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THE HONOURABLE GEORGE HEYMAN

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RE: REQUEST TO REFER THE ENVIRONMENTAL ASSESSMENT OF THE PROPOSED WEST COAST OLEFINS LTD. ETHYLENE PROJECT IN PRINCE GEORGE AND ASSOCIATED PROJECTS TO AN INDEPENDENT PANEL OF EXPERTS TO CONDUCT A REGIONAL ASSESSMENT BY WAY OF PUBLIC HEARINGS

On behalf of Too Close 2 Home, we request that the Minister refer the current environmental assessment of the proposed West Coast Olefins Ltd. (WCOL) Ethylene Project to an independent panel of experts to conduct the assessment by way of public hearings, pursuant to s. 14 of the *Environmental Assessment Act*, SBC 2002.²

¹ We write to Elenore Arend in her capacity as Chief Executive Assessment Officer under the *Environmental Assessment Act*, SBC 2018 and also in her capacity as "Executive Director" of the Environmental Assessment Office under the former *Environmental Assessment Act*, SBC 2002. See footnote below.

² Note that because of timing of the consideration of the Ethylene Project, the Environmental Assessment Office has determined that the assessment of the Ethylene Project in question will be conducted pursuant to the former *Environmental Assessment Act*, SBC 2002, c 43, instead of the 2018 Act. (See *Letter confirming that the EA will continue under Environmental Assessment Act, 2002*, at:

https://projects.eao.gov.bc.ca/api/public/document/5ef112136ff33f002173d6dd/download/358416_Ron%20Just_Final%20for%20EPIC.pdf).

Section 14 of the 2002 statute provides:

"14 (1) If the executive director under section 10 (1) (a) refers a reviewable project to the minister, the minister by order (a) may determine the scope of the required assessment of the reviewable project, and (b) may determine procedures and methods for conducting the assessment, including for conducting as part of the assessment a review, under section 16 (6), of the proponent's application. (2) The minister's discretion under this section to determine scope, procedures and methods includes but is not limited to the discretion by order to exercise any of the powers in section 11 (2).

In addition, pursuant to s. 35 of the *Environmental Assessment Act*, SBC 2018,³ we request that the Minister direct the same panel to conduct a simultaneous Regional Assessment of the impacts of the Ethylene Project – in the context of additional impacts caused by the directly linked proposed:

- Upstream Natural Gas Liquid Recovery Project, which will create fossil fuel products; and
- Downstream Polyethylene Plant, which will create plastic pellets.⁴

The Ethylene Project currently being assessed is just one of three intimately connected projects that rely upon a common source of natural gas input and share by-products of the others. A comprehensive assessment of cumulative impacts of all three projects is required.

(3) An order of the minister making a determination under this section may
(a) require that the assessment be conducted

(i) by a commission that the minister may constitute for the purpose of the assessment, consisting of one or more persons that the minister may appoint to the commission,

(ii) **by a hearing panel, with a public hearing to be held by one or more persons that the minister may appoint to the hearing panel...**

(b) delegate any of the minister's powers under this section to make orders determining scope, procedures and methods to...

(ii) a commission member, hearing panel member or another person, depending on which of them is responsible for conducting the assessment.

(4) For the purposes of an assessment conducted under this section by a commission or hearing panel, the minister by order may confer on the commission or hearing panel, as the case may be, the powers, privileges and protection given under sections 12, 15 and 16 of the *Inquiry Act* to a commissioner appointed under Part 2 of that Act."

In the alternative, if it is determined that the *Environmental Assessment Act*, SBC 2018, c 51 should apply to this matter, section 24 of the latter Act authorizes the Minister to do the same thing. Section 24 authorizes the Minister to order the assessment be conducted by "a hearing panel, with a public hearing to be held by one or more individuals that the minister may appoint to the hearing panel..."; and empowers the Minister to delegate to the panel the power to set scope, procedures and methods of the assessment, and to exercise the powers of a commission of public inquiry.

³ The 2018 statute applies here, because the requested s. 35 action is not grandfathered by previous assessment process.

Section 35 of the 2018 statute provides for assessments of a number of projects in a region. Section 35 provides:

"35(1) **The minister may direct the chief executive assessment officer or an assessment body to do the following**, in accordance with terms of reference established by the minister and with regulations made under subsection (3):

(a) **undertake an assessment of the environmental, economic, social, cultural and health effects of any projects in a region of the province;**

(b) **provide a report and recommendations to the minister at the conclusion of the assessment..**

⁴ Winston Szeto, "Prince George, BC, once again considered as potential home for plastics plant," *CBC News* (2020 December 20) online: <<https://www.cbc.ca/news/canada/british-columbia/prince-george-west-coast-olefins-petrochemical-facility-back-1.5848175>>.

THE THREE PROJECTS MUST BE ASSESSED TOGETHER

West Coast Olefins Ltd. has described the intimate relationship between all three projects.⁵ Indeed, the interconnection of all three projects is reflected in the Company's own flow charts:

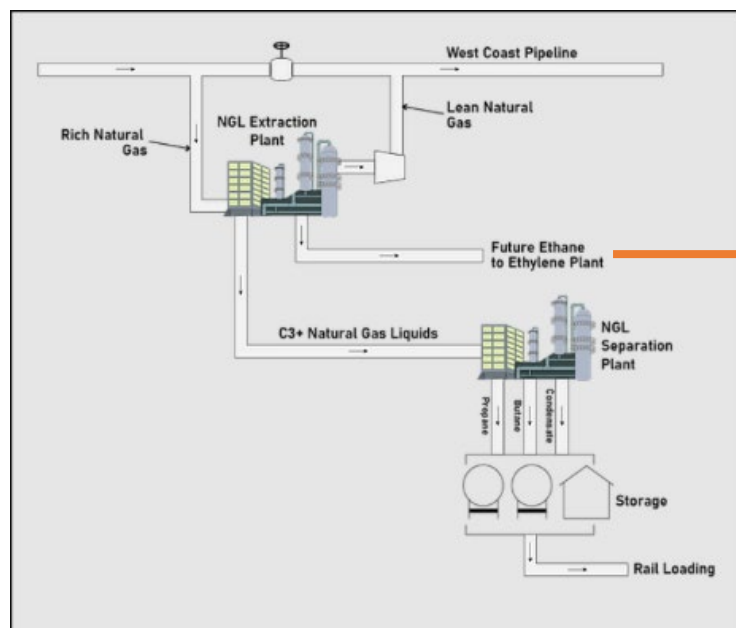


Figure 1: Proposed NGL Recovery Project⁶

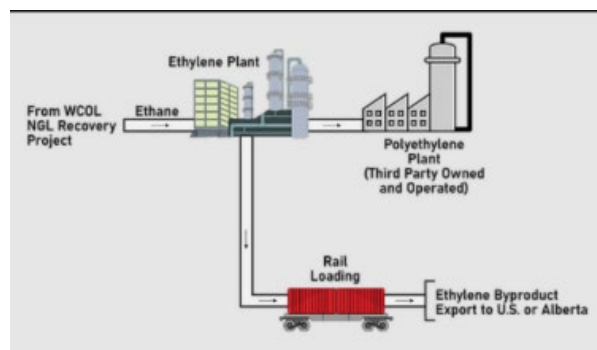


Figure 2: Proposed Ethylene Project and Polyethylene Plant⁷

[Orange arrow has been added for clarity.]

In a very real sense, all three proposed projects form an interconnected, multi-billion dollar petrochemical industrial complex. Indeed, WCOL has apparently described these three projects as one 'overall project' to local media:

According to WCO, the overall project will include a natural gas liquids recovery plant to recover ethane, propane, butane, and natural gas condensate from Enbridge's West Coast Pipeline; an ethylene plant to produce one million tonnes per year of polymer-grade ethylene; a polyethylene plant to consume most of the ethylene produced; and associated off-site facilities and infrastructure.⁸

⁵ Winston Szeto, "Prince George, BC, once again considered as potential home for plastics plant," *CBC News* (2020 December 20) online: <<https://www.cbc.ca/news/canada/british-columbia/prince-george-west-coast-olefins-petrochemical-facility-back-1.5848175>> and Mark Neilson, "Petrochemical complex to head back to city," *Prince George Citizen* (2020 December 16) online: <<https://www.princegeorgecitizen.com/local-news/petrochemical-complex-to-head-back-to-city-3742233>>.

⁶ West Coast Olefins Ltd., "Prince George NGL Recovery Project," West Coast Olefins Ltd Projects, online: <<https://www.westcoastolefins.com/pg-ngl-recovery-plant>>. Note that the orange arrow has been added for clarity.

⁷ West Coast Olefins Ltd., "Prince George Ethylene Project," West Coast Olefins Ltd Projects, online: <<https://www.westcoastolefins.com/pg-ethylene-plant>>. Note that the orange arrow has been added for clarity.

⁸ Canadian Plastics, "New Canadian company wants to build \$5.6 billion petrochemical plant in B.C.," *Canadian Plastics* (2019 July 31) online: <<https://www.canplastics.com/canplastics/west-coast-olefins-seeks-to-build-5-6-billion-petrochemical-plant-in-b-c/1003450462/>>.

The link between the three projects couldn't be clearer. For example, WCOL's CEO, Ken James, has stated baldly:

*You can't have the Ethylene Plant without the NGL Recovery Plant...*⁹

Indeed, the CEO has called the overall petrochemical complex "the biggest project the city has ever seen."¹⁰ This "overall project" will have profound effects on the City of Prince George and the entire region. As discussed below, the overall petrochemical complex raises existential questions about the type of community that Prince George will be in the 21st century. The complex poses significant hazards to the local environment and public health in the Prince George region. It also poses profound economic risk to the Province – an investment in fossil fuel infrastructure is likely to become worthless because climate change is forcing the rapid phase-out of fossil fuels.

Perhaps most important, the petrochemical/plastic complex poses profound risks to the global environment because it may:

- Make it impossible to ever address the global climate emergency that set BC on fire this summer (A *Scientific American* article – "Plastic Plants Poised to be the Next Big Carbon Superpolluters" – asserts that the new boom in complexes such as this "could lock in greenhouse emissions for decades to come"¹¹);
- Spur fracking and other harmful natural gas production activities;
- Spur widespread plastic pollution that does major environmental harm;
- Undermine provincial and federal efforts to reduce plastic waste; and
- Undermine government efforts to encourage plastic recycling.

