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Ottawa cool to fusion project cost

Reluctant to chip in $1B to test `uncertain' technology

First experimental reactor would be built at Darlington site

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OTTAWA—The federal government is balking at the costs of taking over an Ontario-backed bid for Canada to become home to the world's first operational nuclear fusion reactor, a $12 billion facility that would be built east of Toronto.

The government fears major cost overruns on the experimental project and says the much-touted scientific payoff is "uncertain," according to a presentation by Natural Resources Minister Herb Dhaliwal to Ontario's Liberal MPs.

Ottawa also objects to an Ontario proposal to split the $2.3 billion Canadian portion of the project, since the province will get the bulk of any construction and equipment contracts.

"Difficult to support unless Ontario shoulders the lion's share of the contribution — note than 80 per cent of project procurement is in Ontario," says a summary of Dhaliwal's presentation.

The nine-page summary was obtained by the Star and the key points confirmed in an interview with the minister.

Dhaliwal is expected to go to the federal cabinet shortly with a formal recommendation about whether Canada should try to compete against bids from France, Spain and Japan to be the country that hosts the International Thermonuclear Experimental Reactor (ITER).

As a demonstration project, ITER would not generate electricity for the Ontario grid.

"Either we're in or we're out. I don't think we can sit on the fence much longer," Dhaliwal said in an interview.

Dhaliwal told the Ontario Liberal caucus last week that proponents of the reactor were now asking Ottawa to put up roughly $1 billion after first promising that no federal cash contribution was needed.

As well, the government would have to reverse a 1999 decision to scrap all federal research support for fusion energy, the same atomic reaction that produces the sun's heat and light by fusing forms of hydrogen. Existing nuclear reactors are based on nuclear fission, the splitting of atoms of uranium.

Murray Stewart, head of the industry-led consortium that launched the ITER bid, said the federal government now had to take the lead role for Canada to have any hope of getting the facility.

"The key decision is whether Canada wants to be part of this new international program to develop fusion energy. We've got to believe the technology is worth supporting," said Stewart.

The federal government is coming under intense lobbying from political and industrial sources to support ITER with more than words. A cabinet decision is needed before a June 19 meeting of the six partners — Japan, Russia, China, the European Union, the U.S. and Canada.

Ontario has already pledged $300 million to the project over an estimated 10 years of construction and 20 years of projected operation.

Enterprise Minister Jim Flaherty last week told Dhaliwal the province was willing to split the $2.3 billion in federal and provincial backing now being sought by ITER proponents.

The facility would be built next to the Darlington nuclear power plant, which produces about 20 per cent of Ontario's electricity.

ITER represents only one of three possible ways to duplicate the sun's fiery furnace. The 13-storey reactor proposed for the Darlington nuclear power station site would use potent magnetic fields to squeeze ionized hydrogen gas to temperatures of 100 million degrees C until it fuses into helium.

But scientific teams elsewhere are pursuing two other techniques for nuclear fusion — blasting hydrogen-filled capsules with lasers or crushing a capsule of heavy hydrogen with potent X-rays created by an immense electrical surge.

None of the three methods is expected to produce usable amounts of electricity for at least 30 to 40 years, according to independent assessments. As Dhaliwal's presentation noted: "Even a technical success will not guarantee fusion to be commercially viable."

The nuclear fusion reactor has been opposed from the start by environmental groups who point to the radioactive structure that will have to be safely decommissioned after the experiment ends.

Additional articles by Peter Calamai