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Daily Current Affairs Encyclopedia

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National and International News

ISRO to hold more tests for Gaganyaan in coming months

Upcoming Tests by ISRO



Context

- Successful completion of Test Vehicle-D1 (TV-D1) mission on **October 21**.
- Planned series of test missions to further Gaganyaan program.

Upcoming Tests by ISRO

TV-D2 Mission

- Demonstrates in-flight abort capability under varied initial conditions.
- Features control system for crew module re-orientation upon separation.
- Utilizes the same expendable version based on L40 strap-on from GSLV.

G-X Unmanned Orbital Demonstration Flight

- Involves crew module with service module.
- Launches aboard a **human-rated LVM3**.
- Introduces '**Vyommitra**' – a robot astronaut developed by ISRO Inertial Systems Unit (ISU).
- Tests control systems, reduced life support system, thermal protection, and parachute systems.

**Integrated Air-Drop Test (IADT)
Pad Abort Test**

Reuse of TV-D1 Crew Module

- Consideration of TV-D1 crew module recovery for future tests.
- Module retrieved from sea after parachute-assisted splash-down.
- Requires detailed inspection due to salt water exposure.
- Plan to assess feasibility of reuse and determine suitable future test programs.



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<p>RBI Maintains 6.5% GDP Growth Projection</p>	<p>Context: Reserve Bank of India's Outlook (October 6):</p> <ul style="list-style-type: none">• RBI maintains its 6.5% GDP growth projection for the year.• Risks include geopolitical tensions, economic fragmentation, volatile financial markets, and an uneven monsoon.• Domestic demand is strengthening. <p>Key Points: Emerging Uncertainties (Fortnight Since):</p> <ul style="list-style-type: none">• New uncertainties have arisen since the RBI's projection.• The Israel-Hamas conflict has widened, raising concerns about global food, fuel, and fertilizer supplies.• India's dependence on fuel and fertilizer imports could be problematic.• Rising U.S. bond yields and mixed data points add to uncertainties.• Sharp sell-off on Indian bourses observed.
<p>The T.N. experience on caste survey</p>	<p>Key Points</p> <ul style="list-style-type: none">• The Second BC Commission was established in Tamil Nadu in 1982, following a government decision to increase the BC reservation from 31% to 50%.• The Commission conducted a survey in two stages in 1983-84, focusing on enumeration and classification of BCs.• The Commission's findings showed that BCs constituted a significant portion of the State's population, leading to a 50% reservation quota for BCs in Tamil Nadu.• Differences arose between the Commission's Chairman, Ambasankar, and other members regarding the quantum of BC reservation and the inclusion of certain castes.• Despite these differences, the government chose to maintain the 50% reservation quota for BCs and included some new communities while rejecting the exclusion of others.



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China-Bhutan boundary talks

Context

- China and Bhutan held their 25th round of boundary talks in Beijing.
- They signed a Cooperation Agreement on the **"Responsibilities and Functions of the Joint Technical Team (JTT) on the Delimitation and Demarcation of the Bhutan-China Boundary."**

Significance of the Talks:

- After a seven-year gap, Bhutan and China resumed boundary talks.
- Indicative of significant progress in resolving border disputes.
- The talks were paused after the **Doklam Standoff in 2017** and the COVID-19 pandemic in 2019-2021.
- Talks at other levels occurred during the pause, and an Expert Group met in 2021 to agree on a **3-step roadmap**.
- Bhutan's Prime Minister stated that they were **"inching towards" completing the roadmap**.
- Further progress was made during FM Tandi Dorji's visit to Beijing.

The 3-Step Roadmap:

A roadmap established in 2021 with three key steps:
Agreeing on the border "on the table."

- Visiting the border sites on the ground.
- Formally demarcating the boundary.
- Aims to delineate Bhutanese and Chinese territory clearly for the first time.

India's Concerns:

- India is closely monitoring these talks due to its strained relations with China since the 2020 Line of Actual Control standoff.
- India is particularly concerned about **demarcation discussions over Doklam**, where China has proposed a land swap.
- Doklam is strategically significant as it is close to **India's Siliguri corridor**, connecting the **North Eastern States to the rest of India**.
- China has continued to build infrastructure in disputed areas in neighboring Bhutan, eroding India's strategic advantages.
- India is worried about **China's demand for full diplomatic relations with Bhutan** and opening an embassy in Thimphu.
- This concern arises from India's challenges with Chinese projects and influence in neighboring countries.



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India's green hydrogen move

Context

- India aims to produce **'green hydrogen'** with no fossil fuel emissions.
- A study by **Climate Risk Horizons (CRH)** warns of potential pollution if proper checks are not in place.

Key Points:

National Green Hydrogen Mission

- **The Ministry of New and Renewable Energy (MNRE) leads the National Green Hydrogen Mission.**
- The mission targets **five million tonnes of green hydrogen production by 2030.**
- This requires 125 GW of renewable energy capacity and 250,000 gigawatt-hour units of power, equivalent to 13% of India's current electricity generation.

Current Renewable Energy Capacity

- As of August 2023, India's renewable energy capacity is **131 GW.**
- The 2030 green hydrogen plan necessitates adding a similar capacity by 2030.
- India's commitment to install 500 GW of renewable energy capacity by 2030 as part of the Paris Agreement.
- India installed only **15 GW of new solar and wind capacity in 2023**, falling short of the annual 45 GW target.

Challenges in Green Hydrogen Definition

- MNRE defines **green hydrogen as producing no more than two kg of carbon dioxide per kg of hydrogen.**
- Current **'grey hydrogen'** production emits nine kg of carbon dioxide per kg.
- The definition leaves room for interpretation.



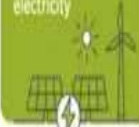
Electricity Source for Electrolysers

- The main concern is the **source of electricity for electrolysers, especially during nighttime.**
- The majority of India's electricity grid relies on coal generation, particularly during non-daylight hours.
- Most projects have not disclosed their electricity source, raising concerns about increased carbon emissions.
- It is unclear if projects committing to 100% clean energy can meet this requirement.



Conclusion

- India's Green Hydrogen Mission faces challenges related to electricity sources and meeting ambitious renewable energy capacity targets.
- Proper checks and transparency are needed to ensure that **green hydrogen production does not worsen pollution.**

Color	GREY HYDROGEN	BLUE HYDROGEN	TURQUOISE HYDROGEN*	GREEN HYDROGEN
Process	SMR or gasification	SMR or gasification with carbon capture (85-95%)	Pyrolysis	Electrolysis
Source	Methane or coal 	Methane or coal 	Methane 	Renewable electricity 

Note: SMR = steam methane reforming.

* Turquoise hydrogen is an emerging decarbonisation option.

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