

# Modi's U.S. visit yields many vital agreements

PM and Biden announce deals on jet engine tech transfers, drones, health and space cooperation; democracy is in our veins, says Modi, maintaining that there is no discrimination in India

**Sriram Lakshman**  
WASHINGTON

India and the U.S. on Thursday announced a number of agreements on defence cooperation, critical and emerging technologies, health, environment, visas and space – including a deal which could pave the way for an unprecedented transfer of jet engine technology – as Prime Minister Narendra Modi met U.S. President Joseph Biden as part of his first state visit to the United States.

The two leaders, who hailed the strengthening of the strategic partnership with the visit, met at the White House and made the point that both countries share democratic values, while addressing a gathering of officials and thousands of members of the Indian-American diaspora.



**Stronger bond:** Narendra Modi and Joe and Jill Biden during a welcome ceremony for the Prime Minister at the White House. AFP

Mr. Modi and Mr. Biden marked what they have described as a new stage in the India-U.S. relationship as the Prime Minister was accorded a ceremonial welcome at the White House South Lawn by the President and First Lady Jill Biden on a drizzly Thursday morning.

Both leaders addressed a press conference after their bilateral meeting. Mr.

Modi answered two questions – one on democracy in India from the American press corps and another on climate change from the Indian media.

Mr. Modi agreed with Mr. Biden that democracy was in the DNA of India and the U.S. "Democracy runs in our veins," Mr. Modi said, maintaining that there was no discrimination in India.

## Barack Obama sounds alarm on minority rights

NEW DELHI

India may "pull apart" if rights of the religious and ethnic minorities are not upheld, former U.S. President Barack Obama said, adding that the Biden administration should discuss these issues "honestly" with PM Modi. » **PAGE 13**

The Prime Minister and the President discussed the war in Ukraine during their bilateral meeting.

"We are completely ready to contribute in any way we can to restore peace," Mr. Modi told the press conference.

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**GE AEROSPACE-HAL DEAL**

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## Modi's U.S. visit yields many vital agreements

The address on the South Lawn saw a number of people chanting "Modi, Modi", even as protesters met further away from the White House to demand that the U.S. President raise human rights issues with the PM.

More than 75 lawmakers had signed a letter urging Mr. Biden to express concerns over the situation in India "publicly", while a number of members of Congress announced on Thursday that they would "boycott" Mr. Modi's address to the joint session of the U.S. Congress.

Mr. Biden, who embraced Mr. Modi many times during the welcoming ceremony, had clearly set aside the protests. "I've long believed that the relationship between the United States and India will be one of the defining relationships of the 21st century," he said.

Cabinet officials on both sides and a few thousand diaspora members, some of whom chanting "Modi, Modi" were in attendance.

It was not just pomp and ceremony though – the two sides announced a long list of deliverables spanning defence, critical and emerging technology, health, energy and mobility. Mr. Biden characterised this as a "next generation partnership".

"After becoming the Prime Minister, I have come here many times, but today for the first time the doors of the White House have been opened for the Indian American community in such large numbers," Mr. Modi said.

Also palpable in Washington were concerns around Mr. Modi's past, when he was Chief Minister of Gujarat, as well as concerns about democratic backsliding in India.

### 'We the people'

"... As democracies, we can better tap into the full talent of all of our people and attract investments ... with our ... greatest export being the power of our example: equity under the law, freedom of expression, religious, pluralism and diversity of our people," Mr. Biden said in his welcome speech on the South Lawn. Both leaders referred to the countries' Constitutions beginning with the phrase "We the people".

"Both of our countries take pride in their diversity. Both of us believe in the fundamental principle of in the interest of all for the welfare of all," Mr. Modi said as per a translated version of his speech. "Our strong strategic partnership is a clear proof of the power of democracy," he added.

"The decisions we make today are going to determine our future for decades to come," Mr. Biden added.

### Jet engine tech transfer

Earlier in the day, General Electric and Hindustan Aeronautics Limited announced they had signed a big-ticket MoU to jointly produce GE 414 jet engines in India for the Tejas Mk2 light combat aircraft. U.S. officials who briefed journalists before the announcement appeared to be patting themselves on the back for the deal, with one official describing the Indian side as being "surprised and thrilled by the steps" the American side has been able to take to overcome bureaucratic roadblocks to the deal. India's purchase of armed drones is also likely to be announced on Thursday.

