

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
STARRED QUESTION NO. *2
TO BE ANSWERED ON 18.07.2018

NUCLEAR POWER PLANTS

*2. SHRI RAHUL SHEWALE:

Will the PRIME MINISTER be pleased to state:

- (a) the number of nuclear power plants proposed to be set up in the country during the next twenty years, State-wise;
- (b) the total estimated cost of each project along with the production capacity of these plants, State-wise;
- (c) the details of measures taken or proposed to be taken by the Government for the installation and commissioning/operationalisation of these projects;
- (d) whether the Government is considering to increase the capacity of the existing nuclear power plants in the country; and
- (e) if so, the details thereof and if not, the reasons therefor?

ANSWER

THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES &
PENSIONS AND PRIME MINISTER'S OFFICE (DR.JITENDRA SINGH):

(a)to(e) A statement is placed on the Table of the House.

Government of India
Department of Atomic Energy

STATEMENT REFERRED TO IN REPLY TO LOK SABHA STARRED QUESTION NO. *2 DUE FOR ANSWER ON 18.07.2018 BY SHRI RAHUL SHEWALE REGARDING NUCLEAR POWER PLANTS.

(a)&(b) At present, there are nine (9) nuclear power reactors at various stages of construction, targeted for completion by 2024-25. In addition, twelve (12) more nuclear power reactors have been accorded administrative approval and financial sanction by the Government in June 2017. Thus, twenty one (21) nuclear power reactors, with an installed capacity of 15700 MW are under implementation, envisaged for progressive completion by the year 2031. The details are as follows:

(i) Nuclear Power Reactors under Construction:

| State | Location | Project | Capacity (MW) | Sanctioned Cost (₹ crore) |
|------------|------------|------------------------|----------------------|---------------------------|
| Gujarat | Kakrapar | KAPP 3&4 | 2 x 700 | 11459* |
| Rajasthan | Rawatbhata | RAPP 7&8 | 2 X 700 | 12320 |
| Tamil Nadu | Kudankulam | KKNPP 3&4 | 2 X 1000 | 39849 |
| | Kalpakkam | PFBR ^{&} | 500 ^{&} | 5677 |
| Haryana | Gorakhpur | GHAVP 1&2 [§] | 2 x 700 | 20594 |

Under Revision [&] Project being implemented by BHAVINI [§] Excavation commenced

(ii) Nuclear Power Reactors accorded administrative approval and financial sanction:

| State | Location | Project | Capacity (MW) | Sanctioned Cost (₹ crore) |
|----------------|---------------|-------------------|---------------|---------------------------|
| Haryana | Gorakhpur | GHAVP 3&4 | 2 x 700 | 105000 |
| Rajasthan | Mahi-Banswara | Mahi Banswara 1&2 | 2 X 700 | |
| | | Mahi Banswara 3&4 | 2 X 700 | |
| Karnataka | Kaiga | Kaiga 5&6 | 2 X 700 | |
| Madhya Pradesh | Chutka | Chutka 1&2 | 2 X 700 | 49621 |
| Tamil Nadu | Kudankulam | KKNPP 5&6 | 2 X 1000 | |

Sites accorded 'In-Principle' approval:

In addition, five sites, as given below, have been accorded 'in principle' approval by the Government for setting up more reactors in future.

| State | Site | Capacity (MW) | In Cooperation with |
|----------------|--------------------|---------------|--------------------------|
| Maharashtra | Jaitapur | 6 X 1650 | France |
| Andhra Pradesh | Kovvada | 6 X 1208 | United States of America |
| Gujarat | Chhaya Mithi Virdi | 6 X 1000* | |
| West Bengal | Haripur | 6 X 1000* | Russian Federation |
| Madhya Pradesh | Bhimpur | 4 X 700 | Indigenous PHWR |

**Nominal Capacity*

Discussions on finalization of project proposals in respect of setting up large size Light Water Reactors in collaboration with France at Jaitapur site in Maharashtra and USA at Kovvada site in Andhra Pradesh are underway. The cost of reactors to be set up at these sites will emerge on conclusion of the techno-commercial discussions and formulation of their project proposals. These reactors will be launched after the accord of administrative approval and financial sanction by the Government. At the other 'In-Principle' approved sites, the pre-project activities are at various stages.

Bharatiya Nabhikiya Vidyut Nigam Limited (BHAVINI), a PSU under Department of Atomic Energy is currently constructing a 500MWe Prototype Fast Breeder Reactor at Kalpakkam, Tamil Nadu. Further, it is proposed to construct a series of twin reactors as given below.

| Proposed Fast Breeder Reactors | Capacity in MWe | Start of construction | Commercial operation | Estimated cost in INR | Location of plant |
|--------------------------------|-----------------|-----------------------|----------------------|-----------------------------------|-------------------------|
| FBR1 | 600 | 2021 | 2029 | Cost estimation is under progress | Kalpakkam, Tamil Nadu |
| FBR2 | 600 | 2021 | 2031 | | |
| FBR3 | 600 | 2025 | 2033 | | Site yet to be selected |
| FBR4 | 600 | 2025 | 2035 | | |
| FBR5 | 600 | 2029 | 2037 | | |
| FBR6 | 600 | 2029 | 2039 | | |

- (c) The Government has taken several measures to enable setting up of nuclear power reactors in the country. These include:
- (i) Resolution of issues related to Civil Liability for Nuclear Damage (CLND) Act & Creation of Indian Nuclear Insurance Pool (INIP).
 - (ii) Amendment of the Atomic Energy Act-1962 (as amended from time to time) to enable Joint Ventures of Public Sector Companies to set up nuclear power projects in the country.
 - (iii) Enabling agreements with the foreign countries for nuclear power cooperation including supply of fuel.
 - (iv) Identification and addressing of the issues in implementation of the projects through Pro-Active Governance And Timely Implementation "PRAGATI" platform.
- (d) No, Sir.
- (e) The existing units are operating at their rated capacity. The unit size of indigenous Pressurised Heavy Water Reactors (PHWRs) has already been increased from 220 MW to 540 MW and then to 700 MW, which are now under construction. In addition, Light Water Reactors of 1000 MW have also been introduced with foreign cooperation.
