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Daily News Feed

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AI flight with 242 on board crashes in Ahmedabad

- London-bound Boeing 787 aircraft crashes into medical college complex after take-off
- Pilot issues 'Mayday' alert soon after take-off, goes silent before the crash
- Several casualties feared on the ground with official count of those killed awaited
- One passenger survives miraculously; he was identified as a British national

Jagriti Chandra
AHMEDABAD

An Air India flight from Ahmedabad to London, carrying 230 passengers and 12 crew members, crashed shortly after take-off on Thursday afternoon. A towering plume of smoke was visible from afar following a massive explosion after the aircraft plummeted into a medical college hostel five kilometres from the airport as students were gathered for lunch.

Barring one passenger who survived miraculously, no one aboard the aircraft could be rescued.

The Boeing 787-8 aircraft took off from Sardar Vallabhbhai Patel International Airport in Ahmedabad at 1.38 p.m and was headed to Gatwick Airport in London. Immediately after take-off, it crashed in the residential area of Meghani Nagar.

Tragedy on take-off

Air India flight AI-171 crashed shortly after taking off from the Sardar Vallabhbhai Patel International Airport at **1:38 p.m.** on Thursday

The crash marks the first deadly incident involving an aircraft from the Boeing 787 Dreamliner series

41,000 hours The aircraft that crashed on Thursday was nearly 12 years old with more that 41,000 hours of flying time

It had its **first flight** in December 2013 and was delivered to Air India in **January 2014**

The aircraft had almost **8,000** takeoffs and landings, including some 700 cycles in the past **12 months**

There are **1,148** Boeing 787 variants in service globally, with an average age of 7.5 years

33 Air India presently has 33 Boeing 787 Dreamliner variants in service after Thursday's crash

2,598 Dreamliners have been ordered by more than 80 airlines around the world

> The tragedy in Ahmedabad has stunned and saddened us. It is heartbreaking beyond words
>
> **NARENDRA MODI**
> Prime Minister

Emergency response team at the site of the crash on Thursday. PHOTOS: VIJAY SONEJI

Fatal flight: The tail of the Air India flight 171 protruding out of the hostel mess of B.J. Medical College in Ahmedabad on Thursday

Fast turn of events

According to CCTV footage captured by the CISF, the aircraft crashed under 40 seconds of being airborne. The aircraft was steered by pilot-in-command Sumit Sabharwal and co-pilot Clive Kunder. Government sources said the pilots gave a 'Mayday' call immediately after take-off, signalling a life-threatening emergency, but did not respond to subsequent calls made by the airport traffic control.

According to Air India, of the 230 passengers, 169 were Indians, 53 British, and seven Portuguese. One was Canadian.

Former Gujarat Chief Minister Vijay Rupani was among the dead.

Thursday's crash is the first involving a variant of the Boeing 787 Dreamliner series.

Union Home Minister Amit Shah, who met the sole survivor of the crash in hospital, said none of the other people on board could be saved. "Due to the huge amount of fuel at 1.25 lakh litres and high temperature from the explosion, no one could be rescued," he said. The Press Trust of India identified the survivor as Viswashkumar Ramesh, a U.K. citizen travelling in the A11 seat of the aircraft, heading to London with his brother.

Mr. Shah said that the process of retrieving bodies was almost complete, and that the official death toll would be released after DNA samples are matched and all bodies are identified.

The search was also on for the aircraft's black box for clues to understand what happened in the last crucial moments of flight.

As many as 265 bodies were brought to civil hospital in Ahmedabad, Deputy Commissioner of Police Kanan Desai told presspersons, suggesting that 24 people on the ground were killed in the crash.

Air India and Tata Sons Chairman N. Chandrasekaran said the Tata Group would provide ₹1 crore to the families of each person who lost their life in the tragedy.

Air India is also organising two relief flights, one each from Delhi and Mumbai, to Ahmedabad for the next of kin of passengers and Air India staff.

Air India CEO Campbell Wilson said the airline was actively working with relevant authorities on the emergency response and a special team of caregivers was being despatched to Ahmedabad to provide additional support.

PM in Ahmedabad

"We will also cover the medical expenses of those injured and ensure that they receive all necessary care and support. Additionally, we will provide support in the building up of the B.J. Medical's hostel," an official statement said.

Shortly after the crash, Prime Minister Narendra Modi spoke to Union Minister of Civil Aviation Rammohan Naidu, who reached the accident site in the evening.

