

[Trans Ocean Gas PRESS](#)

Polar Ice Caps Are Melting Faster Than Ever ... More and More Land Is Being Devastated By Drought ... Rising Waters Are Drowning Low-Lying Communities ... By Any Measure, Earth Is At ... The Tipping Point

By Jeffrey Kluger

Time Cover Story

Sunday 26 March 2006

"The climate is crashing, and global warming is to blame. Why the crisis hit so soon - and what we can do about it."



[Click here to read the full story...](#)

 Time Cover Story - Earth is at the Tipping Point.pdf

HAZARDOUS CARGO BULLETIN

Turning gas into gold

"The marine transport of compressed natural gas (CNG) is an idea that works brilliantly in theory, but has not as yet made it into practice. The potential benefits are undeniable - unlike LNG, CNG bypasses the need for expensive liquefaction and regasification plants and is a more flexible alternative to pipeline transport, which is becoming increasingly unreliable as natural disasters and political situations interrupt the flow."



HAZARDOUS CARGO
BULLETIN.pdf
Adobe Acrobat Document



OTC.06 offshore technology conference

1 - 4 May • Reliant Center • Houston

General Session: The Challenge of Stranded Gas
Wednesday, 3 May 2006, 1400 to 1630

[Panelists](#)

Bent Svensson, World Bank

Steven Campbell, Trans Ocean Gas Inc.

Xavier Pr eel, Total Exploration and Production

"Steven Campbell is president and founder of Trans Ocean Gas Inc., based out of St. John's, NL Canada. Campbell has a PE designation, graduating from the Faculty of Engineering through Memorial University of Newfoundland. Work experience includes the Hibernia Development Project, various pipeline projects throughout Alberta, Canada and hydro-test/ mechanical completions engineer with the Terra-Nova FPSO Oil & Gas Development Project. He holds several patents related to the oil, gas, and ocean technology sectors including the composite compressed natural gas transportation system. He currently resides in his hometown of St. John's, NL Canada."

Composites Alive And Well In Offshore Oil Applications


By: Sara Black for Composites World 

March 2006

"Trans Ocean Gas Inc. (St. Johns, Newfoundland, Canada) has a new concept — transporting compressed natural gas (CNG) by ship in large composite pressure bottles or tanks. A \$1.5 million joint industry project (JIP) involving Trans Ocean Gas, Composites Atlantic Ltd. (Lunenburg, Nova Scotia, Canada), certification society Det Norske Veritas and several other parties are currently verifying the technology for certification. "About half of the world's discovered natural gas is considered 'stranded,' or beyond the economical limit of a pipeline, and most is located offshore," says Trans Ocean Gas president Steven Campbell. "CNG transport by ship will allow stranded gas to be economically gathered and delivered to market." "

"Composites are the preferred material over steel," notes Campbell, "because of lighter weight, corrosion resistance (thanks to the thermoplastic liner), cryogenic temperature resistance and crack and rupture resistance. Cost is also competitive with steel, given the proposed bottle size and relatively high steel prices."

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 Composites Alive And Well In Offshore Oil Applications.pdf

The 'cosmopolitanization' of St. John's

The city is attracting a new breed of innovators to work in the energy sector.

For many, it's a return home

JANE ARMSTRONG - Globe and Mail 

March 16 2006

"Trans Oceans Gas chief executive officer Steve Campbell has patented a method for transporting natural gas using fibre-reinforced pressurized plastic containers. Mr. Campbell, an engineer who spent years working in the Alberta oil fields, says he got the idea from seeing buses fuelled by natural gas. Their tanks were also made from fibre-reinforced plastic. Mr. Campbell's plan was to use the same material to patent on a grander scale.

Trans Ocean Gas is a private company, but Mr. Campbell says he hopes to take it public within a year.

Right now, natural gas is transported by pipeline or liquefied natural gas tanker, which is expensive. Mr. Campbell says his method of transporting gas in pressurized containers would cut costs by two-thirds.

