plays a crucial role in its effectiveness. Oversized air conditioners waste energy and money; in many cases, they also do not perform as well. A smaller, appropriately sized air conditioner can operate more efficiently by running continuously for longer periods, which not only enhances cooling but also effectively reduces <u>humidity levels</u>. Furthermore, conditioners air equipped with automatic temperature cut-off features contribute to energy savings by preventing unnecessary operational cycles.

Room size	AC capacity
Up to 100 sq. ft	0.8 ton
Up to 150 sq. ft	10 top
Op to 100 Sq. 11	1.0 1011
Up to 250 sq. ft	1.5 ton
Up to 400 sq. ft	2.0 ton

Figure 2: How to choose your AC by room capacity | The Economic Times 3. Maintain it properly: Win the war against wasteful energy consumption by adhering to <u>routine</u> <u>maintenance of the appliance</u>. For example, to ensure optimal performance, it's important to clean the air conditioner already installed in your home. <u>Start by cleaning the filter and checking for any</u> <u>leaks</u> in both the indoor and outdoor systems. If leaks are present, the air conditioner will struggle to cool effectively, which can lead to inflated electricity bills.



Figure 3 : Clean AC filters regularly | <u>Haier India</u>

4. When to choose new? It's important to note that the most advanced AC models are equipped with higher-efficiency compressors, fan motors, and heat-transfer surfaces compared to older versions. These high-efficiency units can <u>reduce energy consumption by 20 to 40 per cent</u>, leading to significant savings on energy bills. For instance, replacing a 10-year-old air conditioner with an Energy Star model can result in substantial cuts to monthly costs.

5. Use fans with your Air Conditioner: Using an air conditioner at the <u>Ideal Temperature (24°C)</u> helps in effective cooling with energy saving. Using fans with your AC unit <u>helps circulate cool air</u> <u>throughout the room</u>. This strategy can reduce your reliance on the AC and ultimately lower your energy bills. When using fans, adjust the AC settings according to your comfort preferences and the outside temperature to maximise energy efficiency.



Figure 4 : Use your ceiling fan in combination with the AC for energy efficient use | <u>oceansideservices.com</u>

Natural Ventilation

Natural ventilation <u>allows fresh air into your home</u>, without having to rely on fans, ACs or other mechanics. It facilitates temperature regulation and promotes the circulation of fresh air, which can greatly enhance the overall living environment. According to the <u>National Building Code of India (NBC 2016)</u>, adequate natural ventilation through windows and openings is a basic requirement for healthy indoor environments, especially in residential buildings. Open windows during cool evenings or mornings to let in refreshing air and improve indoor air quality. Make sure the windows are across from each other. This creates cross-ventilation, letting stale air escape and fresh air in. <u>Adding shades can also help keep your space cooler.</u>



Figure 5 : Type of natural ventilation | Teal Products

Choosing and Maintaining Ceiling Fans

Another cutting-edge category is tandem or <u>multi-junction solar cells</u>, which stack multiple layers of PN junctions to absorb various wavelengths of sunlight. These cells have demonstrated extremely high efficiencies—up to <u>45%</u> in laboratory settings—but are currently limited to niche applications like satellites, space probes, concentrated solar PV systems, due to their high cost and complexity



Figure 6 : Advantages of a BLDC Fan | <u>CAG</u>

Conclusion

By adopting sustainable practices and making informed choices, we can effectively reduce our energy consumption and lower our electricity bills. Not only do these strategies contribute to a more comfortable living environment, but they also promote a healthier planet. Embracing these energy-efficient habits will help us navigate the summer heat while maintaining both our finances and our commitment to sustainability. Let's take these steps together for a cooler, greener future.

CONSUME<mark>R FOCU</mark>S

The appellant is a domestic consumer, in a 2 BHK flat in the Central Public Works Department (CPWD) government quarters since February 2022. The appellant's service connection is registered under the name of the Assistant Engineer, Electrical, for the CPWD quarters. The household's average monthly electricity consumption was around 500 units. However, in May 2023, the appellant observed a significant and sudden increase in his electricity bill, despite no changes in household appliances or usage patterns.

The appellant submitted her complaint to the Assistant Engineer (AE) on 17.05.2023 to check the meter. An inspection by the electricity board staff (lineman) found the meter functioning well. Based on his report, the AE sent the meter to the Meter Relay Testing (MRT) wing on 24.05.2023. The first MRT test report concluded that the meter was working in good condition and no abnormalities were noticed.

The appellant decided to monitor further billing cycles. Continued excessive billing prompted the appellant to file a petition with the Consumer Grievance Redressal Forum (CGRF) on 18.09.2023. Based on the complaint, a second MRT test was performed, and this again showed the meter to be working properly. This led the appellant to believe that the problem might be due to their house wiring or appliances. Therefore, the appellant skipped the CGRF petition's hearing. Based on the MRT facts, on 04.11.2023, the CGRF also closed the petition.

