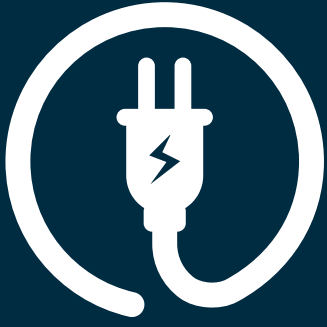




CURRENT NEWS

மின் செய்திகள்

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IS A HEAT PUMP EFFECTIVE FOR HEATING APPLICATIONS ?

MANIKANDAN

Anyone who has stood beside the outdoor unit of an air conditioner will have felt hot air blowing out of it. That heat comes from inside the room. An air conditioner does not create heat, it just removes heat from one place and releases it in another. A refrigerator works in a similar manner. The back and sides of a refrigerator feel warm because they are giving off the heat that has been drawn out of the food inside. Now suppose that this waste heat was put to deliberate use (eg. water heating). This is precisely the role of a heat pump.

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What is a heat pump?

Most heating equipment generates heat. An electric geyser passes current through a metal element and a boiler burns diesel or coal. A heat pump works differently. Rather than generating heat, it collects heat that is already available, such as the outdoor air, warm wastewater or hot exhaust air from a machine, and transfers it to where it is needed. Electricity is used only to drive this transfer.

A useful comparison is the water pump. A water pump does not create water, it lifts existing water from a sump to an overhead tank. In the same way, a heat pump lifts heat from one place to another.

How does a heat pump work?

A heat pump contains a special fluid known as a refrigerant. It circulates continuously through a sealed loop of pipes. The refrigerant behaves much like a sponge for heat, it absorbs heat at one point and releases it at another. Each cycle has four stages as follows:

- a.) Heat absorption (evaporator): The refrigerant boils at a temperature far below the boiling point of water. As it flows through a coil exposed to outdoor air or warm wastewater, it absorbs heat and turns into gas.
- b.) Compression (compressor): The gas is then compressed. Anyone who has inflated a bicycle tyre will have noticed that a pump in use becomes warm – this is because compressing a gas raises its temperature. This is the only stage where a heat pump consumes electricity.
- c.) Heat release (Condenser): The hot gas flows through a coil placed in the water tank, where it transfers its heat to the water. As it gives up heat, it cools and condenses back into a liquid.
- d.) Expansion (expansion valve): The pressure of the liquid is then reduced, which cools it sharply and prepares it to absorb heat once more. The cycle then repeats.

