



Learn Beyond

# How States are turning heat-action plans into mandates

While States have drafted climate action plans, implementation often faces institutional hurdles and a lack of clear ownership, experts suggest embedding environmental goals within departmental budgets and development schemes

Mahima Jain

**T**extile shops and jewellery showrooms blast cold air onto the street in T. Nagar, Chennai, where the summer temperature often hits 35 °C.

These ACs also contribute to urban heat-islands, making the area one of the most vulnerable spots exhibiting significantly higher temperatures than other areas in Chennai. Deena Hari Krishna, project manager, Auroville Consulting, a U.N.-backed centre advising on policies and sustainable practices, said.

To mitigate heat, buildings here may require passive cooling and ventilation using mechanical fans that suck out hot air; operational advisories to set AC temperatures at 24-26 °C; and introducing energy efficient cooling systems. However, mitigating heat in T. Nagar may look completely different from other localities, he said.

Heat mitigation is integrated in Chennai's Third Master Plan, led by Chennai Metropolitan Development Authority, and supported by C40 Cities and Community Jameel. It aims to build climate resilience and improve adaptive capacity to manage flood risks and heat islands by focussing on vulnerable spots based on surface temperature and building density, Mr. Krishna said.

Such localised planning for climate action is just emerging in India, experts pointed out. While all Indian States and Union Territories have drafted or finalised their climate action

## State v. climate

Localised planning for climate action is just emerging in India

- India is moving away from generic climate planning and towards localised strategies that address specific regional vulnerabilities
- But implementation often falters as States face institutional barriers, poor plan quality or a lack of leadership
- Proactive States are now embedding environmental goals into executive processes to ensure climate action remains a priority
- New data portals can bridge the gap between raw information and policy, helping officials monitor national climate progress
- Sustainable success involves viewing adaptation as good development by weaving resilience into every new infrastructure project
- Local task forces use responsibility matrices to coordinate departments and access funding for critical cooling interventions



In the hot seat: A policeman rests on a bench under the Jaipur sun. JOHAN MOUCHET

plans, there are several obstacles to implementation, including inadequate leadership, institutional barriers or the quality of the plans, according to Oxford Policy Management.

Nambi Appadurai, director of the Climate Resilience Practice at World Resources Institute-India said that while early SAPCCs were often hurriedly conducted with a top-down approach, the second versions are more effective.

Chandra Bhushan, founder-CEO of iFOREST, said integrating climate goals into State executive and legislative processes, such as requiring environment departments to present annual progress reports to their respective Assemblies, has been a useful way to drive on-ground action.

Mr. Appadurai said, "Most climate plans lack clear ownership. But there

are exceptions." For instance, Odisha has cracked climate budgets, allowing them to track exactly where money is spent. Kerala has started to excel at disaster management. Madhya Pradesh has established a robust knowledge platform for climate activities, Tamil Nadu is at the forefront of climate action in India due to significant government buy-in, multi-sectoral efforts, and proactive investment, Mr. Appadurai said. In 2024, it established the Tamil Nadu Green Climate Company (TNGCC), a nodal agency for all climate action. Mr. Appadurai is on its governing council.

The Council on Energy, Environment and Water (CEEW) has collaborated with cities across India to integrate scientific tools to help cities measure the implementation of HAPs.

Viswas Chitale, fellow

and lead, Climate Resilience at CEEW, gave the example of Thane's heat task force committee, which uses a 'responsibility matrix' designed to strengthen inter-departmental coordination focusing on preparedness, response, and long-term mitigation.

Srinivas Krishnaswamy, CEO of New Delhi-based environment nonprofit Vasudha Foundation, said data portals can help close the gap between raw data and actionable policy. For example, the portal of the Union government's Revamped Distribution Sector Scheme provides State-wise progress on power infrastructure upgrades and tracks losses, allowing governments at all levels to monitor compliance and adjust funding priorities. The PM Surya Ghar portal tracks rooftop solar adoption across States.

Vasudha Foundation and NITI Aayog developed the 'India Climate and Energy Dashboard' to integrate data from various ministries and departments into a holistic picture of the national-level trajectory. Mr. Krishnaswamy said it has logged more than 6 lakh users since 2023, including from government ministries, academics, and industry.

Governments can include a climate lens in all their development and infrastructure plans, Mr. Bhushan said. "Good adaptation is good development through a climate lens," Mr. Appadurai added.

In Maharashtra's Ratnagiri, the administration and iFOREST launched a district development-cum-climate action plan in February. Instead of a separate climate document, it integrated climate resilience directly into the three-year development plan, Mr. Bhushan said.

Drafting it brought together senior officials from the district administration, line departments, and representatives from the State environment department, plus technical experts and local stakeholders.

Mr. Chitale said with the 16th Finance Commission recommending making heatwaves a nationally notified disaster, a significant amount of finance will become available for cities to strengthen their heat resilience.