Yet the \$2.8 billion Ethylene Project is the only one of the three projects now being assessed under the *Environmental Assessment Act*.¹² The problem is that this one project under assessment is only a small part of a much bigger picture – only one part of the massive petrochemical complex planned.

In 2019, WCOL stated it was negotiating with potential "third party partners," who would use their products to produce the polyethylene plastic pellets. See: Ken James, "Response from West Coast Olefins" (Statement of the CEO of the Project Proponent) (2019 September 11) online: <<https://www.princegeorgecitizen.com/opinion/response-from-west-coast-olefins-3737817>>. WCOL has stated that it hopes to see the polyethylene plastic pellet facility up and running by 2024. See: Mark Neilson, "Petrochemical complex to head back to city," *Prince George Citizen* (2020 December 16) online: <<https://www.princegeorgecitizen.com/local-news/petrochemical-complex-to-head-back-to-city-3742233>>.

⁹ BC Resources Coalition, "The BCRC Show Episode 21: CEO of the West Coast Olefins Ken James, President of BCRC Willy Manson" (2020 December 19) at 41m: 48s, online (video): *YouTube* <<https://www.youtube.com/watch?v=B9WW2GLqJC8&t=2508s>>.

¹⁰ Quote taken from event in Prince George where Ken James, CEO and president of WCOL, was introducing the petrochemical complex and all its constituent parts. See: Hanna Petersen, "'It's a game changer:' Calgary company plans to build \$5.6B petrochemical plant in Prince George" *Prince George Citizen* (2019 July 24), online: <<https://www.princegeorgecitizen.com/local-news/calgary-company-to-build-56b-petrochemical-plant-in-prince-george-1602606>>.

¹¹ Benjamin Storrow, "Plastic Plants are Poised to Be the Next Big Carbon Superpolluters" *Scientific American* (2020 January 24), online: <<https://www.scientificamerican.com/article/plastics-plants-are-poised-to-be-the-next-big-carbon-superpolluters>>. See the detailed discussion of all these bulleted points, below.

¹² The Ethylene Project has been granted a Section 11 Order under the *Environmental Assessment Act*, SBC 2002 on December 10, 2019. See: British Columbia Environmental Assessment Office Project Information Center, "IN THE MATTER OF THE ENVIRONMENTAL ASSESSMENT ACT S.B.C. 2002, c.43 (ACT) AND AN ENVIRONMENTAL ASSESSMENT OF THE WEST COAST OLEFINS ETHYLENE PROJECT (PROPOSED PROJECT) ORDER UNDER SECTION 11" (Order), online:

The second facility – which will refine natural gas into other fuels¹³ and feed the Ethylene Project – is the massive \$1.3 billion Natural Gas Liquids Recovery Project. However, unless the Minister accedes to our request, that project may not be subject to a formal environmental assessment under the *Environmental Assessment Act*. Indeed, WCOL has boasted that it has “actually split... out” this latter plant to be considered by a simpler, more rudimentary Oil and Gas Commission permitting process.¹⁴ Currently, WCOL does not contemplate a formal environmental assessment proceeding under the *Environmental Assessment Act*.¹⁵

As for the third facility, WCOL has acknowledged that the \$1.5 billion polyethylene plant producing polyethylene pellets for plastics production is also part of the “overall project.” Yet, because WCOL claims that a third party will propose that part of the overall project *later on*, no environmental assessment is likely to take place for this third project until much later – likely *after approvals* of the other parts of the complex have already been obtained.

Yet a future assessment of the third facility is likely to be powerfully skewed if billions of dollars have already been spent – and numerous jobs created – implementing the other two approved components of the “overall project.” The investments and jobs established for the first two facilities may impel approval of the final part of the petrochemical complex. The pressure to complete an “overall project” that is halfway there will be substantial. Economic theory teaches that the “Sunk Costs Fallacy” will come into play and prevent objective assessment of that final project:

*The sunk cost fallacy means that we are making decisions that are irrational and lead to suboptimal outcomes. We are focused on our past investments instead of our present and future costs and benefits, meaning that we commit ourselves to decisions that are no longer in our best interests.*¹⁶

<<https://projects.eao.gov.bc.ca/api/public/document/5df0143ef7f30e0021e731b0/download/West%20Coast%20Olefins%20Ethylene%20Section%2011%20Order.pdf>>.

¹³ According to WCOL, rich natural gas from the West Coast Pipeline will be refined into lean natural gas, propane, and butane, which are all fossil fuels which will be shipped via pipeline and rail for end use elsewhere. See: West Coast Olefins Ltd., “Prince George NGL Recovery Project,” West Coast Olefins Ltd Projects, online: <<https://www.westcoastolefins.com/pg-ngl-recovery-plant>>.

¹⁴ See the statement by CEO and president of WCOL, Ken James: “...The OGC process is actually a little simpler so we get through that regulatory process a little faster so it makes a lot of sense that we can actually split the projects out and have one lead by 6 months to a year.” See: BC Resources Coalition, “The BCRC Show Episode 21: CEO of the West Coast Olefins Ken James, President of BCRC Willy Manson” (2020 December 19) at 43m: 03s, online (video): *YouTube* <<https://www.youtube.com/watch?v=B9WW2GLqJC8&t=2583s>>.

¹⁵ In a letter to residents WCOL states “WCOL will have to gain regulatory approvals from the Oil and Gas Commission, the Agricultural Land Commission and the Regional District for rezoning. As well, WCOL will work with NavCanada to ensure that the towers and flare stack are registered.” No mention is made of an environmental assessment under the *Environmental Assessment Act*. See: West Coast Olefins Ltd. August 3, 2021 letter from Christine Olson addressed To Whom it May Concern, “Re: West Coast Olefins Proposed NGL Extraction Plant 25 acres parcel in the NW corner of West ½ District Lot 1946 PID 006-284-582”.

¹⁶ The Decision Lab, “Why are we likely to continue with an investment even if it would be rational to give it up?” online: <<https://thedecisionlab.com/biases/the-sunk-cost-fallacy/>>.

[The Sunk Costs Fallacy is also known as the “Concorde Fallacy.” The UK and French governments experienced massive financial loss because they “took their expenses on the costly supersonic jet as a rationale for continuing the project, as opposed to ‘cutting their losses.’”¹⁷]

The fundamental point is that there needs to be a timely independent expert assessment of the overall project now. The assessment of the largest industrial development in Prince George history needs to assess all three part of the development at the same time. If government only assesses one part of the development now, it will miss the big picture, and the overall impacts of the development.

Proceeding with just an assessment of the Ethylene Project risks missing essential information. Looking at just part of the whole will likely lead to error. It runs the risk faced by the three ancient people who ran into an elephant in the dark:

*The person who felt the ear said it was a **fan**. The person who felt the elephant’s side said that it was a **wall**. The person who felt the elephant’s trunk said that it was a **snake**.*

The moral of the story is that you have to see the entire thing – the whole petrochemical complex – to come to any kind of rational conclusion. British Columbians must have an assessment of the overall project, to see what real-world, cumulative impacts are likely. It is not enough to just examine the Ethylene Project – that’s just the elephant’s trunk.

Taken altogether, a truly massive, multi-billion dollar petrochemical industrial complex is being proposed – with the Ethylene Project being just phase one of a development that could transform Prince George, harm the regional environment, and seriously compromise Planet Earth by exacerbating climate change and global plastic pollution. The public needs an accurate and complete picture of what is in the offing. Only a comprehensive examination of all three projects, by way of a regional assessment, can provide that.

The “overall project” should not proceed without the most careful environmental assessment of what is ultimately being proposed, and potential local, regional and global impacts. It is essential to determine whether the proposed Ethylene Project – and the linked Natural Gas Liquid Recovery Project and Polyethylene Plant – are consistent with *Government’s stated objectives* to:

- Fight climate change;
- Reduce unnecessary plastic waste; and
- Enhance recycling and create a circular economy.

Below we document evidence that the proposed petrochemical complex will, in fact, seriously undermine all these stated government objectives. An independent expert review is needed to determine whether this is so. In addition, the panel is needed to consider other potentially serious impacts on Indigenous peoples, local citizens, and the region’s environment. The panel must also determine the risk that the complex could foreclose a more prosperous and sustainable future for Prince

¹⁷ Wikipedia, “Sunk Costs,” online: <https://en.wikipedia.org/wiki/Sunk_cost>.

George. Finally, the expert panel must analyze whether this fossil fuel infrastructure is likely to become “worthless” to BC in the long term – as Mark Carney and other eminent experts warn.¹⁸

Note that section 14 of the *Environmental Assessment Act, 2002*¹⁹ authorizes the Minister to appoint an independent expert panel to conduct an environmental assessment and public hearings on the matter. Due to the importance of the issues involved, such a process is clearly necessary for the Ethylene Project that is currently being assessed.

In addition, section 35 of the *Environmental Assessment Act, 2018* empowers the Minister to direct the assessment body to undertake an assessment of the environmental, economic, social, cultural, and health effects of **any projects in a region of the province**, in the form of a regional assessment. A regional assessment is needed here to capture the broader and cumulative impacts of the entire petrochemical complex – including the Ethylene Project, the upstream Natural Gas Liquid Recovery Plant, and the downstream Polyethylene Plant.

The entire petrochemical complex raises issues of immense environmental, health and social importance. The potential profound impacts upon Prince George, the province, Canada, and the planet require careful and comprehensive investigation and scrutiny.

THE PERTINENT FACTS

In considering whether to refer this matter to an independent expert panel for public hearings and direct that the matter be considered in the form of a regional assessment, we urge you to consider the following facts:

First Nations Opposition to the Proposed Petrochemical Complex

Note that the Lheidli T’enneh Nation and McLeod Lake Indian Band have publicly opposed the proposed WCOL petrochemical complex. On December 16, 2020, the two First Nations stated that they oppose WCOL advancing the project on the proposed BC Rail industrial site and that there will be no future negotiations between the parties.²⁰ The Lheidli T’enneh Nation has unequivocally stated their position about the proposed Ethylene Project and NGL Recovery Project on their unceded territory:

¹⁸ See the discussion of stranded assets below.

¹⁹ Because of the timing of the initial consideration of the Ethylene Project, the Environmental Assessment Office has determined that the assessment of the Ethylene Project in question will be conducted pursuant to the former *Environmental Assessment Act*, SBC 2002, c 43, instead of the 2018 Act. (See *Letter confirming that the EA will continue under Environmental Assessment Act, 2002*, at: https://projects.eao.gov.bc.ca/api/public/document/5ef112136ff33f002173d6dd/download/358416_Ron%20Just_Final%20for%20EPIC.pdf).

