

**From:** [Sanderson, Melissa EMPR:EX](#)  
**To:** [Meggs, Geoff PREM:EX](#)  
**Cc:** [Wong, Tamarra PREM:EX](#)  
**Subject:** Hydraulic Fracturing science panel  
**Date:** Tuesday, March 13, 2018 1:13:25 PM  
**Attachments:** [NR-BG Hydraulic Fracturing Review Panel March 8 ADM.docx](#)  
[QA Hydraulic Fracturing Review March 8 ADM.docx](#)

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Hi Geoff,

Attached is both the news release, as well as the key messages in the Q&A document.

Melissa

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## NEWS RELEASE

For Immediate Release  
[release number]  
[Date]

Ministry of Energy, Mines and Petroleum  
Resources

### **Hydraulic Fracturing Scientific review panel announced**

VICTORIA – With the appointment of a panel to conduct a scientific review of hydraulic fracturing, British Columbia's government is taking action to ensure natural gas is extracted in a manner that is safe and environmentally responsible.

Energy, Mines and Petroleum Resources Minister Michelle Mungall has appointed three members to the panel, which consists of a hydrogeologist, a geological engineering professor and a geological engineer/geophysicist.

The appointment of the panel follows through on the government's commitment to conduct a science-based review of the hydraulic fracturing process. Specifically, the review will look at the role of hydraulic fracturing as it relates to induced seismicity and its impacts on water quantity and quality. It will also look into fugitive methane emissions that might be generated during the process of hydraulically fracturing a well.

"The protection of British Columbia's environment is a priority for our government. The review panel will evaluate scientific evidence and assess how our regulatory framework is addressing potential risks," said Minister Mungall. "The evidence we collect will be evaluated to ensure our regulations are appropriately addressing the commitment we made to keep operations safe and responsible."

The scientific review panel is responsible for hearing presentations and collecting scientific evidence from organizations and experts as well as traditional indigenous knowledge from First Nations. Information and evidence will be collected from academics, industry associations, northeast B.C. communities, Treaty 8 First Nations and environmental organizations. Ms. Nalaine Morin will provide advice to the panel on traditional indigenous knowledge.

The panel will compile all information obtained and provide findings and advice to the Minister before the end of the year.

#### **Quick Facts:**

- Hydraulic fracturing has been used in B.C. since the 1950s to extract natural gas.
- The process involves pumping water and sand into a gas well at a high pressure, causing small cracks to appear in the rock deep below the surface and releasing the natural gas trapped inside. Most of the activity in northeast B.C. happens at depth well below 1,500 metres.
- Hydraulic fracturing is only used for a week or two, when the well is first drilled. When completed, natural gas and fluids flow through the created fracture network to the wellbore and then to the surface, leaving some sand in place to hold open the newly created fractures. At the surface, water and other fluids are separated and the natural

gas is moved via pipelines for additional processing after which it generally enters the pipeline transmission systems for delivery to markets.

- The vast majority of B.C.'s natural gas resources are only accessible through the use of hydraulic fracturing.
- Technological developments that allow horizontal drilling of multiple wells from a single pad have made it economical to produce tight gas resources, while reducing environmental footprint.

A backgrounder follows.

Suntanu Dalal  
Media Relations  
Ministry of Energy, Mines and Petroleum Resources  
250 952-0628

# BACKGROUND

## Hydraulic Fracturing review panel – member biographies

### **Dr. Diana M. Allen, P. Geo**

Dr. Diana Allen (Ph.D. 1996, Carleton University) is a Professor in the Department of Earth Sciences at Simon Fraser University. Her research focuses broadly on water security, spanning the development of risk assessment methodologies to understanding and projecting the potential impacts of climate change on water resources. As a hydrogeologist, Dr. Allen conducts field- and numerical modeling-based research that aims to link hydrological and hydrogeological processes in diverse geological settings. She has conducted research in different regions of British Columbia, including the Gulf Islands, the Fraser Valley, the Okanagan, south-central BC, and Northeast BC, as well as in other countries. Dr. Allen has led several projects in Northeast BC that encompass the assessment of risk to shallow groundwater, the groundwater potential of buried valley aquifers, the migration of saline wastewater during deep disposal, and the sustainability of surface water under scenarios of increased demand and climate change.