(Mahima Jain is a resident fellow at the Climate Change Media Hub, Asian College of Journalism, Chennai)



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## GS Paper I – Geography

### Cracks in the oil crown

#### OPEC

The cartel, already grappling with changes in the global energy landscape, geopolitical tensions, and declining influence, faces a litmus test with the exit of the UAE, one of its top oil producers with capacity to influence the market

Smiti Sudesh

**I**n April 29, the UAE announced it would leave the Organization of the Petroleum Exporting Countries (OPEC), ending nearly six decades of membership. The decision, effective May 1, removes one of the group's largest producers.

OPEC traces its origins to September 1960, when representatives from Iran, Iraq, Kuwait, Saudi Arabia, and Venezuela gathered in Baghdad. At the time, the global oil industry was controlled largely by a consortium of Western companies known as the Seven Sisters. Producing countries had a limited say over how much oil was extracted, or at what price it was sold and revenues depended on decisions made elsewhere.

The founding members sought to change this. OPEC was conceived as a platform for coordination among producers. Here, producers could exert greater control over supply and pricing, and secure a larger share of the value of their resources. In its early years, however, OPEC's influence was modest. The global oil system was still shaped by multinational firms, and non-OPEC production remained significant. The organisation existed, but it did not yet define the market.

That changed in the 1970s. During the 1973 Arab-Israeli War, also known as the Yom Kippur War, Arab OPEC members imposed production cuts and an embargo on the U.S. and the Netherlands. Oil prices quadrupled. The episode demonstrated OPEC's ability to use oil as a geopolitical tool and established the group as a major force in the global economy.

A second shock followed in 1979 with the Iranian Revolution. For a period, OPEC controlled around 75% of global oil exports and accumulated significant petrodollars that funded infrastructure and reshaped international finance.

By the 1980s, OPEC introduced formal production quotas, with Saudi Arabia often acting as the swing producer. In 1986, after a period of market flooding, prices collapsed. The following decades brought repeated cycles of cuts, recoveries, and new



REUTERS

pressures from the Gulf War and Asian financial crisis to China's demand surge in the 2000s.

The U.S. shale revolution, which accelerated in the 2010s, represented a structural change. Starting around 2012, American producers, using hydraulic fracturing and horizontal drilling, began unlocking vast reserves of tight oil in Texas, North Dakota and elsewhere. Shale production was faster, more flexible, and highly responsive to price. When prices rose, output followed within months.

#### Uneasy coordination

In 2014, OPEC made its most decisive attempt to tackle the challenge. Rather than cut output to defend prices, it kept pumping, hoping to push prices low enough to force higher-cost shale producers out of the market. Prices duly fell below \$30 a barrel. In 2016, the group formed the broader OPEC+ alliance with Russia, Kazakhstan, Azerbaijan and other non-OPEC producers to coordinate output more effectively. Even then, the combined group accounted for roughly 40% of global supply, which was far from the dominance of earlier decades. What followed was a period of

uneasy coordination. The first major test came in 2020. As the COVID-19 pandemic led to the collapse of global demand, oil consumption fell at a pace not seen before. OPEC+ responded with unprecedented production cuts, removing millions of barrels per day from the market. In the years that followed, the alliance settled into a pattern of tailored corrections. Output was gradually restored as demand recovered, but disagreements persisted. Some members, facing fiscal strain, pushed for higher production. Others, led by Saudi Arabia, prioritised price stability.

By late 2025, prices had dipped below \$60 a barrel as the group began unwinding production cuts. Saudi Arabia and Russia were pushing to restore output, while others wanted to hold the cuts in place. The internal arguments that had always plagued the group – between those who needed high prices to balance their budgets and those who wanted to maximise market share – were intensifying.

Then came the war. On February 28, the U.S. and Israel launched attacks on Iran and assassinated Supreme Leader Ali Khamenei. Iran retaliated with missile

and drone attacks across the Persian Gulf and blockaded the Strait of Hormuz. Global oil supply plummeted by more than 10 million barrels a day in March alone. The crisis exposed OPEC's deepest structural contradiction. Iran, one of its founding members, attacked other members in the region in response to the U.S.-Israeli strikes.

For the UAE, the crisis sharpened an existing tension. A member since 1967, it has spent years expanding its production capacity, with the aim of reaching close to 5 million barrels per day. Under recent OPEC+ agreements, however, its output was capped lower, around 3.2 - 3.4 million bpd. But by leaving, the UAE gains flexibility to increase production once shipping routes stabilise and to pursue bilateral arrangements. The move also exposes the UAE's growing differences with Saudi Arabia, the cartel's de facto leader, on issues ranging from quotas to regional policy.

The UAE is not the first country to leave OPEC. Qatar departed in 2019, redirecting its energy identity toward liquefied natural gas. Ecuador, Gabon, Angola, and Indonesia have all come and gone at various points. But the

UAE's departure is different in scale. It was OPEC's third-largest producer. It was one of only two members, Saudi Arabia being the other, with the ability to rapidly increase or decrease output to stabilise markets. Without the UAE, OPEC's capacity to respond to supply shocks is materially diminished.