²⁰ Prince George Citizen Staff, “First Nations Oppose Petrochemical Complex,” *Prince George Citizen* (2020 December 17) online: <https://www.princegeorgecitizen.com/local-news/first-nations-oppose-petrochemical-complex-3742242> and Jeff Balzer “First Nation bands say there 'will be no future negotiations' in Prince George relocation proposal for West Coast Olefins plant,” *The Prince George Citizen* (2020 December 17), online: <https://www.princegeorgecitizen.com/local-news/first-nation-bands-say-there-will-be-no-future-negotiations-in-prince-george-relocation-proposal-for-west-coast-olefins-plant-3193798>.

*WCOL is not welcome in LTFN territory and on unceded ancestral lands.*²¹

That should be the end of the matter. In any case, in light of this First Nations opposition, there is no way that a routine assessment and approval can go forward. Indeed, First Nations must be fully involved in all decision making going forward.

Citizen Opposition to the Petrochemical Complex

Note that there is also widespread concern in the community about the proposed project. There is substantial citizen opposition. For example, Too Close 2 Home is a community group concerned about the proposed petrochemical complex. The group has a Facebook page with about 800 members, who are concerned about the project proposal. The group has held several public/open events. There is also now significant citizen opposition to the proposed Pineview site as well, represented in the Grasslands Not Gaslands Facebook page, with over 130 members. A recent petition calling for an assessment by independent experts conducting public hearings has been signed by hundreds of people; and a second related petition now has over 1,100 signatures and climbing.²² Public concern has risen to a level that justifies a review of the issues by independent experts.

THE PETROCHEMICAL COMPLEX'S IMPLICATIONS FOR THE PRINCE GEORGE AREA

Air quality

This project could undermine air quality – in a city where air quality is a major public concern. The Prince George air shed is already burdened with considerable industrial, transportation, residential and wildfire pollution. Indeed, in 2018 wildfires gave Prince George some of the worst air pollution levels in the world.²³ In addition, the City of Prince George has had a long history of serious industrial air pollution problems, exacerbated by the strong inversion effects that trap pollutants in the City.²⁴ It has been estimated that as many as 81 deaths per year in Prince George may be attributable to air pollution.²⁵

²¹ Lheidli T'enneh First Nation, "West Coast Olefins Ltd. Not Welcome in LTFN Territory," (2021 August 4) (News Release), online: <<https://www.lheidli.ca/west-coast-olefins-ltd-not-welcome-in-ltfn-territory/>>.

²² Stop Pineview Plastics Plant, "Stop the plastics plant in Pineview," Change.org, online: <<https://www.change.org/p/regional-district-of-fraser-fort-george-directors-stop-the-plastics-plant-in-pineview>>.

²³ Joti Grewal, "Prince George among cities with worst air quality worldwide in 2018: report" *The Interior News* (2019 March 5) online: <<https://www.interior-news.com/news/prince-george-among-cities-with-worst-air-quality-worldwide-in-2018-report/>>.

²⁴ Note that air modelling shows that dominant air patterns would tend to push much of the pollution created by the complex, along the River to College Heights and towards downtown Prince George, two areas that are within 3 and 5 kilometres of the Ethylene Project. Frequent inversions tend to hold poor air in the bowl of Prince George, which has the City's largest population concentration.

²⁵ See *Times Colonist*, "Pollution Proves Deadly in Prince George: Study", December 22 2007 and Elliott, Catherine and Copes, Ray, *Burden of Mortality due to Fine Particulate Air Pollution (PM2.5) in Interior and Northern B.C.*, Can J Public Health 2011; 102(5): 390-39, p. 391 ("Elliott and Copes 2011").

The incidence of asthma and chronic lung disease have long raised local health concerns.²⁶ Consequently, air quality has been a priority issue in Prince George in recent years.

Indeed, a Regional District document has stated:

*The city of Prince George's air shed has been identified as not being able to accept additional air emissions without compromising the health of its citizens...The Regional Board supports the elimination of health hazards and minimization of air and water pollution.*²⁷

In light of current air quality concerns, the proposed project must be carefully assessed – because petrochemical plants have been associated with high rates of cancer and other disease. “Petrochemical production can release airborne toxins such as 1,3-Butadiene, benzene, and toluene, causing cancer and other illnesses.”²⁸

A 2019 corporate report noted that over 30,000 kg of fugitive volatile organic compounds were released from a similar Nova facility in Red Deer, Alberta. That plant also releases ethylene and NO₂ pollutants.²⁹ The public in St. James, Louisiana has vociferously opposed a proposed plastics manufacturing plant for health reasons. “St. James is in the heart of Cancer Alley — an 85-mile stretch along the Mississippi River with a high concentration of industrial plants, and high cancer rates among residents.”³⁰ The Canadian Association of Physicians for the Environment (CAPE) has launched a campaign called “Unnatural Gas” to draw attention to the negative health impacts of the natural gas industry due to the many pollutants

²⁶ “Concerns about respiratory impacts such as asthma and chronic lung disease caused by Prince George’s already poor air quality has long been a pressing topic for health advocates. High rates of cancer, recurrent sinus and middle ear infections, cardio-vascular, and cerebro-vascular disease are also major problems being dealt with by medical practitioners within Prince George.” See: Eriel Strauch, “Social and medical concerns for Prince George heightened by West Coast Olefins proposed plants” *Canada-Info.ca* (2021 March 12), online: <<https://canada-info.ca/en/social-and-medical-concerns-for-prince-george-heightened-by-west-coast-olefins-proposed-plants/>>.

²⁷ Regional District of Fraser-Fort George, “Prince George Area Industrial Land Profile,” Regional District of Fraser-Fort George – Documents and Resources, (2008 May) at p. 8, online (pdf): <https://rdffg.bc.ca/uploads/745/PGArea_Industrial_Lands_Profile.pdf>.

²⁸ Beth Gardiner, “The Plastics Pipeline: A Surge of New Production Is on the Way,” *Yale Environment* 360, (2019 December 19) online: <<https://e360.yale.edu/features/the-plastics-pipeline-a-surge-of-new-production-is-on-the-way>>.

²⁹ See Nova Chemicals report on its emissions at their Joffre Site in : Nova Chemicals, “SiteLine – Joffre Site Community News” (2020) 31:2, online (pdf): <<https://www.novachem.com/download?id=3750>>; For more detail, see the Canadian National Pollutant Release Inventory’s data: <https://pollution-waste.canada.ca/national-release-inventory/archives/index.cfm?do=facility_substance_summary&lang=en&opt_npri_id=0000001779&opt_report_year=2017&fbclid=IwAR0fA1WsT1mjR4ruTTQtuF8u6OugKP02A5zS7tG1wQt8t2RgthakLTeeGQg#cac>.

³⁰ See this Note/Commentary about an area in Southern Louisiana known as ‘Petrochemical America: Courtney J. Keehan, “Lessons from Cancer Alley: How the (US) Clean Air Act has failed to protect public health in Southern Louisiana” (2018) 29:2 *Colo. Nat. Resources, Energy & Env’tl. L. Rev.* 341, online (pdf): <https://www.colorado.edu/law/sites/default/files/attached-files/keehan_online_copy.pdf>; and Earthjustice, “How Big Oil is Using Toxic Chemicals as a Lifeline – and How We Can Stop It” (2020 July 2) online: <<https://earthjustice.org/features/petrochemicals-explainer>>.

For more on the petrochemical industry and cancer, see: V. Iyer, and N. Mastorakis, *Unsafe Petrochemical Refinery Air Pollution And Its Environmental Impact Assessment* (Canary Islands: World Scientific and Engineering Academy and Society, 2009) online: <https://hero.epa.gov/hero/index.cfm/reference/details/reference_id/2205466>. Also, see: Elaine MacDonald & Sarah Rang, *Exposing Canada's Chemical Valley: An Investigation of Cumulative Air Pollution Emissions in Sarnia, Ontario Area* (Report) (Toronto: Ecojustice, 2007), online: <<https://ecojustice.ca/wp-content/uploads/2015/09/2007-Exposing-Canadas-Chemical-Valley.pdf>>.

released through the extraction, transmission, and use.³¹ Clearly there must be a thorough assessment of the chemicals that would be emitted by the proposed Prince George facilities.

There must also be an examination of particulate air pollution. Prince George already has challenges managing its PM_{2.5} concentrations, with contributions from industry, transportation, wood stoves, and forest fires. Any additional PM_{2.5} production associated with the new complex would be a concern,³² especially given that the BCR Industrial Site, where the complex is proposed, exceeded the air quality objectives for PM_{2.5} in 2014-2016.³³ Industrial sources in Prince George were the largest source of PM_{2.5} in 2014-2016.³⁴ Despite WCOL's CEO asserting that the NGL Recovery Project and Ethylene Project will not create any particulate pollution because they "do not have solid products,"³⁵ the impacts of potential particulate pollution needs careful assessment. For example, an assessment should look at PM_{2.5} production from the polyethylene plant – and at whether all the projects may exacerbate PM_{2.5} pollution in other ways, e.g., during construction and during use (e.g. employee travel to and from work, trucking construction materials, and trucking required for routine operations).

In sum, the potential impact of the entire petrochemical complex upon air quality must be given the most careful consideration – it must be assessed by a panel of independent experts holding public hearings.

Worker and residential health impacts generally

The project raises important occupational health concerns as well. Impacts of particular concern fall into three classes: carcinogenic, mutagenic, and endocrine disruptor-related impacts. An extensive list of potential occupational diseases associated with such facilities is found in the scientific literature footnoted below.³⁶

³¹ Canadian Association of Physicians for the Environment & Canadian Association of Nurses for the Environment, "How Healthy is Natural Gas?," online:

<https://www.unnaturalgas.org/?utm_source=coast%20reporter&utm_campaign=coast%20reporter&utm_medium=referral>.

³² Catherine T Elliott & Ray Copes, "Burden of Mortality due to Ambient Fine Particulate Air Pollution (PM 2.5) in Interior and Northern BC" (2011) 102(5): 390-393 Canadian Journal of Public Health, online (pdf):

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6973564/pdf/41997_2011_Article_BF03404182.pdf.

³³ Brayden Nilson, Peter Jackson, Bruce Ainslie, & Gail Roth, "Prince George Air Quality Emissions and Modelling (2014-2016)" (Presentation for Prince George City Council Meeting) (2021) at slide 9, online: <https://pub-princegeorge.escribemeetings.com/filestream.ashx?DocumentId=7045&utm_source=prince%20george%20citizen&utm_campaign=prince%20george%20citizen&utm_medium=referral>.

