City school helps methane trial

Otago Girls' High pupils collect seaweed for team hoping to make commercial fuel

Harvest time: Hannah George (17), of Otago Girls' High School, braves the wintry waters at the mouth of Otago Harbour to collect undaria seaweed. *PHOTO: BRUCE MUNRO*

By BRUCE MUNRO

DUNEDIN is hosting a methane gas trial which may lead to commercial production of fuel from seaweed.

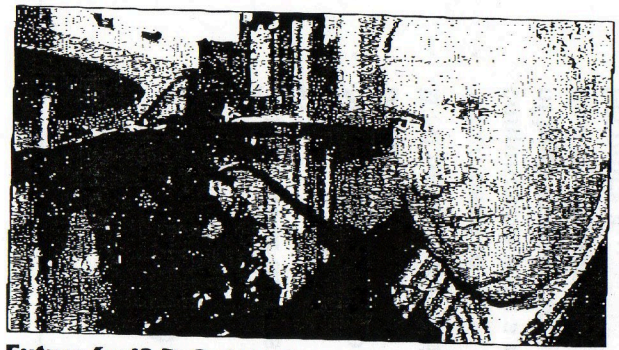
On Sunday, Otago Girls' High School pupils, under the supervision of Hamilton-based biochemical engineer Dr Carl Henderson, US-based company owner Peter Fend and Enviroschools national director Heidi Mardon, began harvesting undaria seaweed from the mouth of Otago Harbour for a one-month methane gas production trial.

The trial being conducted at the high school by Dr Henderson aims to determine the viability of seaweed as a new energy resource.

"It is a biofuels project that has been ignored and needs to be explored further," Dr Henderson said.

"We only have a certain amount of land in New Zealand but we have a huge coastline that could be used to farm seaweed and could produce a significant amount of it."

If successful, the gas could be used to fuel stoves, heat homes and, potentially, power motor vehicles.



Future fuel? Dr Carl Henderson with a sample of undaria seaweed which will be processed in digestors (in the background) to produce methane gas suitable for running household heating and cooking. *PHOTO: BRUCE MUNRO*

The study arose from a chance conversation between Otago Girls' High School teacher Douglas Black and Enviroschools founder Ms Mardon late last year.

The school's environmental Green Group had been studying the distribution of the invasive exotic seaweed undaria for several years, but the focus needed to change when the Government changed its approach from eradication to management.

"We started looking at how to control it by harvesting it for a useful purpose," Mr Black said.

"Heidi said she knew someone keen to develop seaweed for biogas production."

That person was Mr Fend, an ecological artist and founder of Ocean Earth Development Corporation which develops solutions to sustainability issues.

Enviroschools did not normally work directly with individual schools but was making an exception, Ms Mardon said.

"Biogas is a known industry but it hasn't been done with water plants," she said.

"It has the potential to spark a whole new energy resource.

"It's a cutting-edge project that could be a model for other schools."

Dr Henderson, who is contracted by Enviroschools for this project, has a background in ethanol production and methane fermentation.

The undaria trial involves extracting methane gas produced by fermenting the seaweed in two purpose-built 30-litre digestors being housed at the high school.

"It will take at least a month to get it running steadily," Dr Henderson said.

"The aim is to see how well the seaweed ferments, how quickly it ferments, and how much methane is produced."

Dr Henderson hopes the trial will allow him to estimate the operating costs and volume of seaweed required for a commercial venture.