OPEC's ability to move prices depends heavily on whether its remaining members, many of them economically fragile, politically unstable, or at war with each other, can maintain unity. It also depends on whether Russia continues to coordinate through the OPEC+ framework. And it depends on whether the shale producers, the renewables build-out, and the broader energy transition continue to erode the structural centrality of Gulf oil.

#### Long-term benefits

For large importers such as India, which depends on imports for nearly 90% of its roughly 5.8 million barrels per day consumption, the change could bring longer-term benefits.

Analysts say greater UAE production outside quotas may support additional supply, enable direct bilateral deals, and reduce freight costs due to proximity. This could help moderate import bills and support energy security efforts amid ongoing global uncertainty.

In the short term, however, the Strait of Hormuz disruptions continue to dominate price movements. Any additional supply from the UAE will only fully materialise once safer shipping conditions return. Until then, the exit's primary effect is symbolic rather than immediate.

OPEC now retains substantial reserves and influence through its core members, particularly Saudi Arabia. The organisation now operates in a more complex environment. Renewables continue to gain ground, energy efficiency improvements persist, and major consumers are actively diversifying sources. At the same time, geopolitical risks add layers of uncertainty.

For 65 years, OPEC held the world over a barrel. The barrel is now cracked, and the oil is running in directions no cartel can follow.

#### THE GIST

OPEC was conceived as a platform where producers could exert greater control over supply and pricing, and secure a larger share of the value of their resources

During the 1973 Arab-Israeli War, also known as the Yom Kippur War, Arab OPEC members imposed production cuts and an embargo on the U.S. and the Netherlands, establishing the group as a major force in the global economy

In 2016, the group formed the broader OPEC+ alliance with Russia, Kazakhstan, Azerbaijan and other non-OPEC producers to coordinate output more effectively



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## GS Paper II – Polity

# SC rejects Trinamool claim of bias by Central govt. staff

Dismissing plea, it questions need for proportionate representation; Trinamool had said that EC was skewing playing field in favour of BJP by appointing more Central officers at counting centres

**Krishnadas Rajagopal**

NEW DELHI

**T**he Supreme Court on Saturday called it a “fallacy” nursed by the Trinamool Congress that West Bengal Government services’ employees owe allegiance to it and Central employees were loyal to or controlled by the party ruling the Centre.

They are employees of the government and are part of the Election Commission in the exercise of their electoral duties during the poll time, it said.

The oral observations were made while disposing of a petition filed by the Trinamool, which alleged that the EC was deliberately skewing the playing field in favour of the rival Bharatiya Janata Party by appointing more Central of-



**JUSTICE P.S. NARASIMHA**  
Supreme Court Judge

fficers, disregarding State employees, at counting centres across West Bengal.

### Questions party

Justice P.S. Narasimha, heading a Special Bench, questioned the Trinamool’s perceived need to have a “proportionate representation” of officers drawn from both Centre and State services at counting centres on May 4. “This

is yet another fallacy, that is those belonging to State government services have a different allegiance... These are but employees of the government. Give them some credit,” Justice Narasimha said.

Justice Joymalya Bagchi, the associate judge on the Division Bench, said that once these officers were deployed for poll duties, they belonged to the EC. “All these persons, wheth-

er Central or State employees, are in the control of the EC in the discharge of electoral duties,” Justice Bagchi said.

The special sitting, merely 48 hours before counting started in West Bengal, was convened on a petition filed by the Trinamool challenging an April 13 circular issued by the State’s Additional Chief Electoral Officer directing that at least one counting supervisor and assistant at each counting table would be a Central government or Central Public Sector Unit employee.

The party, represented by advocates Kapil Sibal and Sanchit Garga, said the circular was a “textbook example of an unjust executive action”.

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## GS Paper II – Governance

# Centre launches emergency alert system for citizens

**Press Trust of India**

NEW DELHI

Mobile phones across the country went abuzz after Union Telecom Minister Jyotiraditya Scindia launched the cell broadcast alert system on Saturday that will warn citizens about emergency and natural disasters in their area.

The Department of Telecom had already alerted citizens about the trial run of the service on April 29 to avoid panic, with an appeal to ignore any alerts they receive.

The test message read: "Extremely Severe Alert. India launched Cell Broadcast using indigenous technology, for instant disaster alerting service for its citizens. Alert citizens, safe nation. No action is required by the public upon receipt of this message. This is a test message- Government of India."

The alert system was sent across the network of all telecom operators across the country, except in poll-bound States.

**'Indigenous technology'**

"Union Minister for Communications, Jyotiraditya



Women show their mobile phones after receiving an alert message on Saturday. PTI

Scindia, today launched the Cell Broadcast Alert System, developed indigenously by C-DOT in collaboration with the National Disaster Management Authority (NDMA), under the guidance of Home Minister Amit Shah," an official statement said.

