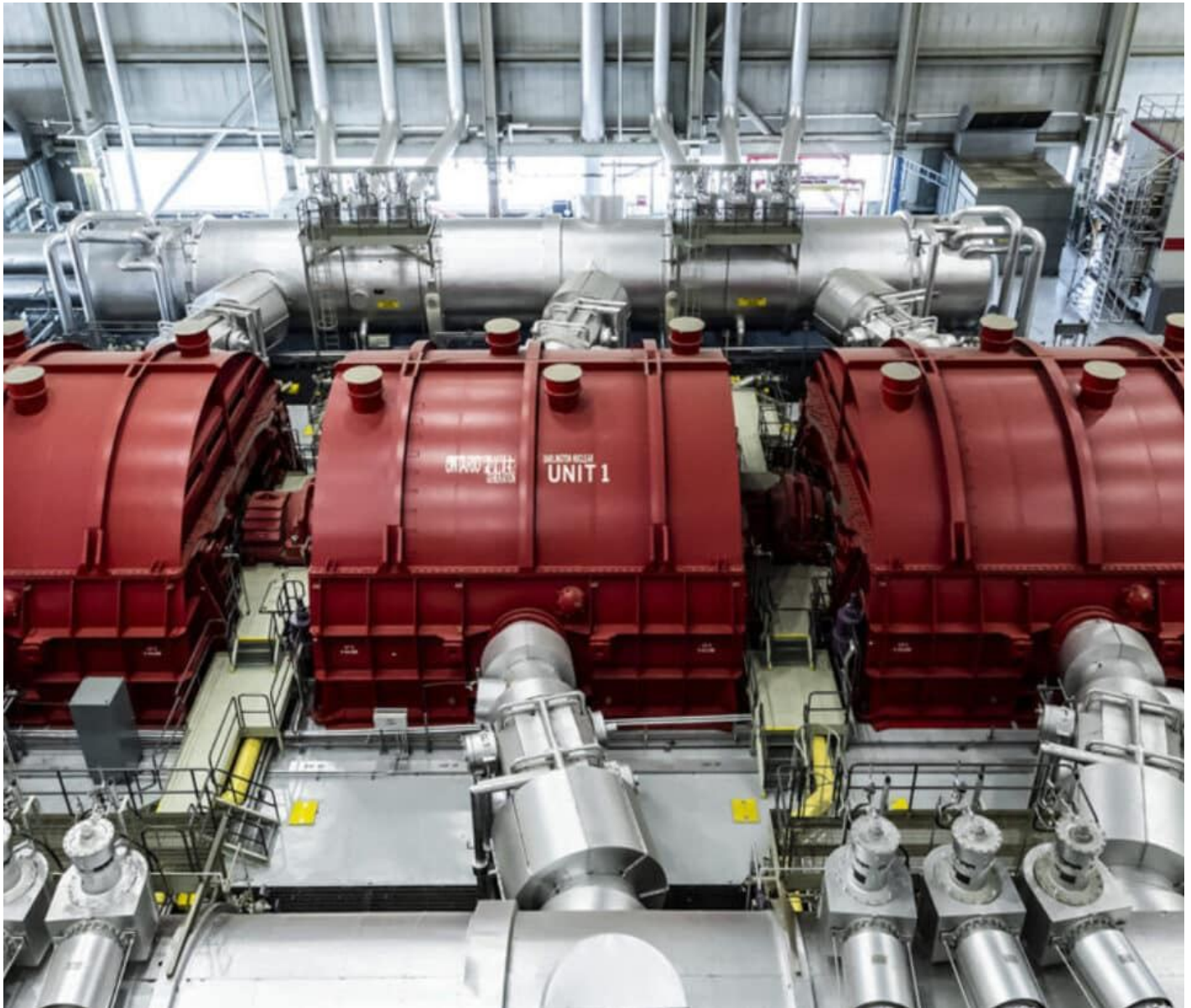


What are Small Modular Reactors (SMRs)?

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About Small Modular Reactors (SMRs):

- They are **advanced nuclear reactors** that have a **power capacity of up to 300 MW(e) per unit**, which is about **one-third of the** generating capacity of **traditional nuclear power reactors**.
- **SMRs**, which can produce a large amount of low-carbon electricity, **are**:
 - **Small** – **physically a fraction** of the size of a **conventional nuclear power reactor**.
 - **Modular** – making it possible for systems and **components to be factory-assembled and transported** as a unit to a location for installation.
 - **Reactors** – harnessing **nuclear fission to** generate heat to **produce energy**.

- **Advantages:**

- Relatively **small physical footprints**;
- **Reduced capital investment**;
- **Can be factory-built** unlike the conventional nuclear reactors that are built on-site;
- **Ability to be sited in locations not possible for larger nuclear plants**;
- Provisions for **incremental power additions**;
- It also **offer distinct safeguards, security** and **nonproliferation advantages**.
- They can be **used for power generation, process heat, desalination**, or other industrial uses.
- SMRs **can offer a carbon free, clean energy alternative to fossil fuels**.

Q1) What is Nuclear Fission?

Fission occurs when a neutron slams into a larger atom, forcing it to excite and split into two smaller atoms—also known as fission products. Additional neutrons are also released that can initiate a chain reaction. When each atom splits, a tremendous amount of energy is released.

Source: [India working on small modular reactors: Jitendra Singh](#)

Source: <https://vajiramandravi.com/current-affairs/what-are-small-modular-reactors-smrs/>

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