

Next-Gen Launch Vehicle(NGLV) of ISRO

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In news– The Indian Space Research Organisation (ISRO) is developing a NGLV, which will one day replace operational systems like the Polar Satellite Launch Vehicle (PSLV).

The Next-Gen Launch Vehicle(NGLV)-

- In NGLV, ISRO is understood to be looking at a cost-efficient, **three-stage to orbit, reusable heavy-lift vehicle** with a payload capability of ten tonnes to Geostationary Transfer Orbit (GTO).
- **NGLV will feature semi-cryogenic propulsion** (refined kerosene as fuel with liquid oxygen (LOX) as oxidiser) for the booster stages which is cheaper and more efficient.
- Correspondingly, the Low Earth Orbit (LEO) capability will be twice that. However, payload capability will be lower when the rocket is reusable.
- **NGLV will feature a simple, robust design which allows bulk manufacturing**, modularity in systems, sub-systems and stages and minimal turnaround time.
- Potential uses will be in the areas of launching communication satellites, deep space missions, future human spaceflight and cargo missions.

Indian Satellite Launch Vehicles-

- A launch vehicle is a rocket-powered vehicle used to transport a spacecraft beyond Earth's atmosphere, either into orbit around Earth or to some other destination in outer space.
- The launch vehicles have been used to send crewed spacecraft, uncrewed space probes, and satellites into space since the 1950s.

- Launch Vehicles are used to transport and put satellites or spacecraft into space.
- In India, the launch vehicles development program began in the early 1970s. The first experimental Satellite Launch Vehicle (SLV-3) was developed in 1980.
- An Augmented version of this, ASLV, was launched successfully in 1992.
- India has made tremendous strides in launch vehicle technology to achieve self-reliance in the satellite launch vehicle program with the operationalization of Polar Satellite Launch Vehicle (PSLV) and Geosynchronous Satellite Launch Vehicle (GSLV).