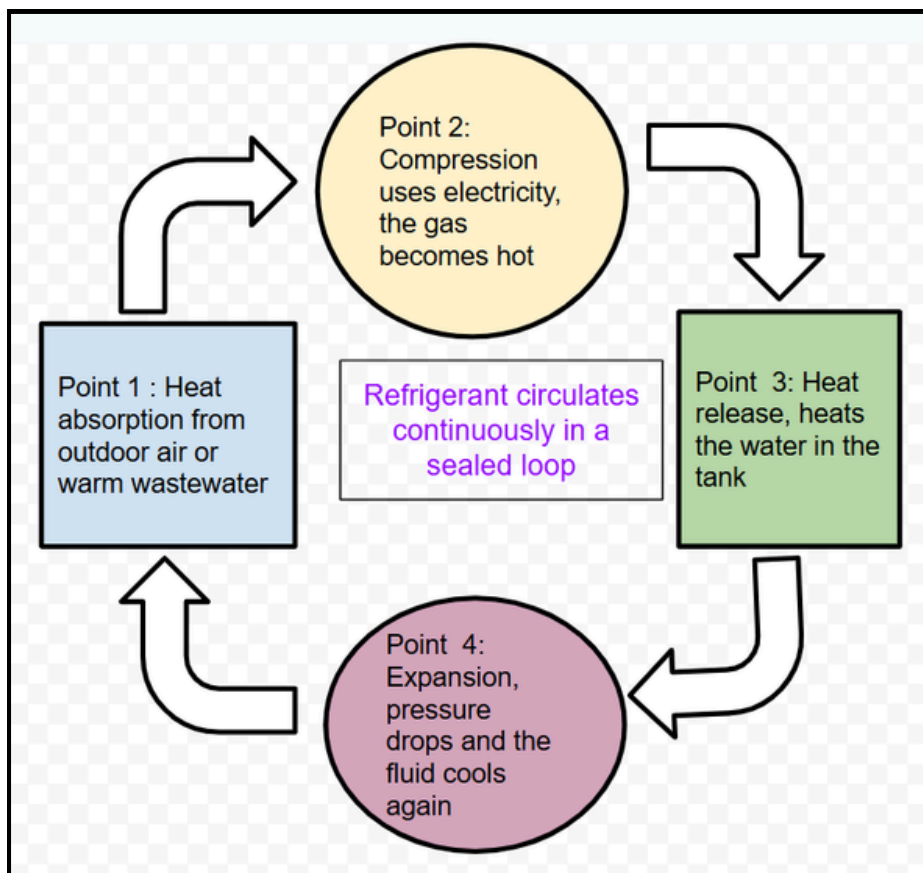


Figure 1: Schematic representation of heat pump working

Why is a heat pump so efficient ?

Because a heat pump moves heat rather than generating it, it delivers more heat than the electrical energy it consumes. The comparison of conventional heating methods are as follows:

- Electric geyser : one unit of electricity produces about one unit of heat.
- Diesel Boiler : some heat escapes through the chimney, so less heat is delivered than the energy contained in the fuel.
- Heat pump : one unit of electricity delivers three to five units of heat. The additional heat is drawn from available heat sources.