³⁴ Brayden Nilson, Peter Jackson, Bruce Ainslie, & Gail Roth, "Prince George Air Quality Emissions and Modelling (2014-2016)" (Presentation for Prince George City Council Meeting) (2021) at slide 5, online: <https://pub-princegeorge.escribemeetings.com/filestream.ashx?DocumentId=7045&utm_source=prince%20george%20citizen&utm_campaign=prince%20george%20citizen&utm_medium=referral>.

³⁵ Ken James, "Response from West Coast Olefins" (Statement of the CEO of the Project Proponent) (2019 September 11) online: <<https://www.princegeorgecitizen.com/opinion/response-from-west-coast-olefins-3737817>>.

³⁶ Robert DeMatteo, *Chemical Exposure and Plastics Production: Issues for Women's Health – a Review of Literature* (Prepared for National Network on Environments and Women's Health, 2011 December), online (pdf):

<<http://cwhn.ca/sites/default/files/resources/cancer/short%20lit%20review-%20EN%20-%20formatted.pdf>>. Also see:

Courtney J. Keehan, "Lessons from Cancer Alley: How the (US) Clear Air Act has failed to protect public health in Southern Louisiana" (2018) 29:2 Colo. Nat. Resources, Energy & Env'tl. L. Rev. 341, online (pdf):

<https://www.colorado.edu/law/sites/default/files/attached-files/keehan_online_copy.pdf>

For example, there are specific concerns about health impacts on women workers. Chemical exposures of women workers in the plastics industry have resulted in dramatically higher rates of breast cancer.³⁷

The issues of both workers' and residents' health and safety must be comprehensively addressed by independent experts.

Fire and Explosion Risks

Fires and explosions are a risk at most petrochemical facilities.³⁸ A comprehensive assessment needs to analyze the risks of fire, explosion, and consequent serious pollution that may occur at petrochemical facilities such as those proposed. As the Inland Marine Underwriters Association has pointed out:

Flammable organic solvents are found in nearly every plastic plant [including ethylene plants]. Solvents typically are highly volatile, represent a serious fire hazard...Improper handling of flammable liquids has caused serious fires in plastics plants.

A 2019 Yale University environmental journal article gave an example of the problem:

*The day before Thanksgiving, a blaze at the Texas Petroleum Chemical plant in Port Neches set off two explosions, forcing 50,000 people to evacuate their homes. A week later, authorities issued another evacuation warning after air monitors detected high levels of carcinogenic 1,3 Butadiene.*³⁹

In fact, the Solex Gas Liquids plant, located in Taylor, BC, experienced a series of explosions in 2000, injuring 14 employees at the plant and leading to the evacuation of 1,200 residents.⁴⁰ Like the proposed NGL Extraction Project, the Solex plant recovered propane, butane, and ethane from natural gas.⁴¹

Similarly, a fire at a plastics plant near Chicago created hazardous fumes that forced evacuation of nearby residents.⁴² An explosion at a plastics factory in Edmonton sent nine people to hospital,⁴³ and an

³⁷ "If we looked at women under the age of 50, pre-menopausal women, these women's risk ...took off like a rocket. They were over 400 per cent increased risk" said James Brophy, lead author of a study about exposure to plastic fumes and related breast cancer risk. Quote from: Gil Shochat & Megan Rowney, "Exposed to plastic fumes, women working in some factories have a 400% increased risk of breast cancer, study says," *Global News* (2014 January 24), online:

<<https://globalnews.ca/news/1099930/experts-push-for-increased-protections-for-women-exposed-to-plastics-fumes/>>. See study cited: James T Brophy, et al. "Breast cancer risk in relation to occupations with exposure to carcinogens and endocrine disruptors: a Canadian case-control study" (2012) 11:87 *Environmental Health*, doi: 10.1186/1476-069X-11-87, online (pdf): <<https://ehjournal.biomedcentral.com/track/pdf/10.1186/1476-069X-11-87.pdf>>.

³⁸ Merrit Kennedy, "Massive Explosion Rips Through Texas Chemical Plant, National Public Radio," NPR (2019 November 27), online: <<https://www.npr.org/2019/11/27/783263942/massive-explosion-rips-through-texas-chemical-plant>>.

³⁹ Beth Gardiner, "The Plastics Pipeline: A Surge of New Production Is on the Way," *Yale Environment* 360, (2019 December 19), online: <<https://e360.yale.edu/features/the-plastics-pipeline-a-surge-of-new-production-is-on-the-way>>.

⁴⁰ CBC News, "Taylor BC evacuated after explosion," (Last updated: 2000 November 10), online:

<<https://www.cbc.ca/news/canada/taylor-b-c-evacuated-after-explosion-1.188068>>

⁴¹ Government of British Columbia, "POWER FOR JOBS HELPS SOLEX EXPAND TAYLOR PLANT," (News Release) (2000 July 28), online: <<https://archive.news.gov.bc.ca/releases/archive/pre2001/2000/nrs2000/034nr.asp>>.

⁴² CBS News Chicago, "Fire at Plastics Plant Creates Hazardous Fumes in Zion," (2012, June 17), online:

<<https://chicago.cbslocal.com/2012/06/17/fire-at-plastics-plant-creates-hazardous-fumes-in-zion/>>.

⁴³ Amanda Ferguson, "Plastics Factory Blast Leaves Community Shaken," *CTV News* (2008 October 24), online:

<<https://edmonton.ctvnews.ca/plastics-factory-blast-leaves-community-shaken-1.336753>>.

explosion at a Chinese polyethylene plant killed seven.⁴⁴ Such explosions can create pollution that threatens the environment and the health of residents.⁴⁵

Residents of the Prince George area vividly remember the 2018 Westcoast gas pipeline explosion just north of the City, which forced the evacuation of 100 people from the Lheidli T'enneh First Nation.⁴⁶ Members of the Nation have remarked that they were worried about another explosion – and that witnessing the explosion was “traumatic.”⁴⁷

The risks of fire and explosion – including hazards to the environment and citizen safety – need to be thoroughly investigated by independent experts. The fire and explosion risk is especially of concern in light of the proximity of the projects to residents.

Impacts on Water and Fish

The Project is located in a watershed of local, provincial, and global importance. For example, a stream immediately adjacent to the Ethylene Project site feeds into the Fraser River, a Canadian Heritage River that supports some of the world’s greatest salmon runs.⁴⁸ Chinook salmon, rainbow trout and other freshwater species rear in the stream immediately adjacent to the Ethylene Project site. The stream is an important rearing stream for juvenile chinook.

Therefore, an assessment must carefully analyze the impacts of the projects on water, aquatic life and especially fish. Fraser River fish populations are in crisis – “[m]ore than 20 runs in the Fraser River are headed for endangered status, including those of the sockeye, chinook, and coho” salmon.⁴⁹ Thus, potential impacts on the precious salmon resource must be carefully studied.

For example, it has been estimated that the raw water supply needed by the initial proposed ethylene facility is between 600-650 cubic metres of water per hour. This equates to approximately six Olympic-sized pools every 24 hours. WCOL has indicated that they wish to draw this amount from groundwater. The impact of proposed water extraction/usage of all three projects on fish, streams and groundwater quantity and quality must be carefully evaluated.⁵⁰

⁴⁴ Industrial Fire World Staff “Explosion at Chinese Polyethylene Plant Kills 7,” (2020 November 13) Industrial Fire World, online: <<https://www.industrialfireworld.com/582574/explosion-at-chinese-polyethylene-plant-kills-7>>.

⁴⁵ World Wildlife Fund, “Environmental Concerns Mount Over Toxic Spill in China,” (2005 November 24), online: <https://wwf.panda.org/wwf_news/?51700/Environmental-concerns-mount-over-toxic-spill-in-China>.

⁴⁶ Amy Smart, “‘It was huge’: Enbridge gas pipeline ruptures, sparking massive fire and evacuation north of Prince George, B.C.,” *Financial Post* (2018 October 10), online: <<https://financialpost.com/news/newsalert-enbridge-pipeline-ruptures-sparks-fire-near-prince-george-b-c-2>>.

⁴⁷ Andrew Kurjata, “A year after Prince George pipeline blast, B.C. First Nation wants answers Social Sharing,” *CBC News* (2019 October 9), online: <<https://www.cbc.ca/news/canada/british-columbia/enbridge-pipeline-prince-george-one-year-1.5313608>>.

⁴⁸ Fraser Basin Council and BC Parks, “The Fraser River – A Canadian Heritage River Story Map,” Canadian Heritage Rivers, online: <<https://www.arcgis.com/apps/MapSeries/index.html?appid=65d67aa847fe46e0a454b7efe5209ce5>>.

⁴⁹ Sarah Grochowski, “Imminent extinction of Interior steelhead runs foretells what’s to come for Fraser River salmon: experts,” *Vancouver Sun* (2021 August 13), online: <<https://vancouver.sun.com/news/imminent-extinction-of-interior-steelhead-runs-foretells-whats-to-come-for-fraser-river-salmon-experts>>.

⁵⁰ West Coast Olefins Ltd. “West Coast Olefins Project Preliminary project description – Revision 1” (2019 September 12) at Table 3.3, online (pdf):

The water pollution that will come from the projects must also be scrutinized. Both water extraction and water pollution may pose risks to invaluable fish stocks in the area.

Two fish listed under the *Species at Risk Act* (SARA) are present in connected waters: White Sturgeon (Upper Fraser NSP and Nechako White NSP) and Bull Trout. They both frequent the Fraser and Nechako rivers in and around Prince George and are among many other species that could be negatively impacted by various aspects of this proposed project. Note that although sturgeon do not directly use the stream mentioned, they do feed on migrating chinook salmon.⁵¹

Note that fugitive plastics themselves may pose a potential threat to fish populations and their habitat. A great deal of new research is being done on this question. For example, research on the impacts of microplastics on aquatic environments and fish is underway at the Experimental Lakes Area in Ontario.⁵² Microplastic pollutants in the aquatic environment pose a risk of bio-accumulating in the smaller organisms in the stream, and then into salmon, sturgeon and other fish.⁵³

The end product of the planned plastics facility will also fuel the global plastic pollution problem, and impact fish in that fashion. Already, In the Strait of Georgia over 3,000 particles of microplastic per cubic meter of seawater are being found;⁵⁴ and a recent study estimated that returning BC adult salmon may be ingesting up to 90 particles of plastic per day.⁵⁵

An independent expert panel must carefully weigh potential impacts on waters and fish.