Dr. Allen was the 2013 winner of the C.J. Westerman Award by Engineers and Geoscientists BC, and the 2015 winner of the Robert N. Farvolden Award by the Canadian National Chapter of the International Association of Hydrogeologists. Dr. Allen also served as Co-Editor of the Canadian Water Resources Journal for 6 years, and was a member of the Province of BC Ground Water Advisory Board from 2002 to 2010. She is currently the President of the Canadian National Chapter of the International Association of Hydrogeologists, and the Group Chair for Geosciences for the Natural Sciences and Engineering Research Council of Canada (NSERC).

### **Dr. Erik Eberhardt, P. Eng**

Dr. Erik Eberhardt is a Professor of Rock Mechanics and Rock Engineering, and the Director of the Geological Engineering program at the University of British Columbia. His research focuses on the integration and advancement of field geology, innovative monitoring, experimental rock mechanics, and state-of-the-art numerical modelling applied to geological hazard problems encountered in deep mining, unconventional gas, and rock slope engineering projects. His research is driven by a recognition that the tools frequently used in assessing risk are often descriptive and qualitative, and that there is a need to better understand the underlying mechanisms responsible for complex rock mass responses to engineering activities. Erik is a registered professional engineer in British Columbia and consults on international projects in North and South America, Europe and Asia. He has published over 200 technical papers, and was the 2013 recipient of the John A. Franklin Award for outstanding technical contributions to rock mechanics and rock engineering, and 2017 recipient of the Thomas Roy Award for outstanding contributions to the field of Engineering Geology in Canada.

**Dr. Amanda Bustin, PhD**

Dr. Amanda Bustin is a research associate at the University of British Columbia and the president of Bustin Earth Science Consultants. Amanda holds degrees in geological engineering (BASc 2001) from the University of British Columbia and a PhD (2006) in geophysics from the University of Victoria. She is currently working as a researcher and professional consultant on a variety of unconventional gas projects with the main focus on induced seismicity and reservoir development. Amanda has broad experience in reservoir fluid evaluation including extraction, injection, storage, and disposal.

Amanda's expertise comprises induced and natural seismicity, unconventional reservoir modelling, geophysical analyses and interpretation, geomechanics, petrophysics, field work and laboratory analysis, reservoir completion and production engineering, and hydro-geomechanical modelling. She has worked on a diverse range of projects including plate tectonics and natural seismicity; reservoir assessment; complex reservoir modelling including detailed parametric analyses, comingled production, impact of hydraulic fracturing, multi-lateral well pads, and field-scale simulations; CO2 capture and storage; nitrogen enhanced coalbed methane production; methane clathrate hydrates; and quantification of slip due to fluid injection from hydro-geomechanical modelling. Her current research at the University of British Columbia is focused on monitoring, risk assessment, management, and mitigation of induced seismicity due to fluid injection related to natural resource activities in western Canada. This research involves the integration of field studies, laboratory analysis, and numerical simulations. She has currently deployed a seismic sensor network in western Canada that monitors hydraulic fracturing, fluid disposal, and storage.

Amanda's professional experience over the last 15 years has included working with a variety of small and large petroleum and environmental companies as a technical advisor providing engineering and geophysics oversight and analysis on fluid extraction, storage and disposal projects. She has experience in most major basins in North America and has worked broadly internationally on diverse projects. Amanda has been responsible for or worked as a team member on all phases of reservoir development including drilling, completion, production, economics, and environmental assessment as well as the optimisation of production and disposal.

**Advisor to the Panel: Nalaine Morin**

Nalaine Morin is nationally recognized for her work in environmental assessment. She has led and managed the environmental reviews of several large resource development projects on behalf of First Nations. Her deep technical background in both mining and environmental assessment processes combined with being of Tahltan descent has enabled her to understand and to identify methods for the connection and support of both First Nation traditional knowledge and western science in a way that bridges cultural understanding on both sides. Nalaine provides services in technical review, regulatory support, negotiations, community consultation and environmental resource management.

In 2006, Nalaine helped establish the Tahltan Heritage Resources Environmental Assessment Team on behalf of the Tahltan Nation. THREAT is an innovative team that incorporates the expertise of the Tahltan people with Western science. As the lead manager of THREAT, Nalaine has supported the Tahltan Nation to navigate the environmental assessment processes of

several large-scale resource projects including mines, run-of-river hydro projects and transmission lines. Nalaine has gained a national reputation for effectively managing complicated resource project issues in a cross cultural setting. Many of the innovative processes she has helped develop have been subsequently adopted for use at the Provincial level.

