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Fusion Power, Elusive and Alluring

A standing joke among scientists is that fusion power - the holy grail of those seeking a boundless supply of energy to supplant fossil fuels - is always decades away. That has been the guesstimate for half a century, and it remained the guesstimate last week when an international consortium announced that it had finally resolved an internal struggle over where to site an experimental nuclear fusion reactor. It will be in southern France, with Japan receiving some consolation-prize benefits.

According to a timeline issued by the consortium, this new reactor could put the world on a path toward a commercial fusion reactor by 2050. Or maybe not. The task is so daunting that fusion power may never prove practical. Even so, it is a dream worth pursuing in a world that may be desperate for new energy sources as fossil fuel supplies dwindle and global warming rises.

Fusion reactors, which smash atomic nuclei together instead of splitting them, as a conventional nuclear reactor does, are undeniably alluring. They would produce no greenhouse gases, would rely on abundant sources of fuel and would be safer than current nuclear reactors, and their radioactive waste would be easier to handle. But fusion - the nuclear reaction that powers the sun and the awesome blast of the hydrogen bomb - has proved devilishly difficult to harness for peaceful purposes.

The experimental reactor is projected to take eight years to build and will play host to another 20 years of experiments at a total cost of $10 billion to $15 billion. The United States, a minority partner, is expected to pay some $1.1 billion toward construction. That seems a reasonable contribution toward a project that the Energy Department has ranked at the top of its priority list.

Now a battle is brewing in Washington over how to finance the American contribution. Some in Congress want the department to find additional funding for the international project without gouging domestic fusion research, or else drop out of the collaboration entirely. Others believe that the collaboration should take precedence and domestic research should be cut and fitted around it. That seems the more reasonable approach. Fusion is at least half a century away from yielding practical power. It is in no position to claim a disproportionate slice of today's Energy Department budget.