Investigating teams from the Directorate General of Civil Aviation and the Aircraft Accidents Investigation Bureau also arrived in Ahmedabad later in the day.

(With PTI inputs)

MORE REPORTS ON » PAGES 5 & 6

Rupani's trip to meet his family in U.K. turns fatal

The Hindu Bureau
NEW DELHI

Former Gujarat Chief Minister Vijay Rupani, 69, was among those who perished in the crash of Air India flight AI-171, Union Jal Shakti Minister C.R. Paatil confirmed on Thursday.

The Union Minister described the loss as one "deeply felt by the BJP family". Rupani, who held the post of Chief Minister of Gujarat between 2016 and 2021 in two terms before being replaced by the current Chief Minister Bhupendra Patel, was *en route* to London to join his wife and other members of his family.

Mr. Rupani declared his retirement from electoral politics just before the 2022 election.

FULL REPORT ON » PAGE 5

At least 5 MBBS students killed, says medical body

Press Trust of India
NEW DELHI

At least five MBBS students, one PG resident doctor and the wife of a superspecialist doctor of the B.J. Medical College in Ahmedabad were killed and over 60 medical students injured Air India plane crashed into after residential quarters of the BJ Medical college on Thursday, the Federation of All India Medical Association said.

Rescue efforts ongoing at the crash site. VIJAY SONEJI

Over 100 MBBS students were having lunch in the mess when the flight crashed into the building.

STUDENTS MISSING » PAGE 5

Moody's downgrade and U.S. fiscal reality

Moody's downgrade of the U.S. credit rating unfolds without panic, but marks a quiet shift in global fiscal confidence; for India, this moment mirrors deeper fiscal vulnerabilities and calls for urgent reflection, restraint, and financial discipline

ECONOMIC NOTES

Deepanshu Mohan

Amid the chaos set in by churning events and spurring global uncertainty, there is an interesting financial trend that mainstream analysts are perhaps missing. It is well known in economic history how certain shifts don't arrive with the roar of crisis or the panic of a crash, but with the quiet authority of inevitability – which does have a crisis bearing, a fact that often emerges post the aftermath of a shock.

When Moody's Investors Service finally downgraded the credit rating of the Unites States on May 16, there was no dramatic nosedive in the markets, no frantic emergency meetings, no calamitous plunge in investor confidence.

Outwardly, the world barely flinched. Yet beneath that projected calm, a silent but monumental shift occurred – one, we argue, may be remembered not for the noise it made, but for silently indicating the end of a long era of unchallenged U.S. fiscal supremacy.

Foreshadowed for years

What made this moment so striking was not that it happened suddenly, but that it had been forecast in whispers and footnotes of financial discourse for years. For many, this was a long-delayed acknowledgement that the financial world had been indulging in a fiction for far too long.

For most of the post-war period, the U.S. held a rarefied status in the global economy. Its treasury bonds were the closest thing the financial system had to a sacred object, utterly liquid, unfailingly safe, and supported by the full faith and credit of the world's largest and most dynamic economy. This privileged position was not merely a reflection of economic size or military might; it was about trust.

Trust in America's institutions, its political system, its capacity for self-correction, and its willingness, however flawed, to eventually rein in excess.

But the numbers have grown impossible to ignore.

From discipline to dependence

A national debt that once stood at manageable levels has ballooned into a structural liability, breaching 120% of Gross Domestic Product (GDP), and with U.S. President Donald Trump's latest 'Big New Bill', it's showing no signs of retreat. Policymakers now speak about fiscal sustainability in theoretical terms, while pushing actual solutions further down an ever-narrowing road.

This erosion has been gradual but persistent.

The post-2008 era ushered in a new norm of emergency spending, first to rescue banks, then to stimulate recovery, and later to shield households from the pandemic's chaos.

Each intervention may have been justified in its own moment, but together they forged a long-term addiction of monetarists to deficit finance.

Unlike the post-World War II generation that slashed debt aggressively through a combination of growth and fiscal discipline, today's political class appears paralysed by polarisation and unable to even pass budgets without the threat of shutdown.

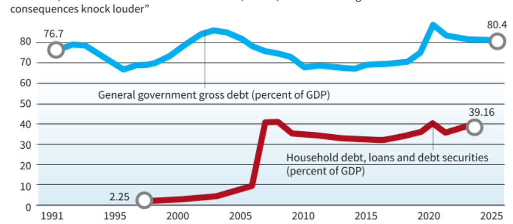
The confidence that also once underpinned U.S. borrowing, rooted as much in political stability as in economic fundamentals, has taken a series of subtle but significant blows, culminating in Moody's reluctant decision to strip away its final vote of unquestioning faith.

