

NOIA NEWS



**There are billions of reasons to support
Newfoundland and Labrador's oil & gas industry**

www.imaginethepotential.ca



Regulatory efficiency
key to industry

Imagine the Potential
campaign launched

Innovate or Die
say industry experts



Building beyond since 1953.

What began as a small, family-owned electrical company has grown into one of the largest multi-disciplinary construction companies in Canada. More than 60 years later, with operations from Newfoundland to Alberta, and partnerships with global industry leaders, our family values still run deep.



Noia Board of Directors 2018

Chair	Liam O'Shea Atlantic Offshore Medical Services
Vice-Chair	Mark Collett Crosbie Group of Companies
Treasurer	Mike Critch NSB Energy
Past-Chair	Andrew Bell K&D Pratt
Directors	Ian Arbuckle, Rothlochston Subsea David Billard, Aker Solutions Canada Jason Fudge, DF Barnes Jason Muise, TechnipFMC James Parmiter, Cahill Group of Companies Christian Somerton, Pennecon Energy Marine Base Hank Williams, Cougar Helicopters Inc. Karen Winsor, Atlantic XL

Noia News

Editor-in-Chief: Ken Morrissey

Editor: Marilyn Buckingham

Layout & Design: Steffanie Martin | NudgeDesigns.ca

Contributing Writers: Kristann Templeton, Geoff Meeker,
Marilyn Buckingham

Advertising: Alexia Williams

Published by Noia | Printed by Bounty Print

The contents of this publication do not constitute professional advice. The publishers, editors and authors, as well as the authors' firms or professional corporations, disclaim any liability which may arise as a result of a reader relying upon contents of this publication. Opinions expressed in the articles do not necessarily reflect the views of Noia.

Material from this publication may not be reproduced without written permission from Noia.

Letters and guest articles are welcomed. Submissions must be signed and include your address and telephone number. Noia reserves the right to reject or edit submissions.

Canada Post Publications Mail Agreement 42407516

Contact Noia:

www.noia.ca | noia@noia.ca

Box 44, Suite 606, Atlantic Place, 215 Water Street

St. John's, NL, Canada A1C 6C9

Contents

4 CEO CORNER

INDUSTRY NEWS

6 Imagine the Potential: Noia launches public information campaign

10 Newfoundland and Labrador steps out into the deep

INSIDE CONFERENCE

13 Nalcor unveils 'monster' prospect at conference

15 Regulatory efficiency key to competitive, sustainable industry

20 'Innovate or Die' say conference speakers

27 Subsea standardization, technologies improving field economic viability

INDUSTRY PROFILE

31 Stewart McKelvey celebrates 30 years with Noia

IN BRIEF

34 CAPP launches marketing campaign



Noia CEO Charlene Johnson

CEO Corner

Noia has been extremely busy, with the coming months certainly looking as though they will be even busier. In June, Noia hosted what many have referred to as our most successful Oil & Gas Conference yet. Through a strong program of speakers who attract national attention, the impact of our industry and its importance to the national economy was clearly demonstrated. While the focal point of our offshore may be Newfoundland and Labrador, it truly is a nation building industry that touches Canadians from coast to coast to coast.

In that context, I was proud to present at our conference, and recently at Offshore Northern Seas in Stavanger, Norway, to highlight the tremendous potential of our offshore oil & gas industry as studied by David Campbell, the former chief economist for the Government of New Brunswick. Using data available through public sources and the targets of Advance 2030, he provided an impressive look at the potential for our province and country.

We have the potential to have over 78,000 jobs created in Canada because of Newfoundland and Labrador's offshore oil & gas industry, with 56,000 of those in Newfoundland and Labrador. Noteworthy components of the study highlighted that to support the growth in our industry it is anticipated approximately 4,000 additional engineering and construction jobs will be needed in our province, along with 1,000 teachers and counsellors and 1,000 restaurant employees.

In order to reach the milestones indicated by the economic study, \$37 billion in new capital expenditure will be required, providing tremendous opportunities for Noia members. In 2033, labour income in Newfoundland and Labrador is projected to be \$4.6 billion – up from \$1.99 billion – with \$3.5 billion in consumer spending,

a rise of \$2 billion. In Canada, labour income is projected to be \$1.6 billion – up from \$750 million – and consumer spending will equal \$1.2 billion, an increase from \$550 million. By 2045, Newfoundland and Labrador is anticipated to receive over \$100 billion in royalties and taxes.

These are impressive numbers and Noia will be providing further information when the final report is complete. Noia is also organizing awareness days with key influencers in both Ottawa and Newfoundland and Labrador. Our goal is to share this information so that everyone understands the value of our industry. Further information is also available in this edition of Noia News. Visit www.ImagineThePotential.ca and follow our social media feeds to keep updated.

Imagine the Potential is an important part of our advocacy plan for the coming months and we are also continuing to work on a variety of other issues that impact our industry. I feel our efforts are proving successful, particularly on issues such as marine protected areas and the Impact Assessment Agency, and we will continue to represent Noia members on these important topics.

We have gained momentum, yet much work remains to be done. Let's continue to work together to get our message out and ensure a strong and vibrant oil & gas industry for Newfoundland and Labrador and Canada.

Sincerely,

Charlene Johnson
Chief Executive Officer

We've been fully revitalized.
And we mean business.



Welcome to the newly renovated Delta St. John's.



Modern elegance in the
heart of downtown St. John's.

120 New Gower Street

Reservations: 1 888 79-DELTA or marriott.com/yytds



@deltahotelnl



@DeltaStJohnsHotel



deltahotelnl

D
DELTA
HOTELS
MARRIOTT

ST JOHN'S
CONFERENCE CENTRE



Noia CEO Charlene Johnson speaks to media following her keynote address.

Imagine the Potential: Noia launches public information campaign

We've been producing oil since 1997, but many residents of this province don't fully grasp the economic value of the industry.

To address that, Noia launched a new public awareness campaign, Imagine The Potential, at their 2018 Oil & Gas Conference.

"Those of us in this room know our resource potential," said Noia CEO Charlene Johnson. "But what about the rest of the province? What about our decision makers? We asked Corporate Research Associates (CRA) to help us understand what people know about the oil & gas sector in Newfoundland. They found that 88 per cent of our people support the oil & gas industry, which Don Mills of CRA says is truly a significant number. It indicates that our industry enjoys broad social licence based on its track record to date. We need to maintain this momentum of support because, as you heard this week, there is a potential threat to our industry."

The CRA data also found – perhaps not surprisingly – that the public does not altogether understand the economic value of the industry.

"We knew we had to do something about this," Johnson said. "During a recent meeting with Jim Irving, he told me about the Ships Start Here campaign, to create a movement about the largest ship procurement in the country. He said you have to win based on merit, but

community support goes a long way... and from there our campaign took shape – with thanks to financial and in-kind support from Mr. Irving and Atlantic Towing.”

Noia contracted Jupia Consultants, led by David Campbell – the former chief economist for the province of New Brunswick – to conduct economic research to help build the campaign. Campbell was asked to run a forecasting model based on the province’s Advance 2030 Plan for Growth in the Newfoundland and Labrador Oil & Gas Industry target of 650,000 barrels of oil per day.

“We never could have imagined what we discovered,” Johnson said, describing a future industry that directly employs 56,000 people, while spinning off thousands of other opportunities for the people of Newfoundland and Labrador.

Visit www.imaginethepotential.ca to find out more and check the sidebar to see how you can get involved.

During the Noia conference, several other voices directly referenced the need for greater public awareness of the critical role the oil & gas industry plays in the provincial and national economy.

Get involved!

Every Noia member – and their employees, suppliers, friends and relatives – has a role to play in the Imagine The Potential campaign. We all have a voice and a platform to use it.

Please get involved! Here’s how:

- Go to www.imaginethepotential.ca.
- Enter your email address to join the campaign and receive updates.
- Download the fact sheets and get up to speed.
- Share the “Did You Know” facts on Twitter and Facebook.
- Share www.imaginethepotential.ca on social media.
- Talk about the oil & gas industry to family, friends, associates, politicians... everyone!



Dedicated to helping your
business succeed

Whether you need advice on tax planning,
managing cash flow or strengthening
your operations, our St. John’s office
is ready to help.