Through this system, critical information related to disasters, emergencies, and public safety will be transmitted directly and instantly to citizens' mobile phones, the statement said. The system is based on the Common Alerting Protocol (CAP) as recommended by the UN body International Telecommunication Union.



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## GS Paper II – Polity

# INDIA bloc likely to meet after May 4 to discuss delimitation, women's quota

**Sandeep Phukan**

NEW DELHI

The Indian National Developmental, Inclusive Alliance (INDIA) is likely to meet, once the results of the Assembly elections are declared on May 4, to discuss the way forward on the topic of women's reservation, which has been tied up with the delimitation exercise and expansion of the Lok Sabha.

Though the Opposition managed to defeat the Constitution (131st Amendment) Bill, 2026, in the Lower House, its assessment is that the government may bring it again in some other form. And therefore, the INDIA bloc could meet up by mid-May to discuss tackling the crucial issue of delimitation, which was tied to the women's quota law, in the Bill, sources told *The Hindu*. However, no official announcement has been made.

The government had



Though the Opposition defeated the Constitution Amendment Bill, its assessment is that the govt. may bring it back in some form. PTI

proposed to increase the number of Lok Sabha seats to 816 from its present strength of 543 after a delimitation exercise based on the 2011 Census, and offer 33% of the seats to women. Though the government had assured that each State and Union Territory will see a proportionate 50% increase in the number of seats, thereby not altering the current proportion of their representation in the total strength of the Lok Sabha,

it was not made part of the Bill.

“The government was hoping that Lok Sabha members from West Bengal and Tamil Nadu will not be there [during the parliamentary vote] and expected Opposition members from Uttar Pradesh to oppose and abstain. That didn't happen and we managed to marshal the numbers. But the Prime Minister [Narendra Modi] isn't someone who will abandon his plan so easi-

ly,” a senior floor manager of an Opposition party said.

While the Congress has reiterated its demand that the government discuss its delimitation plans, it has also been pressing for an immediate roll-out of the women's quota on the current Lok Sabha strength.

### No discussion on polls

The leader said the INDIA bloc was unlikely to discuss the just-concluded Assembly elections as constituents fought separately in Kerala and West Bengal.

The Congress-led United Democratic Front (UDF) fought a pitched battle against the Left Democratic Front (LDF) in Kerala. The Trinamool Congress, the Left, and the Congress have fought separately in West Bengal.

However, leaders said the role of the Election Commission (EC) in the elections, especially in West Bengal, was sure to figure in the discussions.



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## GS Paper II – Polity

# SC to examine plea against apnoea test for brain death

Petitioner claims apnoea test may by itself induce brain death as it requires stopping or reducing cerebral blood flow; court asks AIIMS to form expert team, submit recommendations in 2 months

**The Hindu Bureau**

NEW DELHI

**T**he Supreme Court has found *prima facie* a “ring of truth” in a doctor’s plea that the apnoea test, alleged to be widely used in Kerala, is not a conclusive assessment of brain death.

A Bench of Justices Vikram Nath and Sandeep Mehta recorded the contention of S. Ganapathy, a medical professional, that the apnoea test may by itself induce brain death as it required stopping or reducing cerebral blood flow.

The court included in its order the petitioner’s contention that the best possible procedure to conclusively assess the parameters of brainstem death would be to subject the patient to appropriate ancillary or supplemental tests, including electroen-



It is urged that, in terms of internationally accepted medical standards, including the guidelines of the WHO, the apnoea test ought to be resorted to only as a confirmatory test and not as the sole or primary basis for determining brain-stem death

**SUPREME COURT BENCH**



cephalography (EEG), four-vessel cerebral angiography, radionuclide (radioisotope) angiography, or CT angiography.

“It is urged that, in terms of internationally accepted medical standards, including the guidelines of the World Health Organization, the apnoea test ought to be resorted to only as a confirmatory test and not as the sole or primary basis for determining brain-stem

death,” the Bench said in an April 28 order published on Saturday.

The State of Kerala, represented by advocate Nishe Rajen Shonker, maintained that the prescribed statutory protocols were duly followed before any patient was declared brain-dead. Counsel submitted that the apprehensions expressed by Mr. Ganapathy were unfounded and not supported by cred-

ible scientific material. The State, however, said it was not in a position to dispute the contention raised by the petitioner that the apnoea test was the most prevalent in Kerala.

The petitioner alleged that he had credible information indicating serious malpractices prevailing in Kerala in relation to organ transplantation procedures. According to the petitioner, patients admitted to various hospitals in critical condition were declared brain-dead even in cases where the clinical parameters prescribed under the law did not justify such a determination.

The court has directed the Head of the Department of Neurology, AIIMS, New Delhi, to constitute an expert team on the issue and submit recommendations in a sealed cover in two months.