Nalaine works with First Nations across Canada on projects as varied as mining, pipelines and highway infrastructure. In 2009, Nalaine's expertise was recognized by the Canadian Environmental Assessment Agency when she was selected as a panel member for the review of a major mining project in BC. Nalaine has been asked to speak at several conferences both provincially and nationally. In 2013, she shared a keynote address discussing impact assessment at the International Association of Impact Assessment conference and was a featured speaker at the Prospectors and Developers Association of Canada conference.

Nalaine holds a Bachelor of Applied Science degree from the University of British Columbia and a Mechanical Engineering Technology Diploma from the British Columbia Institute of Technology. Nalaine also holds certification as an Environmental Professional, certified by the Canadian Environmental Certification Approvals Board.

Contact:  
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**QUESTION AND ANSWERS**  
**Hydraulic Fracturing Scientific Review Panel**  
**February 2018**

Ministry of Energy, Mines and Petroleum Resources

**Key Messages**

- **The growth and diversification of British Columbia's natural gas sector creates good jobs and strengthens economic prospects for people across the province. In northeast B.C. specifically, activities linked to exploration and production supports local businesses and creates opportunities for First Nations communities.**
- **With that said, the protection of British Columbia's environment is a priority for our government. We are following through with our election platform commitment of a scientific review of hydraulic fracturing.**
- **The three panel members are recognized academic experts with knowledge in areas relating to environmental management, water, induced seismicity and hydraulic fracturing.**
- **The appointed panel will evaluate scientific evidence, traditional indigenous knowledge and how our regulatory framework addresses risks of induced seismicity and potential impacts to water.**

## **Questions and Answers**

### **1. What are you announcing today?**

The British Columbia government is following through on their election platform commitment and is announcing the appointment of a scientific panel to conduct a review of the process of Hydraulic Fracturing.

### **2. Why are you putting this panel together?**

We are following through on our election platform commitment to appoint a scientific panel to review the practice to ensure that gas is produced safely, and that our environment is protected.

### **3. How were the panel members chosen?**

The Ministry of Energy, Mines and Petroleum Resources created a list of academics and professionals that have knowledge about the subject in Canada and the Minister made the final decision on the panelists. Candidates were contacted directly and invited to participate. Panel members accepted.

### **4. Who is on the panel?**

The Panel consists of three recognized academic experts with knowledge in areas relating to environmental management, water, induced seismicity and hydraulic fracturing.

### **5. What is the scope of the scientific review?**

The scope is limited to the process of hydraulically fracturing a well, and specifically includes: water use (quality, quantity) and disposition, fugitive methane emissions as part of drilling the well, and induced seismicity.

### **6. Why aren't you looking at things like cumulative effects from oil and gas development?**

The objective of the Panel is to review the scientific evidence on the process of hydraulic fracturing. There are other existing venues in which concerns like cumulative effects are being looked at.



## **7. Why aren't you looking at things like the economic benefits of oil and gas development?**

The objective of the Panel is to review the scientific evidence on the process of hydraulic fracturing. The economic benefits of oil and gas development are well known by the Province.

## **8. Why are greenhouse gas emissions not being evaluated as part of the review?**

We are limiting the scope of the review to the process of hydraulic fracturing – basically what 'comes in' and 'goes out' when a well is hydraulically fractured to produce oil and gas, including the water cycle for these operations.

Although greenhouse gas emissions in general are out of scope, the Panel has agreed to look into fugitive methane emissions that might result from the process of drilling a well. The review will NOT cover all GHG emissions, just those related to the operations of drilling a well using the process of hydraulic fracturing.

BC already has tools in place like the carbon tax. This addresses greenhouse gas emissions, and commitments to reduce methane emissions from oil and gas.

## **9. Why aren't you reviewing hydraulic fracturing chemicals impacts on human health?**

Potential water contamination as part of the process of hydraulic fracturing is part of the scope of this review. A chemicals impact on human health is outside the scope of the review.

