



Daily Current Affairs Encyclopedia

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National & International News

MethaneSAT



Context:

- MethaneSAT, a satellite launched aboard a SpaceX Falcon9 rocket from California, will track and measure methane emissions globally.
- Methane is a potent greenhouse gas, the second largest contributor to global warming after carbon dioxide, responsible for 30% of global heating since the Industrial Revolution.

Why Track Methane Emissions?

- Methane is 80 times more potent at warming than carbon dioxide over a 20-year period.
- It contributes to the formation of ground-level ozone, which could contribute to one million premature deaths yearly.
- Fossil fuel operations are the main culprits, accounting for about 40% of all human-caused methane emissions.

About MethaneSAT:

- Developed by the Environmental Defense Fund (EDF) in partnership with Harvard University, the Smithsonian Astrophysical Observatory, and the New Zealand Space Agency.
- Will orbit the Earth 15 times a day, monitoring the oil and gas sector.
- Will provide data on methane emissions, their and trends over time, enabling stakeholders and regulators to take action to reduce emissions.

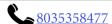
Features of MethaneSAT:

- Equipped with a high-resolution infrared sensor and spectrometer, it can track methane concentrations as small as three parts per billion.
- Has a wide-camera view of about 200 km by 200 km, allowing it to identify larger emitters known as "super emitters."

Bengaluru's First Driverless Metro Train

Context:

The Bengaluru Metro Rail Corporation Limited (BMRCL) has received the first set of six train coaches for its under-construction yellow line.





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coaches These the are part Communication-based Train Control (CBTC) system, enabling driverless operations.

What is a CBTC-enabled Driverless Metro Train?

- Utilizes Communication-based Train Control (CBTC) technology.
- Relies on radio communication for precise train control.
- Enables trains to communicate with each other.
- **Unattended Train Operations (UTO) automate tasks** like door operations and train movement.
- Enhanced Supervision Capability from the **Operations** Control Centre (OCC) ensures effective monitoring and management of train operations.

Manufacturing and Design:

- Manufactured by CRRC Nanjing Puzhen Co Ltd, China, in collaboration with Titagarh Rail Systems Ltd., India.
- Part of the Make In India Initiative.
- A contract worth Rs 1,578 crore for 216 coaches was secured in 2019.

Al Integration:

- Al technology enhances safety operations on the new line.
- Al algorithms monitor tracks for anomalies using sensor data.
- Cameras on trains capture visual data for real-time analysis of safety concerns.
- Aims to improve track maintenance and ensure safe operations.

Special Features:

- Hot axle detection system monitors train bearings for overheating.
- Real-time location displays door status and arrival/departure information.
- Front and rear-view cameras aid in monitoring boarding and deboarding.
- **Emergency Egress Device** (EED) allows passengers to request assistance during emergencies.

Operation and Timeline:

Initially, the train will have a train operator for at least six months before transitioning to fully driverless operations.





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- Revenue operations will start with seven trains running at a 15-minute frequency.
- Operational delays have pushed the expected commencement to December 2024.
- Delays are primarily due to slow manufacturing and testing processes.

India, four-nation EFTA bloc likely to ink FTA on March 10



Context:

India and the four-nation European Free Trade Association (EFTA), which includes Switzerland, Finland, Norway and Liechtenstein, is likely to sign a long-negotiated free trade agreement on March 10, aimed at increasing trade and investment flows, job creation and economic growth, according to multiple sources.

Key points:

- The proposed India-EFTA Trade and Economic Partnership Agreement (TEPA) is expected to lead to investments worth \$100 billion from the four-country bloc into India over the next 15 years generating an estimated one million jobs, officials said.
- Notably, this FTA marks the first instance where India secures commitments on investment and employment from partner nations.
- Officials anticipate that the pact will help address India's significant trade deficit with the EFTA bloc.

Revision in PM Surya Ghar Muft Bijli Yojana and Its Implementation



Context:

The Union government has modified the ₹75,000-crore PM Surva Ghar Muft Bijli Yojana, also known as the rooftop solar: free electricity scheme.

Key points:

- Initially intended to fully subsidize 1 kW-3 kW solar systems in one crore households, the scheme now contributes up to 60% of the installation costs.
- Interested households must now bear the remaining cost, with a minimum payment of ₹20,000, which can be mitigated through a low-interest, collateral-free loan.
- Eligibility criteria include suitable roof conditions and an existing grid connection. Consumers are still responsible for paying for the net power supplied and consumed via the grid.
- Net-metering allows unused solar power to flow back into the grid, offsetting the household's electricity bill.





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- A 3 kW-hour system can generate up to 300 units per month, with a maximum subsidy of ₹78,000 available.
- Currently, the cost of a rooftop solar system is around ₹50,000 per kW.
- Households can either pay the remaining balance or opt for a loan, with installation and maintenance costs factored in.
- Over 40 lakh registrations have already been received, with installations underway in Gujarat. The target is to reach one crore houses within three years.

Union Minister Anurag Singh Thakur **Announces Two NCoE for Women**

Context:

Union Minister for Youth Affairs and Sports, Shri Anurag Singh Thakur, has declared the establishment of two National Centres of Excellence (NCOEs) for women in honor of International Women's Day.

Key points:

- These NCOEs will focus on 23 disciplines prioritized for medal-winning potential in global competitions like the Asian Games and the Olympics.
- Shri Thakur, addressing the lack of trainers, coaches, and infrastructure at the state level, emphasized the importance of national support for sports development.
- Collaboration between the Central government and state authorities is underway to identify key sports and allocate resources accordingly, ensuring a strategic approach to promoting sports like hockey, boxing, and athletics.
- Efforts are being made to strengthen existing NCOEs and enhance coaching quality in collaboration with national sports federations.
- The Sports Authority of India has established 23 NCOEs across India, equipped with advanced infrastructure, sports science facilities, personalized nutrition plans, and expert coaching staff to nurture promising athletes.

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