

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
RAJYA SABHA
UNSTARRED QUESTION NO. 11
TO BE ANSWERED ON 02.02.2023

Nuclear plants in the country

11 Shri Iranna Kadadi:

Will the PRIME MINISTER be pleased to state:

- (a) the total number of operational nuclear plants in the country;
- (b) the total proposed nuclear plants with proposed cost for the same, State-wise details thereof;
- (c) the major sources of nuclear material imports by the country and the amount of imported materials, country-wise details thereof;
- (d) the steps taken by Government to become Atmanirbhar in nuclear raw materials;
- (e) the total electricity generated by nuclear plants and percentage of share of power generated by nuclear plants in total power generation; and
- (f) the steps taken by Government for the disposal of nuclear wastes safely?

ANSWER

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

- (a) At present, there are 22 nuclear power plants operational in the country.
- (b) The details of nuclear power plants accorded administrative approval and financial sanction are given below:

| State | Location | Project | Capacity (MW) | Sanctioned Cost (Rs. crore) |
|----------------|---------------|-------------------|---------------|-----------------------------|
| Karnataka | Kaiga | Kaiga-5&6 | 2 X 700 | 105000 |
| Haryana | Gorakhpur | GHAVP- 3&4 | 2 X 700 | |
| Madhya Pradesh | Chutka | Chutka-1&2 | 2 X 700 | |
| Rajasthan | Mahi Banswara | Mahi Banswara-1&2 | 2 X 700 | |
| | | Mahi Banswara-3&4 | 2 X 700 | |

In addition, the Government has also accorded 'In-Principle' approval for setting up nuclear power plants at five new sites.

- (c) Major sources of nuclear raw material imports by the country are Russia, Kazakhstan, Canada and France.

Post signing of Civil Nuclear Cooperation Agreement, the country-wise imports made are as under:

Import of Enriched Uranium in the form of UO₂, pellets (for BWRs)

| Year/Period | Country | Material Description | Quantity (MT'U') |
|-------------|---------|----------------------------------|------------------|
| 2009-19 | Russia | Enriched UO ₂ Pellets | 157 |

Import of Natural Uranium in the form of UOC & UO₂ pellets (for PHWRs)

| Year/Period | Country | Material Description | Quantity (MT'U') |
|-------------|------------|-------------------------|------------------|
| 2009 | France | Uranium Ore Concentrate | 300 |
| 2009-2020 | Kazakhstan | Uranium Ore Concentrate | 10067 |
| 2015-2020 | Canada | Uranium Ore Concentrate | 5462 |
| 2009-2016 | Russia | UO ₂ Pellets | 2006 |

- (d) Atomic Energy Commission (AEC) has accorded in principle approval for new projects to augment the uranium production / supply from indigenous sources with a view to cater the fuel requirement of upcoming nuclear reactors covered under domestic safeguards. UCIL has accordingly taken up capacity expansion of some of its operations in Jharkhand and Andhra Pradesh. UCIL has also initiated pre-project activities to set up new mines and plants in different parts of the country viz, Jharkhand, Karnataka, Telengana, Andhra Pradesh, Chattisgarh and Rajasthan.

- (e) The total electricity generated by nuclear power plants in 2021-22 was 47,112 million units which is about 3.15% of the total electricity generated.

- (f) The wastes generated at the nuclear power stations during their operation are of low and intermediate radioactivity level. These wastes are appropriately treated, concentrated and subjected to volume reduction. The concentrates are immobilized in inert materials like cement, bitumen, polymers etc. and stored in specially constructed structures located at the site under monitoring. The treated liquids and gases are diluted and discharged under continuous monitoring, ensuring that the discharges are well within the limits set by Atomic Energy Regulatory Board (AERB). The radioactivity level of the stored wastes reduces with time and by the end of the plant life, falls to very low levels.