An Exacerbating Factor – the specific location of the projects

Negative social, health, economic and environmental impacts of the petrochemical complex could well be exacerbated by the specific location of the facilities. For example, the currently proposed Ethylene Project site is far too close to residential areas and well-used greenways in Prince George. It is located less than three kilometres away from residential areas with schools and playgrounds. It is also adjacent to trails and greenspaces that connect recreation and leisure (e.g. cycling; running; dryland ski training).

The site is adjacent to the Fraser River which is a key waterway for the local area, as well as a waterway of concern due to downstream impacts on fish populations. The proposed site is within City of Prince George boundaries and partly falls within the Agricultural Land Reserve.⁵⁶

<<https://projects.eao.gov.bc.ca/api/public/document/5d7bc9fb26583700218b9080/download/Preliminary%20Project%20Description%20Issued%20Rev1%20Sept%202012.pdf>>.

⁵¹ Fisheries and Oceans Canada, “Aquatic Species at Risk found in Canadian Waters,” online: <<https://www.dfo-mpo.gc.ca/species-especes/sara-lep/identify-eng.html?province=British%20Columbia>>.

⁵² International Institute for Sustainable Development – Experimental Lakes Area, “Measuring the Impact of Microplastics on Fresh Water” (2019 April 16), online: <<https://www.iisd.org/ela/research/current-research/measuring-impact-microplastics-fresh-water/>>. Also see: Therese M. Karlsson et al. “The unaccountability case of plastic pellet pollution” (2018) 129:1 Marine Pollution Bulletin 52-60, online: <<https://www.sciencedirect.com/science/article/pii/S0025326X18300523>>.

⁵³ Michaela Miller, Mark Hamman and Frederieke J Kroon, “Bioaccumulation and biomagnification of microplastics in marine organisms: A review and meta-analysis of current data” 15(10) PLoS ONE, online (pdf): <<https://journals.plos.org/plosone/article/file?id=10.1371/journal.pone.0240792&type=printable>>.

⁵⁴ Jean-Pierre Desforges et al., “Widespread Distribution of Microplastics in Subsurface Seawater in the NE Pacific Ocean: Marine Pollution Bulletin, 79 (2014) 94-99, at pp.94-98.

⁵⁵ Jean-Pierre Desforges et al., “Ingestion of Microplastics by Zooplankton in the Northeast Pacific Ocean,” *Archives of Environmental Contamination and Toxicology*, June 12, 2015, Abstract.

⁵⁶ See: Provincial Agricultural Land Commission, “ALR & Maps,” online: <<https://www.alc.gov.bc.ca/alc/content/alr-maps>>.

The Ethylene Project site is simply not suitable for a large petrochemical plant and the potential vehicular traffic, resulting pollution, and other risks. Indeed, it is arguable that this proposed land use and location precludes the ideal vision of Prince George in 2040 as articulated in the City's Official Community Plan as "a model for sustainable Canadian cities" with a healthy local environment and spectacular natural setting listed as two key points.⁵⁷

Similar serious questions are being raised about the appropriateness of the Agricultural Land Reserve site recently announced for the Pineview Natural Gas Liquid Recovery Project.⁵⁸

In sum, the siting of all the projects must be seriously assessed by experts – to ensure that impacts on neighbours, farm land, waterways and community health are accurately measured and considered.

Social impacts associated with temporary "man camps" in the construction phase

Scholars have documented that temporary industrial "man camps" often used to build similar projects have negative social impacts on the communities around them – including high rates of violence among men living in work camps, and documented increases in domestic violence.⁵⁹

Documented worker experiences have also noted particular stresses, strains and challenges associated with work camps. These include transportation logistics, financial impacts, and safety. Related jobs in the construction phase can come with significant costs for individuals and community.⁶⁰

Notably, the National Inquiry into Missing and Murdered Indigenous Women and Girls, resulted in several calls to action requesting mitigation of the negative impacts of resource-extraction and development projects, on the safety and security of Indigenous women, girls, and 2SLGBTQQIA people.⁶¹ The National Inquiry heard testimony that resource extraction projects can cause an increase in violence against Indigenous women in several ways – and contribute to transience of workers, harassment and assault at the workplace, substance abuse and addictions, and economic insecurity.⁶²

⁵⁷ City of Prince George, "Official Community Plan Bylaw No. 8383" (2011) at p. 20, online (pdf):

<<https://bylaws.princegeorge.ca/Modules/bylaws/Bylaw/Download/df8353e7-7824-49d6-92a4-98de997eff03>>.

⁵⁸ Caden Fanshaw, "'This is not the right place for it': Pineview residents upset at possibility of new Westcoast Olefins plant," CKPGToday.ca (2021 July 28), online: <<https://ckpgtoday.ca/2021/07/28/this-is-not-the-right-place-for-it-pineview-residents-upset-at-possibility-of-new-westcoast-olefins-plant/>>.

⁵⁹ Kerry Carrington, Alison McIntosh, and John Scott, "Globalization, Frontier Masculinities and Violence: Booze, Blokes and Brawls." (2010) 50:3 The British Journal of Criminology 393-413, online: <<https://academic.oup.com/bjc/article/50/3/393/468175>>. Also see: First Peoples Worldwide, "Violence from Extractive Industry 'Man Camps' Endangers Indigenous Women and Girls," First Peoples Worldwide-University of Colorado Boulder (2020 January 29), online: <<https://www.colorado.edu/program/fpw/2020/01/29/violence-extractive-industry-man-camps-endangers-indigenous-women-and-children>>.

⁶⁰ Laura Ryser, Sean Starkey, & Greg Halseth, "The workers' perspective: The impacts of long distance labour commuting in a northern Canadian small town" (2016) 3:3 The Extractive Industries and Society 594-605, online: <<https://www.sciencedirect.com/science/article/pii/S2214790X16300120>>.

⁶¹ See Calls for Justice 13.1-13.5: Canada, National Inquiry Into Missing and Murdered Indigenous Women and Girls, *Reclaiming Power and Place: The Final Report of the National Inquiry into Missing and Murdered Indigenous Women and Girls – Calls for Justice* (2019), online: <<https://www.mmiwg-ffada.ca/wp-content/uploads/2019/06/Calls-Web-Version-EN.docx>>.

⁶² Canada, National Inquiry Into Missing and Murdered Indigenous Women and Girls, *Reclaiming Power and Place: The Final Report of the National Inquiry into Missing and Murdered Indigenous Women and Girls – Volume 1A* (2019) at 584, online: <<https://www.mmiwg-ffada.ca/wp-content/uploads/2019/06/Calls-Web-Version-EN.docx>>.

Careful assessment is needed to consider the potential negative social impacts of temporary work camps on both workers and on Indigenous and settler communities.

A FUNDAMENTAL LOCAL ISSUE: WILL THIS PETROCHEMICAL COMPLEX FORECLOSE AN ALTERNATIVE PATH FOR PRINCE GEORGE – ONE THAT WOULD BE ECONOMICALLY, SOCIALLY AND ENVIRONMENTALLY SUPERIOR?

Once dependent on forestry and other extractive industries, Prince George is diversifying, and becoming arguably one of the hottest technology centres in North America. Young entrepreneurs are finding Prince George to be ideal, as it is affordable and offers a desirable lifestyle. This makes Prince George appealing for young start-up companies.

“We are the small but growing Silicon Valley of the North,” says Will Cadell, CEO at Sparkgeo, a Prince George company building cutting-edge geospatial technology for companies around the world. Entrepreneurial start-up firms building a cutting-edge 21st century economy are increasingly open to locating in modern Prince George.⁶³

The City has been partnering with local non-profits and organizations to re-brand Prince George as a desirable place to work and live.⁶⁴ The City Official Community Plan highlights that the diversification of the economy over the last two decades has provided stability – and that future growth in a variety of sectors should meet standards for environmental, social and economic returns.⁶⁵ But the City will have difficulty overcoming the old “heavy industry town” reputation if the proposed complex is approved. The City would then be less desirable to those seeking a quality, livable, family-friendly environment.

In the long run, the degradation of the natural environment could be *economically* damaging to Prince George. It could destroy the potential to attract other sectors, jobs, and talent to the City:

*In recent years, cities that have experienced the strongest economic growth have tended to be the most livable – cities such as Vancouver, Victoria, Seattle and Portland. The chief economist for one of California’s largest corporations has found that corporate decision-makers consistently rank the quality of an area’s physical environment as one of the top two factors in siting an enterprise, and surveys support that view.*⁶⁶

Recent surveys indicate that the University of Northern British Columbia will likely suffer if the proposed project proceeds. In early days at UNBC (1992-1994), it was difficult to recruit professors and students to come to “stinky, dirty” Prince George. Decades of hard work is starting to change the City’s reputation.

⁶³ BC Business, “Startup Businesses are Finding Happy Homes in Prince George,” online: <<https://www.bcbusiness.ca/startup-businesses-are-finding-happy-homes-in-prince-george>>.

⁶⁴ For example, see: City of Prince George, “Move Up Prince George,” posted on Facebook, online: <<https://www.facebook.com/MoveUpPG/>>.

⁶⁵ City of Prince George, “Official Community Plan Bylaw No. 8383 – Part C” (2011) at p. 25, online (pdf): <<https://www.princegeorge.ca/Business%20and%20Development/Documents/Planning%20and%20Development/OCP/BL8383-BYLA-W-PART-C.pdf>>.

⁶⁶ Commission on Resources and Environment, Calvin Sandborn, *Green Space and Growth*, March 1996, p. 4.

However, a return to the “dirty town” reputation would place both the local University and college at risk.⁶⁷

In recent years, the City has tried to attract retirees to the community, but retirees are not likely to come – or stay – if the current proposal leads to a large new industrial zone right in the City. The loss of retirees, young entrepreneurs, academics, families, artists and cultural development will detract from the City’s growing attractiveness and assets. It will reverse the progress made in recent years to diversify the economy, and ensure a more robust economic future.

At the very least, a thoughtful and independent assessment needs to be done to assess whether approval of the petrochemical complex might actually cause serious *economic and social harm* – by foreclosing a more prosperous and sustainable economic path for the City.

THE SUSTAINABILITY DEAL-BREAKER: THE BROADER IMPLICATIONS OF THE PETROCHEMICAL COMPLEX

The petrochemical complex runs counter to government commitments on climate change and plastics.