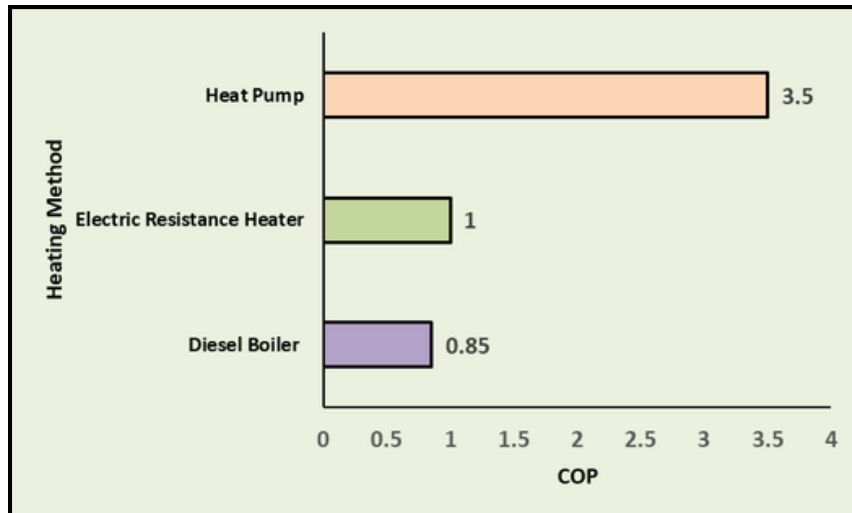


Figure 2: COP (Coefficient of performance) comparison of heating methods

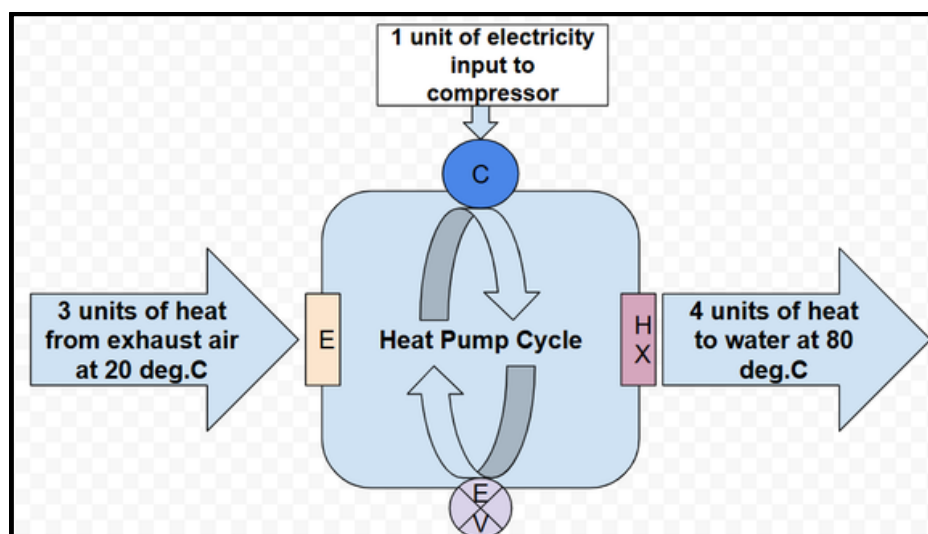


Figure 3: Heat pump energy efficiency

What does this mean for a household?

Consider a family that uses a 2 kW electric geyser for one hour each day,

Energy Consumption	Electric geyser	Heat pump water heater (Assume COP = 3.5)
Daily	2 units	0.6 units
Monthly (30 days)	60 units	18 units
Monthly savings	-	41 units

At a tariff of ₹ 10 per unit, the family would save ₹ 410 every month for the same quantity of hot water.

Where can heat pumps be used?

Heat pumps are suited to any application that requires warm or hot water, typically in the range of 40 °C – 90 °C.

Area	Application	Desired Temperature
Hotels, hospitals & hostels	Hot water for bathing, kitchens & laundry	55 - 65°C
Textile dyeing and processing	Hot process water; heat recovery from effluent	50 - 90°C
Food, dairy and beverages	Washing & pasteurisation	60 - 90°C
Pharmaceuticals	Process water & HVAC reheat	50 - 80°C
Automobile	Paint shop pre-treatment & parts washing	50 - 70°C
Drying	Food, agricultural produce & timber	40 - 80°C
Boiler houses	Pre-heating feed water	Up to 90°C

Examples from implemented cases

A five star hotel in Chennai replaced its diesel fired boilers with an air course heat pump. Its annual water heating cost fell from ₹ 18 lakh to ₹ 3.9 lakh, while its carbon dioxide emissions fell by about 19 tonnes a year.

A truck manufacturer replaced electric heaters with a heat pump and reduced its electricity consumption by 80,000 units a year. This avoided around 60 tonnes of carbon dioxide emissions annually.

A chemical manufacturer installed a heat pump to supply hot water in place of continuous steam, saving 3,300 tonnes of steam a year. The corresponding saved electricity consumption is 7 MWh (7 lakh units of electricity).

Is a heat pump suitable in every situation?

Heat pumps delivers the greatest benefits where,

- Hot water is required daily and in steady quantities like in hotels, hospitals and factories.
- A source of heat is available, warm wastewater or hot exhaust.
- The required temperature is below 100°C.

Conclusion

For low to medium temperature heatings heat pumps are effective. Instead of burning fuel, it transfers heat that already exists to where it is needed, delivering three to five times more heat for the same amount of electricity. Their benefit is greatest where there is a steady heat demand and a usable source such as hot ambient air, warm effluent or waste process heat. These savings come with lower carbon emissions in every case. As on-site solar power becomes more widely adopted, pairing it with heat pumps offers an increasingly attractive option, reducing both reliance on grid electricity and the carbon footprint of heating.

CONSUMER FOCUS

The Appellant, a domestic consumer, took a temporary electricity service connection in October 2022 to construct his house. After construction was completed, a separate permanent domestic service connection was given to the same premises in August 2023. The consumer wrote to the Assistant Engineer of the TNPDC section office on 02.09.2023, asking for the temporary connection to be disconnected and dismantled. The temporary supply was cut off in November 2023, and the consumer believed the matter had ended there.