Meanwhile, the appellant checked the appliances and wiring of the house, which were found to be in good condition. Again, on 22.01.2024, the appellant submitted a complaint to the AE with the latest information about the wiring results, but he rejected it, insisting that the problem might be with the house wiring and not with the meter.

The appellant came to know about third-party testing agencies that are accredited by the National Accreditation Board for Testing and Calibration Laboratories (NABL) for the purpose of testing disputed meters. She therefore filed another complaint with the AE on 12.04.2024 asking that the meter be tested with the Government Electrical Standards Laboratory, paying Rs. 5000/- towards this. On 25.06.2024, the result stated that "the meter is incorrectly recording power at twice the normal (consumption)". Based on this report, the AE changed the faulty meter and installed a new meter.

Subsequent to this, the appellant submitted a letter to the AE on 28.06.2024, requesting (i) for reimbursement of the meter challenge test fee (ii) necessary bill revision for the period of inaccurate recording of consumption (iii) reimbursement or adjustment of excess charges in subsequent bills and (iv) copy of challenge test and MRT test report of the old meter.

After no response for 75 days, the appellant filed a second petition with CGRF on 11.09.2024. Following this, another independent test was conducted on the meter in question at the NABLaccredited TNPDCL lab in October 2024, which confirmed that the meter was indeed registering double the actual power consumption.

The CGRF, acknowledging the third-party findings, directed the respondent to revise the bills from September 2023 to June 2024, reimburse the excess bill amount paid and reimburse the cost of the challenge test within 7 days from the date of receipt of the order.

As per the MRT test report performed on 24.05.2023 & 30.09.2023 the meter was in good condition up to the 09/2023 assessment period. The CGRF therefore considered meter recordings to be inaccurate only after this. So, from the period 11/2023 to 07/2024, a 50% reimbursement of the units recorded in the meter (as the meter was recording double the consumption) was ordered. The respondent submitted that based on the CGRF order, Rs. 23,999/- (Including testing fee Rs 5000) will be adjusted against future bills, and the same was intimated to the appellant.

The appellant believed that the period selected by the CGRF for reimbursement was inaccurate, and therefore filed a petition before the Tamil Nadu Electricity Ombudsman. She therefore asked for a refund of charges paid for May, July, and August 2023 as well, and also asked that reimbursement of excess charges be made via bank transfer or cheque.

During the Electricity Ombudsman hearing, the following were observed:

- The respondent claimed that the appellant's request for a bill revision from May 2023 can not be provided because there is no conclusive evidence that the meter was faulty before November 2023. As per the MRT reports from May and September 2023, it was clearly stated that the meter was functioning correctly. Therefore, the exact period from which the meter started malfunctioning could not be determined.
- Also, the appellant did not contest this matter in the CGRF hearing. Therefore, the respondent asserted that the meter's abnormal readings must have started from November 2023 and could not be earlier. The respondent argued that there is no basis for granting additional bill adjustments for the three assessment periods of May, July, and August 2023.
- The appellant argued that though her residence is registered under the name of the Assistant Engineer of the CPWD Quarters, currently, she is the occupant of the service connection. In two years, she will have to vacate the premises on her husband's retirement. Therefore, she was concerned that the credited amount might not be utilised by her through just the adjustment of future bills.

The Ombudsman's findings were:

- The Consumer Grievance Redressal Forum (CGRF) agreed to revise the bill from September 2023 to June 2024 based on the meter reading test (MRT) reports. However, the National Accreditation Board for Testing and Calibration Laboratories (NABL) report showed that the meter was recording double the actual usage, and these results should be considered accurate. CGRF's decision to adjust the bill reflects only half of the assessed usage, as per the Tamil Nadu Electricity Regulatory Commission (TNERC) Supply Code rules. The relief granted to the appellant should start from May 2023 instead of September 2023. Therefore, the respondents must revise the bill from May 2023 and inform the appellant of the refund amount.
- The service connection is registered in the name of the AE of CPWD, who is the account holder, but the appellant paid the Current Consumption (CC) bill during the disputed period. This complicates the appellant's refund request. The Electricity Ombudsman informed the respondent to confirm if the revised bill amount from 05/2023 can be refunded directly to the appellant, with authorisation from the AE/CPWD. The respondent indicated they may consider this option.

Based on the findings, the Electricity Ombudsman ordered the respondent to recalculate the bills for the period from May 2023 to June 2024 and take necessary action for a refund.