Let’s start the conversation.

kpmg.ca/enterprise

©2018 KPMG LLP, a Canadian limited liability partnership and a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative (“KPMG International”), a Swiss entity. All rights reserved. 21234

The value of Newfoundland and Labrador's industry



**\$4.6 billion in
labour income**

**\$3.5 billion in
consumer spending**



**\$1.6 billion worth of
labour income**

**\$1.2 billion worth
of consumer spending**



As of 2033, as stated by Jupia Consultants' forecasting model

Deborah Yedlin, business & energy columnist with the Calgary Herald, stated energy literacy is a major societal hurdle that must be addressed. She said a 2012 University of Calgary study found major gaps in public understanding of how oil & gas is produced, environmental reliability and where the energy comes from that we use in our homes.

"A portion of this literacy gap sits on the shoulders of the energy sector itself... the energy sector has been really good at communicating, but only to two constituents: the buy side and the sell side. The rest of the stakeholders – employees, indigenous communities, municipalities, other governments – really didn't matter..."

"I would argue that this lack of communication and thus the literacy gap is one of the factors that caused the federal government to overhaul the agencies overseeing the development of Canada's oil & gas resource."

Newfoundland and Labrador Premier Dwight Ball said there is a need for better knowledge of the province's oil & gas sector – both here and around the world.

"There is a great message to be told in Newfoundland and Labrador about the work we are doing in the oil & gas industry under some very difficult conditions offshore, but we must also continue to tell the story to the world until the world listens, about the great opportunities that we have in our province. We will do that and we will do that with your support. Never let it be lost on anyone of us in this room the importance of the oil & gas sector to our economy."

Jim Irving, of J.D. Irving Limited, also spoke of the need for greater public awareness of the oil & gas industry.

"The province has had great success in the offshore, but we can't be complacent. We can't take for granted that somebody else will be our advocate for a strengthened offshore. Every voice counts... Noia needs you to be an active partner to make sure that these offshore efforts and the communication of them continues to move forward..."

"We need everybody here today to carry the message. Lend your voice and your resources to strengthen Noia's outreach on this important subject." ■

SHIPPING TO NEWFOUNDLAND & LABRADOR.

**RELIABLE SERVICE YOU CAN COUNT ON
FOR ALL YOUR TRANSPORTATION NEEDS!**

Contact us at: www.oceanex.com or 1-888-875-9595

Canadian Maritime **CME** Engineering



National Leader in Custom Engineering and Industrial Services



877-468-1888

www.cmelimited.com

Marine Solutions

Industrial Solutions

Quality, Safety & Environment

We are a multi-faceted organization that has been providing a comprehensive range of services for the Oil & Gas, Marine, Energy and Industrial sectors for over 30 years. A custom solution provider for engineering, large capacity & onsite machining, specialty coatings, metal fabrication, marine vessel construction, process piping, pressure vessels and tanks. CME's sister company Allerion Oilfield Services provides state-of-the-art Oil Field tank inspection, cleaning, and waste disposal services.

We have you covered Coast to Coast ⚓



Equinor's conceptual design of a potential FPSO to service the Bay du Nord development.

Newfoundland and Labrador steps out **into the deep**

Local oil & gas industry representatives and other interested parties gathered at the ALT Hotel in downtown St. John's on July 26 to hear Newfoundland and Labrador Premier Dwight Ball announce that the province was taking its first step into a new frontier – deepwater petroleum production.

Premier Ball was joined at the announcement by Natural Resources Minister Siobhan Coady, Equinor's Unni Fjaer and Husky Energy's Trevor Pritchard.

Equinor will operate the Bay du Nord Project – located in the Flemish Pass Basin, 500 kilometres offshore in 1200-metre deep water – with partner Husky Energy. Newfoundland and Labrador has taken a 10 per cent equity stake in the project.

"Today marks the global recognition of Newfoundland and Labrador as a preferred location for deepwater production. Equinor and Husky's commitment and investment in this project highlights the attractiveness of our industry and the potential that exists within this province in our offshore," said Premier Ball. "With today's announcement, we take our first step into the new frontier, we mark a new era of deepwater

exploration, as well as the opening of a new basin – the Flemish Pass. The future of our offshore begins today.”

Discovered in 2013, the Bay du Nord Project is expected to be sanctioned in 2020, with first oil expected in 2025. With reserves of nearly 300 million barrels of oil, it is the first remote, deepwater project in the province’s offshore. It opens a new basin – the Flemish Pass – and is the first project to be negotiated under Newfoundland and Labrador’s generic oil royalty regulations.

The project will generate more than \$14 billion in economic activity (in 2017 dollars) and contribute an estimated \$3.5 billion in government revenues from royalties, taxes and equity.

Local industry benefits coming from the development include:

- an estimated 5,000 metric tonnes of in-province fabrication which will include subsea, topsides and suction anchors for moorings;
- a multi-million dollar investment in a large scale steel roller to build local fabrication capability;
- additional engineering and fabrication opportunities available for competitive bid;
- a minimum of \$75 million in R&D and education & training expenditures will be made over 10 years to position the province as a deepwater centre of excellence in subsea technology, digitalization, renewable energy solutions and ocean innovation;

- establishment of an integrated operations centre in Newfoundland and Labrador with up to 50 people in support of operations, engineering, maintenance, logistics, health, safety and environment, information technology and other support personnel;
- a supply and service opportunities forum with dedicated resources and an annual work plan of activities that supports the identification of business opportunities, fosters operator-supplier collaboration, and focuses on global competitiveness;
- a gender equity and diversity program designed to address employment equity, implement proactive programs and practices, and promote accountability and responsibility for gender equity and diversity for all phases of the project.

Anticipated employment benefits include in-province employment of 22.3 million person hours (approximately 11,000 person years – 84 per cent of total project employment) over the life of the project. This includes:

- Four million person hours in pre-development and development phases, including 1.7 million person hours of engineering, project management and procurement work.

Within these four million hours, at least 90 per cent of project management (not less than 320,000 person hours), at least 90 per cent of procurement management (not less than 280,000 person hours) and at least 51 per cent of pre-development and development engineering – with a focus on subsea



EAST CAN TRANSPORT SERVICES LTD.

Equipment includes open and covered dropdeck trailers. Providing professional service with a personal touch.

"Who Can? - East Can!"

For more information or rates please contact Glen Dowden at 722-1991 or glen.dowden@eastcantrans.com

NL owned; fully licenced & insured to transport general freight and equipment throughout Canada, as well as to and from the U.S.

engineering (not less than 1.1 million person hours) – will take place in-province;

- 5.2 million person hours for drilling and completions, with at least 90 per cent of engineering and execution of drilling and completions taking place in-province;
- 1.1 million person hours for a Baccalieu subsea tieback;
- 12 million person hours for operations (substantially all onshore and offshore operations phase employment), including engineering, maintenance, logistics, research and development and support functions.

The July announcement came on the heels of Noia's June Oil & Gas Conference, where delegates heard Equinor's Unni Fjaer state that a project description for an environmental assessment had been filed with the Canadian Environmental Assessment Agency for a potential development project at Bay du Nord.

At that time, Fjaer told conference-goers that, although the project was in its early stages, an FPSO would likely be used for production should a decision be made to proceed.

"Because of the water depth in the Flemish Pass Basin, we know that the production installation would need to be a floating installation, and as you can see from the slide behind me, an FPSO is the option that is best suited for this environment," she said.

The referenced FPSO can be seen on the first page of this article.

Fjaer said the estimated 300 million barrels of recoverable reserves includes volumes from the nearby Bay de Verde and Baccalieu discoveries and that, should the decision be made to proceed, they are currently working towards first oil as early as the mid 2020s.

She cautioned, however, that it's critical that Bay du Nord be competitive within Equinor's global portfolio.

"Being competitive enables the best chance of success that we will continue to progress this opportunity." ■

Whether in St. John's or Argentina, the clear choice is A. Harvey.

Argentia Freezers and Terminals is A. Harvey's full-service marine logistics and cargo management facility – just a bay away from our Marine Base in St. John's.