However, the account of the temporary connection was never closed in TNPDC's records. For nearly two years, the connection remained in the system as a disconnected service – the meter was not dismantled, and kept accruing monthly minimum charges. In 2025, while TNPDC was taking up the closure of pending temporary connections, it found that about ₹19,000 had accumulated against this account and they therefore raised a demand on the consumer. In November 2025, the consumer emailed the Assistant Engineer and the Assistant Executive Engineer about the demand. He received no reply, neither was any action taken. In December 2025, the consumer filed a petition before the Consumer Grievance Redressal Forum (CGRF). He asked the CGRF to cancel the demand, close the account from the date of disconnection, and refund his deposit.

Before the CGRF, TNPDC stated that it could not find any letter from the Appellant requesting disconnection of the service in its records. It added that the Appellant had not made any online application either. According to TNPDC, the service was disconnected only because the October 2023 bill of ₹5,939 had not been paid. The CGRF then examined the Tamil Nadu Electricity Supply Code. Under the Code, a disconnected consumer has to pay monthly minimum charges until the supply agreement is terminated, along with any dues pending on the date of disconnection. The CGRF noted that the supply to the service was cut off in November 2023 but the meter was permanently dismantled only in February 2026. It held that the account should have been closed once the agreement ended, six months after disconnection, and not two years later. The CGRF directed TNPDC to issue a revised working sheet, close the account as per the Supply Code, and refund the available deposit. TNPDC revised the bill accordingly. It limited the minimum charges to the permissible period and adjusted the security deposit and meter caution deposit. This brought the amount due down to ₹8,656.

The consumer was dissatisfied and filed an appeal before the Electricity Ombudsman. He argued that the supply had been disconnected at his own request, so the account should be closed from the date of disconnection. He also argued that the CGRF had not considered that the temporary connection was surrendered before the permanent connection was given. Further, he contended that the CGRF had taken nearly three months to decide the matter, had not explained the reasons for its decision, and had set no deadline for TNPDC to comply. He also sought compensation under the Distribution Standards of Performance (DSOP) Regulations.

TNPDC maintained that the connection was disconnected for non-payment and not at the consumer's request. It added that the dismantling charges had not been paid. TNPDC had informed the Appellant in June 2026 that a balance of ₹8,656 remained payable

The Electricity Ombudsman examined the submissions of both parties, the consumer ledger, the CGRF Order and the relevant provisions of the Supply Code. The consumer had relied on his letter dated 02.09.2023. However, he could not produce an acknowledged copy or any official record showing that TNPDCCL had received and acted on it. The Ombudsman therefore held that his claim could not be accepted on his word alone.

As a result, the Ombudsman held that the physical disconnection had to be treated as a disconnection for non-payment, and not as a permanent closure of the account. The consumer's request to treat the account as closed from the date of his letter, or from the date of physical disconnection, could not be accepted. At the same time, the Ombudsman noted that the original demand of about ₹19,000 had already been revised after the CGRF's order. The charges had been restricted to the permissible period, and the security deposit and meter caution deposit had been adjusted, leaving a net balance of ₹8,656. The revised working sheet had been given to the consumer, and he did not specifically dispute this amount during the hearing.

The Ombudsman also pointed out a lapse by TNPDCCL. A temporary supply for construction is given on the understanding that it will be converted to a permanent tariff once construction is complete. In this case, the section office gave a separate permanent connection to the same premises while the temporary one was still active. The Ombudsman advised that, in future, TNPDCCL should check the status of any existing temporary supply before giving a permanent connection, and complete the surrender and account-closure formalities promptly.

Based on these findings, the Electricity Ombudsman did not interfere with the CGRF's order. The revised balance of ₹8,656 was allowed to stand. The consumer's request to limit his liability to the date of physical disconnection was not accepted. His request for compensation was also rejected, as he had not shown which specific provision entitled him to it.

