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## Office of Housing and Construction Standards Topics for Minister Coleman Briefing

January 26, 2015 11:00 – 12:00 PM, PVO

These items are OHCS report out and do not include the verbal report out from Shayne

### 1. Climate Leadership Plan

- OHCS leading stakeholder engagement on the Built Environment section of the Province's Climate Leadership Plan.
- working closely with:
  - Climate Action Secretariat MEnv
  - MEM
  - MCSCD
  - MTICS
- purpose is to obtain input from stakeholders on practical considerations of implementing existing policy and program recommendations resulting in an ambitious reduction in GHG emissions from new and existing buildings. Specifically, feedback on:
  - specific regulations and programs to transition to low carbon buildings;
  - the scale, scope, and timelines for sector transitions, e.g. time required for retooling or training; and
  - opportunities and challenges for various sectors in the industry.
- input and advice will inform the recommendations and advice from OHCS to MRC for consideration for the Built Environment section of the Climate Leadership Plan.
- Friday, January 22 - first engagement meeting in Victoria attended by 27 people in person and 50 by videoconference.
- Attendees represented
  - First Nations
  - local governments
  - utilities
  - construction and development
  - trade associations;
  - professional associations
  - warranty and insurance providers
  - green building advocates
  - crown corporation
  - building owner, managers, and operators
  - training institutions.
- Three more meetings scheduled between now and mid-March. Face to face in the Lower Mainland.

## **2. Refugee Readiness**

- Private rental markets are tight. Approximately 1,100 refugees have arrived in BC to date. Another 1,500 over next 60-90 days.
- BC Housing is:
  - Working with Immigrant Service Society of BC on housing options,
  - Facilitating a process for refugee households to have applications on the Housing Registry, and
  - Working with the BC Non Profit Housing Association (BCNPHA) to reach out to non-profit housing providers to encourage them to consider refugees when social housing vacancies arise.

## **3. CRD Courthouse Homeless Camp**

- MTICS started the legal process to obtain an injunction. Injunction should be ready in roughly 1.5 weeks from now. Police estimate it will take another two weeks after the tabled injunction to clear the site. OHCS met with legal staff at Justice to discuss injunction.
- MTICS, BC Housing and Victoria Police meeting today to discuss public safety on the site between now and when the site is cleared.
- BC Housing is working on multiple housing and shelter options for the campers including;
  - Approximately 40 rent supplements through HPP in the private market to target people in the camp and temporary winter shelters such as the Boy and Girls club.
  - Indoor and outdoor shelter space at Victoria Youth Corrections Centre, approx. 50 spaces. Looking to open late Feb/early March.
  - Working with the Cool Aid Society to provide transitional housing units for 40 at the Mount Edward building on Vancouver St. Estimated opening date late February-early March (TBD)
- BC Housing is working to create a minimum of 130 shelter/housing spaces within next two months. Tentative BC Housing press release between February 1-5 on full range of housing options.

## **4. Administrative Penalties – 2015 Estimates Commitment**

- The report on Administrative Framework Penalty, and corresponding decision note, are in the final stages of development and will be provided to the Minister mid-February.
- The decision note will provide recommendations to improve the current process, as well as an option to further develop the enforcement provisions in the Act.
- **Decision required re: create space holder for 2017 legislation amendment**

### **West Hotel Update**

- December 2015, the ED of Residential Tenancy Branch informed the owners of the West Hotel that ED was considering imposing an administrative penalty on the owners of the hotel.
- reason was failure to comply with previous RTB orders to make repairs to showers and to repair or make adequate the heating system in a tenant's unit.

- landlord's written submission has been received; however, additional information has been requested to clarify an invoice that may have been incorrectly submitted.
- Once clarified, the ED will determine if an administrative penalty is warranted. It is expected that this decision will be made by the end of February 2016.