A native of the province, Mr. Campbell says he is glad to be back home, conducting research that might one day provide jobs in his province."

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 The cosmopolitanization of St. John's.pdf

Trans Ocean unveils CNG ship blueprint.

Canadian carrier plans to kickstart market with containership conversions.

Marcus Hand in Singapore - For Lloyds List 

Thursday March 02 2006

"CANADIAN company Trans Ocean Gas is trying to make the much-talked-about shipping of compressed natural gas a reality, with a design to convert containerships into CNG tankers.

While several designs for CNG carriers exist on paper, a ship is yet to be built.

Trans Ocean Gas is marketing its ship conversion concept to energy and shipping

companies in an effort to kickstart the market, which it sees as a way to develop "stranded" gas fields not big enough to justify the investment for liquefied natural gas.

"We can do a conversion rather than a newbuild," said Darrell Hawkins, vice president of business development for Trans Ocean Gas. The company has, in principle, approval from ABS for the hull design for a conversion of a 4,400 teu containership to a CNG tanker. The ship would utilise fibre reinforced plastic containment tanks to carry the cargo, similar to those used on CNG-powered buses and cars.

Converting an existing vessel would be far cheaper than building a CNG ship from scratch. A CNG newbuild has been estimated to cost in the region of US\$250m, by contrast Mr Hawkins estimated a conversion would cost around 20% to 30% of the value of the ship. It would also be considerably quicker to convert a ship especially given the lack of newbuilding space at established shipyards. Trans Ocean Gas is in talks with a number of energy companies that could theoretically result in a shipping start date of 2009.

While the present design is for a containership Mr Hawkins said that it could be adapted to other ship types depending on what vessels are available.

The company is targeting short haul trades such as gas from stranded fields off East Malaysia to the Philippines, a distance of 600 nm.

Whereas investment in LNG infrastructure such as receiving terminals runs into billions of dollars, CNG terminals would be just a fraction of the cost at US\$125m Mr Hawkins estimated.


The idea would be supply smaller volumes of gas than transported by LNG vessels at distances at a maximum of 2,000 nm. The Malaysia-Philippines project would require four vessels of 50,000 dwt to 70,000 dwt.

"CNG is a smaller scale project," he said, describing LNG as an exclusive "billionaire boys club". "CNG now enables gas to be treated like oil. You can shuffle cargoes around like oil," he said.

However, Trans Ocean Gas is yet to find a customer for its design with existing players in the gas market preferring to go with tried and tested pipeline and LNG projects."

 Trans Ocean unveils CNG ship blueprint.pdf

NEW Zealand energy network company Vector is considering importing compressed natural gas from PNG using a "virtual pipeline" of tankers crossing the Tasman Sea.

Neil Ritchie, New Zealand - For PNG Industry News 
Friday, March 03, 2006


"Vector's acting divisional gas chief executive, Michael Cummings, outlined plans for using PNG CNG at the 2006 National Power Conference in Auckland yesterday afternoon.

He said CNG could provide the "optimum outcome" for New Zealand, as it did not require customers to bring in the huge quantities required for liquefied natural gas."

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 NEW Zealand energy network company.pdf

'A vision for Newfoundland and Labrador'

BY: Clare-Marie Gosse - For The Independent 

Sunday, October 23, 2005

"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."

"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."

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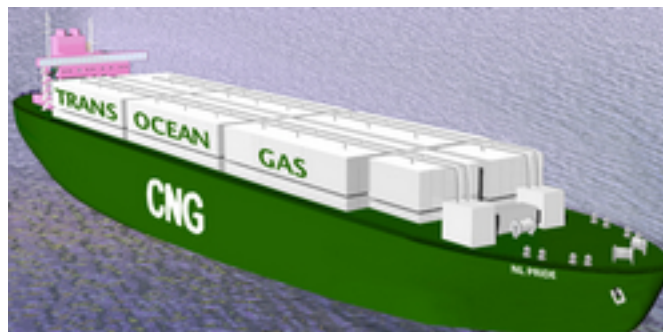
 A vision for Newfoundland and Labrador.pdf

The future of Hebron and gas development offshore Newfoundland and Labrador

BY: Edward G. Hollett - For The Sir Robert Bond Papers 

Published: Friday, October 21, 2005

(Right) One of the Premier's despised "God damn" but locally-owned compressed natural gas ships could earn the province millions in added revenue through the private sector.