To address public concerns related to health and safety in the oil and gas sector, a Human Health Risk Assessment of oil and gas activities in northeastern BC was conducted between 2012 and 2015. The results of this study can be found online at <https://www2.gov.bc.ca/gov/content/health/keeping-bc-healthy-safe/oil-and-gas-activities>

In B.C. it is mandatory that oil and gas producers report hydraulic fracturing fluid ingredients through the publically accessible FracFocus Canada website.  
<http://fracfocus.ca/>

## **10. Are the panel members receiving compensation?**

No, they are not. Panel participation is voluntary. Any travel, hotels, meals and related expenses incurred to participate will be reimbursed.

## **11. What is the timeline of the review?**

- Kick off date: February 2018
- Information Gathering Sessions: April - June 2018
- Additional Information Gathering Sessions: September - October 2018 (if needed)
- Wrap-up: December 2018

## **12. What is the purpose of this review?**

The purpose is to review the process of hydraulic fracturing in BC, building on existing research and evidence, analyze how the existing regulatory framework addresses risks, and provide recommendations.

## **13. Who can participate in the review? Are meetings open to the public? If not – why?**

The Panel will first familiarize themselves with all existing evidence on the process of hydraulic fracturing as per the scope. Based on this preliminary analysis, the Panel will decide on the what they would like to hear at the Information Gathering Sessions. At that point, presenters will be selected and invited.

The meetings will be closed door and the findings of the review will be posted to a webpage for public access once the panel's report is completed and government has an opportunity to review.

## **14. How will presenters to the Information Gathering Sessions be chosen? Will the panel have a say?**

The panel will be presented with a list of potential presenters; ultimately the panel will decide who they will hear presentations from.

## **15. What if my organization/community has relevant information available to provide to the panel but we are not called to present?**

The panel will be supported by a Secretariat with senior staff at the Ministry of Energy, Mines and Petroleum Resources. If an organization or community would like to provide feedback on items pertaining to the scope of the review and they are not called to present at an Information Gathering Session, they can provide the information to the Secretariat. Information on how to do so will be provided a bit later into the process to ensure a smooth first round of Information Gathering Sessions.

#### **16.How will First Nations be consulted? Are First Nations participating?**

The panel will seek and incorporate indigenous traditional knowledge into the scientific review from Treaty 8 First Nations. The Secretariat to the Panel has hired an experienced technical contractor who will bring expertise and advice to the panel in integration of western science with traditional indigenous knowledge.

#### **17.Where will the Information Gathering Sessions take place?**

They are expected to be conducted in Northeast BC and Vancouver in order to hear from local experts and minimize travel costs.

#### **18.What information will the panel use for consideration?**

The panel will review recent studies/reports as well as presentations made by invited experts at the Information Gathering Sessions.

#### **19.When will the panel conclude presentations and compile their report?**

Presentations are scheduled to conclude in June 2018 with the possibility of additional sessions running until October 2018. Upon completion of the presentations the panel will compile a report detailing their findings and recommendations for the Minister by December 2018.

#### **20.Is Hydraulic Fracturing necessary in British Columbia?**

British Columbia is fortunate to have premier natural gas resources. Natural gas is an affordable and reliable resource which can act as a foundation fuel to a lower-carbon energy future – for B.C. and for other areas of the world.

Hydraulic fracturing is a technique used by industry to extract natural gas out of the ground when in 'tight' formations. The natural gas sector creates jobs, supports local businesses and sustains economic activity in our rural communities.

It should also be noted that the BC Oil and Gas Commission has over a decade's worth of regulating the natural gas sector, including hydraulic fracturing. We have a very solid safety record as a result.

**21. What if the panel concludes Hydraulic Fracturing should not be occurring in British Columbia?**

There is enough scientific evidence that the practice of hydraulic fracturing, if properly regulated, is safe. In any case, all of the panel's findings will be included in the final report they deliver to government. The findings and advice of the panel will be reviewed by the government.

**22. If the panel finds gaps in how hydraulic fracturing is regulated will new legislation be introduced?**

The panel will provide their findings and advice on how BC's regulatory framework addresses risks of induced seismicity and potential impacts to water. The findings and advice of the panel will be reviewed by government.

**23. Why is hydraulic fracturing not being banned during the review?**

There is enough scientific evidence that the practice of hydraulic fracturing, if properly regulated, is safe. British Columbia has modern, stringent safety procedures for natural gas development. When 'bans' were established in other jurisdictions during reviews, those jurisdictions had limited or no regulatory framework in place.

