TOKYO (Reuters) - Japan's science minister plans to visit Russia and China next week to try to win backing for Tokyo's bid to host an experimental nuclear fusion program, a ministry spokesman said Tuesday.

The campaigning tour, which may start on January 14 and which would include South Korea, is the latest move in a tug-of-war between the European Union and Japan, both of which are bidding for the International Thermonuclear Experimental Reactor (ITER).

The European Union is backing Cadarache in southern France, while Tokyo is pushing Rokkasho, a remote fishing village in northern Japan as its proposed site for the world's first attempt at generating energy in the same way as the sun.

At a meeting in Washington on December 20, the six members of the ITER joint venture failed to reach agreement, with the United States and South Korea backing Japan, while Russia and China favored France.

Media have suggested the deadlock over the multi-billion dollar project reflected Washington's displeasure over France's opposition to the U.S.-led war in Iraq.

The six countries are set to meet again next month.

France has proposed a compromise whereby the reactor would be in Cadarache, but data analysis could take place elsewhere.

Nuclear fusion has been touted as a solution to the world's energy problems, as it would be low in pollution and would theoretically use seawater as fuel.

Fusion involves sticking atoms together, as opposed to today's nuclear reactors and weapons, which produce energy by blowing atoms apart.

Fifty years of research, however, have failed to produce a commercially viable fusion reactor.