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Global fusion

A year ago the world's main scientific and industrial powers agreed to spend \$10bn (£5.4bn) over the next 30 years on a nuclear fusion experiment that could provide another energy option for the middle of this century. Sadly, the International Thermonuclear Energy Reactor is no further advanced today; the would-be partners have wasted the past 12 months squabbling over Iter's location.

Last week the European Union tried to break the deadlock in favour of Cadarache in southern France over the Japanese candidate, Rokkasho-Mura. As host, the EU offered to raise its contribution to more than half of Iter's estimated \$5bn construction costs - with Japan receiving compensating research facilities in return for letting the main prize, the reactor itself, go to France. But the EU waved a big stick too: the threat to go ahead without Japan and its supporters, the US and South Korea, if no agreement is reached soon. The issue is high on the agenda for tomorrow's meeting of European research ministers.

Although each side has put forward a range of technical, geographical, social and industrial arguments in favour of its site, the truth is that Iter could work equally well at Cadarache or Rokkasho-Mura. The reactor should go to whichever country can put together the best economic and financial package to support the project. There is no reason why the host's contribution should not exceed 60 per cent, if Iter is thought to provide a sufficiently valuable boost to science and technology in the region.

Although the EU's robust stance has offended the sensitive Japanese, something was needed to bring the interminable site selection process to a conclusion. A delay of a year or two may not seem critical in the development of an energy source that is unlikely to be in commercial use for half a century, but it is vital for Iter to move on to its site-specific design and construction phase as soon as possible, before the technical teams that put together the Iter proposal disband.

The project itself is worth pursuing, despite taunts from some nuclear opponents that fusion power is one of those technologies that are always going to come to fruition in 50 years' time. There is no doubting the basic physics of fusion - the process that powers the sun and the hydrogen bomb - and experience with smaller-scale experimental reactors such as Europe's Jet suggests that the process can be scaled up to provide a clean and virtually inexhaustible power source.

Even if Iter runs well over budget, its spending level is unlikely to exceed \$1bn a year, a small price to pay for a reasonable chance to give the world another energy option for a time when it will no longer be possible to burn fossil fuels on the profligate scale of the early 21st century. But it should go ahead as a global rather than a European project - and ultimately there is no better way to choose between two good sites than to toss a coin.