

Distribution of Atomic Power Plants in India

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India has a largely **indigenous nuclear power program**. Because India is outside the **Nuclear Non-Proliferation Treaty** due to its weapons program, it was for 34 years largely excluded from trade in nuclear plants and materials, which hampered its development of civil nuclear energy until 2009. Due to earlier trade bans and lack of indigenous uranium, India has uniquely been developing a **nuclear fuel cycle to exploit its reserves of thorium**.

Distribution of the Atomic Power Plants

- Nuclear power in India delivers a total capacity of **6.7GW, contributing to just under 2% of the country's electricity supply**.
- India's nuclear plants are controlled by **Nuclear Power Corporation of India (NPCIL), a state-owned corporation which was founded in 1987**.

India Boasts a Fleet of Seven Nuclear Power Plants

▪ Kudankulam Nuclear Power Plant

. It is located in the Tamil Nadu and is the **highest-capacity nuclear plant in India**, with a total of 2,000MW currently installed with a further 2,000MW under construction.

. Kudankulam is the only nuclear plant in India that uses **pressurised water reactors (PWR)** rather than boiling water reactors (BHW) or pressurised heavy-water reactors (PHWR). The PWRs are based on Russian technology and were supplied by Atomstroyexport.

▪ Tarapur Nuclear Reactor

. The Tarapur Nuclear Reactor in Maharashtra is the **oldest nuclear facility in India**, having commenced commercial operations in 1969.

. The reactor is currently the second most powerful in India, with two BHW of 160MW and two PHWR reactors of 540MW forming a total of 1,400MW.

▪ **Rajasthan Atomic Power Plant**

. It has a total installed capacity of 1180MW. Formed of **six PHWR reactors** with two more reactors planned, the first reactor was commissioned back in December 1973.

▪ **Kaiga Atomic Power Plant**

. It is formed of four 220MW PHWR reactors making a total of 880MW.

▪ **Kalpakkam Nuclear Power Plant**

. It first began operating in 1984 and currently has two 235MW reactors, with two more reactors of 500MW and 600MW to be added at a later date.

. Kalpakkam has a **prototype fast breeder reactor (PFBR) which does not produce highly radioactive nuclear waste and can produce 70% more energy.**

▪ **Narora Nuclear Reactor**

. It has two PHWR which offer a total capacity of 440MW.

. Narora is considered **one of the safest nuclear plants** in the country and won a Golden Peacock award for environment management in the year 2000.

▪ **Kakrapar Atomic Power Plant**

. The power plant in Gujarat, Western India has two **PHWR reactors** with a total installed capacity of 440MW.

▪ Units Under Construction

- . Kakrapar Atomic Power Project Unit-3&4
- . Rajasthan Atomic Power Project Units-7&8
- . Gorakhpur Haryana Anu Vidhyut Pariyojna Units-1&2
- . Kudankulam Nuclear Power Project Unit-3&4