This three-part petrochemical complex has broad implications on the province, the nation and the world. An independent panel is needed to analyze the overall project’s broad impacts on:

- Climate change – and the province’s commitments to address climate change;
- Increasing fracking damage in the northeast of British Columbia;
- Undermining the province’s stated commitments to reduce unnecessary plastic products; and
- The province’s commitments to reduce plastic waste – and to prioritize plastic recycling over production of virgin plastics.

Will this Project Exacerbate Climate change?

*Plastic Plants are Poised to be the Next Big Carbon Superpolluters” – Scientific American.*⁶⁸

⁶⁷ See UNBC ENVS 326 course projects 2019. Survey available upon request.

⁶⁸ Benjamin Storrow, “Plastic Plants are Poised to Be the Next Big Carbon Superpolluters” *Scientific American* (2020 January 24), online: <<https://www.scientificamerican.com/article/plastics-plants-are-poised-to-be-the-next-big-carbon-superpolluters>>. Also see: Reid Frazer, “The US Natural Gas Boom is Fueling a Global Plastics Boom” *NPR* (2019 November 15), online: <<https://www.npr.org/2019/11/15/778665357/the-u-s-natural-gas-boom-is-fueling-a-global-plastics-boom>>; Earthworks “Fracking for Plastic,” online: <<https://www.earthworks.org/issues/fracking-for-plastic/>>; Center for International Environmental Law, “How Fracked Gas, Cheap Oil, and Unburnable Coal are Driving the Plastics Boom,” online (pdf): <<https://www.ciel.org/wp-content/uploads/2017/09/Fueling-Plastics-How-Fracked-Gas-Cheap-Oil-and-Unburnable-Coal-are-Driving-the-Plastics-Boom.pdf>>.

All three proposed projects will encourage more natural gas fossil fuel utilization. And the polyethylene (plastics) plant is particularly problematic. A rapidly expanding plastics industry is a major threat to world climate. Currently, plastics-related industry consumes 7-8% of the world's oil and gas production.⁶⁹ By 2050 it has been estimated that the plastics industry overall could be consuming 15% of the global annual carbon budget.⁷⁰

Currently, the oil and gas industry is encouraging massive increases in plastics production – trying to somehow sell the glut of fracked gas and oil now flooding the market. But that is bad news for those who worry about the climate that their grandchildren will inherit. The problem is that new petrochemical/plastic plants create massive, permanent new sources of greenhouse gases – in a world where the head of the International Energy Association warns that we simply cannot meet long-term global CO₂ emission goals if we build *any* new emitting infrastructure.⁷¹

In spite of this climate imperative, a Yale University journal has revealed that the oil and gas industry is rapidly expanding *plastic production* in order to replace the oncoming phase-out of fossil fuels for transportation and other uses:

*Companies like ExxonMobil, Shell, and Saudi Aramco are ramping up output of plastic — which is made from oil and gas, and their byproducts — to hedge against the possibility that a serious global response to climate change might reduce demand for their fuels, analysts say. Petrochemicals, the category that includes plastic, now account for 14 percent of oil use, and are expected to drive half of oil demand growth between now and 2050, the International Energy Agency (IEA) says. The World Economic Forum predicts plastic production will double in the next 20 years.*⁷²

Scientific American recently published an article entitled: “Plastic Plants are Poised to be the Next Big Carbon Superpolluters.” The article points out:

A boom in petrochemical plants driven by cheap natural gas could lock in greenhouse emissions for decades to come.

Scientific American goes on to quote lawyer Steven Feit:

⁶⁹ Plastics consume 4% of the world's oil and gas production, and an additional 3-4% of world oil and gas is used for plastics manufacture. See: Jefferson Hopewell, Robert Dvorak and Edward Kosior, “Plastics recycling: challenges and opportunities” (2009) 364:1526 *Philosophical Transactions of the Royal Society B* 2115, online (pdf): <<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2873020/pdf/rstb20080311.pdf>>.

⁷⁰ FN World Economic Forum, “The New Plastics Economy: Rethinking the future of plastics” (2016) at p. 22, online (pdf): <http://www3.weforum.org/docs/WEF_The_New_Plastics_Economy.pdf>. Also see: Environmental Law Centre, *Seven Reforms to Address Marine Plastic Pollution*, Meghan Partridge and Calvin Sandborn, (Report) online: <http://www.elc.uvic.ca/wordpress/wp-content/uploads/2017/08/2017-01-11-MarinePlastics_2017Oct23.pdf> at p. 7.

⁷¹ Faith Birol, executive director of the International Energy Agency has stated that in order to meet global CO₂ emission goals, “[w]e have no room for anything [new] that emits CO₂ emissions.” See: Adam Vaughn, “World has no capacity to absorb new fossil fuel plants, warns IEA” *The Guardian* (2018 November 13), online: <<https://www.theguardian.com/business/2018/nov/13/world-has-no-capacity-to-absorb-new-fossil-fuel-plants-warns-iea>>.

⁷² Beth Gardiner, “The Plastics Pipeline: A Surge of New Production Is on the Way”, *Yale Environment* 360, (2019 December 19) online: <<https://e360.yale.edu/features/the-plastics-pipeline-a-surge-of-new-production-is-on-the-way>>.

*Plastic is fossil fuel in another form. Everything that happens before you see that plastic on the shelf is emissions intense. It releases all manner of pollutants and toxic chemicals...At the top level, dealing with the climate crisis requires dealing with the plastics crisis.*⁷³

A recent Earthjustice report encapsulated the issue:

Petrochemicals are a carbon bomb that threaten to cancel out the progress we've made on solving the climate crisis... New petrochemical facilities would extend the life of the oil and gas industry and undermine efforts to keep fossil fuels in the ground.

For example, just one proposed petrochemical complex in Ohio would require thousands of shale gas wells to be drilled and fracked to keep it supplied with raw materials. Petrochemical facilities are energy-intensive and dump an enormous amount of carbon pollution into the air. For example, Louisiana's Formosa mega-complex alone would emit 13.6 million tons of carbon pollution every year — the equivalent of adding 2.8 million cars to the road.

*After they are produced, petrochemical products continue to fuel the climate crisis. For example, nearly 12% of plastic waste is incinerated, releasing more greenhouse gases as well as dangerous toxins. New research suggests that plastic releases greenhouse gases as it degrades — representing a potentially vast and uncontrollable source of emissions.*⁷⁴

Indeed, the multitude of new petrochemical/plastic plants may make it impossible to deal with the climate challenge. Judith Enck, a former regional director for the U.S. Environmental Protection Agency and founder of Beyond Plastics, has warned:

*There are a lot of these facilities that are in the permitting process. We're pretty close to it all being too late,' 'If even a quarter of these ethane cracking facilities are built, it's locking us into a plastic future that is going to be hard to recover from.*⁷⁵

⁷³ Benjamin Storrow, "Plastic Plants are Poised to Be the Next Big Carbon Superpolluters" *Scientific American* (2020 January 24), online: <<https://www.scientificamerican.com/article/plastics-plants-are-poised-to-be-the-next-big-carbon-superpolluters>>. Also see: Reid Frazer, "The US Natural Gas Boom is Fueling a Global Plastics Boom" *NPR* (2019 November 15), online: <<https://www.npr.org/2019/11/15/778665357/the-u-s-natural-gas-boom-is-fueling-a-global-plastics-boom>>; Earthworks "Fracking for Plastic," online: <<https://www.earthworks.org/issues/fracking-for-plastic/>>; Center for International Environmental Law, "How Fracked Gas, Cheap Oil, and Unburnable Coal are Driving the Plastics Boom," online (pdf): <<https://www.ciel.org/wp-content/uploads/2017/09/Fueling-Plastics-How-Fracked-Gas-Cheap-Oil-and-Unburnable-Coal-are-Driving-the-Plastics-Boom.pdf>>.

⁷⁴ Earthjustice, "How Big Oil is Using Toxic Chemicals as a Lifeline – and How We Can Stop It" (2020 July 2), online: <<https://earthjustice.org/features/petrochemicals-explainer>>.

⁷⁵ Beth Gardiner, "The Plastics Pipeline: A Surge of New Production Is on the Way," *Yale Environment 360*, (2019 December 19), online: <<https://e360.yale.edu/features/the-plastics-pipeline-a-surge-of-new-production-is-on-the-way>>. Note that excess North American fracked natural gas is driving this boom, not only in North America, but also in Europe. See: Beth Gardiner, "Europe Plastics Industry About to Boom. US Fracking is Driving It" *National Geographic* (2021 March 25), online: <<https://www.nationalgeographic.com/environment/article/europe-plastics-industry-about-to-boom-us-fracking-driving-it>>.

[Note that the proposed petrochemical complex is just such an ‘ethane cracking facility.’ See the WCOL flow charts above in Figures 1 and 2.]

British Columbia has committed to reducing greenhouse gas emissions. Yet the proposed project involves building **long-term infrastructure that entrenches future consumption of fossil fuels**. A decision to approve this project will directly impact the greenhouse gas emissions from British Columbia – not just now, but in 2050 and beyond. Therefore, the decision to approve the combined petrochemical complex should not be made lightly. **The fact is, approval of this complex may be one of the most consequential climate change decisions your government will ever make.**

As University of Toronto science Professor Laura Tozer has warned:

The evidence is clear that owners of fossil fuel assets and infrastructure obstruct effective climate policy. Every time we invest in infrastructure or institutions whose very existence depends on continuing to use fossil fuels, it makes it harder for Canada to tackle the climate crisis.⁷⁶

If your government is serious about its avowed commitment to reducing greenhouse gases, this proposed long-term natural gas-consuming infrastructure should not be approved. At the very least, approval should not be given without the strictest possible scrutiny. This multi-billion-dollar petrochemicals complex will operate for decades and decades – long after much of the developed world expects to forsake fossil fuels entirely.

As governments and financial institutions begin to move away from large fossil fuel investments, massive new infrastructure of this kind should only be approved after the most rigorous assessment of costs and benefits.

Surely a panel of experts must consider the long-term, global climate change impacts of this petrochemical complex. For example, it is estimated that the larger Formosa petrochemical complex is equivalent to adding 2.8 million cars to the road. Just how many cars is the proposed Prince George complex equivalent to? We need to know, before this gets approved.

The catastrophic climate change impacts that BC has suffered in recent years – from the mountain pine beetle scourge that killed our pine forests, to the drought that is wiping out salmon stocks, to the apocalyptic summer that Interior British Columbians suffered this summer – demands nothing less.

