

India's crucial contribution in ITER hope for energy freedom

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The upcoming \$25 billion plasma-based fusion reactor [ITER](#), in which India is a partner, is the hope to energy freedom and also a solution to the world that is gripped with a threat to survival primarily by the use of fossil energy and fast depleting conventional energy resources.

These were the views expressed by former Chairman of the Atomic Energy Commission of India, [Anil Kakodkar](#), who was at his maiden visit on Tuesday to ITER facility being built in Saint-Paul-les-Durance, some 35km north of Aix-en-Provence in southern France.

India is one of the seven partners, both in-kind and in-cash, in a first-of-a-kind global collaboration.

Talking to IANS on the sidelines of an event to mark India achieving a significant milestone in fabrication of the world's largest high-vacuum chamber -- crucial [cryostat](#) -- that is now ready for installation, Kakodkar, 76, said fusion energy has the potential to provide abundant energy supply sustainably, avoiding [climate change](#) concerns.

"ITER is a unique global technological effort of an unprecedented magnitude. It is thus the way to new energy paradigm that the humanity is desperately looking for," he said in an interview.

Saying that this was his first visit to the facility, Kakodkar, a member of Atomic Energy Commission, said the slope of progress in ITER has gone up remarkably in a short span of time.

"Despite intense international discussions, the target of limiting global warming to within 1.5 degrees Celsius with respect to pre-industrial levels seems nowhere in sight. Studies have shown that without a significant contribution from non-fossil base load electricity generation, such a target would be too expensive to be realised in practice," he said.

In today's context this essentiality meant greater role of the nuclear energy. "Going forward, this also highlights the important role fusion energy would be required to play in future. The challenge then before the technology community is to ensure that these options are a reality as early as possible," he said.

Certainly before the world reaches the cliff edge, he said the ITER project, in which countries constituting more than half of the world population have come together to address this important global challenge, is thus a mission that must be timely accomplished.

Remembering the role he played in shaping up India's participation in ITER collaboration, he said he fondly remembers the formal events in Brussels and Paris that brought ITER and the international organisations for driving it into its formal existence.

An optimistic Kakodkar added that he is looking for the day when fusion burn would become a regular feature in ITER.

Designed to demonstrate the scientific and technological feasibility of fusion power, ITER will be the world's largest experimental fusion facility.

Fusion is the process that powers the sun and the stars, when light atomic nuclei fuse together to form heavier ones, a large amount of energy is released.

Fusion research is aimed at developing a safe, abundant and environmentally-responsible energy source.

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ITER is a global collaboration. Europe will contribute almost half of the cost of its construction, while the other six members of this joint international venture (China, India, Japan, Korea, Russia and the US) will contribute equally to the rest.