Matter of discussion: The Indian economy is not immune to global fiscal contractions. GETTY IMAGES

Quiet warning

The chart shows India's general government gross debt climbing to 80.4% of GDP and household debt rising to 39.16%

"For India, it reflects our financial vulnerabilities, habits, and an unwillingness to learn until the consequences knock louder"



Source: IMF 2023, 2025

Global recalibration

But this downgrade, though symbolic, carries implications that ripple far beyond Wall Street. It comes at a time when global financial allegiances are shifting, when the dollar's centrality in international reserves is already under quiet attack, and when major economies are exploring alternatives to a U.S.-centric system.

Central banks that once loaded up on treasuries with near-religious regularity are now hedging with gold. The euro and other digital currencies are not a distant idea. And while the markets have taken this moment in stride, history teaches us that great financial unravelings rarely begin with panic – they begin with a shrug. The cost becomes visible only later.

It is in this context that the Moody's downgrade must be understood, not as a trigger of immediate collapse, but as a marker of long-building pressure finally piercing the illusion of permanence.

The world has not yet turned away from the dollar, but it has begun to look around. And that moment of looking, that quiet recalibration of confidence, may ultimately prove more consequential than any single rating change.

As the curtain lifts on a new era of fiscal realism, it is worth asking what this development means not just for the U.S., but for countries that have built their own economic strategies around American reliability. The implications for India and the rest of the world are only just beginning to come into focus.

India's fiscal mirror

For India, this moment is less about what happens in Washington and more about what it reveals back home: about our financial vulnerabilities, habits, and unwillingness to learn until the consequences knock louder and harder in a crisis like emergency-response mode.

The Indian economy is not immune to global fiscal contractions.

With general government gross debt hovering near 80% of GDP (IMF 2025), our buffers are limited, especially in an environment of rising global interest rates. As U.S. Treasury yields climb to accommodate perceived risk, investors begin to reprice emerging market debt, and India, despite its growth story, remains vulnerable. This isn't just speculation.

We saw it vividly during the 2013 taper tantrum, when capital outflows pummelled the rupee and exposed our dependence on external financing. A similar shift today would pressure the Reserve Bank of India, complicate deficit management, and test India's ability to shield growth without stoking inflation.

Deeper fiscal malaise

But beyond macro shocks lies a deeper malaise, which is our domestic fiscal culture.

While India dreams big, it continues to drag a ball and chain of fiscal populism.

Successive governments have treated pre-election seasons as open tabs of irrational fiscal exuberance, which come with serious budgetary and fiscal health warnings.

The recent Lok Sabha and Vidhan Sabha elections also saw parties tripping over themselves with giveaways, and if Bihar's upcoming polls are anything to go by, we should probably brace for another round of headline-grabbing promises. One suspects the only limit left is creativity.

This fiscal approach comes with compounding ripple effects. High deficits crowd out private investment, distort credit flows, and leave little room for developmental capital. Structural inefficiencies, such as low tax compliance and judicial delays in insolvency cases, to underperforming logistics and lagging education outcomes, further create friction that slows down our momentum when we most need agility. The result is a disconnect.

Globally, the downgrade of the U.S. credit ratings serves as a mirror and a point of deeper financial, fiscal strategic introspection.

Emerging markets with heavy debt burdens and borrowing positions accompanied by low-growth cycles, like Brazil and South Africa too are already facing rising borrowing costs. Even developed economies, including Germany (debt-to-GDP at 62.5%) and Canada (at 110.8%), now operate under closer scrutiny. The message is clear: credibility is no longer inherited; it must be earned and maintained.

For India, this is surely not a moment to panic, but a moment to pause, reflect, and enact fiscal caution and financial discipline. Not because we are in the line of fire, but because the conditions that brought the fire elsewhere are not unfamiliar. The discipline we often defer cannot be delayed forever.

If fiscal credibility is being repriced globally, India must ask whether it wants to wait for markets to demand change or lead that change on its own terms.

Caution and prudence for India

Fiscal caution and prudence are no longer virtues for crisis moments, they are the foundation for resilience in this age of the new normal. Caution for India does not mean a widespread adoption of austerity measures; rather, it means there is more clarity needed in strategy, both in the short, medium-and-long term. It means investing not in headlines, but in core economic foundations: job-creating infrastructure, future-ready skills, and systems that outlast election cycles. It means resisting the seduction of easy populism.

