THE HINDU

GS Paper 1-Cyber Security

Operation Chakra V: CBI gets hold of four 'kingpins' in 'digital arrest' fraud

Devesh K. Pandey
NEW DELHI

The Central Bureau of Investigation (CBI) has arrested four people, two each from Mumbai and Moradabad (Uttar Pradesh), for their alleged involvement in "digital arrest" fraud.

The arrests, made as part of 'Operation Chakra V', followed searches at 12 locations in the country.

In such a fraud, criminals extort money from targets by posing as officials online. GETTY IMAGES

vestigative techniques were employed to identify

days of police custody," the agency said.

In his '*Mann Ki Baat*' address last October, Prime Minister Narendra Modi had cautioned the people against 'digital arrest' frauds being committed to scam the victims of their hard-earned money and asked them to report such cases to the cyber helpline.

In this scam, fraudsters make phone/video calls to

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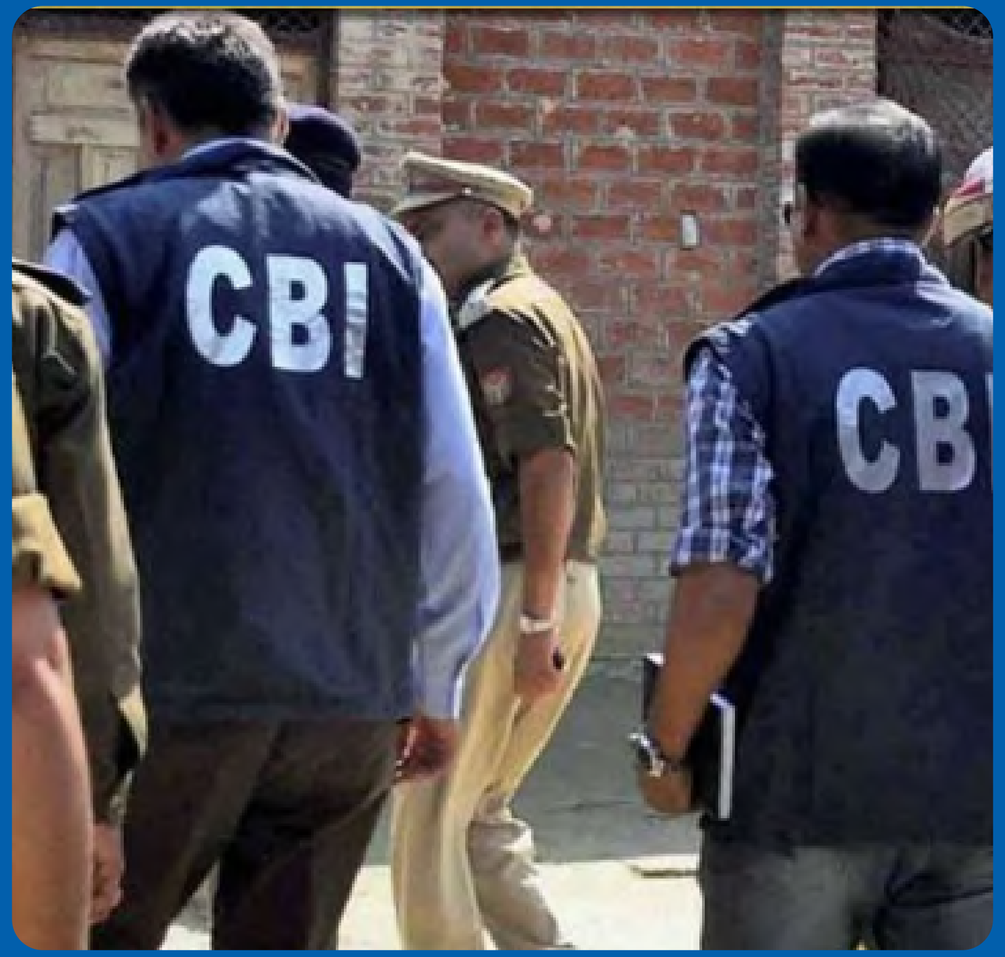
KEY POINTS

- The CBI, under Operation Chakra V, arrested four people for their role in a “digital arrest” fraud.
- Operation Chakra targets cybercrime networks in India, based on international inputs, to combat financial scams and frauds.



