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US funding of fusion reactor in doubt

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The US Congress is divided over how to fund the US share of the world's largest nuclear fusion facility, mirroring a rift between some scientists and the US Department of Energy. The clash could lead to the US pulling out of the project - which had stalled following disagreements over its location - just as it appeared set to move forward once again.

The project, called ITER - International Thermonuclear Experimental Reactor - aims to lay the groundwork for using nuclear fusion as an inexhaustible and clean energy source. But work on ITER ground to a halt in December 2003 because its six member parties could not agree on whether to locate the main facility in France or Japan.

Recent media reports have hinted at movement towards an agreement, and some observers believed a decision on the site could have come as early as June.

But now, clashes in the US House of Representatives threaten to derail that progress. The US is expected to cover 10% of ITER's cost - a portion estimated at \$1.12 billion - spread between now and 2013. The Bush administration requested an increased sum of \$49.5 million to become available in 2006, to fund ITER through the US Department of Energy (DOE).

But the appropriations committee in the House - which can suggest changes to the budget in bills that then go to the Senate for debate - objected to the source of the funding. It said two-thirds of the increase for ITER would come as a result of cuts in other US fusion research, against the committee's previous requests. Under the cuts, three major fusion research facilities could operate for a total of only 17 weeks in 2006 instead of the planned 48, it said.

"Unwise and unacceptable"

In a bill on the DOE's 2006 budget - that was passed by the entire House on Tuesday - the committee restored the cut funding to 2005 levels, taking most of the money that the DOE had planned to use for ITER.

Supporting ITER at the expense of other fusion research was "unwise", "unacceptable", and "short-sighted", an appropriations subcommittee wrote in a report of its funding recommendations. It said the US "needs to maintain strong domestic research programmes and user facilities to train the next generation of fusion scientists and engineers".

"While changes will be necessary, it doesn't make sense to gut the domestic programme," agrees Raymond Fonck, a physicist at the University of Wisconsin in Madison, US, who co-chaired a National Academy of Sciences committee that set guidelines for fusion research. "You need a good domestic programme to benefit from participating in ITER."

The appropriations committee says it will use what control it has of the DOE's purse strings to keep that domestic programme alive - even if that means the US has to drop out of ITER. If the DOE's 2007 budget request takes money from other fusion programmes to pay for ITER, "the Committee is prepared to eliminate all US funding for the ITER project in the future", says the funding report.

Forcing decisions

But a separate House committee that covers science takes the opposite stand on funding. "We think, like the Department of Energy, that you can't keep the fusion programme exactly as it is and also do ITER," David Goldston, chief of staff of the House Science Committee, told **New Scientist**. "There's no way to do ITER as an add-on."

So Science Committee Chairman Sherwood Boehlert put forward an amendment to the funding bill to try to force a funding decision. The amendment, which passed the House and must now go before the Senate for approval, would prevent the US from entering into an agreement on ITER before 1 March 2006.

"I want to make sure that before we commit a dime to ITER that we have a consensus on how we will find that money," Boehlert told the House. "I will do all I can to prevent the US from entering into an agreement if no one is willing to make the sacrifices to pay for it."

The Senate will now have a chance to modify the funding bill, then both it and the House will have to hammer out an agreement on the DOE's budget. But Goldston says that unless a compromise is made, "US participation in ITER is unlikely".

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