GOVERNMENT OF INDIA MINISTRY OF SCIENCE AND TECHNOLOGY DEPARTMENT OF SCIENCE AND TECHNOLOGY LOK SABHA UNSTARRED QUESTION No. 2101 TO BE ANSWERED ON 23/09/2020

NATIONAL SUPERCOMPUTING MISSION

2101. SHRI VISHNU DAYAL RAM:

Will the Minister of SCIENCE AND TECHNOLOGY विज्ञान और प्रौदयोगिकी

मंत्री be pleased to state:

(a) the details of the aims and objectives of National Supercomputing Mission along with the achievements made there under so far with regard to developing the super computers;

(b) whether the Government is also collaborating with the Non-Governmental organisations in developing applications for the super computer and if so, the details thereof; and

(c) whether the Government has taken any measures to develop high performance computing and skilled human resource for operating these applications effectively, if so, the details thereof?

ANSWER

MINISTER OF HEALTH AND FAMILY WELFARE; MINISTER OF SCIENCE AND TECHNOLOGY; AND MINISTER OF EARTH SCIENCES (DR. HARSH VARDHAN)

स्वास्थ्य और परिवार कल्याण मंत्री, विज्ञान और प्रौदयोगिकी मंत्री और पृथ्वी विज्ञान मंत्री

(डॉ .हर्ष वर्धन)

(a) The National Super-computing Mission (NSM), is jointly steered and implemented by Department of Science and Technology (DST) and M/o Electronics and Information Technology (MeitY) with Centre for Development of Advanced Computing (C-DAC, Pune) and Indian Institute of Science (IISc-Bengaluru) as the implementing partner. The main objectives of the mission include:

1. Creation of state-of-the-art High Performance Computing (HPC) facilities and infrastructure to enhance the national capability to enable cutting-edge research in various domains in solving grand challenge problems.

2. Development of HPC Applications for major Science and Engineering domains.

3. Promote Research and Development in HPC leading to next generation Exascale computing readiness. 4. Human Resource Development to handle and spearhead HPC activities in the country.

Under NSM, Government is building Multiple Super-computing Systems of various capacities ranging from 650 Teraflops to 3000 Teraflops or 3 Petaflops to 25000 Teraflops or 25 Petaflops at various academic and research institutes across the country in a phased manner. The achievements made with regard to developing super computers are as follows:

I The first four systems from the six systems approved under Phase-I that are already installed and made operational include systems at:

- Indian Institute of Technology at Varanasi
- Indian Institute of Technology at Kharagpur
- Indian Institute of Science Education and Research (IISER) at Pune.
- Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR)-Bengaluru.

The two systems from Phase – I, which are under operationalization are installed at

- Indian Institute of Technology Hyderabad.
- Indian Institute of Technology Kanpur.

II Under Phase-II, eleven Supercomputing systems, all manufactured in India, are under assembly and installation at various academic and research institutions.

III Under Build Approach, R&D C-DAC is designing and developing supercomputing subsystems indigenously. Phase-III systems are designed and manufactured in India.

(b) Applications development has been undertaken in multiple domains in consortium mode involving various academic and research organisations. There are no collaborations with non-governmental agencies for applications.

(c) Yes Sir. HPC aware human resource development is a key deliverable of this mission. For this, a framework for running short term, medium term and formal education courses has been worked out, in consultation with D/o Higher Education. This includes design of the course curriculum for running courses at under graduate, post graduate and post graduate diploma levels. Multiple faculty development programs, HPC awareness workshops, training programs for application developers, with or without domain expertise, and Hackathons have been conducted to train the faculties and students in various institutions across the country. So far, about 2500 participants have been trained. More such training programs are envisaged for the future, including online training program to overcome the pandemic situation.