The Defence Ministries of the two countries also launched the inaugural session of an innovation platform – INDUS-X – in Washington DC on June 21, hosted by the U.S. India Business Council, to foster defence industrial collaboration. Among the big private sector deals coinciding with the visit was U.S. semiconductor and chip maker Micron Technology, Inc's announcement that it would invest up to \$825 million in a new chip assembly and test facility in Gujarat, which would be bolstered by investment from the Indian and Gujarat governments, totalling \$2.75 billion.

In space cooperation, India is signing on to a framework of 25 countries for space exploration and cooperation. The two countries have agreed on a mission to the International Space Station in 2024.

After years of pandemic-induced visa slowdowns, the U.S. is announcing a pilot programme to renew visas domestically – which means that applicants do not have to travel outside the U.S. to get their renewal stamps – for certain petition-based temporary workers.

This programme could expand to cover H1B and L-1 skilled visas by 2024 and to other categories eventually. It will also involve opening U.S. consulates in Bengaluru and Ahmedabad. India will reopen its consulate in Seattle, and announce new consulates elsewhere.

*(With inputs from Suhastini Hatder in New Delhi)*



# Kalaighar pen monument gets CRZ nod

**K. Lakshmi**  
CHENNAI

The Union Ministry of Environment has granted the Coastal Regulation Zone (CRZ) clearance, with 15 conditions, for the Tamil Nadu government's proposal to construct the Muthamizh Arignar Dr. Kalaighar pen monument in the Bay of Bengal, off the Marina beach.

**EAC recommendations**  
With this, the State can start implementing its pro-



The CRZ clearance is subject to the final order of the NGT, southern zone. Picture shows an artist's impression of the monument.

posal. In its letter to the Public Works Department on June 19, the Ministry said that the clearance was

granted based on the recommendations of the Expert Appraisal Committee and the Tamil Nadu

Coastal Zone Management Authority. It may be revoked or suspended if implementation of the conditions were not satisfactory.

The environmental statement would have to be submitted to the Tamil Nadu Pollution Control Board every year and the status of compliance of conditions need to be uploaded on the Public Works Department website, the letter noted.

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## CRZ nod for Kalaighar pen monument

Some of the conditions laid down by the Ministry include obtaining a no-objection certificate from INS Adyar, situated 800 metres away from the project site, before the construction; monitoring erosion and carrying out accretion studies; filing reports on crowd management; and setting out emergency evacuation plans that are to be provided to the regional environment office.

Noting that any order or direction of court and tribunal must be complied with, the Ministry said the CRZ clearance was subject to the final order of the National Green Tribunal, southern zone.

Chennai-based Hubert Enviro Care Systems was the infrastructure and environmental consultant for the project. The PWD would prepare a detailed project report based on the Ministry's approval.

The PWD had proposed that the monument would be 30-metre high and spread over 8,551 sq m. This project includes a pen pedestal, a lattice bridge above the beach and land, and a pedestrian pathway above the sea. The 7-metre wide bridge would be 290-metre long above the land and 360-metre long above the sea.

Officials of the PWD noted that IIT-Madras and other experts would be consulted for design of the monument. The detailed project report would be completed in three months, after which the process for construction would begin.

## ‘Carbon neutrality by 2070 is possible, but India has to rush’

**The Hindu Bureau**  
CHENNAI

India's target to achieve carbon neutrality by 2070 will become a reality, but the journey towards it should be accelerated, said renewable energy experts at a conference held by the Andhra Chamber of Commerce on Thursday.

N. Elangovan, Regional Joint Secretary, Department of MSME, said Tamil Nadu's fortunate position of being endowed with good renewable energy sources had led to the State contributing around 35% to 40% of India's installed capacity of wind energy.

While the State had the second highest wind energy capacity in the country, one of the challenges it faced was the lack of land to set up more wind farms, said Ajay Devaraj, Secretary-general, Indian Wind Power Association (IPWA). "One solution is repowering, which is upgrading the capacity of the existing wind turbines to produce

more energy," he explained.