Loan waivers and free power may win votes, but they do little to build the trust that both global capital and citizens themselves seek in a modern state. Structural reforms must move beyond committee reports. Trade resilience must be rooted not in slogans but in strategic diversification.

Above all, Indian policymakers need to recognise that in the age of capital mobility, the loss of credibility is rarely noisy, but always consequentially expensive. While the U.S. has reminded the world that prestige is not protection, India should take the hint early.

(Deepanshu Mohan is Professor and Dean, O.P. Jindal Global University. Ankur Singh contributed to this column and is a research analyst)

THE GIST

- Moody's downgrade of the U.S. credit rating marks a silent but significant shift, piercing the illusion of fiscal permanence without triggering immediate market panic.
- The world begins to look around, as the dollar's centrality faces quiet challenges and global confidence undergoes a subtle recalibration.
- For India, this moment is a mirror reflecting its own fiscal vulnerabilities, highlighting the urgent need to resist populism and lead with financial discipline.

Urbanisation and the challenge of ideal transit solutions

Among the various aspects of Viksit Bharat by 2047, an urbanised India is sure to be a principal one as it is expected that urban India will be the engine of growth in this transformation. Let us note that over 60% of India's population would move from low-productive rural India to highly productive urban India by the 2060s.

Clearly, the mobility of people on such a large scale within cities, from their residential quarters to work areas, will be a test for urban planners. While policymakers have plans to construct smart cities, where the need for the mobility of workers will be substantially reduced, the fact remains that, unlike China, we do not see many of the newly emerging smart cities coming of age. In contrast, the metros/existing tier 1 cities are on an ever-expanding spree, leading to rising challenges for policymakers, such as meeting the transportation demand of workers.

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Planners in India need to look at whether they are investing in the most sustainable and cost-effective transit solutions

Rising to the challenge

The government is increasingly focused on augmenting the public transport system to meet the urban mobility challenge. This year's Budget saw the launch of the PM e-Bus Sewa-Payment Security Mechanism, with the aim of improving urban bus transportation in India (nearly 10,000 urban buses). The PM Electric Drive Revolution in Innovative Vehicle Enhancement (PM e-Drive) scheme was introduced, which will support the procurement of 14,000 new e-buses, 1,10,000 e-rickshaws, e-trucks, and e-ambulances. However, according to estimates, India needs 2,00,000 urban buses, but only 35,000 are operational (including e-buses). This is far below the requirement.

Another initiative has been the greater emphasis on building metro networks and a higher allocation of funds in multiple metro/tier I cities to cater to the high density. This is in line with the trend seen in the recent Budget.

However, as the Economic Survey that was released on the eve of the Budget on January 31, has cited, only 37% of urban residents in India have easy access to public transportation. In contrast, in Brazil and China, more than 50% of urban residents have convenient access to mass transit. Clearly, India is too far behind in developing an efficient public system.

The development of a metro network is a long-term and costly venture. Much of it has been developed with the Centre's funding. And invariably, most have yet to recover their total costs (which includes fixed and operational costs). In almost all metros, the ridership projected in the project document has still to be matched. So, recovering the cost may be a difficult proposition unless the route lies along a high-density route. Also, it has been observed that users are extremely fare sensitive – a fare rise invariably leads to a fall in footfalls. Invariably, consumers seek out their ways keeping in mind comfort, time and cost due to the high cost of last-mile connectivity from metro stations to their work/residence points.

Unlike in some developed countries where public transport is highly subsidised in order to make metro transportation cheap, our government is not financially rich enough to dole out recurrent and large subsidies.

Seeking alternatives

India also needs cost-effective, road-based public transport for better last-mile connectivity. This year's Budget has increased allocations for urban bus systems, thus continuing efforts to boost capacity, especially in the metros. However, private investment remains limited due to uncertain returns. Government funds have shifted from CNG to more expensive e-buses. Future bottom-up transport models may focus on road-based modes that use electric, CNG, hydrogen, or biofuel technologies. Yet, they often overlook trams and trolleybuses, which, based on a life cycle cost and revenue analysis, can outperform e-buses in financial terms and deserve serious policy consideration in India's urban transport planning.

