



## Agnibaan

### Description

#### Theme:

- In March 2024, Agnikul Cosmos, a private space startup based in India, successfully launched the Agnibaan rocket, a small-lift launch vehicle. This milestone followed the earlier achievement of Skyroot Aerospace, another Indian private space startup, which successfully launched its Vikram rocket in November 2022. Therefore, this marks the second successful launch by a private space startup in India.

#### Achievements of Agnibaan Rocket:

- The Agnilet engine, used in the Agnibaan rocket, is the world's first single-piece 3D-printed semi-cryogenic engine. Previously, 3D printing was used in rocket engines, but individual parts were printed and then assembled. This assembly process could introduce issues at the joints and in the wiring. However, since the Agnilet engine is printed as a single smooth piece, the probability of errors due to joints and wiring is eliminated. This innovative design enhances reliability and performance.

#### Way Forward:

- In 2020, the government of India opened the space sector to private companies. Later, the Indian Space Policy 2023 enabled end-to-end participation of private companies in all domains of space activities. The successful launches of Vikram and Agnibaan rockets highlight the positive outcomes of private sector engagement in India's space initiatives. Both of these rockets are designed to meet the increasing demand for launching small satellites into Low Earth Orbit (LEO).
- India currently holds a 2% share of the global space economy, which is valued at approximately \$360 billion. India aims to increase this share to 10% by the year 2030.



## Conclusion:

Agnibaan rocket used a single-piece 3D-printed semi-cryogenic engine, which is a first in the world. This technological advancement represents a significant step forward in India's efforts to commercialize and innovate in space technology.

## Your Turn!

What are your thoughts on Agnibaan? Express your point of view through the comment section below. Subscribe to our blog to read answers to the trending GD topics.

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## References:

- [How Agnibaan rocket launch marks a turning point for India's space sector](#)
  - [India's private space sector skyrockets](#)
  - [India's share in USD 360-billion global space economy is 2%: Govt to Lok Sabha](#)
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