ARGENTIA AT A GLANCE:

- Ideal location for subsea construction, project cargo, and marshalling yard operations
- 600m of docking facilities with up to 11m draught
- 100 acres of secured port land

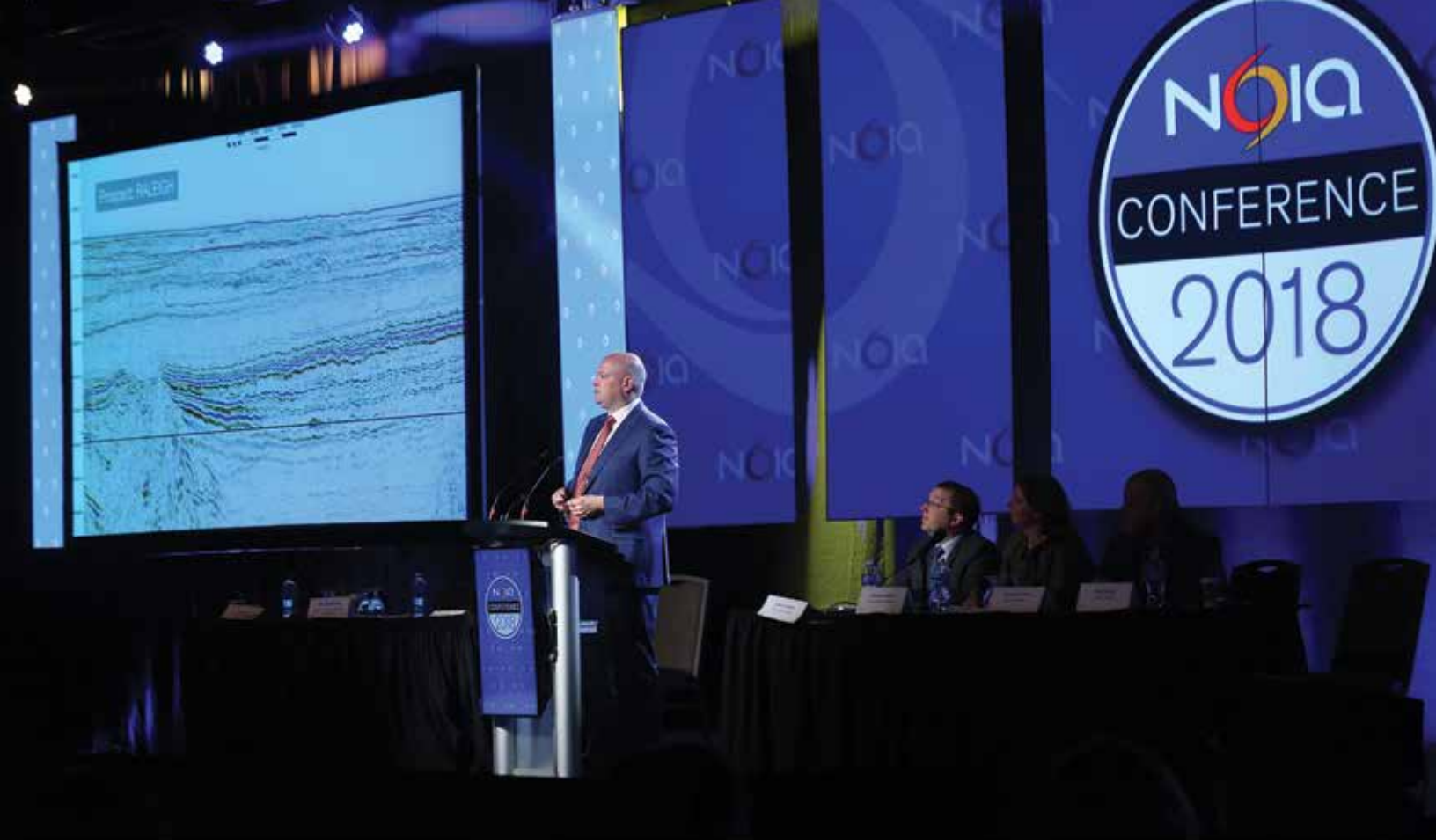


**OFFSHORE
MARINE BASE**

**ARGENTIA FREEZERS &
TERMINALS**

- Offshore & Marine Logistics
- Marshalling Yard Services
- Stevedoring

www.aharvey.com



Jim Keating explains the significance of the offshore Raleigh prospect

Nalcor unveils 'monster' prospect at conference

The prospects for major discoveries in the Newfoundland and Labrador offshore just got even better.

Jim Keating, Nalcor's executive vice president for offshore development and corporate services, dropped some big news during his Noia conference presentation. He provided an update on Nalcor's \$100 million investment to date in geo-scientific data acquisition, then moved to a slide that, to the uninitiated, might have resembled a stack of pancakes covered in candy sprinkles. But for those who know to read seismic images, it was a sweet sight indeed.

"This is the Raleigh prospect," Keating said. "I know what you're thinking. You think you're looking at an upper cretaceous stacked, multi-layered, fan structure. Yes, it's a big one or else it wouldn't make the top 10 list at Nalcor. This prospect is in the 2018 license round. It is a classic structure, the type which industry looks for these days... big elephants."

The prospect covers an area of about 300 square kilometers, Keating said.

"To put that into perspective, Hibernia is about 150 square kilometers. The feature that we are interested in here is that it's stacked. It's not so much a resource that goes outwards, like Cape Freels – [which is] a big fan; this

INSIDE CONFERENCE | Nalcor unveils 'monster' prospect at conference

resource is stacked. We'll know when we drill, of course, and that makes this one interesting."

Keating pointed out that Raleigh is only one of 650 leads and prospects in the province's offshore and a number of them are quite significant.

"There are a couple of dozen true monster-type prospects. Of course, not all of them will have commercial oil & gas quantities. We'll drill and invariably will be disappointed in a few. But invariably, some will have commercial quantities of hydrocarbons in them. It's almost a geological certainty when you look at the 650 prospects we have in our database today. And those 650 prospects are all drillable."


Norway has drilled almost 1,400 exploration wells into prospects over the last 30 years, Keating said, and the United Kingdom has drilled close to 4,000.

"So, to think that 650 wells can't ultimately be drilled here might be true if you're a pessimist. But if any of those prospects are truly what we believe and hope them to


be... the likelihood of us getting to 650 at some point is a real one. But patience is what we need."

Keating couldn't comment further on the Raleigh prospect due to commercial sensitivities. However, Nalcor did provide some background information.

"Seabed cores coupled with the new 3D seismic data collected in the Orphan Basin have provided scientific evidence of active petroleum systems in the bid area," the spokesperson said. "Multiple structures have been identified, including a previously untested play type for this area – a material scale play type that has yielded discoveries in similar basins globally. A number of leads and prospects have been identified. One lead, in particular, that Nalcor Oil and Gas has named, Raleigh, is showing encouraging signs at this early stage of evaluation. Ongoing technical work is defining the nature and extent of the findings and further details will be released in the independent resource assessment covering the 2018 license round areas. This year's assessment will be issued publicly in Q3, in advance of the bids closing in November." ■







The image shows a large red and yellow tugboat, the Atlantic Assistel, docked in front of a colorful, multi-story town. The ship has "ATLANTIC ASSISTEL" and "VS 4622 CD 1678" written on its side. A yellow "RESCUE ZONE" sign is visible on the side of the ship.


ATLANTIC TOWING
atlantictowing.com

Atlantic Towing brings world-class support to offshore oil & gas development in Canada and abroad, and is a proud member of JDI Transportation and Logistics.

CAPABLE, RELIABLE, FLEXIBLE –
that's the Atlantic Towing Advantage.

 **JDI Integrated Logistics, Connecting Customers to the World®**



Jim Irving of J.D. Irving Ltd.

Regulatory efficiency key to competitive, sustainable industry

There were some upbeat messages delivered at Noia's 2018 Oil & Gas Conference, themed *Redefining Oil: The Time is Now*.

The room was buzzing about potential for new discoveries in our offshore – including the new Raleigh prospect that will be up for bids in the 2018 license round; one of approximately 650 leads in our offshore – and the fact that a Fraser Institute survey of petroleum industry executives has rated this province as the fourth most attractive region in the world for petroleum investment.

Newfoundland and Labrador's oil & gas industry has had a significant impact on the economic well-being of this province. The province's GDP was, on average, \$10 billion per year higher between 2006-2014 because of petroleum development and production activities and generated almost 36 per cent of the province's GDP at peak production.