#### **5. Home Inspectors**

- mandate letter accountability will be accomplished by end of this fiscal
- Status: regulation amendments near final; very targeted external consultations being scheduled.
- Phase 1 OIC to go forward in late February, with a September effective date to allow time for Consumer Protection BC and the sector to implement and adapt.
- Phase 2 work to complete implementation will be led by PSSG. - work remains to hone the license qualifications for 2017

#### **6. Professional Acts/Interior Designers RIDs**

- Has Minister Coleman checked in with Minister Wilkinson about this issue?
- Would like to gauge MRC's level of interest in this issue, as it is heating up again.
- Heard that Minister Wilkinson may have requested a proposal,
- email from John Leech last week, suggests industry is buzzing.

#### **7. Propane Tanks**

- BCSA put a temporary stop on any invoicing of propane operating permits until further notice. The immediate focus of the program is to gather data on propane vessel numbers and locations.
- More information on how the program will proceed to come.

#### **8. Support Recovery Homes**

- OHCS facilitating a cross government meeting on Thursday January 28 with SDSI, Justice, Health and BC Housing to discuss potential models for support recovery homes. BC Housing creating a proposed business plan for the program.
- Ministry of Health is meeting with Surrey on January 29, 2016.
- Possibly a good initiative to bring to CWG MHSU as an example of multi ministry reprofiling of existing resources to deliver better outcomes



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Page 01 to/à Page 24

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**BRIEFING NOTE****RE: A Jobs, Economy and Climate Plan for B.C.**Suite 721  
602 West Hastings Street  
Vancouver, BC V6B 1P2

## Summary

British Columbia has demonstrated to the world that it is possible to reduce carbon pollution while growing the economy. Policies such as the carbon tax, clean electricity standard and renewable and low-carbon fuel requirements regulation have helped to drive this change. Under such policies, British Columbia's economy continued to grow while—until recently—driving down carbon pollution. However, British Columbia's carbon pollution is creeping back up and, without new climate policy, experts expect that trend to continue.<sup>1</sup>

The B.C. government is currently developing a new Climate Action Plan 2.0, with recommendations from the Climate Leadership Team, to meet B.C.'s 2020 and 2050 climate targets.

Because jobs and the economy are key issues in British Columbia, Clean Energy Canada retained Navius Research to model the job and economic implications of meeting the province's 2020 and 2050 climate targets.

The results are very positive. They showed that both jobs and the economy would grow while B.C. met its climate targets and maintained its climate leadership.

## A Jobs, Economy and Climate Plan for B.C.

Affordably reducing carbon pollution, while continuing to grow the economy, requires a three-pronged approach:

1. **Introduce and expand clean standards** for vehicles, buildings and industry. Our proposed standards leverage existing policies and target carbon reductions where they're most needed, and where carbon pricing is least effective.
2. **Increase the carbon tax.** The carbon tax works in unison with these policies by ensuring that carbon pollution is incorporated into most energy decisions in the province.
3. **Establish a Clean Economy Fund** to support families and businesses. The revenues from the incremental increase in the carbon tax can then flow back to families and businesses—buffering households from the impacts of transitioning to a cleaner economy.

This three-pronged approach will affordably drive down carbon pollution in line with British Columbia's targets while the economy continues to grow.

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<sup>1</sup> Environment Canada (2015) National Inventory Report 1990-2013 – Table A10-20.

## The Results

Here's a snapshot of B.C. in 2025, based on our research.

### A diverse, growing economy

The province's economy continues to grow at just over two percent per year. It remains diverse, with growth in the traditional resource sector, up-and-coming sectors like renewable energy generation and manufacturing, natural gas and a robust services sector.

- **Traditional resource jobs:** Mining, forestry and agri-foods employ an additional 27,000 people in communities across British Columbia. Energy use in the mining sector shifts from fossil fuels to biofuels and electricity.
- **The “solution industries”:** Renewable electricity generation, biofuels and manufacturing add 29,000 jobs and outpace growth in the rest of the economy as these sectors innovate to provide the clean energy and products that the province needs to prosper in a clean economy.
- **Industry in transition:** Natural gas shifts focus from domestic to export markets as British Columbians and industry shift to cleaner energy sources. The sector adds 3,000 jobs.
- **Knowledge and services:** The knowledge and service sector employs the most British Columbians by far, and continues to grow—creating 210,000 new jobs.