**24. Will this review and findings be made public?**

Yes, once the review is complete and the government has a chance to evaluate the findings and recommendations.

**25. Where can I find the report?**

Once the report is final it will be posted to a dedicated webpage where it will remain available to the public.

**26. Is industry participating?**

The panel will hear from stakeholders and First Nations presenting evidence on the scope of the review. This will include industry technical presentations.

**27. Will there be an opportunity for community input?**

The panel will hear from experts in municipalities and regional governments presenting evidence on the scope of the review.

**28. Will this review hinder B.C.'s opportunity to build a competitive natural gas sector, including a LNG industry?**

This review is taking place to ensure gas is produced safely, and that our environment is protected. If anything, this report intends to close any real or perceived gaps in knowledge or regulations.

**29. Does this review create uncertainty for the industry at a time when the natural gas market is struggling?**

We have engaged with all industry associations prior to announcing the review panel to explain the need and objectives of the review. They understand the objectives of the process.

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## Background:

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- The BC Oil and Gas Commission presently regulate more than 20,000 wells and over 40,000 kilometres of pipeline infrastructure
- The BC office of the Canadian Centre for Policy Alternatives and other groups released a call for a full public inquiry into hydraulic fracturing citing:
  - “Escalating water usage by fracking companies.
  - Poor or misleading consultations with First Nations.
  - Widespread industry non-compliance with relevant provincial water laws through the construction of dozens of unlicensed dams.
  - Record-setting induced earthquakes at BC fracking operations.”
- The call for a public inquiry was endorsed by 17 groups including: UBCIC, David Suzuki Foundation, Wilderness Committee, West Coast Environmental Law, Sierra Club BC, Council of Canadians.
- According to the groups, the Inquiry must address whether or not provincial agencies adequately oversee fracking operations, ensuring that companies comply with existing laws and regulations, safeguard public health, and protect the environment. The Inquiry must have powers and sufficient funds to compel legal testimony, commission professional research, and hold public hearings across BC.
- The OGC closely regulates hydraulic fracturing to protect groundwater. Legislation and regulation guiding the protection of domestic water wells is very specific, including setback distances and well casing requirements.
- After the hydraulic fracturing process, fluids flow back to the surface and are collected at the wellsite. It is against the law in BC to introduce flowback fluids onto the surface environment.
- A May 2016 review of water storage sites in Northeast BC by the OGC and FLNRORD revealed 51 sites that qualify as dams under the Water Sustainability Act and Dam Safety Regulation and that these sites were not properly licensed.
- The OGC issued seven compliance orders for the drawdown of 50% of water at five dams and full dewatering of two dams.

**From:** [Lloyd, Evan GCPE:EX](#)  
**To:** [Howlett, Tim GCPE:EX](#); [Aaron, Sage PREM:EX](#); [Oreck, Mira PREM:EX](#); [Bain, Don PREM:EX](#)  
**Cc:** [Meggs, Geoff PREM:EX](#)  
**Subject:** Draft Stakeholder list and related materials  
**Date:** Wednesday, March 14, 2018 6:19:18 PM  
**Attachments:** [Stakeholder Engagement Plan\\_March 14 420PM.docx](#)  
[Issues Scan\\_March 13 420PM\[1\].docx](#)  
[BG\\_DRAFT\\_March 13 420PM.docx](#)

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Tim, et al

As discussed please find attached a set of DRAFT stakeholder engagement lists, issues scan and backgrounder. These are as received, more or less, from EMPR.

Evan



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## LNG Canada - Proposal Stakeholder Engagement Plan

The provincial government will describe the conditions it will place upon any proposed project to extract and liquefy BC's natural gas for export during the week of March 19<sup>th</sup>-23<sup>rd</sup>, 2018. These will reiterate the premier's four key conditions and emphasize the central importance of an economy-wide climate-action strategy within which such any such proposed liquified natural gas (LNG) project(s) must be assessed.

### Goals:

- Connect with all key stakeholders in advance of the provincial government's announcement.
- Communicate details about government's climate strategy.
- Where appropriate, provide information about LNG Canada's ability - and acceptance - to meet all environmental objectives announced by the provincial government.

