

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 6071
TO BE ANSWERED ON 04.04.2018

NUCLEAR POWER PLANTS

6071. DR. P. K. BIJU:

Will the PRIME MINISTER be pleased to state:

- (a) the installed power generation capacity, utilisation of the said capacity and production cost per unit of each of the nuclear power plants in the country, nuclear plant-wise; and
- (b) the details of action plan to establish new nuclear power stations every year during the next five years along with the details of funds and atomic fuel required for the same?

ANSWER

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

- (a) The details are given in Annexure.
- (b) The details of Nuclear Power Projects which are under construction along with their expected completion is given below:

| Project | Capacity (MW) | Sanctioned Cost (Rs. in Crore) | Physical Progress (%) as of Feb-2018 | Expected Completion |
|-------------------------|---------------|--------------------------------|--------------------------------------|---------------------|
| KAPP-3&4* | 2 x 700 | 11459 | 83.2 | 2018/19 |
| RAPP-7&8* | 2 X 700 | 12320 | 69.2 | 2020 |
| KKNPP- 3&4 [#] | 2 X 1000 | 39849 | 15.93 | 2022/23 |
| PFBR [@] | 1 x 500 | 5677 | Project under commissioning | 2018 |

* : Pressurized Heavy Water Reactor(PHWR) # : Light Water Reactor (LWR)

@ : Prototype Fast Breeder Reactor (PFBR)

The fund requirement for the next five years for the projects under construction and new projects sanctioned are as follows:

| | | | | | Rs.in Crore |
|----------------------------------|---------|---------|---------|---------|-------------|
| Year | 2018-19 | 2019-20 | 2020-21 | 2021-22 | 2022-23 |
| Total Capital Expenditure | 7605 | 17028 | 21722 | 28745 | 35725 |

The approximate requirements of atomic fuel/uranium for Pressurised Heavy Water Reactors (PHWRs) are as follows:

| | |
|--------------------|---|
| Unit Capacity (MW) | Annual requirement at 85% Capacity Factor (tons UO ₂) |
| 700 | 125 |

The approximate requirements of atomic fuel/uranium for Light Water Reactors (LWRs) currently in operation are as given below:

| | |
|-------------------|--|
| Unit Capacity(MW) | Annual Fuel Requirement (tons, low enriched uranium) |
| 1000 | 25 (at 90% CF) |

Annexure

| State | Location | Unit | Type of Reactor | Capacity (MW) | Plant Load Factor (PLF), 2017-18 (upto Feb 2018) | Electricity Traiff (₹/kWh) 2017-18 | |
|---------------|------------|---------------------|-----------------|---------------|--|------------------------------------|------|
| Maharashtra | Tarapur | TAPS-1 | LWR (BWR) | 160 | 13.59 [@] | 1.07 | |
| | | TAPS-2 | | 160 | 77.55 | | |
| | | TAPS-3 | PHWR | 540 | 75.65 | 2.93 | |
| | | TAPS-4 | | 540 | 37.77 [§] | | |
| Rajasthan | Rawatbhata | RAPS-1* | PHWR | 100 | -- | -- | |
| | | RAPS-2 | | 200 | 87.94 | 2.88 | |
| | | RAPS-3 | | 220 | 97.42 | | |
| | | RAPS-4 | | 220 | 84.58 | | |
| | | RAPS-5 | | 220 | 104.88 | 3.54 | |
| | | RAPS-6 | | 220 | 87.22 | | |
| Uttar Pradesh | Narora | NAPS-1 | PHWR | 220 | 95.00 | 2.58 | |
| | | NAPS-2 | | 220 | 93.54 | | |
| Gujarat | Kakrapar | KAPS-1 [#] | PHWR | 220 | -- | 2.47 | |
| | | KAPS-2 [#] | | 220 | -- | | |
| Karnataka | Kaiga | KGS-1 | PHWR | 220 | 99.91 | 3.13 | |
| | | KGS-2 | | 220 | 97.57 | | |
| | | KGS-3 | | 220 | 98.49 | | |
| | | KGS-4 | | 220 | 93.47 | | |
| Tamil Nadu | Kalpakkam | MAPS-1 | PHWR | 220 | 67.72 | 2.16 | |
| | | MAPS-2 | | 220 | 91.54 | | |
| | Kudankulam | KKNPP-1 | | LWR (VVER) | 1000 | 47.47 | 4.10 |
| | | KKNPP-2 | | | 1000 | 53.41 | |

* RAPS-1 is under extended shutdown for techno-economic assessment for continued operation.

KAPS-1&2 have been taken in project mode for *Enmasse Coolant Channel Replacement (EMCCR)* and *Enmasse Feeder Replacement (EMFR)* activities from August 01, 2016 onwards.

@ TAPS-1 is under shutdown since 04.06.2017 for detailed inspection of the core.

§ TAPS-4 was under shutdown during 23.04.2017 to 10.11.2017 for additional coolant channels inspection