### The future is affordable

As British Columbians transition to cleaner vehicles and more efficient homes, they will pay less for energy than they do today—whether they live in Peace River or Vancouver. Even though energy rates are projected to increase over the next 10 years, British Columbians can expect to spend less on energy overall by boosting efficiency at home and work, and upgrading to vehicles that use less fuel.

- **In the lower-mainland:** Fifteen years from now, an average Vancouver household can expect to save \$900 a year on their energy bills. Today, the average Vancouverite drives a small car, lives in an apartment or town home and spends \$2,600 a year on electricity, natural gas and gasoline. By 2030, energy spending would drop by \$900, with the average household spending \$1,700 a year entirely on electricity. Households save money by switching from furnace to heat pump, trading their gas-powered vehicle for an electric one, and installing more efficient lights throughout the house—all during normal renovation periods.
- **Up north:** The energy savings are even higher for the average household in Peace River. Today, living in Peace River typically means driving a truck, living in a house and spending up to \$6,000 a year on energy—mainly gasoline and natural gas for heating. On average, a detached house will be larger than an apartment and, since Peace River is further north, households spend nearly twice as much money on heating and three times as much on gasoline compared to the average Vancouver household. However, by switching to a hybrid truck and heat-pump system, rural households can cut energy costs by \$1,200 per year by 2030.

### Climate Leadership: B.C meets its carbon reduction targets

While the economy grows and energy bills drop, climate pollution steadily declines. By 2030, emissions would be 45 percent lower than 2007. By 2040, they're down 67 percent, and by 2050 they're 80 percent lower than in 2007. These reductions align with British Columbia's greenhouse-gas targets.

## Detailed Policy Recommendations

The built environment, transportation, and industry sectors produce nearly 80 percent of British Columbia's carbon pollution. Over the next 35 years,<sup>2</sup> a combination of sector policies designed to encourage a switch to clean electricity, more energy efficient design and lower carbon pollution equipment will be necessary.

The **carbon tax** would support these policies by ensuring that carbon pollution is factored into all decisions made in the market. Finally, a proposed Clean Economy Fund could make it easier for British Columbia's residents and businesses to reduce carbon pollution while ensuring the province more effectively competes in the growing \$780-billion global market for clean energy technology.<sup>3</sup>

Our recommendations are divided into three implementation timeframes: Near-term (from 2016 to 2020), medium-term (from 2020 to 2030) and long-term (from 2030 to 2050). The near-term policies are presented below, while the medium- and long-term policies are included in the appendix.

### Near-term Policies (2016 and 2020)

We've designed the near-term policies and announcements to both achieve meaningful emission reductions and set the course for long-term reductions.

Policy		2016	2020
Economy-wide	<b>Carbon Tax</b>	Announce a 2018 schedule of increase, raising the carbon price by \$5 to \$10 a year for 10 years with a review after 5 years.	Continue increase at \$5 to \$10 a year.
	<b>Clean Economy Fund</b>	Announce the Clean Economy Fund for a 2018 start date, funded with a portion of carbon tax revenue.	Continue to use Clean Economy Fund.

(Table continued on next page)

<sup>2</sup> Based on preliminary results of Navius Research (2015) A Climate Leadership Plan for British Columbia and climate plans for other jurisdictions.

