

**GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
LOK SABHA
UNSTARRED QUESTION NO. 1475
TO BE ANSWERED ON WEDNESDAY, 31ST JULY, 2024**

NEW petaFLOP SUPERCOMPUTERS

1475. SHRI SUDHEER GUPTA:
SHRI DHAIRYASHEEL SAMBHAJIRAO MANE:

Will the Minister of EARTH SCIENCES be pleased to state:

- (a) whether the Government is going to unveil the new 18 petaFLOPs Supercomputer System for weather forecasting institutes this year;
- (b) if so, the details thereof and the salient features of the said Supercomputer System;
- (c) the total expenditure incurred in the development of this System and the place where it will be installed;
- (d) the manner in which this new Supercomputer System will help in forecasting weather and predicting calamities like cyclone, etc. in the country; and
- (e) the steps taken/being taken by the Government in acquiring accuracy in weather forecasting?

ANSWER

THE MINISTER OF STATE (INDEPENDENT CHARGE) FOR
MINISTRY OF SCIENCE AND TECHNOLOGY
AND EARTH SCIENCES
(DR. JITENDRA SINGH)

- (a) Yes. The Government is going to unveil its new 21.1 petaFLOP (PF) Supercomputer this year.
- (b) The details of the High Performance Computer (HPC) systems are as follows:

Salient features of the HPC	IITM, Pune	NCMRWF, Noida
CPU Rpeak (PFLOPs)	11.7 +1.16	8.2
CPU nodes (AMD Milan 7643, 2x48c, 2.3GHz, 256GB RAM)	3021	2115
GPU Nodes (AMD Milan 7643+4xA100-80GB)	26	18
Separate AI/ML System Node	7	-
GPU Rpeak (PFLOPs)	1.16	-
Storage (PB)	33	23

- (c) The total expenditure sanctioned for the procurement of the HPC system is Rs. 900 crores. The systems will be installed at two locations: Indian Institute of Tropical Meteorology (IITM), Pune and National Centre for MediumRange Weather Forecasting (NCMRWF), Noida.

- (d) This Augmented HPC capacity will help in advancing the understanding of weather and climate, resulting in a better prediction and improved weather services for the nation. The major benefits include:
- i. Improved weather and climate forecasts at a very high resolution and forecasts of extreme events at block level.
 - ii. Carryout research to improve the indigenous dynamical models for better prediction.
 - iii. Leveraging the new HPC facility to develop models using the latest technologies like Artificial Intelligence (AI) and Machine Learning (ML) to improve the last mile services to different stakeholders.
 - iv. Improving short, medium, and long-range forecasts for monsoon.
 - v. Better forecast of Air Quality, and Fog forecasts for many cities in India
- (e) Improving the accuracy of weather forecasts requires, enhanced state-of-the-art observational networks, human resources to undertake R&D for the development of numerical models and finally the infrastructure like HPC to run the models at appropriate resolution to address the requirement of the country. Ministry is in continuous endeavour of augmenting the observational and R&D infrastructure towards achieving better accuracy in weather forecasting.