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GS Paper 3-Environment

A great cormorant in the Camargue marshes near Arles, France, on February 27. Hunting with lead shells has been banned in the French wetlands since 2006, yet a study published on April 15 in *Conservation Science and Practice* showed that lead poisoning of waterbirds has not decreased. AFP

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KEY POINTS

- The great cormorant is a large bird with a white throat patch and no crest. It has a wide distribution, found on every continent except South America and Antarctica. It inhabits rivers, reservoirs, and marine environments, mainly along the coastal North Atlantic in North America. Its IUCN Red List status is Least Concern.

THE HINDU

GS Paper 3-Economy

India, rising power demand and the 'hydrogen factor'

R.B. Grover

is a Member of the Atomic Energy Commission, a former Principal Adviser of the Department of Atomic Energy, and a former Vice-Chancellor of the Homi Bhabha National Institute

The goal of achieving a net-zero economy can be realised only by massive electrification of end uses of energy. Besides their use in generating electricity, fossil fuels are used to provide heat and molecules for industrial processes. The use of fossil fuels for providing heat is ubiquitous and well understood. Examples of providing molecules include the use of carbon (from coal) in steel making to reduce iron ore, and the use of hydrogen from natural gas to make ammonia, which is a feedstock for the fertilizer industry. In the steel industry, hydrogen can be substituted for carbon. Thus, a net-zero economy would mean electrification of end uses and the use of hydrogen for many industrial processes.

Power demand and nuclear power plans

Forecasts made by several academics, including this writer and his colleagues, predict a steep increase in electricity demand to meet the goal of economy-wide net-zero emissions for a developed India. Solar, wind and hydro cannot provide all the electricity that India needs, and nuclear has to be part of the energy mix in India. Considering this, the Government of India has set an aspirational target to reach 100 GW of installed capacity based on nuclear power by 2047.

The NPCIL has invited proposals from the industry for setting up 220 MW PHWRs, christened as Bharat Small Reactors (BSRs) for its captive use. The NPCIL has several 220 MW PHWRs in its portfolio, and the BSR is its evolutionary version. Thus, the NPCIL is marching ahead to set up PHWRs, a technology that it has mastered. Indian industry is capable of manufacturing all equipment and components for PHWRs.

Low carbon sources and solutions

Therefore, in the years ahead, the share of electricity provided by low-carbon sources, that is, hydro, nuclear, solar and wind, will increase. Solar and wind are intermittent sources, and nuclear is best operated as base load. At present, to balance supply and demand during solar hours, coal-fired power plants are flexed. Flexing coal-fired plants and letting solar and wind continue to operate lowers carbon emissions from electricity generation. In the emerging scenario, when all sources are low-carbon, balancing supply and demand will need innovative solutions.

Suggestions to explore the possibility of flexing nuclear power plants have been made. It is not desirable to flex power plants set up with a high

connect electrolysers and electricity storage devices to the grid and operate them to shape demand so that there is no need to flex nuclear power plants or curtail solar and wind. Following this approach, one can reduce electricity storage requirements. Considering that the cost of electricity storage is an issue for large-scale integration of solar and wind, this approach provides a win-win solution.

Electrolysers are low-cost equipment and can be operated at different power levels. The scheme proposed for hydrogen production using surplus electricity in the system is not for the reconversion of hydrogen to electricity but for its use in the industry.

The government has defined hydrogen produced by electrolysers using electricity from solar and wind as green and has provided incentives. A certification scheme has also been drafted for green hydrogen, where electrolytic and biomass-based hydrogen with CO_2 emissions not exceeding 2 kg CO_2/kg H_2 on average is called green. Life-cycle greenhouse gas emissions (expressed in terms of a kg of greenhouse gas per kg of hydrogen) for hydrogen production from renewable sources and nuclear power plants are comparable. It is suggested that the taxonomy be changed from green hydrogen to low-carbon

KEY POINTS

- Achieving a net-zero economy requires electrifying energy use and using hydrogen in industries. India aims for 100 GW of nuclear power by 2047 to meet rising electricity demand. While solar, wind, and hydro are key, nuclear will provide base load. Flexing nuclear plants is not cost-effective, but hydrogen production from surplus electricity can balance supply and demand.