<sup>3</sup> Analytica Advisors (2015) Clean Technology Industry Report



Upstream Natural Gas	Carbon Capture and Storage	Announce intention to require carbon capture and storage of formation CO <sub>2</sub> by 2020.	All formation CO <sub>2</sub> must be captured and stored.
	Reduction of Fugitive Emissions Standard	Set fugitive emission reduction standard targeting 50% reduction by 2020.	Fugitive emissions reduced by 50% relative to current levels.
	Zero-Emission Standard	Announce by 2018 that new drives (compressors, pumps, etc.) must be powered by electricity.	Existing gas-fired direct drive equipment is given a 30-year end of life.
LNG	No CO <sub>2</sub> Venting		CO <sub>2</sub> must be removed and stored upstream rather than at the facility.
	Clean Fuel Standard	Announce schedule for 2025 and 2030 intensity reductions at 15% and 20% respectively.	
	Zero-emission Vehicle Mandate	Introduce the zero-emission vehicle standard at a 2% requirement.	Zero-emission vehicles account for 5% of new sales.
Transportation	Building Codes	Continue improving building energy codes.	Select public buildings are constructed to consume net-zero energy.
	Zero-emission Standard for Buildings		Announce that all new heating equipment must produce zero greenhouse gas emissions by 2030.
	Clean Energy Act		Announce no new construction of fossil fuel generation without carbon capture by 2025.
Buildings	Landfill Gas Capture		90% of landfill gas at large sites is captured and combusted.
	Organic Diversion		Announce intention to achieve 95% diversion rate by 2025.
	GHG Emission Standard	Establish emission standards by sector.	Achieve 8% emission reduction relative to 2015 levels.
Electricity			
Landfill			
Other Industry			

## Our approach, assumptions and considerations

Navius Research used two models of B.C.'s energy-economy system to simulate the impact of meeting B.C.'s climate targets. The first model, CIMS, considers how individuals and firms will choose technology to respond to policies. The second, GEEM, considers the economy more broadly and simulates feedbacks between different parts of the economy. Combined, we used these models to determine greenhouse gas reductions, GDP per economic sector, jobs per economic sector and the costs to typical households. The analysis runs from 2015 to 2050. Some of the key assumptions and cautions with this approach are summarized below.

### Assumptions

- **Existing Policies:** We simulated primarily existing policies, but did add some policies that are not in force, like the zero-emission vehicle standard.
- **Rest of North America:** We assume other regions in North America adopt policies similar in outcome to the policies in British Columbia.
- **Electricity Prices:** Electricity prices are based on BC Hydro rates to 2018; from that point forward prices are based on the Navius electricity system model.

### Considerations

- **Affordability:** In the Vancouver and Peace River scenarios we find that households would pay less for energy per year than they did today (by \$900 to \$1,200 a year). This requires investment in new technology such as heat pumps and hybrid vehicles of approximately \$4,000 over the next 35 years, or \$115 a year in current dollars. Incentives, rebate programs and education programs can help individuals realize the savings, incent early adopters and support families that cannot afford the upgrades.
- **Economic growth and jobs:** In our analysis, job and economic growth are similar whether B.C. acts on climate or not. However, some sectors do better than others. The petroleum refining and natural gas distribution industries shrink as B.C. reduces its greenhouse gas emissions.
- **If North America does not act:** If North American jurisdictions do not follow B.C.'s lead as we've assume in our analysis, then British Columbia could consider other policies to prevent greenhouse gas leakage from trade-exposed, carbon-intensive sectors. This could include measures such as technology funds, tax reductions and border carbon adjustments.

## APPENDIX

The following table summarizes policy actions by sector from 2025 to 2050.

	<i>Policy</i>	<i>Actions by 2025</i>	<i>Actions by 2030</i>	<i>Post-2030 Action</i>
<b>All sectors</b>	<b>Carbon Tax</b>	Increase the tax to 80\$/t.	Maintain the real value of the tax by adjusting for inflation.	Continue adjusting for inflation.
<b>Transport</b>	<b>Clean Fuel Standard</b>	Require a 15% reduction in lifecycle GHG intensity of fuels.	Require 20% reduction in GHG intensity.	GHG intensity must continue falling by 4% annually, expand policy to all fuels, excluding aviation.
	<b>Zero-Emission Vehicle Mandate</b>	Increase mandate to 14%.	Increase mandate to 23%.	Mandate continues rising by 1.8% annually.
<b>Buildings</b>	<b>Building Codes</b>	New homes and buildings must be built so they could consume net-zero energy if they install onsite energy generation.		
	<b>Zero-emission Standard for Buildings</b>	New space and water heating equipment installed in all buildings must not produce direct GHG emissions.		
<b>Electricity</b>	<b>Clean Energy Act</b>	No new construction of fossil fuel generation without carbon capture.		
	<b>Formation CO<sub>2</sub> Capture</b>			