However, windmills in proximity can affect each other's performances, pointed out Mr. Devaraj, and added that the IPWA recommended to the authorities that solar panels be put up in existing land where wind turbines currently were which would allow for the transmission lines to take up both solar and wind generated energy.

Experts discussed the current situation and challenges in solar and biomass energy production. It was said although solar energy emerged as the major alternate source of energy, there were growing concerns about the e-waste it produced.

Indira Dutt, president, Andhra Chamber of Commerce and Chairperson/Managing Director, KCP Limited, said the government had been helping MSMEs meet the challenges of a global tightening of green norms.



# State government to set up 'zootorium' at Arignar Anna Zoological Park in Vandalur

The project includes a 7D theatre and an interpretation complex for an immersive learning experience for children. It will be implemented over three years at a total cost of ₹4.3 crore

**The Hindu Bureau**  
CHENNAI

**T**he Tamil Nadu Forest Department has proposed to establish a 'zootorium' at Arignar Anna Zoological Park in Vandalur, comprising a 7D theatre and an interpretation complex aimed at providing an immersive learning experience for children.

The 7D theatre will be developed at the old auditorium on the zoo premises alongside a museum and interpretation complex with interactive displays to enable people to explore and experience wildlife in a novel way, said a Government Order issued on Thursday by Supriya Sahu, Additional Chief Secretary to the Departments of Environment, Climate Change and Forests. The project hopes to create a sense of curiosi-



The 7D theatre will be developed at the old auditorium on the zoo premises alongside a museum and interpretation complex with interactive displays. B. VELANKANNI RAJ

ty about wildlife and nature in young minds, the order said.

The zootorium will be implemented over three years at a total cost of ₹4.365 crore under the Ta-

mil Nadu Innovation Initiatives. The order specifies that ₹3.76 crore has been allocated for 2023-2024 for the 7D theatre and a touch and throw projection board for digital interac-

tions. In the subsequent two years, work will begin on other components such as a virtual reality tour, selfie booth, multi-user touch boards, information boards and cut-outs.

EVA

## An ambitious plan to turn The Nilgiris carbon-neutral, but there is a hurdle

The State government plans to incentivise the use of electric vehicles and set up infrastructure to support them. Conservationists are all for the initiative. But they say the government is failing to address one of the most important objectives: to limit tourism

Rohan Premkumar

**T**he Tamil Nadu government has unveiled a plan to make the Nilgiris carbon-neutral. The plan, if successful, may help to preserve the severely threatened and rapidly declining biodiversity of the hill district. However, stakeholders are sceptical of the plans outlined so far and highlight the need to address the elephant in the room – tourism and construction – to preserve the remaining fragments of the pristine Shola forests and grasslands.

The government plans to make the Nilgiris, Rajapalayam in Virudhunagar, Rameswaram in Ramanathapuram and Coimbatore carbon-neutral. But it has no time-frame in mind. According to Additional Chief Secretary (Environment, Climate Change and Forests) Supriya Sahu, the Nilgiris could become the first carbon-neutral district in the country.

### Climate profile to be studied

Ms. Sahu says the climate and energy profile of the Nilgiris and other parameters will be studied. As part of the district climate change mission, being undertaken in conjunction with the Green Tamil Nadu Mission and the Tamil Nadu Wetland Mission, district forest officers have been appointed as district climate officers.



**A problem of plenty:** During the peak tourist season, over 20,000 vehicles enter the district and the population of major towns such as Udhagamandalam, Coonoor and Kotagiri increases 3-4 times. M. SATHYAMOORTHY

“To achieve carbon-neutrality, the amount of emissions should be equal to or slightly lesser than the total absorption capacity. The Nilgiris is in a prime place to achieve it because it is covered by more than 65% of forests and is rich in biodiversity,” Ms. Sahu says. Among the government’s plans are to incentivise the use of electric vehicles in The Nilgiris and set up

infrastructure to support them and to look at alternative sources of fuel for major industries like tea factories.

The Kaikatty INDCOSERVE tea factory is on the path to becoming carbon-neutral by adopting solar energy to partly offset its carbon emissions, Ms. Sahu says.

Conservationists and experts from the hill

district agree that the initiative is commendable. But they say the government is failing to address one of the most important objectives: to limit tourism in the district. Janardhan Nanjundan, a researcher and ecologist, who has conducted a basic analysis of carbon emissions, says tourism grows every year, and this trend is unsustainable.

