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Failed tidal turbine explained at symposium | CBC News

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Nova Scotia

One of the companies behind a large experimental tidal test project said that powerful currents in the Bay of Fundy destroyed the blades of its test turbine in less than three weeks

OpenHydro says the cause of the damaged test turbine in the Bay of Fundy was because of 10-knot currents, not ice as was

previously believed. (CBC)

One of the companies behind a large experimental tidal test project told a tidal energy conference Friday that powerful currents in the Bay of Fundy destroyed the blades of its test turbine in less than three weeks.

OpenHydro — the Irish company which installed the world's first 1-megawatt tidal turbine in the Bay of Fundy —and its partner Nova Scotia Power deployed the 10-tonne turbine on the floor of the Minas Passage in November 2009.

Then just 20 days later, all 12 turbine rotor blades were destroyed by tidal flows that were two and a half times stronger than for what the turbine was designed.

"Preliminary data indicates we will not be able to return the turbine to the water so we will begin the process of designing a second turbine," said Brendan Corr, OpenHydro's chief operating officer.

The damage is being blamed on ten knot currents — not underwater ice or debris.

Nova Scotia's $111-million tidal energy development program is still in experimental stages.

Doug Keefe of the Fundy Research Centre said what happened should be put perspective.

"It's like they broke a drill bit, but they discovered that we have a reservoir that's twice as big as anyone thought."

The turbine was recovered from the Bay of Fundy in

December 2010.

Since then, engineers have been analyzing data retrieved from onboard sensors.

Corr said the test turbine will have to be replaced. A new turbine will be built and installed in 2012.

Tidal energy legislation

Premier Darrell Dexter was a keynote speaker at the Nova Scotia Tidal Symposium Friday. (Sean Kilpatrick/Canadian Press)

Meanwhile, Premier Darrell Dexter told conference attendees that his government is working on new legislation to ensure the safe development of tidal energy in Nova Scotia.

He said a new marine renewable energy strategy is needed to prevent problems.

"We invited not just tidal developers, people from all of the

jurisdictions and interest groups to say 'What are the potential effects of tidal turbines?' ... We want to make sure that we have in place the appropriate legislation that ensures that we are not doing any harm."

Dexter said the new legislation would also outline how tidal power developers can take their projects from demonstration to the commercial development stage.

The Bay of Fundy pushes more than 160 billion tonnes of water on the incoming tide, according to the symposium's website.

That's more than four times the combined flow of every freshwater river in the world.

The estimated potential of the Fundy region alone is upwards of 60,000 megawatts of energy, of which up to 2,500 megawatts may be safely extracted.

Tidal energy experiments in the Bay of Fundy are part of the province's strategy to generate 40 per cent of its electricity from renewable resources by 2020.