Technological changes, including exploration of new shipping technologies with [local](#) business ties, open up new ways of exploiting the estimated eight trillion cubic feet of natural gas offshore Newfoundland and Labrador.

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TRANS OCEAN GAS MOVES AHEAD WITH CNG PLANS

BY: The Oil & Gas Magazine Online 

PUBLISHED: Oct 2005

"A Newfoundland and Labrador natural gas technology company, Trans Ocean Gas, is on the verge of introducing an exciting method of shipping natural gas from wellhead to market. Trans Ocean Gas plans to commercialize its compressed natural gas (CNG) fibre reinforced plastic (FRP) technology in 12 to 18 months."

[Click here to read more...](#)

 Trans Ocean Gas moves ahead with CNG Plans.pdf

NATURAL GAS: THE WAY OF THE FUTURE

BY: The Oil & Gas Magazine Online 

PUBLISHED: Oct 2005

"The demand on a global scale for natural gas as a cleaner and more environmentally sound source of energy is driving the need to develop natural gas fields." "In Newfoundland and Labrador, the emphasis is being placed on development of natural gas in its compressed form (CNG),"

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 Natural Gas - The way of the future.pdf


EDITORIAL: Natural gas transportation is close to becoming a reality

BY: Bill Abbott, Editor, The Oil & Gas Magazine Online 

PUBLISHED: Oct 2005

"To maximize the benefits from other stranded gas fields offshore Newfoundland and Labrador, the development of compressed natural gas (CNG) technology is vital." "Many of the world's top-producing energy companies are on the verge of making the critical final decision to proceed with plans for compressed natural gas transportation."

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 Natural gas transportation is close to becoming a reality.pdf

NATURAL GAS, THE NATURAL NEXT STEP

BY: The Oil & Gas Magazine Online 

PUBLISHED: Oct 2005

"Supply and demand...concerning natural gas, Newfoundland and Labrador has the "supply". International markets exhibit the "demand". This bodes well for the province, considering nearly 10 trillion cubic feet (tcf) of stranded natural gas reserves and 436 million barrels of natural gas liquids (NGL) have so far been discovered within the province's seabed."

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 Natural Gas - The Natural Next Step.pdf

Petroleum Research Atlantic Canada

PRAC Contributes to \$1.45 Million CNG Project

PUBLISHED: August 24, 2005

"**St. John's** – Petroleum Research Atlantic Canada (PRAC) has recently awarded funding to Trans Ocean Gas for a project that will test the safety and reliability of fiber reinforced plastic (FRP) pressure vessels to be used for the transportation of compressed natural gas (CNG) by ship."

[Click here to read more...](#)


Interview with Steven Campbell

BY: CBC News St. John's NL. 

PUBLISHED: July 2005

[Click here to watch the news interview](#) / [Video Google](#) Requires: [Macromedia Flash Player](#)

Sitting on it


BY: Clare-Marie Gosse - For The Independent 

Sunday, June 26, 2005

"Oil aside, Newfoundland and Labrador has a promising natural gas market waiting in the wings to follow behind the four major offshore oil projects in or preparing for production."

"The biggest challenge facing the province's offshore gas resources is transportation. An offshore pipeline can cost in the region of \$1 million a kilometre to build."

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 [Sitting on it.pdf](#)

Trans Ocean Gas Presentation at The Third Asia Gas Buyers' Summit [Highlights](#)



The Third Asia Gas Buyers' Summit is scheduled for 14th & 15th February, 2005 at Taj Palace Hotel, New Delhi. The Theme for this year's Summit is 'Customer Service in the Natural Gas Sector'.

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Labrador Looks to Retrieve Gas Magic Bus

BY: Susan Eaton - For Explorer Magazine. 