## GS Paper II – International Relations

# Why did the UAE quit OPEC and OPEC+?

What explains the years of simmering competition between Riyadh and Abu Dhabi? How will the UAE's decision impact oil prices? How has its decision to leave impacted OPEC and OPEC+? Will this move benefit India and if so, how?

**M. Kalyanaraman**

### The story so far:

On May 1, the United Arab Emirates (UAE) officially exited the Organization of the Petroleum Exporting Countries (OPEC) and OPEC+. While OPEC is a permanent intergovernmental organisation founded in 1960 to coordinate the petroleum policies of its member countries and stabilise global oil markets, OPEC+ is a broader alliance formed in 2016 that includes the core OPEC members along with 10 additional major oil-producing nations, most notably Russia. The UAE's decision dealt a heavy blow to the oil exporting groups and their de facto leader, Saudi Arabia, at a time when the Iran war has caused a historic energy shock and unsettled the global economy.

### Why did the UAE leave OPEC and OPEC+?

Differences between the UAE and OPEC, in particular Saudi Arabia, have been simmering for a while. Saudi Arabia deferred recognition of the UAE after the latter became independent from the U.K. in the 1970s, until some disputed territory it claimed was ceded.

The political structure and society of the two countries are different. While Saudi Arabia, though a monarchy, acts slowly and builds through consensus within the large extended royal family, the UAE has historically sought to be nimbler and quicker-acting.

However, the UAE has so far formally banded with Saudi Arabia, especially in energy production, because of a large and powerful Iran seen as a common adversary.

OPEC allocates quotas for oil production to control global oil prices. Saudi Arabia plays a key role in fixing these quotas and functions as a swing producer. Currently, it has a quota of

India can leverage enhanced flows from Fujairah port at reduced rates if the UAE's increased production drives down global oil prices

around 10 million barrels a day but has spare capacity of another 2 million. Saudi Arabia can ramp up or ramp down production quickly to counteract any volatility in oil prices. The UAE has a quota of some 3.5 million barrels but has a capacity of 4.85 million. By 2027, its capacity is expected to increase to 5 million.

A cautious Saudi Arabia seeks to even out and prolong fossil fuel use partly by curtailing production and benefiting from it; for instance, it has actively worked against efforts to decarbonise global shipping and to retain the use of crude oil-based shipping fuel.

The UAE recognises the inevitability of energy transition, involving the use of renewables and green fuels. It seeks to quickly boost oil profits and funnel them into its economy. The UAE has a much more diversified economy and is seeking to expand it even further.

In foreign policy, too, the UAE and Saudi Arabia have been at loggerheads. In Yemen, the two, which cooperated against the Iran-backed Houthis, fought a proxy battle recently through the groups they were supporting. In Yemen, Saudi Arabia supports the country's internationally recognised government and works with the Islamist group, Al-Islah, while the UAE is backing a separatist force, the Southern Transitional Council. In Sudan, the two are again on opposing sides. The UAE has been active in seeking leverage in Libya, now an emerging alternative to the Persian Gulf for oil and gas.

In 2021, the differences came to a head with the UAE raising major objections to OPEC decisions. But a consensus was reached and the UAE was given a bigger slice of the oil pie to convince it to stay in the group.

In the aftermath of the war on Iran, the UAE, which has in recent times become more assertive in its economic, political, and foreign policy goals, has announced its decision to quit OPEC. While it is unclear whether the UAE expects the crisis to reduce in intensity, its OPEC announcement did not have much impact on oil prices, given that oil transport has stalled across the Strait of Hormuz.

### How will the UAE act next?

The UAE will review its relationships with nations and reset them as per its priorities. Emirati officials have said some of the Arab states did not do much by way of support even as the UAE bore the brunt of Iranian attacks, which were more than what even Israel faced.

When normalcy returns, even if only in stages, there will be an immediate demand for more oil and the UAE can take advantage of that.

The country seeks to increase its production by 1 million barrels through this year in stages. U.S. President Donald Trump has welcomed the UAE's move to leave the cartel as he believes it could help lower oil prices.

As the war began, the UAE and Saudi Arabia sought to use alternatives to restore some 4.5 million barrels out of the 15 million that had stopped flowing across the strait. While Saudi Arabia used its East-West Pipeline to send oil to the Red Sea port of Yanbu, the UAE sent its oil to Fujairah port downstream of the strait. Fujairah, though hit hard by attacks, saw near capacity utilisation of 1.8 million barrels being sent out per day as the war progressed. It will continue to be a key exit point for greater UAE oil flows.

### What will happen to OPEC?

So far, there is no panic. Russia, the other major oil producer which is part of OPEC+, is in sync with Saudi Arabia on oil production goals. Neither wants booms and busts inevitable in a freer market and wants to manage the market.

In the past, Angola and Qatar left the cartel but it must be said that both nations were smaller players. The UAE, on the other hand, was OPEC's third-largest producer. But cranking up production may ruffle feathers among its neighbours that the UAE may not want. Kazakhstan, Algeria, and Russia have all reaffirmed their commitment to OPEC+.

