The French government has suggested that Europe should go ahead and build the world's biggest nuclear fusion research centre on its own - a move that threatens to tear apart a global scientific effort bringing together the US, China, Japan and the EU.

The suggestion won a mixed response in Brussels, where the European Commission said a breakaway solution was "financially feasible", though the European Union was for the time being committed to an agreement with its partners.

Jean-Pierre Raffarin, the French prime minister, had earlier said that Europe should consider building the €10bn ($11.7bn £6.9bn) facility on its own. France is one of the two candidates still in the race to host the International Thermonuclear Experimental Reactor (Iter), with only Japan left to beat.

"We have to have Iter, even if we do it ourselves. The Europeans could do it, possibly with Canada. We won't let go of this. We're in a negotiation phase and we're determined," Mr Raffarin said.

Though a European break-away seems unlikely at the moment, the prime minister's comments underscore the sensitivity and importance of Iter, which will be the first large-scale demonstration on earth of nuclear fusion - the reaction that powers the sun and stars.

It is due to start operating in 2014 and then run for about 20 years. Some energy experts believe fusion is the best option for clean and plentiful power in the second half of the 21st century.

The centre was to have been run and financed by the EU, the US, China, Russia, Japan, South Korea and Canada, with the EU originally expected to pay for about 30 per cent.

The US, which is expected to contribute about 10 per cent of the costs, has recently stepped up its support for the Japanese site, raising fears in Paris that Cadarache, near the southern French port of Marseille, could lose out.

The Iter partners were originally scheduled to choose a site in December, but were unable to agree. Russia and China are understood to support the European bid, while South Korea is leaning towards the Japanese and US camp.

A European Commission official said on Tuesday that Brussels hoped the conflict could be resolved at a meeting next month.

One possible solution would be to split the institution in two and so give both Japan and France a research centre.

"[Raffarin's comments] are just a way to escalate the discussion and put pressure on the international partners," the official said.

"We could finance the centre on our own, but it would be a huge burden. The point of Iter is to share that burden and make the most of scientific knowledge around the
world. It's not about going it alone."

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