Noia CEO Charlene Johnson, in her conference keynote address, outlined its growth potential. She told gathered delegates that by 2033, our oil & gas industry has the potential to generate, for this province, \$37 billion in new capital investment, \$6.6 billion in taxes and royalties

(up from the current \$1.5 billion) and up to 56,000 jobs – an increase of more than 25 per cent from the current 23,500.

But, she stated, "None of this matters if a positive business climate doesn't exist with clarity and certainty."

A number of conference speakers referenced the local industry's need to be more globally competitive, identifying obstacles that stand in the way of future success and offering suggestions on how to mitigate them. Many emphasized the impact that regulatory efficiency has on future development.

Ambitions jeopardized by regulatory instability

Newfoundland and Labrador Premier Dwight Ball noted the significant impact the oil & gas industry has had on the province and country and said shorter timelines from discovery to production, as well as increased exploration, are needed to realize the province's long-term ambitions.

Our long-term ambitions will not be achieved, however, in the absence of a stable regulatory environment.

What are the province's long-term ambitions?

Advance 2030 is the provincial government's plan to grow the oil & gas industry. It was developed by the provincially-appointed Oil & Gas Industry Development Council in collaboration with other industry stakeholders. The Council is chaired by the natural resources minister and includes representatives of Noia, CAPP and individuals with a strong affiliation with the local industry.

Advance 2030 envisions an industry that has:

- over 100 new exploration wells drilled
- multiple basins producing over 650,000 boe/d from new and existing projects, including tie-backs
- shortened time from prospectivity to production
- sustainable operations phase direct employment of more than 7,500 people
- a robust, innovative global supply and service sector
- commercial gas production
- renewables in oil & gas integrated in a world-class energy cluster

"We know that we have lots of great projects and lots of great leads for commercial development, but what does that all mean if indeed we put ourselves through a very exhaustive, complicated, long, enduring regulatory regime?"

However, the premier said the issue of federal regulation of the province's offshore is moving toward a resolution that should be favourable for the province.

"We have made some significant gains, recognizing now that the federal government sees the role that the C-NLOPB should and would need to play in future developments as we work our way through the regulatory regime."

Great resource potential could be hindered

While bringing a message of optimism about Newfoundland and Labrador's prospectivity, Nalcor Energy's Executive Vice President, Offshore Development and Corporate Services, Jim Keating, cautioned that regulatory certainty is needed.

"We still need to deal with these long approval times – three years to run through a drilling approval process is way too long," Keating said. "So while I, my team at Nalcor and our partners have addressed all of the science that we can possibly get our hands on, we're faced with challenges that are now human made."

Jim Irving, Co-CEO, JD Irving Limited, echoed these sentiments in his conference keynote address.

"Today, three of the five Newfoundland and Labrador exploratory permits in process have passed the 600-day mark and counting," he said. "This is



The advertisement features a background image of an offshore oil rig and a supply vessel at sea. The text is arranged in a clean, professional layout. On the left, the headline 'Complete asset life cycle solutions' is prominently displayed. Below it, the website 'woodplc.com' is listed. On the right side, a list of services is provided, each preceded by a right-pointing chevron. The Wood PLC logo, consisting of the word 'wood.' in a bold, lowercase sans-serif font, is positioned in the bottom right corner.

Complete asset life cycle solutions

woodplc.com

- > Project & Modifications
- > Operations & Maintenance
- > Decommissioning
- > Asset Integrity
- > Subsea Systems
- > Automation & Control
- > Environment and Infrastructure

wood.



Former Saskatchewan Premier Brad Wall (L) and Newfoundland and Labrador Premier Dwight Ball spoke to delegates on the first day of Noia's 2018 conference

for an exploratory [well] that takes approximately 100 days to complete but costs between \$50 and \$100 million..."

Irving also noted that "Canada is competing against 160 oil & gas producing countries in the world, so we need to be efficient. Regulations cannot operate in isolation from what it takes to compete globally."

Irving said capital investment in the oil & gas sector increased globally in 2017 but was down in Canada. Total capital spending on Canadian oil and natural gas was down 19 per cent from 2016 and down 46 per cent from 2014. By comparison, U.S. spending increased by 38 per cent.

He pointed out that Canada ranks last of all the advanced economies when it comes to the burden of government regulations and the efficiency of government spending, according to a recent global competitiveness report by the World Economic Forum.

As well, the country is number 34 out of 35 OECD countries in time consumed by regulatory approval. Under *Canadian Environmental Assessment Act, 2012* regulations it has taken on average 2.5 years from the time an environmental assessment commences, to obtaining an exploration authorization. In theory, an environmental assessment conducted by the federal agency must be completed within 365 days, but the clock stops when requests for information and studies occur.

Irving said many processes could be streamlined. For example, a regional impact assessment focused on shortening the permitting process for offshore oil & gas activities, while maintaining rigorous environmental standards, would go a long way to supporting future development.

"In an ideal world the work would result in a fast track process for operators who have a proven history and are committed to environmental

What is Bill C-69?

Bill C-69 is proposed federal legislation which repeals the *Canadian Environmental Assessment Act, 2012* (CEAA 2012). It names a new Impact Assessment Agency (IAA) to replace the Canadian Environmental Assessment Agency and replaces the National Energy Board with a new body, the Canadian Energy Regulator (CER).

Noia is concerned that a number of regulatory changes within the new legislation could negatively impact the industry through changes to the authority and processes of the current offshore regulator, the Canada – Newfoundland and Labrador Offshore Petroleum Board (C-NLOPB). The C-NLOPB was enshrined in the Atlantic Accord Acts and gave Newfoundland and Labrador equality with the federal government in the joint management of its offshore resources.

Natural resources minister provides update on Bill C-69 efforts

In her Day Two opening keynote address, Siobhan Coady, provincial minister of natural resources, outlined how the provincial government has been working to have its concerns heard regarding the federal government's proposed changes to the *Canadian Environmental Assessment Act, 2012* – specifically Bill C-69 – which is currently before the House of Commons.

The Atlantic Canada Roundtable on Offshore Competitiveness, of which Newfoundland and Labrador is a member, has been dedicating a lot of attention to these proposed changes.

"We are diligent in our efforts to ensure that bill reflects the commitments made to this province and the industry upon its introduction, including less ambiguity on timelines, clarity on the role of the Canada-Newfoundland and Labrador Offshore Petroleum Board and commitment to the regional environmental assessment process," the minister said.

"We must be globally competitive, and environmental processes, as well as the timelines, must reflect that reality."

Coady said the province has been clear on the expectation that exploratory wells, geophysical and geological surveys must be exempt from the project list requiring environmental assessment.

She noted that all major development projects have undergone extensive panel review level environmental assessment, while a vast array of information about the environmental affects of oil & gas activity already exists due to ongoing monitoring and assessment programs by federal departments such as Fisheries and Oceans.

"This information must be fully leveraged in all future impact assessment activities, regardless of the size of the project, to ensure that there's not a duplication of effort and cost gathering information that already exists, adding unnecessary time to the overall assessment approvals process," she said.

Coady noted that discussions between the federal government, provincial government and the Canada-Newfoundland and Labrador Offshore Petroleum board (C-NLOPB) have also been ongoing to develop a regional assessment process in the offshore area. The intent of a regional assessment is to gather evidence-based knowledge on the potential effects of existing or future physical activities in a defined offshore area. The objective would be to identify mitigation measures to allow for the exclusion of exploration drilling projects from the project list. Once completed, she said applications for exploratory wells should be subject to approval and authorization by the C-NLOPB.

Coady expressed optimism that the federal government is listening. She quoted the province's federal minister, Seamus O'Regan, who said in a video statement: "We will not rest until we're the most competitive jurisdiction in the world."

"That's a strong commitment to work together and get things right and I think we should hold each other to it," Coady said.

performance, public engagement, safety and innovation," Irving said.

Irving said Bill C-69 could double the timeline for an exploration permit, causing erosion of investment in Canada's oil & gas projects.

"We are advocating for outcome-based policy that ensures health, safety and environmental performance, not red tape prescriptions. We want policies that align with global best practices and avoid duplication and expense. As well, predictable policies that allow industry to plan long-term with cost and outcomes certainty."