### Will India benefit?

India likely enjoys the greatest comfort with the UAE among Arab nations. As Trucial States, the sheikhdoms reported to the British in India and the rupee was recognised there.

Since Independence, the UAE has been a big employer of the Indian diaspora. While the Emirati population is only a little over 10% of the total UAE population, Indians constitute almost half of non-Emiratis who prosper in the country.

The UAE has recently strengthened its security relations with India as well. India can leverage enhanced flows from Fujairah port at reduced rates if the UAE's increased production drives down global oil prices. Indian refineries are well adapted to processing UAE crude and can pursue flexible, long-term contracts.

V. R. Krishnaswamy, who has served in the Abu Dhabi National Oil Company for nearly 45 years including as a top executive, points out that the Indian rupee continues to be in demand in the UAE. The UAE has put in place a state-of-the-art system for payments in other currencies, particularly in Yuan. So far, across the world, oil payments are typically paid in the U.S. dollar, reinforcing the perception that the dollar's strength comes in-part from its role as the petro-dollar. "Not just the yuan, the UAE may accept payments in other currencies such as the rupee, as well," he adds, recalling India paying Russia and the Soviet Union in rubles.



The logo of OPEC outside its headquarters in Vienna, Austria. REUTERS



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## GS Paper II – Polity

# What did the U.S. Supreme Court change in Louisiana?

Why did Louisiana redraw districts, creating a new Black-majority district? How did Louisiana's situation bring two legal problems into direct collision? What did the Court decide about the Voting Rights Act? What are the implications and concerns?

**Varghese K. George**

### The story so far:

In April 29, the U.S. Supreme Court struck down Louisiana's second majority-Black congressional district as an unconstitutional racial gerrymander. This rewrites the legal standard for when States must create districts where racial minorities form a majority of voters.

### What happened in Louisiana?

Louisiana has six Congressional seats. The boundaries of these were redrawn after the 2020 census. The map was challenged on the grounds that it "packed" Black voters into a single district while "cracking" the remaining Black population across five majority-white districts – both leading to a dilution of their votes. A federal district court held that the Voting Rights Act (VRA) required a second majority-Black district and ordered Louisiana to draw one. The State redrew the districts, creating a new Black-majority district, but designed a 400-kilometre meandering corridor to keep the districts of U.S. House Speaker Mike Johnson and Majority Leader Steve Scalise undisturbed. A separate group challenged the map as an unconstitutional racial gerrymander.

### What was the question before the Supreme Court?

Louisiana's situation brought two legal problems into direct collision. The lower courts had found

The dissent argues that the ruling guts the Voting Rights Act's protections against vote dilution – leaving minority communities formally able to vote but practically unable to elect candidates of their choice

that the original map likely violated the VRA by failing to include a second majority-Black district. But the remedial map Louisiana drew – explicitly race-driven in its design – was struck down as violating the Equal Protection Clause of the Fourteenth Amendment. The State approached the Supreme Court. The Court used the case to address a question it had deferred for over 30 years: can compliance with Section 2 of the VRA constitute a "compelling governmental interest" – the legal threshold that must be met before a State may intentionally use race in drawing district lines? The answer would determine whether Louisiana had a constitutional justification for drawing the new, second, Black-majority district. The Court then interpreted Section 2 of the VRA and its implications for legislative maps.

### What did the majority decide on Section 2 of the VRA?

The majority ruled that compliance with Section 2 can provide a compelling interest – and then reinterpreted Section 2 so narrowly that meeting the requirements for the creation of majority-minority districts will, in most cases, be close to impossible.

This is how the Court went about it. Section 2 bars electoral arrangements that give minority voters "less opportunity than other members of the electorate to elect representatives of their choice." The majority reads this baseline as: whatever opportunity results from the State's own permissible, race-neutral criteria. As the opinion states: "the 'opportunity' of these 'members of the electorate' to contribute their votes to a winning cause is whatever opportunity results from the application of the State's combination of permissible criteria. That is what a randomly selected individual voter and group of voters can expect regarding their opportunity to elect their preferred candidate. And under Section 2, a minority voter is entitled to nothing less and nothing more."

On this reading, if a State has used race-neutral factors – traditional district criteria, incumbency protection, partisan goals – Section 2 has nothing to say, even if the resulting map leaves minority voters permanently unable to elect candidates they prefer. Section 2 imposes liability only, the majority holds, when "the

evidence supports a strong inference that the State intentionally drew its districts to afford minority voters less opportunity because of their race." Where the State can point to any race-neutral justification, that inference does not arise. The effects of a map on minority voting power are not, by themselves, a Section 2 violation. In 1982, the U.S. Congress had amended the VRA to establish an impact standard rather than an intent standard in determining the quality of the electoral process – regardless of intent, if the effect was fewer opportunities for a group, it required remediation. The Supreme Court's judgment effectively reinstates the pre-1982 standard.