Some estimates

Revenue generation and economic viability over time are the necessary parameters to estimate whether urban road-based public transport has a financial deficit or is making a profit in its life cycle. Analysing the profit and loss (P&L) percentages for various public transport modes will help in accurate decision-making on adopting a future transit. We find that trams show a 45% long-term profitability over seven decades, the usual life cycle of the tram, along with scalability and alignment with climate goals. In contrast, an e-bus system, which is currently the preferred mode on Indian roads, fails to maintain profitability due to high operational and replacement costs, resulting in a net loss of 82% over seven decades. Though moderately efficient, trolleybuses fall short of matching the overall benefits of trams, incurring a minimal loss over the specified time frame.

This raises a critical question. Are we truly investing in the most sustainable and cost-effective transit solutions, or are we chasing a future dependent on continuous public subsidies? The planned introduction of trams in Kochi could mark a game-changing moment in India's urban mobility story. Reviving our past is not just a nostalgic choice of what Kolkata thinks – it is a smart and timely move toward a more sustainable and financially viable transport future.

The views expressed are personal

Trump's tariffs and a U.S.-India trade agreement

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At the end of the day, it was not the big fight between nations, but a case brought by five small U.S. businesses that presented the biggest challenge yet, to U.S. President Donald Trump's sweeping tariffs.

Tariffs are the substance of laws and regulations formulated after highly rigorous trade negotiations. The binding of tariffs through schedules of commitments in trade agreements, offers much needed certainty and predictability to businesses trading across borders. Which is why Mr. Trump's sweeping tariffs – 10% to 135%, over 100 countries worldwide – were a stunning repudiation of the rules of trade. That it also extended to the barren Arctic marine reserves of Heard and McDonald Islands, uninhabited by humans, just highlighted the irony of a bizarre executive order.

This sweeping executive action also upended the fundamental principle of separation of powers between the three branches of government – the legislature, the executive and the judiciary – which lie at the heart of any democratic constitutional framework. That such an exercise of executive authority could happen without any checks and balances in the U.S., widely regarded as among the modern world's oldest democracies with a strong constitutional framework, was another point of reckoning.

Five small and mid-sized U.S. businesses, dealing with wines, plastics, bicycles, musical circuits, and fishing equipment, took on the U.S. administration, and challenged the presidential executive order at the U.S. Court of International Trade (U.S. CIT), stating that the tariffs were unlawfully harming their operations and economic viability.

A closer look at 'trade deficits'

The Trump administration argued that the tariffs were necessary to address the "national emergency" created by U.S.' trade deficits with all countries worldwide. Trade deficit occurs when imports exceed exports. A "deficit" is not necessarily bad for a country's economic health. It only demonstrates the availability of consumer wealth to purchase imported goods. In any event, the U.S. administration, bizarrely, did not account for U.S. export of services in its calculation. For example, the U.S. has cited the $44.4 billion trade deficit with India. This, however, does not consider trade in services (which includes digital services, financial services, education) and arms trade, after considering which, the Global Trade Research Initiative has estimated that the U.S. actually runs a $35 billion-$40 billion overall surplus with India.

The U.S. CIT, in its judgment dated May 28, 2025, ruled that the worldwide and retaliatory tariffs exceeded any authority under law. The court cautioned against the blatant and overarching use of "national emergency" powers by the President. It noted that the mere incantation of "national emergency" cannot sound the "death-knell of the Constitution", and, additionally, cannot enable the President to rewrite tariff commitments in international agreements.

The strong and powerful ruling, so far, has had little practical impact, having been stayed the very next day by a U.S. appeals court. The tariffs and the threat of tariffs, therefore, continue, and so does the pressure to conclude a trade deal with the U.S. The Trump administration had in fact, argued before the U.S. CIT that the enhanced tariffs provided it leverage in trade negotiations – an argument which the CIT ruled does not in any manner mitigate its legal infirmity. More egregious U.S. executive actions are promised as part of the Trump One Big Beautiful Bill (OBBB) – a proposed omnibus law which would reportedly also grant the executive immunity from enforcement of judicial orders.