Education, advocacy and increasing attractiveness

Former Saskatchewan premier, Brad Wall, gave an impassioned luncheon address where he implored the industry to educate the country about the oil & gas industry's importance, but warned that regulatory matters such as carbon taxes, rig intake issues, marine protected areas and Bill C-69 have created an un-level playing field, particularly between Canada and the United States.

Wall said governments can and will change positions if presented with the cause to do so from their voters or if they come to the conclusion that it's better policy.

"I encourage you to get involved. Don't be afraid of bold campaign objectives that should first be about changing government policy and, if need be, then maybe changing the government."

Calgary Herald business columnist and incoming University of Calgary chancellor, Deborah Yedlin, acknowledged the strengths of Newfoundland and Labrador's offshore industry, including prospectivity, light

crude, established infrastructure, access to tidewater, a government keen on attracting investment and a supportive population.

She also noted its challenges.

"Norway's development cycle from discovery to first oil is 13 years. Here it's 24. No wonder dollars are going elsewhere. 24 years would stretch the patience of even Warren Buffett.

"Where Norway has 80 fields operating, there are four in Newfoundland and Labrador, and those are old discoveries. While the resource potential is huge, there are only a handful of players in the world who have the pockets and the knowledge to develop these opportunities. An inefficient or ineffective regulatory process can take a project from being feasible to being entirely infeasible.

"The super-majors needed to develop this east coast resource have plenty of options – about 160 jurisdictions to be exact – which means we need to figure out how to make this part of the energy sector an attractive place to invest... Industry, government and regulators need to work together to decrease

regulatory burdens and timelines, and sometimes that means taking a risk."

Yedlin said that innovation and collaboration need to be leveraged to re-ignite long-term capital investments in the Newfoundland and Labrador energy sector.

"And I'm talking about collaboration within industry, government, post secondary institutions – to accelerate advancement of technologies – and with First Nations. Projects need to be economic and competitive at current and potentially declining energy prices.

"The world's oil reserves are declining by the equivalent of one North Sea a day – three million barrels a day – because of the lack of long-term investment and growing demand.

"Canada can play an important role in providing stability in this volatile environment, but competitiveness is key – that means technology, infrastructure, clarity in the regulatory process and an end to regulatory delays. It also means an attractive fiscal construct. Like it or not, life takes energy and the world needs Canada's energy." ■





Knut Engebretsen

‘Innovate or Die’ say conference speakers

Innovation and collaboration were key themes at this year's conference, as the oil & gas industry looks to increase efficiency and competitiveness.

Stephen Henley, moderator of a panel discussion on the subject, said many industry surveys have noted that the most innovative companies collaborate far more than the least innovative. He also noted that innovation is more than just research and development (R&D).

"It's also commercialization and adoption of new technologies, business systems and approaches."

Innovation and collaboration panel

Phil Simons, senior vice president of projects and operations with Subsea 7 and chair of the U.K. Efficiency Task Force (ETF), began the panel discussion by presenting the findings of the ETF.

The task force brought together operators, tier one contractors, small SMEs, the U.K. government and the Oil & Gas Authority, with a key focus on improving business processes through sharing and collaboration. Simons said change is needed to ensure the maturing U.K. continental shelf remains competitive.

"This isn't optional," he noted. "This is mandatory if we are to survive in the long term."

Simons said there has also been a focus on standardization and simplification, particularly in the areas of subsea tiebacks, subsea developments and engineered products. He added that a cooperative culture and new contracting behaviours are also needed, pointing to some North Sea models that have shown huge upsides for both the operator and supply chain. Finally, Simons said there is a need to increase innovation and new technology, noting that the industry has traditionally been very risk averse.

"I hate to hear, 'That's the way we always do it.' The way we always did it isn't sustainable anymore. The future is something completely different."

Gordon MacIntosh, Newfoundland and Labrador's deputy minister of natural resources, told the audience the province is a fantastic environment for innovation. He said it's important to focus on SMEs and commercializing R&D.

"Newfoundland and Labrador has been identified as one of the best places in the world to innovate," MacIntosh explained. "We need to speak more about

that and the opportunities here. We should look at the opportunity that exists to develop this as a future hub, especially for subsea."

He further explained that innovation is a key element of the provincial government's Advance 2030 strategy to develop the oil & gas industry. Immediate action includes the development of a blueprint for innovation, which includes a digitalization strategy. This will look at areas such as data analytics, machine learning, robotics and artificial intelligence (AI). These could benefit the oil & gas industry through digital remote operations, improved subsea technology, increased automation and cost reductions.

"We have fantastic prospectivity. We need to be world-class, competitive, innovative and cost-effective."

Joy Romero, vice president of technology and innovation with Canadian Natural Resources Ltd., continued the panel discussion with information about the work of the Clean Resource Innovation Network (CRIN) and the need to ensure that Canada is the energy supplier of choice to meet global demand. Romero emphasized that all forms

of energy will be needed for a long time, so Canada needs to ensure long-term exhaustion of its carbon resources.

"We are the global leader in clean energy production from source to end use," Romero said. "Solutions to today's energy challenges require the entire innovation system and how the pieces fit together."

She said most people are unaware that the oil & gas industry is a leader in developing clean technology.

"Of the \$2 billion spent on clean tech in Canada in 2016, \$1.65 billion of that was spent by the oil & gas industry. We are the implementers, we are the adopters, we are the ones who commercialize clean tech."

Romero said people have the impression that we don't want to innovate, but low oil prices for longer have spurred innovation.

"If you're not innovating, you're dead," she stated. "Innovation is the basis of who we are. A culture of innovation means that we shouldn't do the same thing twice but do the right thing for the job."

Trusted. Preferred. Experienced.

Everyday, Newfoundland and Labrador's offshore oil and gas industry trusts us with their materials and equipment. We understand the importance of proper **material handling, storage and preservation** of materials destined for the harsh climate environment, while ensuring the highest standards of **safety and quality**.

Visit us online or **contact us** today to learn more.



709-726-7596 | warehouse@pfcollins.com | pfcollins.com





Deborah Yedlin

Industry awakens to the need for Innovation

Deborah Yedlin, Calgary Herald business columnist and chancellor of the University of Calgary, expressed similar sentiment about the need for the energy sector to innovate during her conference luncheon address.

She said a combination of unhappy investors, climate policy and low oil prices have contributed to an awakening of the energy sector when it comes to innovation.

She (like Romero) feels “innovate or die” is the new mantra in the oilpatch.

Yedlin cited several global examples of innovation in the energy sector.

Italian oil & gas company Eni recently brought on the deepwater Zohr gas field offshore Egypt in a record 2.5 years, in large part due to its investment in technology and computing power.

“Their high-speed computer is three times faster than Facebook’s fastest computer and twice as fast as NASA’s,” Yedlin said. “The computing power means faster, better modeling of reservoirs which decreases the time for development. Capturing data also allows for the optimizing of existing wells, refineries and pipelines.”

Elsewhere, Yedlin said Google has signed a deal with energy producer Total to develop AI for data analysis for exploration and production. The French company also has a robot called the Argonaut that can carry

out inspections on a North Sea platform. BP is also using robots to conduct inspections at its Cherry Point refinery in just one hour, saving 23 person-hours over the previous inspection process

Yedlin concluded by saying that innovation and collaboration need to be leveraged to reignite long-term capital investments in the energy sector.

“Projects need to be economic and competitive at current and potentially declining prices. Technology, data and innovation are central to making this happen.”

David McKay, chief surveyor with DNV GL – Oil & Gas, indicated that the industry is beginning to listen to the messages about the need to innovate. He cited DNV GL’s annual industry benchmark study, based on a global survey of 830 senior industry professionals, which found that R&D is set to increase globally, up 36 per cent compared to 14-15 per cent over the previous years. R&D priorities were identified as digitalization and cyber security, followed by subsea investment. Energy transition is also firmly in focus as 44 per cent of survey respondents said they are actively preparing for a transition to a lower carbon intensive energy mix.

“It’s fair to say, I think, that we’ve reached a digital tipping point.”

Innovative technologies

There were many conference presentations detailing innovative technologies under development and in use in the oil & gas industry.

