Déjà vu all over again. _Congress has zeroed out funding for ITER, shown in this artist's conception.

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U.S. Wavers Again on ITER

By Dennis Normile_with reporting by Daniel Clery and Adrian Cho._*Science*NOW Daily News_21 December 2007

The countries planning the world's biggest fusion experiment have learned not to count on the United States. So this week's decision by the U.S. Congress to strip out a planned $149 million contribution in 2008 to the International Thermonuclear Experimental Reactor (ITER) won't halt next year's planned start of the project in Cadarache, France (*Science*NOW, 18 December). But ITER officials say that they will miss the 9% U.S. share if the latest budget decision means that the United States is pulling out--for the second time--of the $12 billion project.

"I don't think there would be a big impact on the overall ITER plan" if the U.S. contribution is delayed, says Hiroki Matsuo, director for fusion energy at Japan's Ministry of Education, Culture, Sports, Science, and Technology. He says that the project is at the stage at which partners are making components, and rescheduling could accommodate a late part or two. It would be a more serious matter if the United States withdraws from ITER or fails to provide the funding it has promised, says Norbert Holtkamp, principal deputy director-general of the ITER organization. Even then, however, Holtkamp says a 9% hole in the budget "will do harm, but it's not going to kill" ITER. The European Union, as host, has agreed to provide 49% of the budget, with the other partners--Japan, China, India, Russia, South Korea, and the United States--divvying up the rest.

This is just the latest U.S. flip-flop on ITER, which is intended to demonstrate the feasibility of harnessing the fusion reaction that powers the sun to produce electricity without the emission of greenhouse gases. In 1985, the United States and the then-Soviet Union announced the project, which soon became a global effort. Midway through the design phase, however, Congress cut all funding, and the United States dropped out (*Science*NOW, 7 May 1998). In 2003, the United States got back into the game for the implementation phase (*Science*NOW, 31 January 2003).

As much as money, what the other ITER partners now want from the United States is clarity. "ITER is waiting for a statement from the U.S. on how they will deal with this," Holtkamp says. So, it turns out, are officials from the U.S. Department of Energy (DOE), the agency responsible for providing the U.S. share. "The Department of Energy is reviewing the budget situation and its implications, as well as assessing options for the U.S. government to continue to meet its commitment to this important international research program," says a department spokesperson, calling the 2008 number a "disappointing" level of funding.

In addition to zeroing out the budget line for ITER, Congress expressly forbade DOE to shuffle money from other programs to satisfy its promise to the ITER partners. But John Marburger, science adviser to President George W. Bush, believes that the prohibition will not stand and that DOE will be forced to dip into other programs. "I can't see DOE not living up to its obligations," Marburger told *Science* earlier this week. "The department will have to use its money to stay in the project, so [the language] really just amounts to another earmark."

Ironically, Congress did provide DOE with $93.5 million to operate the three smaller U.S. fusion experiments--$6 million more than it requested. Ordinarily, the extra money would come as a great relief to fusion researchers, who in recent years have worried that DOE will sacrifice the domestic fusion program to fund ITER. But U.S. researchers don't want to sacrifice ITER to maintain the domestic program, either, says Stewart Prager, a physicist at the University of Wisconsin, Madison, and chair of DOE's Fusion Energy Sciences Advisory Committee: "This goes catastrophically the other way."

http://sciencenow.sciencemag.org/cgi/content/full/2007/1221/1

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