

## **‘A vision for Newfoundland and Labrador’**

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A Newfoundland and Labrador company, Trans Ocean Gas, has discovered an original, simple and cost-effective solution for transporting natural gas that could not only potentially help secure a natural gas and petrochemical industry in the province, but transform similar offshore gas sites around the world.

Company president Steve Campbell — who grew up in St. John's and studied engineering at Memorial University — began envisioning a notion for transporting gas in large, fibre reinforced pressurized plastic containers almost 20 years ago. He was working as a supervisor during the construction of Hibernia's concrete gravity-based structure at the time and was trying to figure out a way of transporting the reservoir's gas.

Expensive pipelines and transporting liquefied natural gas in steel structures — which have corrosion and rupture characteristics — weren't good enough options.

After spending time as a pipeline and facilities engineer in Alberta, which included some work with plastics, Campbell began to envision a simpler solution.

“I saw a bus going by that was fuelled by natural gas and I said, ‘Well what kind of container's on that?’” he tells The Independent. “I found that it had a composite (reinforced plastic) pressure vessel but it had an aluminum liner, still the same thing with the corrosion potential, but it was composite wrapped ... I realized that an all composite pressure vessel would be the trick. Lightweight and frozen resistant.”

After investigating the possibility of building secure, compressed plastic vessels on a grander scale, Campbell immediately patented the concept. He returned to Newfoundland and Labrador to work on the Terra Nova development and eventually focused on his fibre-reinforced pressurized plastic containers in 2001.

Trans Ocean Gas, which is located in the National Research Council's Institute for Ocean Technology (Memorial University campus), is currently in the process of completing a \$1.5-million dollar verification and certification project. The company has the financial backing of multiple private investors including the provincial government.

Campbell — who is presenting at a Compressed Natural Gas workshop in Houston this

week — says Trans Ocean Gas could become a publicly traded company within 12 to 18 months and he anticipates securing worldwide contracts in as little as six months.

“Although we looked at Hibernia as one thing to get gas moving here, we found that this was a solution that was in global demand and now it is very much in global demand,” he says.

Fibre-reinforced pressure vessels have been used with great success in the aerospace industry and public transit for years. Trans Ocean Gas intends to transport its containers by ship and received approval from the American Bureau of Shipping in 2003.

Currently, the only way to transport natural gas is by pipeline or by liquefied natural gas tanker. Both methods are massively expensive, especially for smaller, isolated natural gas fields such as those around the coasts of Newfoundland and Labrador.

Without steel, Campbell says the plastic vessels strengthen in cold temperatures. His new technology, which combines freezing and compression and avoids the need for expensive and environmentally damaging regassification plants, would cut companies’ costs by as much as two thirds.

“Our method brings the liquid back; it’s only our method that would enable enough ethane — which is only 10 per cent of the gas — to actually be able to create a petrochemical industry here,” says Campbell.

Despite receiving support from the province and the Bull Arm Site Corporation (he plans to submit a full site development plan to Bull Arm with a vision to using the site for vessel manufacturing) Campbell is concerned by some recent comments made by the premier.

In talks with the media last week, Danny Williams expressed concern over shipping gas by boats, favouring pipelines to mainland Canada as a means of transportation.

Campbell says he was hugely surprised by Williams’ comments and wonders if the premier just hasn’t realized the full potential of transporting natural gas in pressurized vessels.

He says because of the vast quantity of ethane needed to operate a petrochemical industry (something Williams envisions for the province) his method is the only realistically viable option, one that would create massive local economic development without the need to build multiple pipelines around the province.

“You’re looking at \$5 billion by the time it’s over for sure,” says Campbell, “whereas we (Trans Ocean Gas) are talking about a \$2-billion method to put the whole thing together and provide enough ethane for petrochemicals ... this is the way to go, to be able to create industrial benefit for Newfoundland and Labrador.

“All the benefits would be here; it’s such a vision for Newfoundland.”

As well as developing new technology through Trans Ocean Gas, Campbell recently made his first public presentation on another huge, energy related plan, which could see the province naturally generate five times as much power as the lower Churchill.