India should stay out of any sub-optimal deal with the United States

Where India stands

Where does all this really leave India? The governments of both countries have been indicating an early conclusion of a trade agreement, before the U.S. threat of the July 8 deadline. Despite ongoing negotiations, the U.S. has enhanced its existing punitive tariffs of 25% on steel and 10% on aluminium imports (in force since Mr. Trump's first term), to 50% on both. Pursuant to complaints initiated at the World Trade Organization by Switzerland, Norway, China and Türkiye, WTO panels had ruled (in 2022) that the tariffs imposed during Mr. Trump's first term, do not meet the proposed justification of national security. India too had initiated a WTO dispute, but withdrew this on the basis of a "mutually agreed solution" with the U.S. in 2023. That mutual solution clearly did not prevent Trump administration extending the new 50% tariffs on steel and aluminium to India as well. India's contemplated retaliation at the WTO has been resisted by the U.S. A purported target of the Trump administration's ire is China's rise. The argument that the U.S.-China trade impasse presents a possible strategic advantage for India, however, is made uncertain by two recent developments: the U.S. and China's truce, pausing their retaliatory tariffs against each other and working towards a negotiated solution; and, more importantly, the U.S. administration's threats to impose tariffs on Apple's products, should it manufacture in India. Mr. Trump's transactional approach also indicates that there is no guarantee that the U.S. will intervene in India's favour should there be a military standoff with China.

The path ahead

In any trade agreement with the U.S., therefore, a careful balancing of India's interests is paramount. Any deal would need to ensure the removal of all additional tariffs on India's exports, allay concerns about retaliatory tariffs on U.S. investments, such as that from Apple in India, and ensure that the proposed OBBB Act's 3.5% tax on remittances sent from the U.S. does not apply to remittances by Indian citizens. India should also seek assurance that there would be no retaliation against India's digital services taxes. A long-standing concern for India is also the fears and backlash against H-1B visas, used widely by tech companies for their Indian employees. It is critical for a trade deal to address the issue of visas required for services trade.

It is equally important for both sides to iron out the delivery of cross-border trade in services, which includes aspects relating to data flows and their regulation.

Above all, any trade agreement that India negotiates with the U.S. needs to be fully aligned with India's commitments under the WTO. The U.S. disregard for multilateral institutions, notwithstanding, WTO's multilateral set of rules is the only real safeguard in an uncertain world, and India needs to do much more to preserve its foundations, as committed during its G-20 presidency.

Finally, India should have the ability to stay out of any sub-optimal deal. Mr. Trump's tariffs, while painful, are likely to have a short lifespan with the biggest challenge emerging from within the U.S. itself.

The views expressed are personal

Science behind right AC temperature

The Union Ministry of Power has indicated that it is considering restricting the temperature range of new air conditioners to between 20 degrees and 28 degrees Celsius; studies indicate that apart from energy saving benefits, there are also public health benefits to support case for a fixed temperature range

Vasudevan Mukunth

The Union Ministry of Power has said it is mulling restricting the temperature range of new air conditioners (ACs) in the country to between 20 degrees and 28 degrees Celsius.

In a press conference on Tuesday, Power Minister Manohar Lal Khattar told presspersons the restriction would apply to ACs in households, hotels, and cars.

The idea is not new: in 2018 and then in 2021, R.K. Singh, then the Minister of State (Independent Charge) for Power had said the Ministry was speaking to AC manufacturers about labelling ACs with the optimum temperature setting and fixing the default temperature setting at 24 degrees. At the time the Ministry had also said in a statement that it would consider instituting the default setting following an awareness campaign for four to six months and after public consultations.

"Every 1 degrees Celsius increase in the air conditioner temperature setting results in saving of 6% of electricity consumed," Mr. Singh said. He added that the 24 degrees Celsius recommendation had come from a Bureau of Energy Efficiency study and that should all consumers adopt the setting, the country would save 20 billion units of electricity per year. The BEE had said at the time that the total connected load due to ACs would be 200 gigawatt by 2030.

Aside from calling the 18-21 degrees Celsius range "uncomfortable", the Minister said it was "unhealthy". Indeed, many studies have found that the blood-pressure load rises quickly below 18 degrees Celsius, with vasoconstriction and sympathetic activation being found to drive the systolic blood pressure up by about 6-8 mm (Hg) and long-term exposure translating to higher risk of hypertension. Separate trials involving children in Japan, New Zealand, and the United Kingdom have also found they breathed easier when they slept with ACs set to more than 18 degrees Celsius.

In 2018, the International Energy Agency estimated there were 2 billion ACs in use around the world and that the number of residential units tripled from 2000 to 2022, to 1.5 billion. The agency also said that as of 2022, 43% of people in the Asia Pacific region were still in need of additional cooling.