Alan Clarke, CEO of Petroleum Research Newfoundland and Labrador (PRNL), presented on the goals of Canada's Ocean Supercluster. Clarke said the supercluster is interested in digital automated solutions, including efficiency boosting to maximize resources. Clarke explained that digitalization can also enable condition-based monitoring of assets, providing a better understanding of how they work and optimizing scheduled maintenance. Furthermore, digital twinning is ideal for understanding in real time how an asset is responding to the conditions around it.

"Digital mapping and characterization of our ocean environment is going to be very important to how we deploy these assets more effectively and understanding our resources and how we get them to market," Clarke said.

He stressed that the key to advancement is employing strong data and analytics.

"Data unto itself is just data. You need to take that and turn it into knowledge. When you have knowledge, you have power," Clarke explained. "We need to be able to challenge standards with data, and knowledge is how you overcome them and drive more efficiency in the organization and to the benefit of the industry as a whole."

Clarke said Canada's five recently-deployed superclusters can work together for the benefit of many industries.

"The goal for Canada is really digitalizing Canada – being able to understand what we have available and how we're going to go get it."

"[Italian energy company Eni's] high-speed computer is three times faster than Facebook's fastest computer and twice as fast as NASA's,"

- Deborah Yedlin

Karl Kenny, president and chief executive officer of Kraken Robotics Systems, explained some of the ways digitalization is transforming the oil & gas industry and other sectors. He said investments in digital technologies include big data and analytics, cloud computing, robotics, drones and AI.

Kenny explained some of the technology being used by Kraken, including its Synthetic Aperture Sonar (SAS), which uses extremely high-resolution sonar for mapping and imaging of the seabed. The SeaVision product is a 3D underwater laser imaging system that can be used to scan underwater assets to millimetric precision. It provides enhanced defect detection by applying data to corrosion for underwater assets. Data is stored in the cloud so it can be shared easily, and reports are generated automatically so the machine can predict when intervention or maintenance is needed in advance of a catastrophic event.



Allnorth

Onshore and Offshore Survey
2D & 3D Modeling Services
3D Laser Scanning High Definition Services
Dimensional Control Survey Services

2 Hunts Lane, St. John's NL
1-866-614-7200
allnorth.com



Phil Simons, Joy Romero

Kenny explained that moving to predictive analytics and AI is about lowering the cost of predictions.

"We do this by getting the highest resolution data into the machine to help it to learn."

Kenny said digitalization of the oilfield can improve the asset life cycle management sector using robots, predictive maintenance and cognitive computing. Robots will be key to helping reduce costs and keeping people out of harm's way.

"Robots are changing everything," he stated. "We believe robots are going to be a big deal and we believe that your industry is going to be looking at these types of machines to take on dull, dirty and dangerous tasks."

Kenny said major trends include smarter sensors and the emergence of Robotics as a Service (RaaS). Kenny said enhanced data is making oilfields smarter.

Sixty [to] seventy people are needed to do a structural campaign today," Kenny explained. "How do we do this better, faster, cheaper and with less people? Basically, it's using robots to acquire the data and using machine learning to analyze that data and improve accuracy and increase safety."

Brendan Hyland, founder and chairman of WFS Technologies, also discussed the impact of wireless technologies on subsea projects. He discussed the opportunity to extend the Internet of Things (IoT) and cloud computing to subsea operations by extending big data through water.

"Big data is key to reducing costs," Hyland said. "It can increase production efficiency, reduce inspection costs, extend asset life and lower field extension costs."

Hyland said his company has made substantial R&D investment to make radio systems work efficiently and effectively through water, seabeds and other challenging media. Its Seatooth technology can communicate through seawater and through the water boundary over

respectable range with a 30-year battery life.

He said no single technology is a silver bullet, but higher levels of automation are needed.

"There's a latent need in this industry to deploy many more sensors and devices and employ big data techniques to drive down costs and to drive up safety and efficiency and to deliver a level of stewardship within the industry that increases the

"Of the \$2 billion spent on clean tech in Canada in 2016, \$1.65 billion of that was spent by the oil & gas industry. We are the implementers, we are the adopters, we are the ones who commercialize clean tech."

- Joy Romero

level of confidence of the regulators and public with the assets we're working with."

Ottar Kristian Alme, head of digitalization for Kvaerner, expanded on the need for increased automation as he outlined the concept of a digitalization roadmap. He advocated for automated project setup, including automated engineering, digital lifecycle information, digital procurement, digital yard, robotics and digital project management.

He said the digital yard has had the biggest influence on the Kvaerner bottom line. The versatile platform, with 10-20,000 different sensors, also provides real time data to clients so they don't have to wait for monthly reports.

He further explained how automated jacket design has been advancing through the use of AI and machine learning, to give engineers a powerful tool to optimize design. Previous design times of one year have been reduced to hours.

"While using algorithms and massive computing power we can generate, analyze and rank various designs to find a viable solution," Alme said.

With the many discussions of digitalization, data analytics, robotics and overall simplification of projects, Knut Beck Engebretsen, study manager with Aker Solutions, further challenged conference delegates to imagine the potential of disruptive technologies.

He outlined the benefits of lean and unmanned FPSOs, particularly for harsh environments, and explained that lean FPSOs can be developed using simplified standard solutions for harsh environments. He went further, outlining the case for unmanned FPSOs where workers could "walk to work" from an adjacent standby vessel via a connecting walkway, eliminating the need for platform accommodations, among other things.

He said unmanned FPSOs need to minimize maintenance, which can be done through digitization of equipment and systems to support remote operation and minimum visits. These vessels would require more expensive equipment, but less of it.

"Think unmanned and add on what you need to support your operations."

Only pay for the speed you need... Dynamic Routing!

At Lynden, we understand that plans change but deadlines don't. That's why we proudly offer our exclusive Dynamic Routing system. Designed to work around your unique requirements, Dynamic Routing allows you to choose the mode of transportation — air, sea or land — to control the speed of your deliveries so they arrive just as they are needed. With Lynden you only pay for the speed you need!



www.lynden.com/lint 709-368-8678



Ottar Kristian Alme

Engebretsen concluded by saying that he believes the industry is ready to take FPSOs to the next level with HSE improvements because of the reduced human exposure, CAPEX savings by simplification and elimination and OPEX reductions from using campaign management and maintenance, where people can be working at home for most of the time supported by digital solutions.

Local operators look to innovative solutions

Operators presenting at this year's conference also emphasized the need for innovation and collaboration. Carman Mullins, president of ExxonMobil Canada, said the industry needs to be disruptive.

"That means moving away from our traditional ways of thinking and embracing innovative solutions. We think about innovation and new equipment and technology and new processes, but it's really about our people."

Steve Hogan, Suncor Energy's vice president of east coast operations, also spoke of the importance of innovation, noting that Suncor has been innovating for a long time as it operates in some of the harshest conditions in the world.

"Innovation is needed to stay relevant in the face of constant change," he said.

Hogan referenced some of the work being done to improve operational efficiency and reduce costs on the Grand Banks, particularly surrounding the potential for unexcavated drill centres.

"If we can safely develop without a glory hole needing to be done, we will lower the cost structure, we will lower the marginal field size that is required for development,



Knut Engebretsen

and I think there'll be more development, which means a stronger industry."

He also pointed to the collaboration and innovation at work in the industry. He said the company uses its global partnerships to bring best practices to Terra Nova, and also highlighted the ocean supercluster as a prime example of all stakeholders coming together to benefit the industry as a whole.

Uni Fjaer, Equinor Canada's vice president for offshore Newfoundland, also spoke of the need to apply new technology to support safe operations in remote and harsh environments.

Fjaer said digitalization is not only an enabler of efficiency, but also a means to enhance safety.

For example, a virtual dashboard on one of Equinor's platforms analyzes data and provides an overview of the platform's daily risk picture. She said digital technology can apply learning from incidents across the company, or elsewhere in the world, to acquire relevant information for ongoing activities.

Technology has also been used to reduce noise exposure for workers through a network of sensors that continuously provide real time information to help plan daily work on the Åsgard platform in the North Sea.

"Innovation and digitalization is about how we apply opportunities for a safer tomorrow."

As many speakers demonstrated, the need for innovation and collaboration are paramount.