“During the peak tourist season, an average of over 20,000 vehicles enter the district, with the population of the major towns – Udhagamandalam, Coonoor and Kotagiri – increasing by 3-4 times. The Nilgiris cannot support such unrestricted tourism,” says Mr. Nanjundan. Besides, the total green cover estimates vary. The cover of exotic tree and plant species, such as eucalyptus and wattle, is different from that of the native Sholas and grasslands. “While eucalyptus trees can absorb a lot of carbon, the Shola species and grasslands support much more biodiversity. However, both Shola trees and grasslands are being lost to the spread of exotic and invasive species like wattle and cestrum,” he points out.

### New infrastructure

Another ecologist says the government itself is pushing for new and expanded infrastructure, including wider roads, and more industry, like a TIDEL Park in Udhagamandalam. However, more infrastructure means it will be more difficult for the government to achieve its goal of carbon-neutrality, says the ecologist. Unless tourism is limited, such a goal will be unattainable. Mr. Nanjundan estimates that the carbon capacity as well as carbon emissions of the Nilgiris are almost equal. But he cautions that the exponential growth in tourism will mean that the carbon-neutrality cannot be maintained. He calls for reducing tourism by up to 75%, regulating the tea and coffee industry, planting more native tree species, protecting the grasslands and the wetlands and building more energy-efficient homes and hotels.



## Former T.N. Chief Secretary P. Sabanayagam dies at 101

**The Hindu Bureau**  
CHENNAI

Former Chief Secretary of Tamil Nadu P. Sabanayagam died in Chennai on Thursday. He was 101, and is survived by two sons and a daughter.

Chief Minister M.K. Stalin had participated in his centenary celebrations.

Sabanayagam had worked with Rajaji as his private secretary; former Chief Ministers Kamaraj, Bhaktavatsalam, Annadurai and Karunanidhi; and former Prime Minister Indira Gandhi. He became the Chief Secretary of Tamil Nadu in March 1971 and served in the post till April 1976.

Sabanayagam's contributions include the popularisation of Indian handlooms in the U.S. His efforts ensured that the Madras Checks came to be protected under the Patent Law in the 1960s, historian V. Sriram had written in *The Hindu*.



P. Sabanayagam

After the declaration of Emergency, he was transferred to Delhi as Secretary, Government of India, and had represented India at the meetings of UNESCO in Paris.

Born in Madras in June 1922, Sabanayagam did his schooling in Ewart School. His father S. Panchanatha Mudaliar was an advocate and worked with S. Muthiah Mudaliar, who was a Minister.

He joined the Madras Christian College and completed his BA in 1942. He joined the Army in 1943 and while in service,

he was selected for the Indian Civil Service. He started his career in civil services in the Madras Presidency as the Sub-Collector of Pollachi, Coimbatore district.

As a Chief Secretary, he continued with his 'open door policy'. "Secretaries and heads of departments could meet me easily. I would occasionally walk around and see clerks and peons working...", he had recalled in his memoir 'Service to the Nation'.

In the beginning of his tenure as the Chief Secretary, he was considered as 'Congress-aligned' as he was close to Rajaji, Kamaraj and Bhaktavatsalam, who was thought to be his relative.

He retired as Secretary, Union Ministry of Education and Culture, in New Delhi, in August 1980.

The Tamil Nadu government has announced that Sabanayagam's funeral will be held with police honours.

# GE Aerospace, HAL sign MoU for manufacture of jet engines in India

F414 engines will power LCA-Mk2 and the fifth-generation twin-engine Advanced Medium Combat Aircraft-Mk1, which is on the drawing board and requires a more powerful engine; F414-powered aircraft are in use with eight nations

**Dinakar Peri**  
NEW DELHI

**A**mid the ongoing U.S. visit of Prime Minister Narendra Modi, engine manufacturer GE Aerospace on Thursday announced signing a memorandum of understanding (MoU) with Hindustan Aeronautics Ltd. (HAL) to produce fighter jet engines for the indigenous light combat aircraft (LCA). The proposal needs authorisation from the U.S. Congress before an agreement can be concluded.