An AC works by pumping heat from one space to another. Heat naturally flows from warmer to cooler areas, which means continuously moving it in the other direction – e.g. from a room at 30 degrees Celsius to an environment at 35 degrees Celsius – requires work. This work is represented in the AC's power consumption.

Beating the heat: People purchasing air conditioners during the summer in Patna. The power-cost of ACs is not the only reason to want to steer clear of lower temperatures. ANI

The typical vapour-compression cycle of an AC uses a liquid called a refrigerant to transport the heat. A device called the evaporator holds the refrigerant at just about its boiling point. When a fan blows air in the room over the evaporator, the refrigerant boils by absorbing heat from the air. The air also becomes dehumidified as moisture in the air condenses on the evaporator and drains away. Next, it flows to the compressor as a superheated vapour. The compressor compresses it by 3-4x, in the process heating it to about 90 degrees Celsius. This is the step during which the AC consumes most of its power.

The high-pressure superheated vapour then moves to the condenser, where it naturally loses its heat to the environs while turning back into a liquid. Since its pressure is still high, it passes through an expansion device that turns it into a low-pressure liquid-vapour mix close to its boiling point, and sends it back to the evaporator.

The temperature range in which a refrigerant takes up and releases heat most efficiently is the range within which the AC is also said to be most efficient.

Risks of low temperatures

The power-cost of ACs is not the only reason to want to steer clear of lower temperatures. Numerous studies have ascertained that save for the small fraction of people that need access to cold spaces, the general population can develop higher risks of hypertension, asthma, and respiratory infections when exposed to living spaces under 18 degrees Celsius.

Researchers have generally treated 'comfort' to be the point where a body's core temperature (around 37 degrees Celsius) and mean skin temperature can be kept constant without any sweating or shivering and when no more than about 10% of the occupants of a space say they feel too hot or too cold (called the predicted mean vote). The ASHRAE-55 and ISO 7730 standards begin from this thumb rule before adjusting 'comfort' according to the clothing, cultural sensibilities, and the prevalent types of cooling in different parts of the world.

The body at rest dissipates around 100 W of metabolic heat. Around 20 to 24 degrees Celsius, a lightly clothed person can shed that heat by radiation and convection alone without breaking a sweat or restricting skin blood flow. ASHRAE-55 allows the zone to rise roughly 0.3 degrees Celsius for every 1 degrees Celsius rise in the mean ambient temperature, up to about 30 degrees to 32 degrees Celsius.

Some sleep studies have converged on 16-19 degrees Celsius for healthy young and middle-aged adults. Cool air reportedly helps the core temperature dip by about 1 degrees Celsius, quickening sleep onset and ensuring deep sleep is stable. Infants and older adults may prefer the upper limit of around 19 degrees Celsius because their bodies' thermoregulation is less robust.

This said, the WHO's 2018 Housing and Health Guidelines recommend using 18 degrees Celsius as the minimum safe living-room temperature in temperate or cooler climates because cardiovascular and respiratory admissions were found to climb steeply below that threshold. One cross-sectional study published in 2014 reported a strong correlation between indoor temperatures under 18 degrees Celsius and 9% of the "population attributable risk" of hypertension. Similarly, a 2016 study used data from the English Longitudinal Study of Ageing 2012-2013 to compare differences in symptoms between people exposed to living space under and over 18 degrees Celsius. It showed that those living in the colder homes had higher cholesterol and weaker grip strength.

Another longitudinal study the same year said 16% of people over the age of 50 and living in spaces cooled to under 18 degrees Celsius had higher blood pressure, lower vitamin D levels, and poorer lung function.

On the respiratory front: a study published in 2013 involving 309 children and more than 12,000 child-days analysed the effects of each 1 degrees Celsius drop below a mean bedroom temperature of 14-16 degrees Celsius. It revealed a drop in how quickly children could exhale air and lower lung function.

In 2022, researchers in the U.K. reported that people living in persistently "cold homes" were at twice as much risk of new episodes of depression and anxiety, even after adjusting for incomes and baseline mental distress.

The case for moving towards a fixed temperature range on ACs is clear – supported by public health benefits as well as energy savings.