"We have to drive the culture of technology and innovation adoption in our sector," Karl Kenny emphasized. "There is no turning back. If you don't innovate, you die." ■



Subsea standardization, technologies improving field economic viability

This year's Noia conference featured several experts in marginal field developments who discussed how technology and standardization can be used to increase project viability.

Alan Black, business unit director for Subsea 7, led off a technical session on this subject with a discussion of some of the findings of the Oil & Gas UK Efficiency Task Force (ETF) relating to subsea standardization guidelines. He said the task force had identified many areas of potential savings.

Black outlined the benefits realized by the Apache Callater project in the North Sea, which implemented recommendations of the ETF by utilizing a bundle solution for subsea development. This system incorporates all the structures, valve work, pipelines and control systems necessary to operate a field inside a carrier pipe which can be towed to the field and moored to the seabed location.

He noted that the Apache Callater field saw first oil 23 months after discovery and was finished ahead of schedule with a 10 per cent savings on budget. It was a step-out of the Steen Field which had been delivered by a bundle system, so standardization enabled its efficient development.

"They didn't need to go through a long FEED process again. Collaboration was key and they wanted a very lean team with no role overlap," Black explained. "The subsea bundle was close to 25 per cent savings so we truly did find savings through delivering what we call 'fit for purpose'."

Black added that some 81 such bundles have been used in the North Sea and work is being done to look at their possible use in East Coast Canada.

"It's a great story and something I hope we can expand here."

Brent Gable, customer standardization director with OneSubsea, also delivered a message about the benefits of standardization.

"Standardization is a mechanism to creating economic viability," Gable said.

Standardization is revolutionizing economic viability by delivering integrated systems that can achieve first oil faster, increase production and improve recovery to maximize the operator's return on investment, Gable told the audience.

He said the industry trend of increased project-specific requirements and component level complexity between 2003 and 2013 led to high variability in designs and significant oversight from project management and engineering. The result was the doubling of CAPEX cost per well and extended long cycle deliveries with little tangible value added to products. The 2014 drop in oil prices brought about a paradigm shift, making this business model completely unsustainable.

Gable pointed to the standardization of subsea trees as one example of industry collaboration in this area.

He explained that the International Association of Oil & Gas Producers (IOGP) Joint Industry Project 33 produced specification S561, which doesn't necessarily outline every critical detail of a subsea tree, but the basic functional requirements.

"This represents a culture shift in the industry to drive the acceptance of basic functional requirements and leverage industry standards everywhere else. The proof that this culture shift is having benefits in the industry is in the field-proven history of standard products."

How can Newfoundland and Labrador's offshore utilize standard products? Gable said the key is early engagement.

"Early engagement allows a holistic review of the supplier standards; it allows the operators to identify risks and it sometimes updates their general specifications to be accepting. In other instances, they find ways to deal with the risks. This allows for alignment and maximizes the value for more upcoming projects rather than just a single project."

Globally proven benefits of standard products include the improvement of safety performance, average cost and schedule reduction of up to 50 per cent compared to legacy project execution models, increased reliability and reduced life of field expenditures.

Standardization also reduces costs by enabling small project teams, reducing project management and engineering hours and streamlining the overall project schedule through minimized document reviews.

Gable said capital efficiency is maximized when standard, configurable products can seamlessly be integrated into a full production system.

"Standardization is the mechanism enabling operators and our industry to seize the opportunities of the challenging market conditions and is extending the envelope of economic viability," Gable said.

Technology to enhance viability

As well as standardization, several technologies were discussed as a means of increasing viability.



natural resources
OIL, GAS, MINING & ALTERNATIVE ENERGY IN ATLANTIC CANADA

YOUR GROWTH is our business

For 20 years, *Natural Resources Magazine* has shared Atlantic Canada's resource development stories with readers here in the region as well as across Canada and around the world.

From offshore oil and gas, to onshore mineral deposits, to innovative developments in alternative energy, to a world-class service and supply sector, to industry-focused post-secondary partnerships, we have proudly recorded Atlantic Canada's growth in this exciting sector. And with so many new developments on the horizon, we're just getting started.

To find out how you can share your story with the largest resource-specific audience in Atlantic Canada, contact a member of our sales team.

			
Hubert Hutton PUBLISHER	Tonia Sheridan VP NATIONAL SALES	Sharon Resky DIRECTOR OF SALES (N.S.)	Stéphane Picard DIRECTOR OF SALES (N.B.)
hhutton@atlanticbusinessmagazine.com 709.726-9300 ext. 101	tsheridan@atlanticbusinessmagazine.com 709.726-9300 ext. 102	sresky@atlanticbusinessmagazine.com 902.229.0798	spicard@atlanticbusinessmagazine.com 506.607.2429



Marginal Fields and Standardization technical session presenters (L-R) Mads Hjelmeland, Alan Black, moderator Murray Brown and, at podium, Jason Muise.

Jason Muise, managing director of TechnipFMC, outlined some insight gained from research into infield pipeline design and alternatives to excavated drill centres (EDCs). He said that although much focus is on deepwater development, there is still great potential in shallow water basins such as the Jeanne d'Arc.

"Technology will unlock opportunity," Muise stated. "Many reserves are not economical as stand-alone projects but could be viable with tiebacks. We need to challenge the costs of developments, update our technology and find opportunity."

With this in mind, TechnipFMC started a marginal field R&D program with C-CORE in 2015, with support from Innovate NL and ACOA. The research looked at the direct and indirect costs of icebergs to offshore developments.

Direct costs include pipeline trenching, the use of weak link systems (adding about \$10 million to a development) and the requirement for EDCs, which add \$30-50 million and one year to a project. Muise said

congested drill centres and the need for increased well bore length add further costs and drilling risk. In total, he said there is a \$16 per barrel penalty for Canadian developments associated with these added costs.

"This is real, this is significant and this is really prohibitive for our industry here in Newfoundland and Labrador."

"[With subsea boosting systems,] we've seen increases in production rates in the range of 30 to 100 per cent."

- Mads Hjelmeland

He said the work with C-CORE has focused on several key things, including reviewing the need to trench, trying to push the limit of trenching, eliminating or challenging the use of weak links and

challenging the requirement for EDCs. The research has yielded some interesting results on iceberg, soil and pipe interaction, which challenge the notion that contact equals failure.

"We found when looking at the nature of interaction with icebergs that two-thirds of the interactions were actually from free floating icebergs, so if you could theoretically exclude free floating icebergs you could nominally double your tieback distances before you'd have to think about trenching," Muise said.

HELPING WOMEN IN BUSINESS START. GROW. ADVANCE.



For more information please visit www.nlowe.org or call 709.754.5555

NLOWE
NORFOLK & LORRANE ORGANIZATION OF
WOMEN ENTREPRENEURS

A weak link assessment also showed that since there is no tension in the weak links, they may not always be needed.

Muise said the research further questions the need for EDCs. He pointed to the Bjarni development offshore Labrador, which used a pioneering silo solution. He said the possibility exists that this concrete casing could be an alternative to burying subsea equipment. C-CORE is currently testing a subsea iceberg protection structure (SIPS) to see how it absorbs energy from an iceberg.

Muise said the goal is to create a lean subsea production system for an ice environment. This would result in increased CAPEX but lower drilling cost because it is simpler and less risky, resulting in an improved internal rate of return. With no EDC costs prior to production and two concrete protection structures spaced evenly over the field instead of one EDC, he said the result could be a 30 per cent improved rate of return to the operator.

Muise said there is still work to be done, but the research shows the potential for optimizing subsea developments in eastern Canada.

"We hope that this work will continue and will truly become a collaborative effort."

Mads Hjelmeland, vice president of processing systems with One Subsea, expanded on the need for

technological solutions with his presentation on the case for a subsea factory. Hjelmeland pointed to the Snøhvit field tieback in Norway, a 140 kilometre tieback to beach, as an example of a whole subsea technology portfolio.

"Standardization is... revolutionizing economic viability by delivering integrated systems that can achieve first oil faster, increase production and improve recovery to maximize the operator's return on investment."

- Brent Gable

He said a subsea factory can increase recovery, accelerate production, reduce CAPEX, mitigate the need for new developments and reduce OPEX. He said it further enhances health, safety and environmental factors because it mitigates the transport of people offshore and reduces the amount of logistical operations offshore. It can also offer benefits of energy efficiency, making it a sustainable and low carbon option.