### Roll-Out Timeline:

Time	Activities & Details
March 12-13	Produce preliminary list of stakeholders
March 13-14	Review preliminary list with ministry staff.
March 14-15	Get input on stakeholder list from PO/ Ministers/Ministries. Add/remove contacts.
March 15-16	Finalize stakeholders and contact details. Finalize responsible callers.
March 16	Based on messaging, develop draft scripts for stakeholder calls/meetings.
March # morning.	Meetings/calls with stakeholders.
March # mid-day	Announcement.
Post-announcement	Follow-up calls.

### Guidelines for Stakeholder Outreach:

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**Note:**

**Who will be making calls?**

- Premier John Horgan (PJH)
- Minister of Energy, Mines and Petroleum Resources Michelle Mungall (MMM)
- Minister Indigenous Relations and Reconciliation Scott Fraser (MSF)
- Minister of Environment & Climate Change Strategy George Heyman (MGH)
- Minister Jobs, Trade and Technology Bruce Ralston (MBR)
- Deputy Minister Dave Nikolejsin (DM) / or ministry staff

**Stakeholder List:**

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**APPENDIX – CONTACTS**

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## Issues Scan

<p><b>Issue: Climate Change/LNG</b></p> <p>The Green Party (Andrew Weaver) has been admittedly opposed to LNG export. He argues, as others do, that exporting LNG would make B.C.'s climate targets impossible to meet.</p> <p>Attentive reporters include: Judith Lavoie (Desmog), Vaughn Palmer (Vancouver Sun), Justine Hunter (Globe and Mail)</p>	<p><i>"We need to be honest with British Columbians. Do our targets mean anything? If we truly care about the impacts of climate change on the next generation, we must follow our words with decisive action..." – Andrew Weaver, Desmog Feb 15</i></p> <p><i>"You cannot add 10 megatonnes of emissions and somehow think we are going to reduce by 80 per cent by 2050. There is simply no possible path to do that. It's impossible." – Andrew Weaver, Desmog Feb 4</i></p> <p><i>"We would be in a carbon budget crunch with two projects (Woodfibre LNG + LNG Canada) that occupy nearly 75 per cent of our 2050 carbon budget so what tools does the government have available to grow that part of the pie?" - Karen Tam Wu, Pembina Institute, Desmog Feb 4</i></p> <p><i>The ability to meet targets depends partially on what happens with the development of large scale industries, such as mining and liquefied natural gas, as "development of large-scale LNG production will increase provincial GHG emissions," - Managing Climate Change Risks report (Auditor General Carol Bellringer)</i></p> <p><i>"According to the Pembina Institute, under current policies, LNG Canada's emissions would total 9.6 million tonnes of carbon dioxide equivalent in 2050. B.C.'s emissions target in 2050 is 12.6 million tonnes.</i></p>	<p><b>Key Messages: TBD</b></p>
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	<p>....</p> <p><i>Promoting LNG is either misleading LNG corporations into believing their projects can proceed within climate laws, or it's misleading British Columbians who elected a government promising climate action."</i> - <b>Jens Wieting, Forests and Climate Campaigner for Sierra Club BC.</b></p> <p>".. there are lots of people with lots of ideas on climate action and the impact of our plans as Minister (of Environment and Climate Change Strategy George) Heyman is developing them, and I'm confident that we can walk through this and get to the point that I want to get to, and that's reducing our emissions." – <b>Premier John Horgan, Vancouver Sun, January 27<sup>th</sup></b></p>	
<p><b>Issue: Industry subsidies/competitiveness</b></p> <p>Media attention has focused on poor global economics for the LNG industry. More recently, indications are demands will improve – including a report released by LNG Canada. LNG Canada has raised issues about steel duties. John Horgan has been quoted before as saying LNG Canada has conditions in place to move forward.</p> <p>Attentive reporters include: Brent Jang (Globe and Mail), Matt Preprost (Alaska Highway News),</p>	<p><i>"Following the wave of investment from 2011 to 2015, final investment decisions on LNG projects have nearly stopped. As LNG projects generally take more than four years to start production, new supply will not be ready until well into the next decade..."</i> - <b>Shell (via report)</b></p> <p><i>"We've made the argument with finance that we need to know, because this is really critical for us to make a cost competitive proposal. These modules cannot be built in Canada, and if we have to assume these duties, which we would build into our economics, then it has a significant impact on our</i></p>	<p><b>Key Messages: TBD</b></p>

