



Private Players in Space Sector

For Prelims: Indian Space Research Organisation (ISRO), National Space Transportation Policy (NSTP), IN-SPACE, NewSpace India Limited (NSIL), Indian Space Association (ISpA)

For Mains: Need of Space Revolution and related steps taken

Why in News?

Recently, the Minister of State for the Department of Space (DOS) informed the [Lok Sabha](#) that the government was looking at opening the space sector to [Foreign Direct Investment](#).

How this Step will be Beneficial for ISRO?

▪ Research and Development Activities:

- These reforms will allow **ISRO to focus more on new technologies**, exploration missions and [human spaceflight programme](#).
- Some of the planetary exploration missions will also be opened up to the private sector through an 'announcement of opportunity' mechanism.

▪ Fruitful Dissemination of Space Technologies:

- Allowing industries and others like students, researchers or academic bodies greater access to space assets **would lead to a much better utilisation of India space resources**.

▪ Global Technology Powerhouse:

- It will **enable Indian Industry to be an important player in the global space economy**.
- With this, **there is an opportunity for large-scale employment** in the technology sector and India becoming a Global technology powerhouse.

▪ Cost-effective:

- The operating costs of setting up base and launching space vehicles in India is comparatively much less compared to its counterparts like [National Aeronautics and Space Administration \(NASA\)](#).
- The FDI will also ensure that the newer technology makes it more effective in price as well as efficiency.

▪ Exceptional Success Rate:

- ISRO is the **6th largest space agency in the world** and holds an exceptional success rate.
- India has **made a name for itself by successful launch of about 342** (three hundred and forty-two) foreign satellites from over 34 (thirty-four) countries.

What are the Benefits for Foreign Investors?

▪ Innovative Equipment:

- ISRO holds the **cutting-edge equipment and is also in process of launching [SSLV \(small satellite launch vehicle\)](#)** in partnership with private companies.

- This will provide a greater benefit to foreign investors to form partnerships with the Indian space sector.
- **Liberalised Space Sector:**
 - Over the years, **ISRO has forged strong relationships with numerous industrial ventures** that will be beneficial to foreign players who wish to set up base in India.

What is the Need for Reforms of Space Sector?

- **To increase the Scale of the Sector:**
 - ISRO is **centrally funded and its annual budget is between Rs 14-15,000 crore**, which is a drop in the ocean and most of this is used in building rockets and satellites.
 - To increase the scale of the sector, it is **imperative for private players to enter the market**.
 - ISRO is **planning to share knowledge and technology**, such as manufacturing rockets and satellites, to all the private players.
 - **The United States, Europe, Russia** — all have space industries with big players like Boeing, SpaceX, Air Bus, Virgin Galactic, etc.
- **Reforms in Private Players:**
 - Private players can **bring in the innovation needed for developing space-based applications and services**.
 - Additionally, the demand for these services is soaring worldwide and in India, with satellite data, imageries and space technology being used across most sectors.
 - The **Private players can participate in setting up of ground stations** for space crafts which constitute 48% of the space sector budget and also in application of space technology which result in 45% of space economy.

What are the Related Initiatives taken?

- **IN-SPACE:**
 - IN-SPACE was launched to **provide a level playing field for private companies** to use Indian space infrastructure.
 - It acts **as a single-point interface** between Indian Space Research Organisation (ISRO), and everyone who wants to participate in space-related activities or use India's space resources.
- **NewSpace India Limited (NSIL):**
 - Announced in Budget 2019, its aim is to **use research and development carried out by ISRO** over the years for commercial purposes through Indian industry partners.
- **Indian Space Association (ISpA):**
 - ISpA **aspires to be the collective voice of the Indian Space industry**. ISpA will be represented by leading domestic and global corporations that have advanced capabilities in space and satellite technologies.

Way Forward

- With **India having one of the best space programs in the world**, the move to allow FDI in space will make India a bigger player in the global space economy.
- FDI in space will **allow foreign players with a window to venture into the India space domain**, this will contribute to Indian national and foreign reserves, promote technology transfer and research innovations.
- Further, the **introduction of the Indian Space Activities Bill will give greater clarity** to private players on how to be an integral part of the space sector.

UPSC Civil Services Examination, Previous Year Questions

Q. With reference to India's satellite launch vehicles, consider the following statements: (2018)

1. PSLVs launch the satellites useful for Earth resources monitoring whereas GSLVs are designed mainly to launch communication satellites.
2. Satellites launched by PSLV appear to remain permanently fixed in the same position in the sky, as viewed from a particular location on Earth.
3. GSLV Mk III is a four-staged launch vehicle with the first and third stages using solid rocket motors; and the second and fourth stages using liquid rocket engines.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 and 3
- (c) 1 and 2
- (d) 3 only

Ans: (a)

Exp:

- PSLV is the third generation launch vehicle of India. It is the first Indian launch vehicle to be equipped with liquid stages. It is used mainly for delivering various satellites in Low Earth Orbits, particularly the Indian Remote Sensing series of satellites. It can take up to 1,750 kg of payload to Sun-Synchronous Polar Orbits of 600 km altitude.
- GSLV is designed mainly to deliver Indian National Satellite System, or INSAT, which is a series of multipurpose geo-stationary satellites launched by ISRO to fulfil the needs of telecommunications, broadcasting, meteorology, and search and rescue operations. It places satellites to the highly elliptical Geosynchronous Transfer Orbit (GTO). Hence, statement 1 is correct.
- The satellites in the geosynchronous orbits appear to remain permanently fixed in the same position in the sky. Hence, statement 2 is not correct.
- GSLV-Mk III is a fourth generation, three stage launch vehicle with four liquid strap-ons. The indigenously developed Cryogenic Upper Stage (CUS), which is flight proven, forms the third stage of GSLV Mk III. It is capable to lift 4-5 tonne satellites into Geosynchronous Transfer Orbit (GTO). The rocket has three-stages with two solid motor strap-ons (S200), a liquid propellant core stage (L110) and a cryogenic stage (C-25). Hence, statement 3 is not correct. Therefore, option (a) is the correct answer.

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