Consumer takeaway

This case shows how important it is to complete the formal closure process when a temporary electricity connection is no longer needed. Consumers should not assume that physical disconnection means the account has been closed, because charges can keep building up until the account is formally closed. Any request to surrender or dismantle a connection should be made through the prescribed application, and the consumer should keep an acknowledged copy. All dues should be cleared at the time of surrender, so that the disconnection is not recorded as one for non-payment.

SOURCE: OMBUDSMAN CASE

NEWS FROM TAMIL NADU

Target set to store 4% of green energy generated, says Nirmal Kumar

The state government has set energy storage targets for each year, with a goal to store 4% of total renewable energy generated in 2029-30, in accordance with the guidelines issued by the union government, Minister CTR Nirmal Kumar told the Assembly on Friday. The state has plans to achieve a total energy storage capacity of 2,500 MWh by the end of 2027. During the discussion on demands for grants for the energy department, the minister said, "The integration of renewable energy into the grid requires frequent ramping up and ramping down of conventional thermal generation. This poses operational challenges and places additional stress on the grid." Energy Storage Systems (ESS) would allow the state to integrate renewable energy into the grid and manage fluctuations in both power demand and generation, he said. According to the policy note tabled in the Assembly, the Battery Energy Storage System (BESS) targets are aimed at ensuring grid stability, optimising the use of renewable power and supporting TN's transition towards a cleaner energy. In addition, TNGECL is implementing another 1,500 MWh (375 MW x 4 hours) of standalone BESS with financial support from the Power System Development Fund, for which 11 TANTRANSCO substations have been identified. The installations will be established at Thappagundu, Thatchankurichi, Palladam, Alagarkoil, Kamudhi, Karamadai, Anaikadavu, Thiruvavur, Othakalmandapam, Thuvakudy, and N Subbaiahpuram. These projects are scheduled to be commissioned by September 2027.

SOURCE: [NEWINDIANEXPRESS, 22 AUGUST 2026](#)

NEWS FROM ACROSS THE COUNTRY

India weighs low-cost loans for renewable projects hit by power curbs, sources say

India is considering offering low-cost loans to renewable energy producers to compensate them for losses they have incurred because inadequate transmission infrastructure limited how much they could supply, four industry sources said. The South Asian nation's transmission network has struggled to keep pace with the increase in green energy, particularly solar, which represents about 162 gigawatts, or nearly a third of its power generation capacity, according to government figures. The sources said India's renewable energy developers have lost about 45 billion rupees (\$470.21 million) since February 2025 as the limited infrastructure has restricted the flow of clean power from states such as Rajasthan and Gujarat to the national grid. In some cases, nearly 70 per cent-80 per cent of power from renewable projects could not be added to the grid, one of the sources said. The sources spoke on condition of anonymity because they were not authorised to speak publicly on the issue. The federal power and finance ministries did not immediately respond to a Reuters email seeking comment. Government data shows India, which is the world's third-biggest solar power generator, curtailed 14 per cent, or 8,133 gigawatt hours, of its solar power output between April and June. The sources said the power ministry was considering low-interest loans with long tenures of seven to eight years to compensate producers. They said the government was discussing the plan with energy producers and seeking to verify which projects are eligible for compensation. Sanjeev Aggarwal, founder and executive chairman of Hexa Climate, which develops renewable projects, said his company had experienced curbs without giving details and that it raises problems for financing. "Lenders need confidence in future generation when they size debt," he said. "If curbs are frequent and uncompensated, it would lead to higher cost of capital for the project." Rating agency ICRA estimates that about a third of India's newly commissioned 54.8 GW of clean energy capacity was being evacuated through temporary transmission as of May 2026.