He further explained how subsea boosting systems increase recoverable amounts when natural production begins to decline. They can also accelerate production rate, enhancing the business case for a development.

"We've seen increases in production rates in the range of 30-100 per cent," Hjelmeland noted.

Pointing to successes such as the Dalmatian Field in the Gulf of Mexico, he said that these subsea processing technologies are qualified and available and should be considered for marginal fields around the world, including offshore Newfoundland and Labrador.

"The focus remains on reducing costs and making viable and robust business cases for field developments." ■



We approach recruitment like your future depends on it...
because it does.

Let us connect you. www.kbrs.ca





Bruce Grant, QC, senior partner with Stewart McKelvey's St. John's office

Stewart McKelvey celebrates 30 years with Noia

With a rich history in Atlantic Canada, Stewart McKelvey is being recognized for 30 years of Noia membership and service to the oil & gas industry. Since becoming the first regional law firm over 25 years ago, it has grown to become one of the 20 largest law firms in Canada, employing more than 200 lawyers and 300 staff within six offices in St. John's, Halifax, Saint John, Fredericton, Moncton and Charlottetown.

The company has a long history in the region. The original Newfoundland firm, Sterling Ryan, came through a merger of two St. John's firms, the oldest of which dates back to 1847. The current firm was created through a 1990 merger which brought together the largest law firms in each of the four Atlantic provinces at the time.

Bruce Grant, QC, senior partner with the St. John's office, said the decision to create a regional firm was a major shift in the legal community.

"It was a bold move at the time and we've found that most of our best decisions are bold decisions. That's something that we bring to the entrepreneurial mindset that most of our clients have."

Grant added that all of the firm's offices work collaboratively for the benefit of clients.

"We're all pulling on the oar in the same direction and it gives us a depth of expertise which is paramount to us."

One of Stewart McKelvey's many areas of specialty is the oil & gas industry.

"Historically, we've always had a strong expertise in the admiralty field and, of course, that has certainly come into play now with the offshore work," Grant said.

The firm's early oil & gas work in Newfoundland and Labrador involved litigation such as the Come By Chance Oil Refinery bankruptcy, the Ocean Ranger inquiry and the Hibernia constitutional reference. In the early days of the industry, Grant said many clients were in need of legal support to help with joint venturing as a means to break into the supply and service side of the industry. Over time, more companies entered into direct contractual arrangements.

The firm has acted for a number of the industry operators, including the Hibernia, Terra Nova and Hebron projects, as well as Newfoundland Transshipment Limited, the Canaport LNG facility and several tank farms in Atlantic Canada.

INDUSTRY PROFILE | Stewart McKelvey celebrates 30 years with Noia

Stewart McKelvey has also worked extensively in the areas of acquisitions, financing, chartering and sales of vessels.

More recently, Grant said technological development and innovation has become a focus for the firm.

"I think, for Newfoundland firms to prosper, we're going to have to start being exporters of that expertise, as well as just doing it here in our own backyard. And, in order to be able to service the clients at the highest level and in an ethical and efficient way, we've had to grow in all those areas with them."

Grant said Noia has been an important part of the region's oil & gas industry growth. His own involvement in Noia has provided him with valuable knowledge, as well as a way to give back to the industry which has helped shape his career.

"I've many times said I don't know what my legal practice would have looked like had we not had the oil & gas development off our coast," Grant said. "On a personal level and on a firm level, the whole development of the industry has been a real boon. I'd hate to think how dull my practice would have been without it these last 38 years."

Grant added that Noia serves an important role for the industry.

"Noia has been that voice that, sometimes, nobody else can be in regards to protecting and promoting the industry."

Grant said he always directs those looking to work in the oil & gas industry to Noia.

"It's all part of that philosophy that the firm has that we succeed when our clients succeed, so we want to make sure that we do everything to help them that we can."

Grant said a key to Stewart McKelvey's success is staying current and keeping ahead of trends. As such, it employs a chief innovation partner to find new and innovative ways to deliver the firm's services.

"We like to think that we're not just lawyers but also trusted advisors to our clients. To do that you have to have the industry knowledge, you have to be on top of the trends and you have to be innovative." ■

The Noia logo features the word "NOIA" in a stylized, bold, sans-serif font. The "O" is a large, orange circle with a white dot in the center, resembling an eye or a stylized letter.

FALL Seminar

November 14, 2018 • Delta St. John's Hotel



www.noia.ca

The advertisement for Unified Valve Group Ltd. features a vertical layout. At the top is the company logo, which consists of a stylized "U" and "V" in blue and red, followed by the text "UNIFIED VALVE GROUP LTD". Below the logo, the text "Chemical Injection Pumps, Pressure & Temperature Instrumentation, API/ANSI Valves" is displayed in bold, black font. Underneath this, the phrase "we have you covered" is written in a smaller, italicized font. Three small logos for "CHECKPOINT", "WGI", and "FIM INC." are shown in a row. Below these logos, the contact information "info@unifiedvalve.com 1.403.215.7800" and the website "www.unifiedvalve.com" are provided. The bottom half of the advertisement is a photograph of an offshore oil rig structure against a blue sky and sea.



SAVE
THE
DATE

CONFERENCE
2019

www.noiaconference.com

June 17-20, 2019
St. John's Convention Centre



Explore Noia's refined social channels



@NoiaNL



NoiaNL



NoiaNL

We're now in more places, talking
about all things offshore.

Make sure you're connected with us.
You don't want to miss out on all
the exciting news and events.

CAPP launches marketing campaign

The Canadian Association of Petroleum Producers (CAPP) has launched a new marketing campaign in Newfoundland and Labrador – www.keepNLcompetitive.ca. The goal of the campaign is to emphasize the need for collaboration and working together to help the industry succeed in the long term.

The site includes videos, infographics and articles related to competitiveness. Following each article site visitors are asked to show their support for a competitive oil & gas industry in Newfoundland and Labrador by signing up to CAPP's Energy Citizens program. Canada's Energy Citizens (CEC) is a movement of Canadians supporting Canada's oil & gas industry. CAPP will be promoting the CEC program in Newfoundland and Labrador at trade shows and conferences and encouraging industry employees and others to sign up at events throughout the year.

In recent years a layering of regulatory and policy changes have added cost and created inefficiency which is challenging the province's ability to remain competitive for investment internationally. Through this campaign and the CEC program, CAPP hopes to bring attention to these issues to encourage growth of the industry. ■



WHATEVER IT TAKES.

That's your attitude – and that's why you need a truck to match. With a range of brands and dealers across the province, we've got whatever you need.

Peter Moore (709) 726-6990 pmoore@hickmanmotors.ca hickmanchev.ca

**HICKMAN
AUTOMOTIVE
GROUP**

**CHEVROLET
BUSINESS
ELITE**



THANK YOU TO OUR SPONSORS

PLATINUM



GOLD



HORIZON MARITIME SERVICES LTD
HORIZON MARITIME OFFSHORE LTD



SILVER





THANK YOU TO OUR SPONSORS

BRONZE

KVERNER™



wood.



MCINNES
COOPER

USI Upstream
Solutions Inc.



RothLochston
SUBSEA

KEYNOTE LUNCHEON



Deloitte.

HOSPITALITY HOST





THANK YOU TO OUR SPONSORS

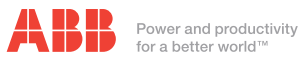
TECHNICAL



PANEL



GALA



GOLF



THANK YOU TO OUR SPONSORS

CART
SPONSOR



HOLE HOST
SPONSOR



LIVE BAND
SPONSOR



HOLE IN ONE
SPONSORS



HOLE
SPONSORS



SOCIAL
SPONSORS





PORT OF ARGENTINIA

Where Potential
Launches Opportunity



Premier heavy
industrial seaport

Construction site of
Husky CGS for West
White Rose project

3 km ice-free,
deep-water port

625 metres docking
facilities



Heavy lift capabilities

Special projects
laydown area

3000 acres of
developed
industrial lands



709 227 5502

portofargentinia.ca

Your onshore gateway
to offshore success.



THE PORT OF ST. JOHN'S
STRATEGIC | EXPERIENCED | KNOWLEDGEABLE
www.sjpa.com