SOURCE: <u>OMBUDSMAN CASE</u>

NEWS FROM TAMIL NADU

Tamil Nadu's daily power consumption crosses 400 million units earlier than last year

As temperatures rose in the state since late February, the total power consumption in a single day has already touched 400 million units on March 7 this year, which is more than a week earlier than last summer. Tamil Nadu's consumption on March 7, 2025, was 406.24 MUs. In contrast, the state reached the 400-MU mark last year on March 15, when the consumption was 417.98 MUs. With the state already crossing the 400-MU mark twice this year, the state's power utilities are gearing up for tackling record high demands for more days this summer. In 2024, the highest daily consumption was 454.320 MUs on May 2, 2024, which was also the highest-ever. This year, the state is expected to surpass this mark by mid-April, officials said. In terms of demand, last year's peak of 20,830 MW was reached on April 30. The demand is likely to reach 22,150 MW this year. According to the Tamil Nadu Power Distribution Corporation Limited's (TNPDCL) data accessed by TNIE, as of March 31, 2021, the power utility served around 3.16 crore consumers including domestic, agriculture, industries and commercial users. This has grown by 10% to 3.47 crore now. This has led to the annual rise of 6% in electricity demand, officials said. The state's power distribution network, including transformers, substations, and power transmission lines, has, however, not grown proportionately due to space and financial constraints, officials said. A senior official said, "As of Tuesday, TNPDCL operates 4.17 lakh transformers statewide, an increase from 3.73 lakh on March 31, 2022. Over the past three years, only 44,000 transformers have been added, which is insufficient. The official emphasised the need to install at least 5% more transformers annually to meet the growing demand." The state also gets an average of 5,500 MW from solar power. With these sources, the demand until the end of summer can be managed, the official added.

SOURCE: THE NEW INDIAN EXPRESS, 12 MARCH 2025

NEWS FROM ACROSS THE COUNTRY

India's power consumption grows slightly to 131.54 billion units in February

India's power consumption grew marginally to 131.54 billion units (BU) in February, higher than 127.34 BU in the year-ago period, according to the government data. However, the two figures are not comparable, as 2024 was a leap year. According to official data, power consumption was 127.34 BU in February 2024. The highest supply in a day (peak power demand met) also rose to 238.14 GW from 222 GW in February 2024. The peak power demand touched an all-time high of about 250 GW in May 2024. The previous all-time high peak power demand of 243.27 GW was recorded in September 2023. Last year, the power ministry projected a peak power demand of 235 GW during the day and 225 GW during evening hours for May 2024, while 240 GW during daytime and 235 GW in the evening hours for June 2024. The ministry had also estimated that peak power demand is expected to touch 270 GW in the summer of 2025. Experts opine that power demand and consumption will increase in March, which is expected to be hotter than usual, due to the use of fans, coolers and air conditioners. It has also been projected that during the March to May season of 2025, an above-normal number of heatwave days are likely over most parts of Peninsular India.

SOURCE: THE HINDU, 04 MARCH 2025

<mark>WORLD</mark> NEWS

Green loans available for healthcare providers

Aussie healthcare providers will be able to save more on their energy bills with the Albanese Government delivering cheaper loans for cheaper rooftop solar, electric vehicles and EV chargers. The Clean Energy Finance Corporation (CEFC) is working with specialist healthcare lender Credabl, with a new \$20 million investment to boost the uptake of energy efficient fixtures and fitouts. It means doctors, dentists, vets and other healthcare providers can access loans with reduced interest rates of up to 0.65%. This could save eligible borrowers over \$4,600 on a \$250,000 loan over a five-year term - those savings are just the start with energy efficiency measures crucial to bringing energy bills down for good. In 2024, Australia hit a record 4 million household solar installations, as homeowners continue to embrace the long-term power bill savings our sunshine provides. The Albanese Government is ensuring Aussie businesses can share in the reliable renewable revolution too, with the uptake of rooftop solar and improved energy efficiency helping to deliver cost of living relief for healthcare providers across the country. The \$20 million investment will also reduce emissions. Our healthcare sector is estimated to contribute almost 7% to national emissions - globally it is estimated the healthcare sector would be the 5th largest emitter if it were a nation. By providing access to cheaper loans, the Albanese Labor Government is bringing energy bills down for good for Australian doctors, dentists and vets. "This CEFC investment is supporting small businesses to capitalise on the renewable revolution and play their role in the net zero transformation." Australia's healthcare providers deliver life-saving services across our communities, but they also need energy-saving technologies to help our health system meet the challenges of climate change. "Our GPs, vets and other health providers are dealing with the impacts of climate change every day as patients present with illnesses from extreme heatwaves.



SOURCE: ENERGY.GOV.AU, 05 MARCH 2025



PUBLICATIONS

- Transmission Lines Completed During FY- 2024-25, <u>CEA</u>, March 2025
- Energy Storage System: Roadmap for India: 2019-2032, <u>ISGF</u>
- Renewable Energy Statistics 2025, IRENA
- Unlocking the potential of demand-side climate mitigation strategies, <u>OECD</u>

SOLAR PV AND WIND NET ADDITIONS IN SELECTED MARKETS, 2023-2024



SOURCE: <u>IEA</u>

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+91(44) 2435 4458 | 2435 0387



9

helpdesk@cag.org.in

No.103 (First Floor), Eldams Road, Teynampet, Chennai-18