(mukunth.v@thehindu.co.in)

THE GIST

- In 2018, the International Energy Agency estimated there were 2 billion ACs in use around the world and that the number of residential units tripled to 1.5 billion from 2000 to 2022
- Numerous studies have ascertained that save for the small fraction of people that need access to cold spaces, the general population can develop higher risks of hypertension, asthma, and respiratory infections when exposed to living spaces under 18 degrees Celsius
- The WHO's 2018 Housing and Health Guidelines recommend using 18 degrees Celsius as the minimum safe living-room temperature in temperate or cooler climates because cardiovascular and respiratory admissions were found to climb steeply below that threshold

Modi-Carney meet at G-7 to focus on bilateral reset: MEA

Kallol Bhattacherjee
NEW DELHI

The upcoming meeting between Prime Minister Narendra Modi and his Canadian counterpart Mark Carney will provide an "important opportunity" to discuss matters of bilateral interest, Ministry of External Affairs (MEA) spokesperson Randhir Jaiswal said on Thursday.

Addressing the weekly media briefing, Mr. Jaiswal noted that mutual security concerns are being addressed through "existing mechanisms" between both countries. "We believe that the forthcoming meeting between the two leaders on the sidelines of the G-7 Summit will offer an important opportunity to exchange views on bilateral and global issues, and to explore pathways to reset the relationship based on mutual respect, shared interests, and sensitivity to each other's concerns," Mr. Jaiswal said.

Prime Minister Modi is scheduled to attend the G-7 summit hosted by Canada between June 15 and 17.

Mark Carney

The summit marks the first multilateral engagement for Mr. Modi following the conclusion of Operation Sindoor.

Earlier, Prime Minister Mark Carney had acknowledged India's global standing and said that India's stature made its participation in the G-7 dialogue imperative.

Bilateral ties between India and Canada had witnessed a sharp downturn following accusations by former Prime Minister Justin Trudeau, who had alleged the involvement of Indian State actors in the killing of pro-Khalistan activist Hardeep Singh Nijjar. In response, India raised the issue of Khalistan separatists and organised criminal elements operating from Canadian territory.

India marks a relative decline in gender parity, ranks 131 worldwide

Press Trust of India
NEW DELHI

The World Economic Forum's Global Gender Gap Report 2025 has ranked India at 131 out of 148 countries, with a parity score of just 64.1%. The report released on Thursday puts India among the lowest-ranked countries in South Asia. India had ranked 129 out of 146 countries last year.

The report said that while the global gender gap has closed to 68.8%, marking the strongest annual advancement since the COVID-19 pandemic, full parity remains 123 years away at current rates.

Iceland leads the rankings for the 16th year running, followed by Finland, Norway, the U.K. and New Zealand.

Bangladesh emerged as the best performer in South Asia, jumping 75 positions to rank 24 globally with notable gains in "political empowerment and economic participation".

Race to equality

The report said the global gender gap has closed to 68.8%. Below are the rankings of select countries:

Top 10 countries

1	Iceland
2	Finland
3	Norway
4	United Kingdom
5	New Zealand
6	Sweden
7	Republic of Moldova
8	Namibia
9	Germany
10	Ireland

India and its neighbours

Bangladesh	24
Bhutan	119
Nepal	125
Sri Lanka	130
India	131
Maldives	138
Pakistan	148

Bangladesh, with a ranking of 24, emerged as the best performer in South Asia

Report said full parity remains
123 years
away at current rates

Four key dimensions

The 19th edition of the report, which covers 148 economies, revealed both encouraging momentum and persistent structural barriers facing women worldwide.

The Global Gender Gap Index measures gender parity across four key dimensions: economic participation and opportunity; educational attainment; health and survival; and political empowerment.

The Indian economy's overall performance improved in absolute terms by 0.3 points.

"One of the dimensions where India increases parity is in Economic Participation and Opportunity, where its score improves by +.9 percentage points to 40.7 per cent. While most indicator values remain the same, parity in estimated earned income rises from 28.6 per cent to 29.9 per cent, positively impacting the subindex score," the report said. India's performance in labour force participation rate remained the same (45.9%) as last year. In educational attainment, the report said, India scored 97.1%, reflecting positive shifts in female shares for literacy and tertiary education enrolment, which resulted in positive score improvements for the subindex as a whole.

"India also records higher parity in health and survival, driven by improved scores in sex ratio at birth and in healthy life expectancy," it said.

However, similar to other countries, parity in healthy life expectancy is obtained despite an overall reduction in the life expectancy of men and women, the report said.

India recorded a drop in parity in political empowerment for the second year in a row with female representation in parliament falling from 14.7% to 13.8%, the report said.

Nepal ranked 125, Sri Lanka 130, Bhutan 119, Maldives 138 and Pakistan ranked at the bottom among all countries at 148.