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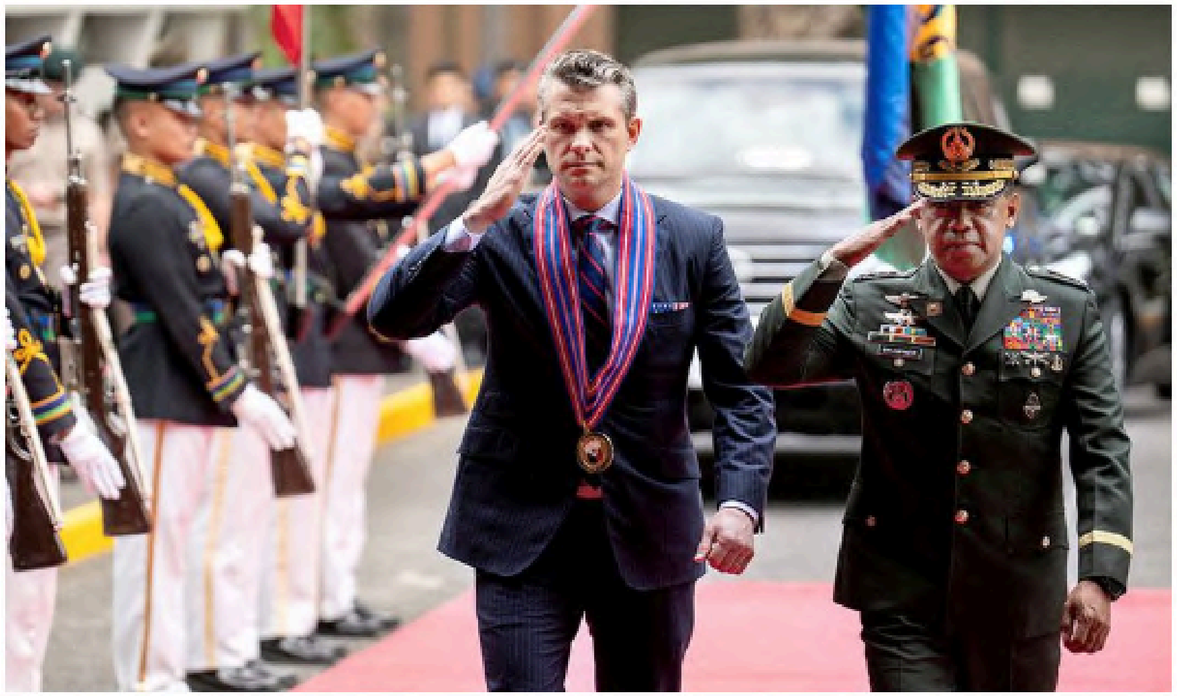
GS Paper 2-IR

U.S. and Philippines to hold live-fire military drills in South China Sea



U.S. Defence Secretary Pete Hegseth with Chief of Staff of the Armed Forces of the Philippines Romeo Brawner Jr. - Photo: FILE PHOTO

KEY POINTS

- .The Balikatan exercises, involving 9,000 U.S. and 5,000 Filipino troops along with other international forces, will be held in the Philippines from April 21 to May 9, featuring fighter jets, navy ships, and U.S. anti-ship missiles. China opposes the drills, particularly near the South China Sea and Taiwan, viewing them as a threat. However, Philippine officials stress the exercises are not aimed at any specific nation.

The Indian EXPRESS

GS Paper 3-Environment

Study: Surat particulate emissions market cut pollution in industries by up to 30%

NIKHIL GHANEKAR
NEW DELHI, APRIL 15

THE WORLD'S first-ever market for trading in particulate matter emissions — launched in Gujarat's Surat in 2019 through partnerships with researchers from the University of Chicago, Yale University, and Abdul Latif Jameel Poverty Action Lab (J-PAL) — has reduced pollution by 20-30% among participating industries while lowering their compliance costs, according to a recent study published in The Quarterly Journal of Economics.

The Surat Emission Trading Scheme (ETS) seeks to curb air pollution by allowing industrial plants to buy and sell permits for particulate matter emissions to stay within a fixed pollution limit. A cap is set on the total pollution limit that the plants have to meet. Those that stay within the limit can sell their unused for carbon emissions.

The Surat ETS is run by the Gujarat Pollution Control Board (GPCB) in collaboration with the Energy Policy Institute at the University of Chicago (EPIC), J-PAL, Yale University and industry associations. Surat was chosen for the pilot market as it is a highly industrialised city where industrial pollution contributes nearly a third of the ambient particulate matter, the study says.