### Earlier criteria versus new criteria: how does the situation change?

The judgment, while not entirely barring race-conscious districting, raises the bar for doing so. It updates the existing criteria under which race-determined districts may be drawn. Those who challenge a congressional map must now establish that race is the sole factor determining their disadvantage, controlled for all other factors including partisanship – which, incidentally, is not justiciable in federal courts. Plaintiffs must provide analysis controlling for party affiliation, isolating racial bloc voting that cannot be explained by partisan alignment. With regard to the "totality of circumstances" inquiry that Section 2 requires, the majority held that it must focus on "present-day intentional racial discrimination regarding voting." The existing criteria had allowed a much wider range of factors to be considered.

The principle the majority reiterates is "equal opportunity," not "equal outcomes." No proportional representation is promised or required. The Act itself says so explicitly, the majority opinion pointed out: Section 2(b) contains what the opinion calls "a robust disclaimer against proportionality."

### What are the concerns?

The dissent argues that the ruling guts the VRA's protections against vote dilution – leaving minority communities formally able to vote but practically unable to elect candidates of their choice. The verdict also exposes a paradox in the law: the Constitution bars the State from treating voters as interchangeable representatives of their racial group, yet it also requires that racial minorities not be systematically deprived of electoral influence. Navigating this tension has long been central to U.S. voting rights law.



A view of the U.S. Supreme Court. AP



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## GS Paper III – Economic Development

### 'Pharma MSMEs hit by inverted duty'

**N. Ravi Kumar**

HYDERABAD

Pharmaceutical MSMEs are grappling with accumulated input tax credit (ITC) in the wake of GST 2.0 reforms coming to hugely aggravate the issue of inverted duty structure.

While benefitting consumers, the reforms have also brought disproportionate financial stress to MSME manufacturers. The structural imbalance may lead to reduced manufacturing capacity, supply disruptions, higher imports and employment instability, the Pharmaceuticals Export Promotion Council of India (Pharmexcil) said.

Highlighting challenges such enterprises face, the pharma exporters body said post GST 2.0, the Goods and Services Tax on finished formulations have been reduced to 5%. In the case of certain lifesaving drugs, there is no GST.

#### 18% for inputs

Inputs or raw materials such as active pharmaceutical ingredients (APIs), excipients and packaging materials, however, continue to attract 18% GST. This has led to widening of the inversion gap from the earlier 6% (18% vs. 12%) to 13% now (18% vs 5%). Consequently, it is leading to substantial accumulation of ITC by the units, Pharmexcil director general Raja



The GST reforms have brought huge financial stress to MSMEs.

Bhanu wrote in a communication to the members.

Seeking inputs for a collective representation which Pharmexcil would submit to the Ministry concerned, he also cited the recent feedback of the members on structural changes under GST 2.0.

The accumulation of ITC has led to multiple issues for the units, from working capital getting blocked on account of unutilised ITC, increased borrowing and interest burden, margin pressure under Drug Price Control Order (DPCO) restrictions to export disadvantage on upfront GST payment on inputs, delayed refunds.

Pharmexcil is inviting members' comments on GST rate alignment between inputs and outputs to remove inversion; details of ITC accumulated in three financial years beginning 2023-24 as also pending GST claims as on date.



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## GS Paper III – Science & Technology

### As calculations catch up, muon anomaly nearly vanishes

**Vasudevan Mukunth**

The particle physics rule-book, called the Standard Model, predicts the properties of most subatomic particles with such precision that those few properties found to differ in experiments have frustrated physicists. This is why they're keenly looking for cracks in the Model – parts where it can be updated – that could cover the anomalous findings as well.

One such crack is the  $g-2$

anomaly. A muon is a subatomic particle that behaves like a spinning magnet, so when placed in a magnetic field, it wobbles. A figure,  $g$ , denotes the strength of this wobble. The model says it should be just above 2 but many experiments have found a higher value.

However, a new study published by an international team in *Nature* suggests the Model might be fine. Reasoning that previous calculations were

just less accurate, the team published an updated set according to which the Model's prediction is roughly 0.000015% from the value measured in experiments.

The team focused on the hadronic vacuum polarisation, a number associated with the muon and extremely difficult to calculate. It accounts for feeble, short-lived particle effects that subtly alter the muon's motion. "It is challenging to calculate because it is in an energy regime where

the strong nuclear force becomes too strong for usual computational techniques to hold water," IISc Centre for High Energy Physics assistant professor Nirmal Raj said.

The team combined lattice QCD, a technique that uses powerful supercomputers to simulate how particles interact on a grid, with data from particle colliders to reach 0.48% precision, finding the Model's prediction and experimental data nearly matched.

This said, the researchers acknowledged that their new value for one part of the calculation, called the intermediate window, differs from previous estimates by 4.3 standard deviations. That is, they replaced the conflict between theory and experiment with a conflict between two ways to calculate the Model's own prediction. Now, the scientific community awaits more data from experiments like the MUonE collaboration

at CERN and J-PARC in Japan. "This result gives significant weight to the notion that there had been no discrepancy with the Standard Model after all," Dr. Raj said. He added that since the 2001 measurement of  $g$  at Brookhaven National Laboratory in the U.S. – a benchmark against which the Model's predictions have been compared – "we only had to wait for two-and-a-half decades for lattice QCD to come of age".



