

**GOVERNMENT OF INDIA  
SPACE  
LOK SABHA**

UNSTARRED QUESTION NO:1949  
ANSWERED ON:08.03.2006  
CRYOGENIC ENGINES  
Ahir Shri Hansraj Gangaram

**Will the Minister of SPACE be pleased to state:**

- (a) whether the satellite launching system of the country is dependent on imported cryogenic engines;
- (b) if so, whether the Government is conducting any research programme to manufacture indigenous cryogenic engines;
- (c) if so, the time by which the capability of manufacturing indigenous cryogenic engines is likely to be achieved;
- (d) whether any time frame has been fixed for launching Indian Space Vehicles with indigenous cryogenic engines; and
- (e) if so, the details thereof?

**Answer**

MINISTER OF STATE IN THE PRIME MINISTER'S OFFICE (SHRI PRITHVIRAJ CHAVAN):

- (a) We are self-sufficient in launching our remote sensing satellites through Polar Satellite Launch Vehicle (PSLV). With respect to launch of communication satellites, the Geosynchronous Satellite Launch Vehicle (GSLV) is operational with a capability of launching two tonne class communication satellites into Geosynchronous Transfer Orbit. GSLV presently uses imported cryogenic stage including the engine.
- (b)&(c) Yes, Sir. Indigenous cryogenic engine has already been developed and successfully qualified in ground firing tests. The various elements of the stage like tankages, component modules are also developed and the stage is integrated. Phased testing of the stage has commenced.
- (d)&(e) After successful completion of the required qualification tests, the flight stage will be available for a flight test during 2006-07.