	<p><i>competitiveness.</i>" – <b>Susannah Pierce, LNG Canada's director of external relations (steel exports), Alaska Highway News, Feb 8<sup>th</sup></b></p> <p><i>"They're optimistic that the market conditions that prevented (earlier projects) from moving forward are starting to shift. In the case of LNG Canada, their Korean, Chinese and Japanese partners are all interested in buying.</i></p> <p><i>"They have significant upstream assets in B.C. I think the synergies might come together for LNG Canada before the others."</i> - <b>Premier John Horgan, Vancouver Sun, October 28<sup>th</sup></b></p> <p><i>"It has all of its permits in place, has social license from First Nations in the region, has the support of the community, and is waiting for economic conditions to turn around, and that project will proceed..."</i> <b>John Horgan, Energetic City, June 30<sup>th</sup> (re LNG Canada)</b></p>	
<p><b>Issue: Hydraulic fracturing</b></p> <p>Hydraulic fracturing is often raised as a reason to take issue with the LNG industry. The exploration process of hydraulic fracturing is often linked to concerns about water contamination, induced seismicity and/or increased GHG emissions. Some opponents argue the provincial government's upcoming science review panel is not enough.</p> <p>Attentive reporters</p>	<p><i>"Fracking and the export of liquefied fracked gas will contribute to climate change, making wildfires more common and even more severe in the future. <b>LNG Canada</b> alone would use up more than threequarters of our entire remaining greenhouse gas emissions as legislated for 2050."</i> - <b>Caitlyn Vernon, Sierra Club's campaigns director, Times Colonist, January 24<sup>th</sup></b></p>	<p><b>Key Messages: TBD</b></p>

include: Judith Lavoie (Desmog), Vaughn Palmer (Vancouver Sun), Andrew Nikiforuk (The Tyee) + general environmental opponents.		
<p><b>Issue: First Nations support/concerns</b></p> <p>First Nations concerns are often raised in the media when opposition is raised about LNG development. Many First Nations have voiced support – LNG Canada included.</p> <p>Attentive reporters include: Vaughn Palmer (Vancouver Sun), Brent Jang (Globe and Mail), Justine Hunter (Globe and Mail)</p>	<p><i>“The members of our alliance support responsible LNG development that achieves an acceptable balance between the economy and the environment”.- Karen Ogen-Toews is CEO of the First Nations LNG Alliance</i></p> <p><i>“We are satisfied that LNG Canada has designed its project to address our concerns, and operate with the lowest greenhouse gas emissions of any large-scale LNG project in the world today.” - Crystal Smith, chief councilor, Haisla Nation</i></p>	<p><b>Key Messages: TBD</b></p>

## Media Clips

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Globe and Mail, Page B02, 27-Feb-2018

Shell warns about global LNG shortage in mid-2020s

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Vancouver Sun, Page A16, 23-Feb-2018

First Nations have own voices on energy plans

*By Karen Ogen-Toews*

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DeSmog Canada, February 15, 2018

B.C. Not Prepared for Climate Change Disasters, Not On Track to Cut Emissions: Auditor General

By Judith Lavoie

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Vancouver Sun, Page A20, 10-Feb-2018

BC Missing Boat On LNG

*By Vaughn Palmer*

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Alaska Highway News, Page A12, 08-Feb-2018

LNG Canada shortlists contractors to build export facility in Kitimat

*By Matt Preprost*

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DeSmog, February 04, 2018

The Weaver-Horgan LNG Kerfuffle Explained

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Times Colonist (Victoria), Page A09, 30-Jan-2018

Haisla Nation supports LNG project

*By Crystal Smith*

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Time for Premier Horgan to do the climate math

*By Jens Wieting*

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Vancouver Sun, Page A12, 27-Jan-2018

Curbing emissions a priority, Horgan says of Weaver threat

*By Nick Eagland*

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Vancouver Sun, Page A11, 26-Jan-2018

B.C. should move on opportunities offered by LNG

*By Val Litwin*

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Burnaby Now, Page A06, 24-Jan-2018

Is this a blow to electoral reform?

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Times Colonist (Victoria), Page A11, 24-Jan-2018

Promoting LNG undermines B.C. tourism

*By Caitlyn Vernon*

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Vancouver Sun, Page E04, 20-Jan-2018

LNG's unlikely saviour

*By Claudia Cattaneo*

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