"The agreement includes the potential joint production of GE Aerospace's F414 engines in India, and GE Aerospace continues to work with the U.S. government to receive the necessary export authorisation for this. The effort is part of the Indian Air Force's (IAF) LCA Mk2 programme," a statement from GE Aerospace said.



Indian Air Force LCA Tejas performs an aerobatic display during the Aero India 2023 air show, Yelahanka air base, Bengaluru. REUTERS

"Today's agreement will advance GE Aerospace's earlier commitment to build 99 engines for the IAF as part of the LCA Mk2 programme."

The firm noted that this put the company in a strong position to create a family of products in India, including the F404 engine that currently powers the LCA Mk1 and LCA Mk1A

and GE Aerospace's selection for the "prototype development, testing and certification of the Advanced Medium Combat Aircraft (AMCA) programme with our F414-INS6 engine". In addition, GE will continue to collaborate with the Indian government on the AMCA Mk2 engine programme, it stated.

The LCA Mk1 and Mk1A, 83 of which are on order, are powered by the F404 engine, while the LCA-Mk2 will be a larger and more capable jet and will be powered by the F414 engine.

Terming it a historic agreement, H. Lawrence Culp Jr., chairman and chief executive officer of GE and CEO of GE Aerospace, said, "Our F414 engines are unmatched and will offer important economic and national security benefits for both countries as we help our customers produce the highest quality engines to meet the needs of their military fleet."

In 1986, GE began working with the Aeronautical Development Agency and HAL with its F404 engines for the LCA programme. "In total, 75 F404 engines have been delivered and another 99 are on order for LCA Mk1A. Eight F414 engines have been delivered

as part of an ongoing development program for LCA Mk2," the firm said.

The Mk2 development received sanction from the Cabinet Committee on Security (CCS) in August 2022 at a total cost of ₹9,000 crore. DRDO had stated that the prototype is expected to roll out by 2024-25 and the jet will be ready for production by 2027. The fifth generation AMCA is awaiting CCS sanction, the development of which will take 10 years after that, as reported by *The Hindu* earlier. The project cost of the AMCA is estimated at around ₹15,000 crore.

For AMCA-Mk2, India is looking at a more powerful engine which it plans to co-develop with an international partner. With more than five million flight hours and eight nations with F414-powered aircraft, F414 continues to exceed goals for reliability, a statement said.



## Amid search for Titan, lessons for proposed Indian submersible dive

**Jacob Koshy**  
NEW DELHI

With hope dwindling on the chances of survival of those in the Titan submersible, scientists in India, preparing to undertake a similar dive in an indigenous vehicle late next year, say that multiple back-up safety measures for the crew are already in place, though there may be reviews of the safety systems employed.

The Titan, which previously ferried tourists to the wreck of the *Titanic* buried 3,800 metres in the North Atlantic, lost contact with its mothership, *Polar Prince*, on June 17.

The Titan consists of a carbon-fibre sphere with a titanium casing on the front and back. "When we were in the planning stage, there was a proposal to use carbon fibre but we firmly ruled it out and insisted on a titanium enclosure," said G. Ramadass, Director, National Institute of Ocean Technology (NIOT), Chennai, which is in the process of designing a submersi-



**Ready to dive:** A prototype of Matsya 6000, a submersible being developed by the NIOT, Chennai. R. RAMINDRAN

ble, Matsya-6000, that will take three Indians to a depth of 6,000 metres into the Indian Ocean.

Matsya-6000 also has syntactic foam, a flotation device that would rise to the top and help determine the physical location of the submersible, even if it were unable to resurface.

Ahead of the main dives, likely in December 2024 or early 2025, the NIOT divers will undertake several test dives up to 500 metres inside another submersible made of steel. Titanium is stronger than steel but many times lighter – a key criterion that helps the submersible resurface with relative ease

from the depths of the open ocean. While the choice of material is made depending on the depth and the cost involved, it's crucial that the submersible's hull is perfectly spherical, so that extreme pressure at the ocean depth is evenly balanced. "Even with the slightest imperfection, say even a millimetre off, it will go off like a bomb," M. Ravichandran, Secretary, Ministry of Earth Sciences (MoES), told *The Hindu*.

"This accident will certainly have us review and re-check all the safety measures that we will be incorporating in our mission," Dr. Ravichandran added.