SOURCE: [ENERGYECONOMICTIMES, 21 AUGUST 2026](#)

WORLD NEWS

Record low coal share in EU electricity production

In 2025, hard coal represented 3.7% (105 601 Gigawatt-hour (GWh)) of the EU's total gross electricity production, and brown coal represented 5.5% (154 186 GWh). In 2024, the total coal share in electricity production went below 10% for the first time and in 2025, it decreased further to its lowest point at 9.2%. In 1990, coal represented more than a third of all electricity production in the EU. In 2000, the total coal share decreased to 30.4%, a trend that continued with only slight rebounds in 2011-2012 and 2021-2022, until it reached its lowest share in 2025. In 1990, hard coal and brown coal were the second and third largest sources of electricity production, with 19.8% and 15.3% of the gross production, respectively. In contrast, in 2025, hard coal and brown coal were the seventh and sixth sources of electricity generation, behind nuclear heat, natural gas and renewable fuels. Both types of coal were overtaken by nuclear heat in 1994, by natural gas in 2019, by hydro and wind in 2023 and by solar in 2024. The decrease in coal use for electricity generation is coupled with record lows in production and consumption of coal. In 2025, the consumption of hard coal and brown coal in the EU is estimated to have reached new historical lows, at 107 million tonnes and 184 million tonnes, respectively. In addition, some EU countries have been phasing out coal either entirely or in electricity and heat generation in recent years. In 2021, Portugal stopped using hard coal in electricity generation, and in 2024, Slovakia phased out production of brown coal, leaving 8 EU countries remaining as brown coal producers.

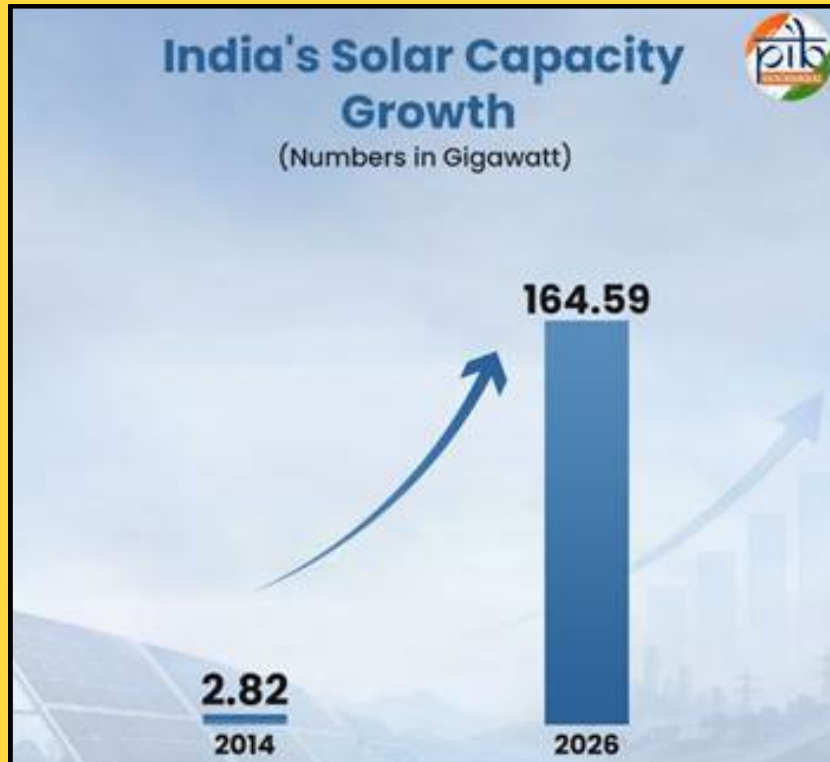
SOURCE: EUROSTAT, 13 AUGUST 2026



PUBLICATIONS

- **2026 Statistical Review of World Energy, KPMG**
- **Building New India - Reform, Resilience, Transformation, PIB**
- **End-Of-Life Management For A Circular Economy Solar Pv Panel, IRENA**
- **Tripura 6Ds Clean Energy Road Map And Implementation Plan 2025-2035, ADB**

INDIA'S SOLAR CAPACITY GROWTH (2026)



SOURCE: PIB

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