A cluster of industrial plants in Surat traded permits on a platform hosted by the National Commodities and Derivatives Exchange e-Markets Limited (NeML). Plants that failed to comply with emission caps or permit requirements were fined.

A randomised controlled trial (RCT), conducted between April 2019 and March 2021, studied 162 plants randomly assigned to participate in the emissions market and 155 others that continued to follow existing partic- researchers from EPIC, Yale University, and the University of Warwick.

It found that plants in the ETS reduced emissions significantly more than those under conventional regulation, and had permits to cover their emissions 99% of the time. These plants cut particulate matter emissions by 20-30%, while also lowering pollution control costs by 11%, thereby improving compliance. In contrast, plants outside the market failed to meet pollution norms for nearly a third of the study period.

"The market delivered a rare win-win-win by reducing pollution, decreasing abatement costs, and raising the government's success at enforcing the law. And it did all this in a setting where there was great scepticism that pollution markets could work," said study co-author Michael Greenstone, Milton Friedman Distinguished Service Professor in Economics at the launch, along with trading and compliance records.

Prior to the rollout, mock trials were held to train participants in trading and compliance protocols. Initially, the emissions cap was set at 280 tons per month, based on estimates assuming plants operated at full capacity and emitted pollutants at the maximum concentration permitted under existing air quality rules. However, once the market began, the cap was revised downward — based on actual emissions data from continuous monitoring — to 170 tons per month, according to the study.

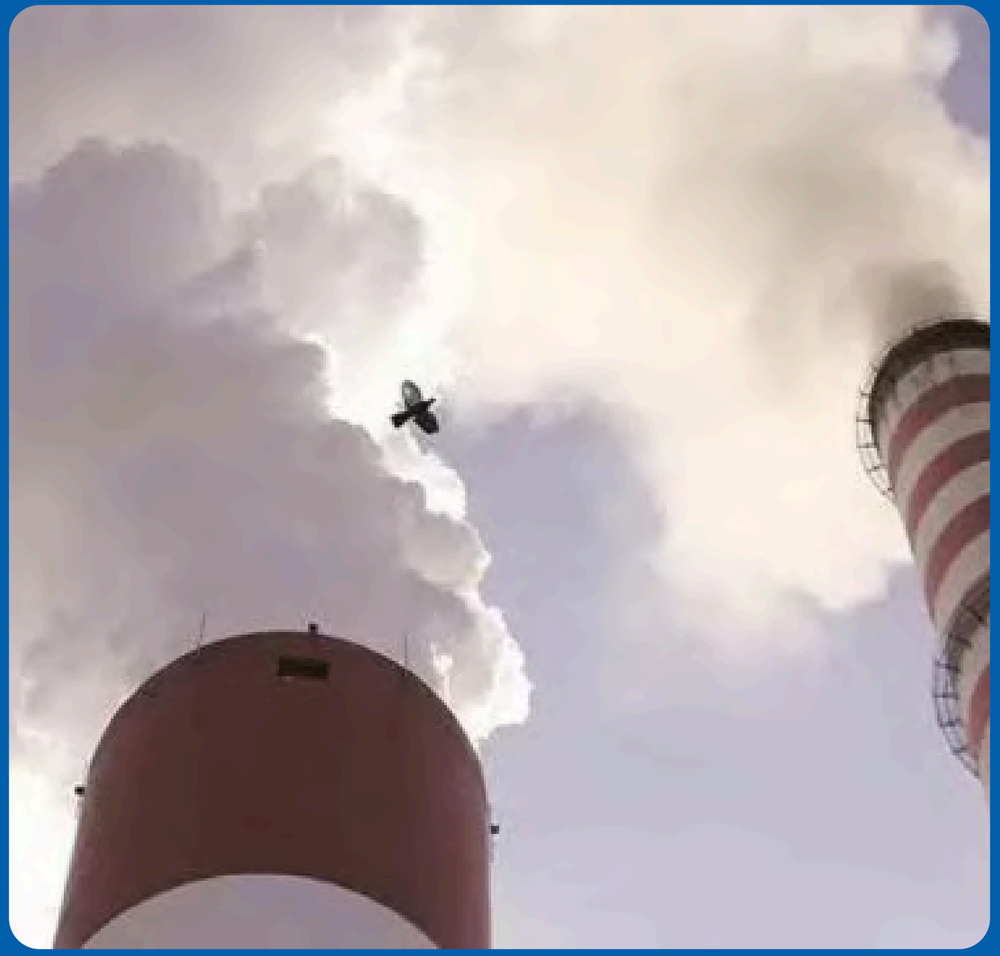
When asked about the reduction in particulate matter emissions in absolute terms, Dr Anant Sudarshan, a study co-author, said, "The total amount of particulate pollution emitted per hour was around 3.6 kg/hour, so that's an absolute reduction of roughly 0.72 kg/hour."