Will This Project Increase Fracking Damage?

With natural gas prices low, many fracking operations are losing money, so producers have been eager to find a use for the ethane they get as a byproduct of

⁷⁶ Professor Laura Tozer, “Canada Needs to Embrace its Fossil-Free Energy Future” Corporate Knights (2021 March 17), online: <<https://www.corporateknights.com/channels/energy/canada-needs-to-embrace-its-fossil-free-energy-future-16159829/>>.

drilling...they're looking for a way to monetize it, Feit said...‘You can think of plastic as kind of subsidy for fracking.’

Beth Gardner, Yale Environment 360⁷⁷

The natural gas used for this proposed project comes at a steep environmental cost. The environmental toll imposed by that natural gas production must be fully considered in any fair assessment of the impact of the proposed petrochemical complex. Fracking operations that create the inputs for this project cause widespread environmental damage:

- The numerous gas wells, pipelines, seismic exploration lines, and service roads necessary to produce natural gas will fragment wildlife habitat. This profoundly impacts grizzly and caribou populations.
- Fracking operations extract precious water from watersheds – and damage streams, wetlands and fish populations.
- Water used in the fracking process can be highly contaminated with salts, radioactive materials, arsenic, benzene mercury and other substances.
- Fracking damages air quality – and puts nearby human populations at risk from lethal sour gas and other toxins.
- Recent research indicates that fracking may be a significant contributor to climate change because it leads to leaks of methane gas, an extraordinarily powerful greenhouse gas.

Other environmental harms caused by fracking are documented in a previous Environmental Law Centre study.⁷⁸

Clearly, the impacts of increased fracking should be considered by the panel of experts.

Will this Project Undermine Provincial Efforts to Reduce Plastic Waste?

Plastic waste consumes vast amounts of energy – it fills our landfills, clogs our storm water systems, and litters our landscapes. Other damage created by the end product of plastic production is well documented:

The world's oceans are choking on plastic. Every year millions of tons of plastic straws, plastic bags, food wrappers, bottles, Styrofoam, plastic fishing gear and other plastics cascade into the sea. This trash kills countless fish, more than a million seabirds and 100,000 marine mammals annually. Sea turtles eat plastic bags, mistaking them for jellyfish. Six-pack rings strangle gulls and herons. Plastic bags entangle and drown seals and dolphins. Whales become entangled in plastic nets – or ingest so much plastic debris that their guts burst.

⁷⁷ Beth Gardiner, “The Plastics Pipeline: A Surge of New Production Is on the Way,” Yale Environment 360, (2019 December 19) online: <<https://e360.yale.edu/features/the-plastics-pipeline-a-surge-of-new-production-is-on-the-way>>.

⁷⁸ For a complete compendium of impacts from fracking see the ELC’s “Request that Minister Polak order a Strategic Economic and Environmental Assessment of Liquid Natural Gas Development in British Columbia, pursuant to Section 49 of the Environmental Assessment Act,” online (pdf) at: <https://elc.uvic.ca/wordpress/wp-content/uploads/2015/01/Strategic-Economic-and-Environmental-Assessment-of-LNG_2013-02-01_2013Aug.pdf>.

Worse still, plastic eventually breaks down into microparticles that are now everywhere. And our children are eating it. Microplastics are widely found in tap water and bottled water. Most commercial sea salt contains plastic particles. British Columbia scientists have found more than 3,000 plastic microparticles per cubic metre of water in the Strait of Georgia. One expert estimates that returning B.C. salmon ingest up to 90 plastic particles a day. In a recent survey, the average B.C. shellfish contained eight plastic particles – particles that may contain endocrine inhibitors and carcinogens.

And this problem is rapidly growing. With plastic production doubling every 20 years, Royal Society research estimates that by 2050 the oceans could contain more plastic than fish.⁷⁹

Margaret Atwood and Calvin Sandborn⁸⁰

In 2018 the Parliament of Canada passed a remarkable *unanimous* resolution to deal with such wasteful plastic pollution.⁸¹ This led the Government of Canada to adopt a National Plastics Reduction Strategy and to commit to a ban harmful single-use plastics.⁸² Similar concerns led the Government of British Columbia to facilitate local government bans on harmful single-use plastic items – and to promise a legal framework to provide for province-wide bans of single-use plastic items.⁸³

Independent experts on the requested assessment panel will need to analyze a critically important strategic question: Will creation of this massive new petrochemical/plastics production facility undermine government policy commitments to reduce production of unnecessary plastic products?

Will this Project Undermine Efforts to Encourage Plastic Recycling?

A related question arises. It is now widely recognized that increasing recycling of plastics (and other materials) is desirable. This is why the European Union and the Government of Canada are encouraging the development of a Circular Economy.⁸⁴

⁷⁹ The facts cited in this quote are all documented in Environmental Law Centre, *Seven Reforms to Address Marine Plastic Pollution*, Meghan Partridge and Calvin Sandborn (Report), online: <http://www.elc.uvic.ca/wordpress/wp-content/uploads/2017/08/2017-01-11-MarinePlastics_2017Oct23.pdf> at pp.4-7.

⁸⁰ Margaret Atwood and Calvin Sandborn, “Can Canada Re-invent the Plastic Economy?,” *Globe and Mail* (2018 May 2), online: <<https://www.theglobeandmail.com/opinion/article-can-canada-reinvent-the-plastic-economy/>>.

⁸¹ CBC News, “BC MP celebrates ‘tremendous’ victory as plastics pollution motion passes House” *CBC News* (2018 December 5), online: <<https://www.cbc.ca/news/canada/british-columbia/b-c-mp-celebrates-tremendous-victory-as-plastics-pollution-motion-passes-house-1.4934361>>.

⁸² Charlie Smith, “Trudeau promises crackdown on plastic wastes – months after NDP MP won unanimous support for action” *Straight Talk* (2019 June 10), online: <<https://www.straight.com/movies/1252561/trudeau-promises-crackdown-plastic-wastes-months-after-ndp-mp-won-unanimous-support>>.

⁸³ BC Ministry of Environment and Climate Change Strategy News Release, “Province approves local bans, takes action on plastics,” September 12, 2020, online: <https://archive.news.gov.bc.ca/releases/news_releases_2017-2021/2020ENV0051-001715.htm>.

⁸⁴ See, for example, Ellen MacArthur Foundation “Towards the Circular Economy: Business rationale for an accelerated transition,” (2015 December 2)(Report), online: <<https://www.ellenmacarthurfoundation.org/publications/towards-a-circular-economy-business-rationale-for-an-accelerated-transition>>, and Ellen MacArthur Foundation, “The New Plastics Economy: rethinking the future of plastic & catalyzing action,” (2017 December 13)(Report), online:

Currently, only 9% of plastic waste in Canada gets recycled, and approximately 87% of plastic waste in Canada ends up in the landfill or leaked into the environment.⁸⁵ In 2016, plastic waste amounted to a loss of economic value equivalent to approximately \$7.8 billion CAD.⁸⁶ More than 90% of the plastic that is produced is new plastic, using virgin fossil feedstocks rather than recycled plastics in the manufacturing process.⁸⁷

It is clearly necessary to supplant the current wasteful linear plastics supply chain (“manufacture, use, throwaway”) with a *circular* plastics economy. If we produce plastic products, they must be recycled or reused. The Government of Canada has clearly recognized the need to prioritize plastic recycling.⁸⁸

However, perhaps the single biggest barrier to effective recycling is the fact that production of virgin plastics from oil and gas is currently cheaper than recycling.⁸⁹ Experts agree that recycled plastic needs to be made more economically competitive than virgin plastics. Otherwise, recycling efforts will likely fail.

To address this market disadvantage that recycling faces, many jurisdictions have designed taxes and other policies to *discourage the production of virgin plastics* from fossil fuels – exactly the kind of plastic production contemplated by the proposed petrochemical complex.⁹⁰ Discouraging this kind of virgin plastic production is necessary, for recycling efforts to succeed. The Organization for Economic Co-operation and Development (OECD) has stated:

<https://www.ellenmacarthurfoundation.org/publications/the-new-plastics-economy-rethinking-the-future-of-plastics-catalysing-action>. Also see: Organization for Economic Co-operation and Development (OECD) “Improving Markets for Recycled Plastics: Trends, Prospects and Policy Responses,” (2018 May 24) online: <https://www.oecd.org/env/improving-markets-for-recycled-plastics-9789264301016-en.htm>; Institute for European Environmental Policy “EPR in the EU Plastics Strategy and the Circular Economy: A focus on plastic packaging,” (2017 November 9) online (pdf): <https://ieep.eu/uploads/articles/attachments/95369718-a733-473b-aa6b-153c1341f581/EPR%20and%20plastics%20report%20IEEP%209%20Nov%202017%20final.pdf>. A recent discussion from Environment and Climate Change Canada states that a plastic ban “...complements government and business actions to transition to a more circular economy that will not only reduce pressure on the environment, but also increase competitiveness, stimulate innovation and boost economic growth by creating new jobs.” See: Environment and Climate Change Canada, “Discussion on A Proposed Integrated Management Approach to Plastic Products to Prevent Waste and Pollution,” (2021 July 12), online: <https://www.canada.ca/en/environment-climate-change/services/managing-reducing-waste/consultations/plastics.html>.

⁸⁵ Deloitte & Cheminfo Services Inc., “Economic Study of the Canadian Plastic Industry, Markets and Waste,” (Environment and Climate Change Canada: 2019), online: http://publications.gc.ca/collections/collection_2-19/eccc/En4-366-1-2019-eng.pdf.

⁸⁶ Deloitte & Cheminfo Services Inc., “Economic Study of the Canadian Plastic Industry, Markets and Waste,” (Environment and Climate Change Canada: 2019), online: http://publications.gc.ca/collections/collection_2-19/eccc/En4-366-1-2019-eng.pdf.

⁸⁷ Ellen MacArthur Foundation, “The New Plastics Economy: rethinking the future of plastic & catalyzing action,” (2017 December 13) (Report), online: <https://www.ellenmacarthurfoundation.org/publications/the-new-plastics-economy-rethinking-the-future-of-plastics-catalysing-action>.

⁸⁸ For example, an Environment and Climate Change Canada News Release, May 31, 2021 states: “The Government of Canada is committed to achieving zero plastic waste by 2030, and is working to take action to reduce plastic pollution across the country and to create a circular economy for plastics.”

