

GOVERNMENT OF INDIA
DEPARTMENT OF SPACE

RAJYA SABHA
STARRED QUESTION NO. 239

TO BE ANSWERED ON THURSDAY, AUGUST 10, 2023

FUNDS ALLOCATED TO IPRC, MAHENDRAGIRI

*239. SHRI R. GIRIRAJAN:

Will the PRIME MINISTER be pleased to state:

- (a) whether ISRO Propulsion Complex at Mahendragiri, Tamil Nadu is responsible for the supply of Storable Liquid Propellants for ISRO's launch vehicles and satellite programmes,
if so, the details thereof;
- (b) whether ISRO is adopting state of art technology and advanced innovations to undertake integration and testing of earth storable propellant engines, cryogenic engines
and stages for launch vehicles, high altitude testing of upper stage engines and spacecraft
thrusters at IPRC, Mahendragiri; and
- (c) if so, the details thereof and the funds allocated to IPRC, Mahendragiri in the last three years, year-wise?

ANSWER

MINISTER OF STATE IN THE MINISTRY OF PERSONNEL, PG &
PENSIONS AND IN THE PRIME MINISTER'S OFFICE
(DR. JITENDRA SINGH):

(a) to (c) A Statement is laid on the Table of the House.

STATEMENT LAID ON THE TABLE OF THE RAJYA SABHA IN REPLY TO STARRED QUESTION NO. 239 REGARDING “FUNDS ALLOCATED TO IPRC, MAHENDRAGIRI” ASKED BY SHRI R. GIRIRAJAN, FOR ANSWER ON THURSDAY, AUGUST 10, 2023.

(a) The storable liquid propellant used for ISRO’s launch vehicle and satellite programmes include: (a) Dinitrogen Tetroxide (N_2O_4) as oxidizer and Unsymmetrical Dimethyl Hydrazine (UH25) as fuel; (b) Mixed Oxides of Nitrogen (MON-3) as oxidizer and Mono Methyl Hydrazine (MMH) as fuel.

- N_2O_4 propellant is produced at Rasayani plant, Mumbai and managed & operated by Satish Dhawan Space Centre (SDSC);
- UH25 & MMH are supplied by industries against contract by SDSC;
- MON-3 plant is operated & managed by Vikram Sarabhai Space Centre (VSSC) but located at ISRO Propulsion Complex (IPRC).

The ISRO propulsion Complex (IPRC) Mahendragiri, Tamil Nadu obtains storable liquid propellants from above sources to carry out engine & thruster hot tests for ISRO’s launch vehicles and satellite programmes.

(b) & (c)

Yes, Sir. ISRO Propulsion Complex (IPRC), Mahendragiri is equipped with the state-of-the-art facilities necessary for realizing the cutting edge propulsion technology products for the Indian space programme.

Various technologies and advanced innovations have been adopted to carryout integration and testing of earth storable propellant engines, cryogenic engines and stages for launch vehicles; high altitude testing of upper stage engines and spacecraft thrusters.

Some of the major technologies include

- I. Automated robotic process for thermal barrier coating for thrust chamber of Vikas engine;
- II. Automatic tube bending & orbital welding processes for stage components;
- III. Co-ordinate measuring machine and non-destructive techniques for inspection;

- IV. 3D manipulator to enable precision alignment of components during engine integration;
- V. Diffusion ejector technology for high altitude testing of upper stage engines & spacecraft thrusters.

The funds allocated to IPRC, Mahendragiri during the last three years is as given below:

Sl. No.	Financial Year	BE allocations (Rs. in Crores)
1.	2021-2022	589.92
2.	2022-2023	506.00
3	2023-2024	480.00