Published: December 2004


Steven Campbell, president of Trans Ocean Gas, hopes to deliver stranded gas to southern markets from the White Rose oil field by 2011, and from the Labrador Shelf within 10 years' time. Campbell, a native of Newfoundland, intends to supply markets that don't have existing pipelines or liquefied natural gas (LNG) facilities.

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 Labrador Looks to Retrieve Gas.pdf

Seismic crews again sail Labrador waters

Stranded natural gas may be unlocked, shipped to Boston

BY: Susan Eaton - For Business Edge 

Published: 11/18/2004 - Vol. 4, No. 41

Rising natural gas prices – combined with a North American gas market that is becoming increasingly constrained by supply – make Labrador's stranded gas reserves all the more attractive.

[Click here to read more...](#)

 Seismic crews again sail Labrador waters.pdf

Interview with Steven Campbell

BY: CBC News St. John's NL. 

PUBLISHED: 2004

[Click here to watch the news interview](#) / [Video Google](#) Requires: [Macromedia Flash Player](#)

Newfoundland Poised To Capture Natural Gas Benefits Fabrication and research expertise could enable Newfoundland & Labrador to tap the economic and industrial benefits of natural gas.

BY: Jennifer Hatt - For Ocean Resources Online 

October 18, 2004

Two recent studies examining the province's ability to commercialize compressed natural gas (CNG) technology concluded that the array of fabrication facilities and experience and the presence of major research facilities provide an opportunity for Newfoundland & Labrador to "position itself at the forefront of a new offshore development."

[Click here to read more...](#)

 Newfoundland Poised To Capture Natural Gas Benefits.pdf

Trans Ocean Gas to Test CNG Cylinders

BY: J.M. Sullivan - For Ocean Resources Online 

October 18, 2004

St. John's-based Trans Ocean Gas is gearing up to test its patented proto-type cylinders to store and ship compressed natural gas (CNG) early next year. "We'll be testing by the first quarter of 2005," said company president Steve Campbell.

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 Trans Ocean Gas to Test CNG Cylinders.pdf

CNG Mobility

Transporting White Rose Gas

BY: Ocean Resources Online 

October 18, 2004

Husky Energy hopes to have final studies on developing natural gas reserves associated with its White Rose oil project completed by the end of January 2005. In August, Husky sent Request for Proposals to nine companies who had responded to their EOI, asking for more detailed plans. All submissions were in as of September 15, and a company spokesperson said Husky intends to award contracts come the end of October.

[Click here to read more...](#)

 CNG Mobility Transporting White Rose Gas.pdf

Moving gas to market

BY: Moira Baird - For The Telegram 

Saturday, August 21, 2004

Trans Ocean Gas Inc. starts testing prototypes for storing and transporting compressed natural (CNG) gas this fall.

The St. John's company has a unique, patented idea for getting CNG to markets in cylinders that are lighter and less prone to explosive ruptures than traditional steel containers. The \$2.4-million testing phase could be completed by year-end.

Next, comes manufacturing of the cylinders known as fibre-reinforced plastic storage vessels - and Trans Ocean wants to do this work in Newfoundland.

To accomplish that, company president Steven Campbell met with provincial Natural Resources Minister Ed Byrne and asked for financial assistance.

He is awaiting a response.

"We're obviously very excited," said Campbell. "Upon the success of design verification testing, we intend to establish manufacturing plants.

"Both ABS and DNV will be contributing to the design verification testing program to obtain approval in principal to construct the pressure vessel system for CNG carriers."

Houston-based American Bureau of Shipping (ABS) and Norwegian-based Det Norske Veritas (DNV) are international organizations developing rules and guidelines for CNG

transportation.

Campbell, an engineer, created Trans Ocean in 2001 when he figured existing composite cylinders used as fuel tanks for F-18 fighter jets and public buses could also safely store CNG.

Containment System

The storage cylinders containing CNG would be stored upright in steel modules, known as a cassette containment system, aboard either converted container ships or purpose-built ships. Then, it would be shipped to an onshore processing centre and on to markets.