⁸⁹ Jillian Ambrose, “War on plastic waste faces setback as cost of recycled material soars,” *The Guardian* (2019 October 13), online: <https://www.theguardian.com/environment/2019/oct/13/war-on-plastic-waste-faces-setback-as-cost-of-recycled-material-soars>.

⁹⁰ See the following ELC Report: Erin Gray, Calvin Sandborn, Jenny YC Lee, Alex McArdle, “Enhancing Plastic Recycling in Canada,” (2020 August) at pp.22-26, online (pdf): <https://elc.uvic.ca/wordpress/wp-content/uploads/2020/08/2019-03-06-Enhancing-Plastic-Recycling-in-Canada-FINAL-FOR-WEBSITE-AND-PUBLIC.pdf>.

Governments of G7 countries could address these challenges [of virgin plastics being priced too low] through policy interventions that aim to level the playing field between virgin and recycled plastics or support the market for recycled plastics. They include: Taxes on the use of virgin plastics or differentiated value added taxes for recycled plastics or plastic products.⁹¹

Yet, there is a real risk that government support for the proposed project would advantage *the continued expansion of virgin plastic production* – which will undercut the recycling we need, if we are to create a circular economy.

The expert panel should consider whether establishment of this petrochemical complex – and its production of yet more virgin plastic – will ultimately doom Canada's plastic recycling efforts.

A CRITICAL FINAL ISSUE: WILL THIS PETROCHEMICAL COMPLEX BACKFIRE ECONOMICALLY?

The Economic Risk – The Stranded Assets Danger

Investing in fossil fuel infrastructure is a very risky economic move these days. There is a clear danger that such fossil fuel facilities will become unprofitable – or even inoperable – when governments and markets respond to the growing climate emergency. The risk that this petrochemical complex will become a “stranded asset” is growing quickly and dramatically. This outcome could have enormous negative impacts on both the proponent and on British Columbians.

Mark Carney, former governor of the Bank of Canada and the Bank of England has warned that investments in fossil fuel infrastructure are likely to become “worthless” – and warned countries to avoid investing in such infrastructure that could become “stranded.”⁹² The International Energy Agency notes that large asset managers and asset owners are “facing heightened scrutiny of investments in the fossil fuel industry.”⁹³ The executive vice-president of the European Commission, Frans Timmermans, has put the point bluntly:

There's no point building assets now that will be of no use in a few years.⁹⁴

⁹¹ Erin Gray, Calvin Sandborn, Jenny YC Lee, Alex McArdle, “Enhancing Plastic Recycling in Canada,” (2020 August) at p. 25, online (pdf): <<https://elc.uvic.ca/wordpress/wp-content/uploads/2020/08/2019-03-06-Enhancing-Plastic-Recycling-in-Canada-FINAL-FOR-WEBSITE-AND-PUBLIC.pdf>>.

⁹² Andrew Sparrow, “Firms must justify investment in fossil fuels, warns Mark Carney,” *The Guardian* (2019 December 30), online: <<https://www.theguardian.com/business/2019/dec/30/firms-must-justify-investment-in-fossil-fuels-warns-mark-carney>>.

⁹³ International Energy Agency (IEA) and Centre for Climate Finance & Investment, “Energy Investing: Exploring Risk and Return in the Capital Markets” (2020 June, 2nd Edition) at p. 5, online (pdf): <https://iea.blob.core.windows.net/assets/3d8c7c6f-bd94-43b8-94ef-d30135c0c776/Energy_Investing_Exploring_Risk_and_Return_in_the_Capital_Markets.pdf>.

⁹⁴ Rachel Morrison “Gas is the New Coal With Risk of 100 Billion in Stranded Assets”, *Bloomberg News* (2021 April 17), online: <<https://www.bnnbloomberg.ca/gas-is-the-new-coal-with-risk-of-100-billion-in-stranded-assets-1.1591499>>.

Similarly, the vice-president of the European Investment Bank, Andrew McDowell has issued a similar warning against the risk of investing in “stranded” fossil fuel infrastructure, stating:

*Investing in new fossil fuel infrastructure like liquefied natural gas terminals is increasingly an economically unsound decision.*⁹⁵

The Intergovernmental Panel on Climate Change (IPCC) warns that mitigation efforts necessary to meet the Paris Agreement target of limiting global warming to 1.5°C will create risks for places like Canada that depend heavily on fossil fuels for revenue and employment.⁹⁶ The IPCC’s warns that innovations associated with decarbonizing the economy “may leave firms and utilities with stranded assets, as the transition can happen very quickly.”⁹⁷ The transition may lead to certain fossil fuels being rendered “unburnable” and the associated industrial assets becoming “obsolete.”⁹⁸

Investors have been wary of investing in coal for some time now, and the European Investment Bank President Werner Hoyer warns that natural gas is now facing a similar fate:

*To put it mildly, gas is over. Without the end to the use of unabated fossil fuels, we will not be able to reach the climate targets.*⁹⁹

Indeed, financial market regulators, in Canada and globally, are increasingly concerned about risky fossil fuel investments. For that reason, regulators are moving in the direction of mandating the disclosure of climate-change related risks of various investments. This will allow investors to more accurately assess whether risks associated with climate change may diminish the return on their investments. Many financial institutions now require climate change related financial risk disclosure from clients – and the Government of Canada is considering requiring such disclosures by law.¹⁰⁰

Note that the Expert Panel on Sustainable Finance commissioned by Environment and Climate Change Canada and Finance Canada, highlights that “[w]hile there is uncertainty as to how or when impacts will

⁹⁵ Matthew Green, “Global LNG projects jeopardized by climate concerns, pandemic delays – report” *Reuters* (2020 July 6), online: <<https://www.reuters.com/article/us-climate-change-gas-idUKKBN247303>>.

⁹⁶ IPCC, “Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty” (2018) at p. 21, online (pdf): <https://www.ipcc.ch/site/assets/uploads/sites/2/2019/06/SR15_Full_Report_High_Res.pdf>.

⁹⁷ IPCC, “Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty” (2018) at p. 323, online (pdf): <https://www.ipcc.ch/site/assets/uploads/sites/2/2019/06/SR15_Full_Report_High_Res.pdf>.

⁹⁸ IPCC, “Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty” (2018) at p. 323, online (pdf): <https://www.ipcc.ch/site/assets/uploads/sites/2/2019/06/SR15_Full_Report_High_Res.pdf>.

⁹⁹ Rachel Morrison “Gas is the New Coal With Risk of 100 Billion in Stranded Assets”, *Bloomberg News* (2021 April 17), online: <<https://www.bnnbloomberg.ca/gas-is-the-new-coal-with-risk-of-100-billion-in-stranded-assets-1.1591499>>.

¹⁰⁰ See: Eli Monas, Tyson Dyck, and William R Walters, “In pursuit of a climate change risk framework for Canada’s financial institutions”, Tory’s LLP (2021), online: <<https://www.torlys.com/insights/publications/2021/03/in-pursuit-of-a-climate-change-risk-framework-for-canadas-financial-institutions>> and the final report from the Expert Panel on Sustainable Finance commissioned by ECCC and Finance Canada, “Final Report of the Expert Panel on Sustainable Finance: Mobilizing Finance for Sustainable Growth” (2019), online: <<https://www.canada.ca/en/environment-climate-change/services/climate-change/expert-panel-sustainable-finance.html>>.

fully manifest, there is no opting-out of climate effects.”¹⁰¹ Many of the policy changes recommended by the Expert Panel involve *mandating and clarifying the assessment and disclosure of climate risks to ensure the prosperity of Canada’s financial sector*.

The emerging policies to mandate disclosure of climate risks will almost certainly drive investment away from emissions intensive projects – such as the proposed Prince George petrochemical complex. Just how will WCOL then secure the tens of millions of dollars of sustaining capital investment that CEO, Ken James, notes will be required *annually* to support the petrochemical complex?¹⁰²

The Expert Panel on Sustainable Finance put it well:

*Moving forward, our essential built and natural infrastructure must be able to both withstand the unpredictable and extreme nature of climate change and contribute to national GHG reduction priorities.*¹⁰³

The proposed petrochemical complex likely meets neither test.

It is incumbent upon Government to obtain an expert assessment of the possibility that this petrochemical project may have to be abandoned during its lifetime – and may become a financial drain on taxpayers, like the \$100 million bill that taxpayers are already paying for cleaning up BC oil and gas wells.¹⁰⁴

Before the Province issues an approval of a project which might become “worthless in a few years,” it is incumbent upon Government to seek out expert advice on whether this project risks becoming a “stranded asset.”

The independent expert panel needs to analyze whether the petrochemical complex could become a financial albatross to provincial taxpayers. All three projects – all parts of the metaphorical elephant – must be considered. In order to ensure that we are not buying a white elephant, the whole elephant needs to be analyzed.

¹⁰¹ Expert Panel on Sustainable Finance commissioned by ECCC and Finance Canada, “Final Report of the Expert Panel on Sustainable Finance: Mobilizing Finance for Sustainable Growth” (2019) at p. 31, online:

<<https://www.canada.ca/en/environment-climate-change/services/climate-change/expert-panel-sustainable-finance.html>>.

¹⁰² Hanna Petersen, “‘It’s a game changer:’ Calgary company plans to build \$5.6B petrochemical plant in Prince George” *Prince George Citizen* (2019 July 24) online: <<https://www.princegeorgecitizen.com/local-news/calgary-company-to-build-56b-petrochemical-plant-in-prince-george-1602606>>.

¹⁰³ Expert Panel on Sustainable Finance commissioned by ECCC and Finance Canada, “Final Report of the Expert Panel on Sustainable Finance: Mobilizing Finance for Sustainable Growth” (2019) at p. 48, online:

<<https://www.canada.ca/en/environment-climate-change/services/climate-change/expert-panel-sustainable-finance.html>>.

¹⁰⁴ Taxpayers are already footing the bill for a \$100-million fund to clean up dormant oil and gas wells in the province. See: Andrew MacLeod, “Governments Are Making Taxpayers Subsidize Corporate Cleanup of Oil and Gas Wells,” *The Tyee* (2021 March 19), online: <<https://thetyee.ca/News/2021/03/19/Governments-Make-Taxpayers-Subsidize-Corporate-Cleanup-Oil-Wells/>>.

CONCLUSION

In light of the above, it would clearly be in the public interest to have a thorough vetting of the serious potential environmental, social and economic impacts posed by the proposed petrochemical complex. We ask you to appoint an independent panel of experts to conduct an assessment of these issues by way of public hearings and to assess all three interconnected facilities together through a regional assessment.

Respectfully submitted,



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