The Indian EXPRESS

NEXT IAS

KEY POINTS

- The Surat Emission Trading Scheme, launched in 2019, reduced pollution by 20–30% among participating industries by allowing plants to buy and sell emission permits.
- This cap-and-trade system, studied from 2019–2021, also lowered compliance costs by 11%, with plants significantly outperforming those under conventional regulations.



The Indian EXPRESS

GS Paper 3-Economy

FOCUSED ON CORE TRADE ISSUES

India, European Union weigh early harvest trade pact, says Commerce Secretary

AANCHAL MAGAZINE & RAVI DUTTA MISHRA
NEW DELHI, APRIL 15

WITH TRADE tensions triggering an urgency for trade diversification, India is exploring faster trade deals in the form of an 'early harvest' trade agreement with the European Union focused on core trade issues, Commerce Secretary Sunil Barthwal said on Tuesday.

In trade parlance, an early harvest agreement between two trading partners helps countries identify certain products for tariff liberalisation pending the conclusion of Free Trade Agreement (FTA) negotiation. India had earlier signed a similar early harvest or mini-trade deal with Australia and is currently negotiating a comprehensive trade deal.

"This has been our view, this we discuss with other countries also, that if some of the issues which may be not very core to the trade and maybe taking some more time, then it is better to focus on the core trade issues first. So, we say first things first, and the trade benefits should accrue to both the countries, the businesses of both the countries and the people of both the countries. And, we are also discussing with the EU what can be the early harvest or the first tranche where we can do a deal faster than if we involve all the kinds of subjects which are involved in the free trade agreement with the EU," Barthwal said.

The Commerce Secretary said the government is taking a "very very pragmatic approach" with the EU as they are taking with the US. A similar strategy has been adopted with the US to negotiate a first tranche ahead of the full Bilateral Trade Agreement, for which the negotiations are underway. Officials indicated that the negotiations for the BTA with the US could be wrapped up "as soon as possible" with the outer limits being fall of this year.

In February, India and the European Union had held the tenth round of trade deal negotiations, where both countries had made considerable progress in agreeing on the norms that will guide dispute settlement under the pact but failed to make a significant breakthrough on rules of origin, which help determine the national source of a product. The 10th round of talks focused on potential market access in goods, services, investment and government procurement.

Prime Minister Narendra Modi and Ursula von der Leyen, President of the European Commission, had announced that both sides would aim to conclude the free trade agreement by the end of 2025. The two parties have been negotiating the agreement since July 2022 and have held ten rounds of talks. The 11th round of talks between the two trade partners is scheduled for May 12-16 in New Delhi.

Both sides had discussed the product-specific rules for several sectors, including: "processed agricultural products, fisheries, pharmaceutical products, chemical products, fertilisers, textiles and clothing, car parts, wood pulp, and paper." They had also held specific discussions on cars and medical devices, following an earlier statement by the 27-member bloc about not being willing to sign a trade deal without "substantive" market access from India for the sale of European-made cars.

Exports inch up 0.7% in March

New Delhi: India's exports turned positive after four months recording a marginal 0.7 per cent increase to $41.97 billion in March, while the trade deficit widened to $21.54 billion, the government data showed on Tuesday.

Cumulatively, during the 2024-25 financial year (April-March), the country's exports moved up a tad by 0.08 per cent to $437.42 billion, whereas imports climbed by 6.62 per cent to $720.24 billion, leaving a trade deficit of $282.82 billion.

The trade deficit in February this year was $14.05 billion. In March last year, the difference between exports and imports stood at $15.33 billion. During 2023-24, it was $241.14 billion. PTI

The Indian EXPRESS

NEXT IAS

KEY POINTS

- India is pursuing an ‘early harvest’ trade deal with the EU to fast-track key trade issues before finalizing a full FTA by 2025.
- Talks focus on goods, services, investment, and sectors like cars and pharmaceuticals. A similar approach is being taken with the U.S.