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## GS Paper III – Science & Technology



### Electric method can identify coffee strength and roast

The industry's current tools can measure coffee strength but can't separate roast colours. Researchers used cyclic voltammetry to pass a current through brewed coffee and found the electrical response revealed the strength. They also found the roast colour was related to how much caffeine stuck to the electrode and blocked the current. The team used the method to spot a bad batch of coffee a roaster had rejected while extant tools couldn't detect the flaw.



### ART ensures survival doesn't depend on genetic lottery

Before antiretroviral therapy (ART) became available, HLA-B alleles (gene variants) helped people live longer and reduced risk of mothers passing HIV to infants. However, disease-susceptible alleles led to faster illness. A study in South Africa has shown that without medical intervention, this natural selection would have doubled the frequency of protective genes by 38% over 45 years. ART has however radically slowed this genetic shift, ensuring survival no longer depends on a person's specific HLA-B genes.



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## GS Paper III – Environment



### Dust storms 'boost' rainfall by helping clouds form

Dust storms are being found to play a role in the earth's water cycle. A study has reported that weekly rainfall totals after a dust storm can be 9.6 mm higher than during dust-free periods, as dust particles act like ice nuclei and help form clouds and boost downpours. The study also found dust in the air enhanced the odds of heavy rainfall. The findings reveal dust storms are a powerful driver of global precipitation patterns.

## GS Paper III – Environment

### The ingredients of India's biopharma ambitions



**SPEAKING OF SCIENCE**

**D. Balasubramanian**

The COVID-19 pandemic was a watershed moment for our country. While the pharmaceutical sector was robust, it lacked the capacity to produce specialised molecular components at scale. At the start of 2020, nearly all of the 20-plus reagents and enzymes required for making the vaccine kits were imported. Supplies were also vulnerable as the countries where these came from struggled with their own outbreaks.

The pandemic brought to light bottlenecks in the supply chains that support research, development, and manufacturing in the biotechnology and health sectors. Vast arrays of specialty reagents are re-

quired to drive innovation in new therapeutics and to make accurate diagnostic kits.

One example is nucleotides and their analogs. Nucleotides are the building blocks of DNA and RNA. Clever chemical modifications of these compounds give us nucleotide analogs. When used in PCR kits, the analogs have greater sensitivity in the diagnosis of diseases such as tuberculosis and dengue.

Some analogs are used as therapeutics. The antiviral drug remdesivir can stop the virus from proliferating. During the pandemic, modest evidence suggested that it could reduce the time to recovery from a severe COVID-19 infection. Other exotic nucleotide analogs have been used to silence genes – as in the case of the enzyme responsible for overproducing oxalate, which ends up forming kidney stones.



The pandemic brought to light bottlenecks in the supply chains that support research, development, and manufacturing. UNSPLASH

News headlines focus mainly on breakthroughs in curing diseases. The infrastructure needed to enable that research gets little attention except in times of crisis. Thanks to the lessons learnt during the pandemic, the industry that makes specialty biochemical reagents and laboratory products is now in a phase of high growth. But the going is not easy for the innovation-driven small and medium Indian companies

that make these products. They have to compete with large multinationals that dominate this sphere worldwide.

Indeed, many small companies start off as distributors of imported products. The Hyderabad-based company Biochem Desk, headed by researcher-turned-entrepreneur Shraddha Goenka, started off two decades ago as a distributor and now manufactures high-purity cus-

tom nucleotides and provides deep technical support required to use these exotic chemicals at R&D institutions. Similarly, other small- and medium-sized enterprises (SMEs) like Mylab Discovery Solutions in Pune and Chennai-based MagGenome Technologies chip away at India's 80% import dependence for high-end laboratory supplies.

But there are many regulatory hurdles that Indian startups in this space face. Maintaining high-level regulatory compliance can affect SMEs more than large multinationals. Inverted duty structures mean that they import their starting material and equipment at a much higher tax rate while selling their finished kits at lower tax slabs.

Government programmes such as the Biopharma SHAKTI initiative and the BioE3 Policy, that promote biotech start-ups,

will create a growing demand for reagents, molecular biology kits, and cell and tissue culture products. There are now around 11,000 biotech startups in the biotech clusters of Bengaluru, Lucknow, and the National Capital Region, in Hyderabad's Genome Valley, and in other places.

There are many incentives offered by regulators to the makers of a final product such as a vaccine – but not for the companies that produce ingredients that go into making the vaccine.

Incentivising the creation of the ingredients that go into the making of successful biotechnological products would go a long way towards attaining a self-reliant India.

*(This article was coauthored by Sushil Chandani)*

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