It's the cylinders and modules that Campbell would like to see built in Newfoundland and then installed aboard ships at a deepwater port.

"We've recently invited the government of Newfoundland and Labrador to partner in establishing manufacturing facilities in rural Newfoundland," he said.

"We also look forward to being able to train a lot of young people to operate the computer-controlled filament winding machines."

Trans Ocean Gas is also busy preparing a proposal to transport CNG from the White Rose field off Newfoundland.

The company is one of several asked by Husky Energy, the operator of White Rose, to submit its plan by mid-September.

"We've assembled the better part of, and are continuing to assemble, our consortium team to offer Husky Energy a complete turnkey solution," said Campbell. Campbell declined to name the members of the consortium, but they include a shipping company, a major offshore engineering firm, and a turret/mooring buoy design fabricator.

In June, Husky asked for submissions assessing key technical, economic and regulatory issues in shipping natural gas from the Grand Banks.

Advantages over steel

Campbell said his composite cylinders have a number of advantages over steel containers - they're light-weight, corrosion resistant, and do not rupture if punctured. They're also cost competitive, he added, since steel prices have doubled in the past year.

And they're suitable for the kind of stranded gas found offshore Newfoundland and in many other parts of the world. (Stranded gas is small pools that oil companies consider too costly to develop.)

To test the prototypes this fall, Trans Ocean is partnered with EADS-Composites Atlantic which is equipped to manufacture the fibre-reinforced pressure cylinders. Based in Lunenburg, N.S., that company is jointly owned by the European Aeronautic Defense and Space Company (EADS) and the Nova Scotia government. EADS also owns

Airbus, Eurocopter and the Galileo space probe.

EADS-Composites Atlantic employs 170 people manufacturing composites for aeronautics, space, defence and commercial products.

Campbell envisions five or six such plants will be needed to meet demand once Trans Ocean's CNG transportation system takes off.

The company's success to date has been thanks to the organizations, such as Institute of Ocean Technology, the Industrial Research Assistance Program, the Atlantic Canada Opportunities Agency, and people like John Crosbie and his approximately 50 shareholders.

Those shareholders invested more than \$100,000 in Trans Ocean Gas under the 20 per cent direct equity tax rebate program.

 Moving gas to market.pdf

St. John's company touts natural gas

WebPosted Sep 17 2003 12:04 PM NDT

ST. JOHN'S

More than 30 years after natural gas was discovered off the coast of Labrador, an engineer from Newfoundland is hoping to use a system he's patented to get the gas to market.

The fields haven't been developed because of the high costs, harsh climate and heavy ice.

Steven Campbell of Trans Ocean Gas Ltd. was a boy growing up in St. John's when the first gas was found in 1971.

He's patented a process for compressing gas in fibreglass reinforced plastic cylinders that would be stored in steel containers.

The gas would be moved to market by container ships rather than traditional pipelines.

"We took this technology and applied it to a ship-based method whereby we can now safely, reliably, and cost-effectively transport large quantities of compressed natural gas in these fibre-reinforced plastic cylinders," Campbell says.

He's been making his pitch in St. John's this week at an offshore petroleum conference.

Jan Wagner of Fluor Canada, a Calgary-based petroleum engineering and construction company, says Labrador gas production faces challenges from being so far north, away from markets and in iceberg territory.

Stiff competition for production

Labrador also faces competition from more accessible natural gas off Nova Scotia and maybe Newfoundland's south coast.

Campbell hopes to make Newfoundland a base when the orders start coming in.

"What we're looking at is setting up manufacturing facilities in Newfoundland – install our system in ships – and have them ready for service," he says.

Campbell's proposal isn't the only one that's been put forward for extracting offshore natural gas. In February, EnerSea of Houston presented its compressed gas technology

at Memorial University.

Labrador natural gas is in for more study in a couple of weeks. Another conference will look at the region's promise and debate.

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 St. John's company touts natural gas.pdf

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