

GOVERNMENT OF INDIA

DEPARTMENT OF SPACE

RAJYA SABHA

UNSTARRED QUESTION NO. 1411

TO BE ANSWERED ON THURSDAY, DECEMBER 09, 2021

**PLAN TO DEVELOP REUSABLE SPACECRAFT**

1411. SHRI M. MOHAMED ABDULLA:

Will the PRIME MINISTER be pleased to state:

- (a) whether ISRO/ANTRIX have plans to develop reusable spacecraft similar to the ones used by SpaceX the details thereof and, if not, the reasons therefor;
- (b) the Steps taken by ISRO to remain competitive in low cost space launches;
- (c) whether Government has any plans to allow the private sector to develop spacecrafts and associated technologies; and
- (d) the steps taken by Government to boost the participation of private players in the Space Industry and the details thereof?

**ANSWER**

MINISTER OF STATE IN THE MINISTRY OF PERSONNEL, PG &  
PENSIONS AND IN THE PRIME MINISTER'S OFFICE

(DR. JITENDRA SINGH):

- (a) Any such proposal or studies for achieving the reusability of spacecraft could be taken up, after successful demonstration of Gaganyaan Programme.
- (b) ISRO is developing the Small Satellite Launch Vehicle (SSLV), which is a cost-effective, three stage, all-solid launch vehicle with a payload capability of 500 kg to 500 km planar orbit or 300 kg to Sun Synchronous Polar Orbit and is ideal for on-demand, quick turn-around launch of small satellites. ISRO is also working on the critical technologies towards the realisation of a fully reusable space transportation system, in which the vehicle and its stages are recovered, refurbished and reused, that is expected to bring down the cost of the space missions.

Subsequent to the first successful experimental mission of a Technology Demonstrator version of a winged body Reusable Launch Vehicle (RLV-TD) on May 23, 2016, technology demonstration missions are planned in the coming years to demonstrate runway landing & orbital flight. ISRO is also working on the critical

technologies for Scramjet propulsion which will be useful during the atmospheric phase of the flight of launch vehicle as the oxidizer for the fuel is derived from the atmosphere itself. This reduces the need for carrying the oxidizer along with the fuel and will benefit in bringing down the cost of access to space.

- (c) Yes, Sir. Government has plans to allow the private sector to develop spacecraft and associated technologies.
- (d) Government of India has announced reforms in June, 2020, in the space sector towards enabling the private players to provide end to end services and subsequently the following steps were taken.
  - i. A national level autonomous Nodal Agency namely Indian National Space Promotion and Authorization Centre (IN-SPACe) under DOS for promoting, handholding, authorising and licensing private players to carry out Space Activities.
  - ii. Access to ISRO facilities and expertise are extended to private entities to support their space activities. Apart from this ISRO will also nurture Indian space industries by sharing its experiences on quality and reliability protocols, documentation, testing procedures etc.
  - iii. Announcement of Opportunities are being done offering challenges in new domains of space technology.
  - iv. New Space India Ltd (NSIL), the CPSE under DOS will transfer the matured technologies developed by ISRO to Indian industries.
  - v. To facilitate private sector participation in Space activities, the existing policies in space domain has been revised and new policies are being drafted. 10 sector specific policies are under various stages of processing viz; SpaceCom Policy, Remote Sensing Policy, Technology Transfer Policy, Navigation Policy, Human in Space Policy, Space Transportation Policy, Space exploration policy, Space Situational Awareness policy, Overall National space policy and Space FDI policy.
  - vi. In order to address the necessary legal framework, the department is also in the process of enacting a National legislation and the draft Space Activities Bill has completed Public and Legal consultations and the draft Bill will be processed for further approvals for inter-ministerial consultations.

\*\*\*\*\*