



For Immediate Release  
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## Fact Sheet: ITER

### Promoting Energy Independence Through Cooperative Research to Develop Fusion Energy

#### Today's Presidential Action

President Bush announced today that the United States will join an ambitious international research project to harness the promise of fusion energy, the same form of energy that powers the sun. America will join negotiations with Canada, Europe, Japan, Russia, and China to create the International Thermonuclear Experimental Reactor, or ITER. This will be the largest and most technologically sophisticated fusion experiment in the world. If successful, ITER will be a major step forward in the effort to produce clean, safe, renewable, commercially-available fusion-generated energy by the middle of this century. Commercialization of fusion energy would dramatically reduce America's dependence on imported oil and provide an abundant source of clean energy.

#### A Clean, Safe, Renewable Energy Source for the Future

Fusion energy could provide significant amounts of electricity and also generate hydrogen needed to power fuel cell vehicles of the future.

- **Fusion is clean:** It produces negligible atmospheric emissions and zero greenhouse gas emissions.
- **Fusion is safe:** Reactors cannot "melt down," and do not generate the high-level, long-lasting radioactive waste associated with nuclear power.
- **Fusion is renewable:** Commercial fusion reactors would use lithium and deuterium, both readily available natural resources found in sea water.

#### The Promise of Fusion Energy

Fusion energy is created when two atomic nuclei are "fused" together at temperatures greater than the interior of stars and far above the melting point of any solid container. Once initiated, a fusion reaction converts small amounts of matter to enormous amounts of energy. ITER will create and sustain this reaction on a scale necessary to develop fusion-based power plants.

America has supported research to harness fusion for nearly half a century; ITER will accelerate efforts to develop commercially viable means of generating fusion energy. ITER seeks to generate self-sustained, magnetically-confined fusion reactions ("burning plasma") for significant periods of time. This step is critical to the development of fusion as a viable energy source. Recent scientific developments have advanced knowledge of this field to the point that scientists now believe ITER can demonstrate the feasibility of this technology as part of an ongoing effort to develop a practical energy-generating device. If successful, ITER would create the first fusion device capable of producing thermal energy comparable to the output of a power plant, making commercially viable fusion power available as soon as 2050.

#### The Commitment of the United States

ITER is a \$5 billion international fusion energy research project. The level of America's financial commitment will be determined during negotiations with our international partners: the European Union, Canada, Japan, Russia, and China. (ITER negotiators are currently evaluating South Korea's request to participate.) The National Academy of Sciences recently endorsed America's participation in this important international research program.

For more information on the President's initiatives, please visit [www.whitehouse.gov](http://www.whitehouse.gov)

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#### Return to this article at:

[/news/releases/2003/01/20030130-48.html](http://news/releases/2003/01/20030130-48.html)