<i>Upstream Natural Gas</i>	and Storage			
	Reduction of Fugitive Emissions	No additional policies after 50% decline		
<i>LNG</i>	Zero- emission Standard	All gas-fired direct drive equipment must be retired.		
	GHG Intensity Standard			
	No CO <sub>2</sub> Venting			
<i>Other Industry</i>	GHG Emission Cap and Trade	30% reduction.	45% reduction.	50% reduction.
<i>Solid Waste</i>	Landfill Gas Capture	No other policies past 2020		
	Diversion of organic matter from landfills	Achieve diversion rate of 95%.		



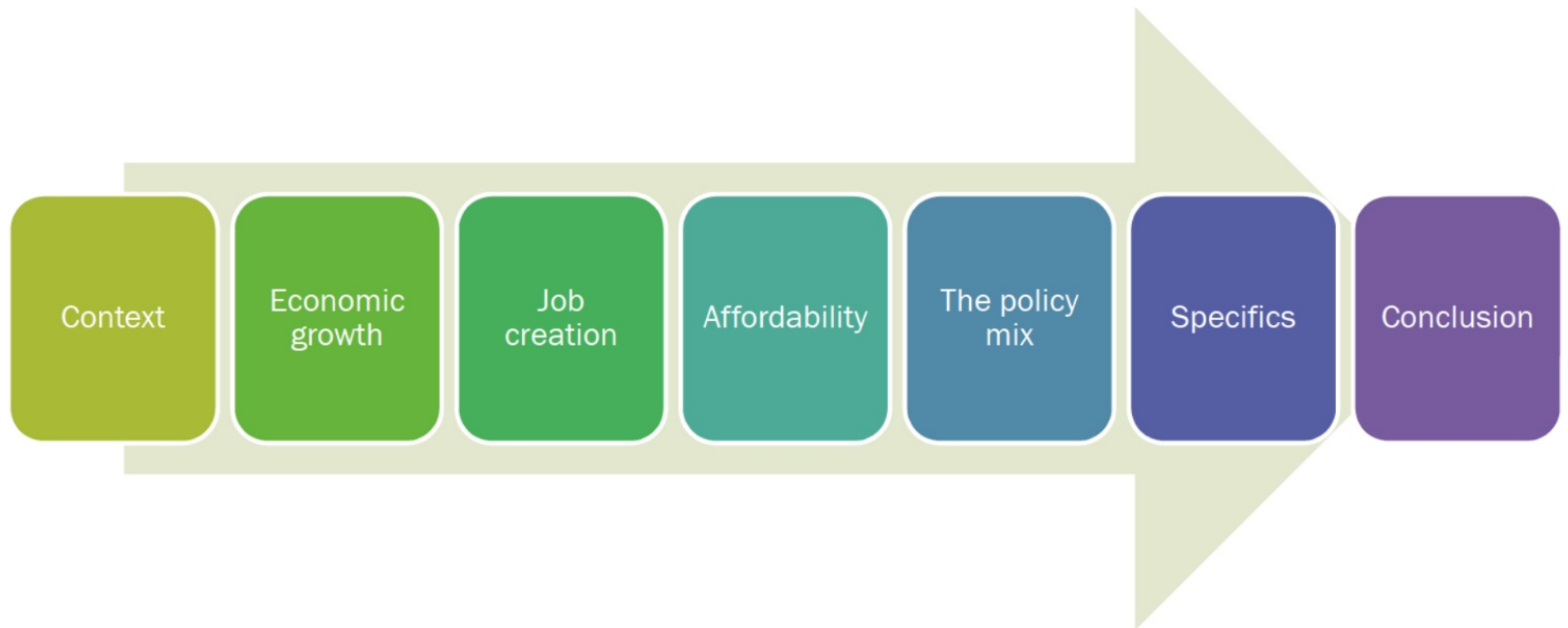
# A Job, Economic and Climate Strategy for British Columbia

## Presentation to Ministry of Natural Gas

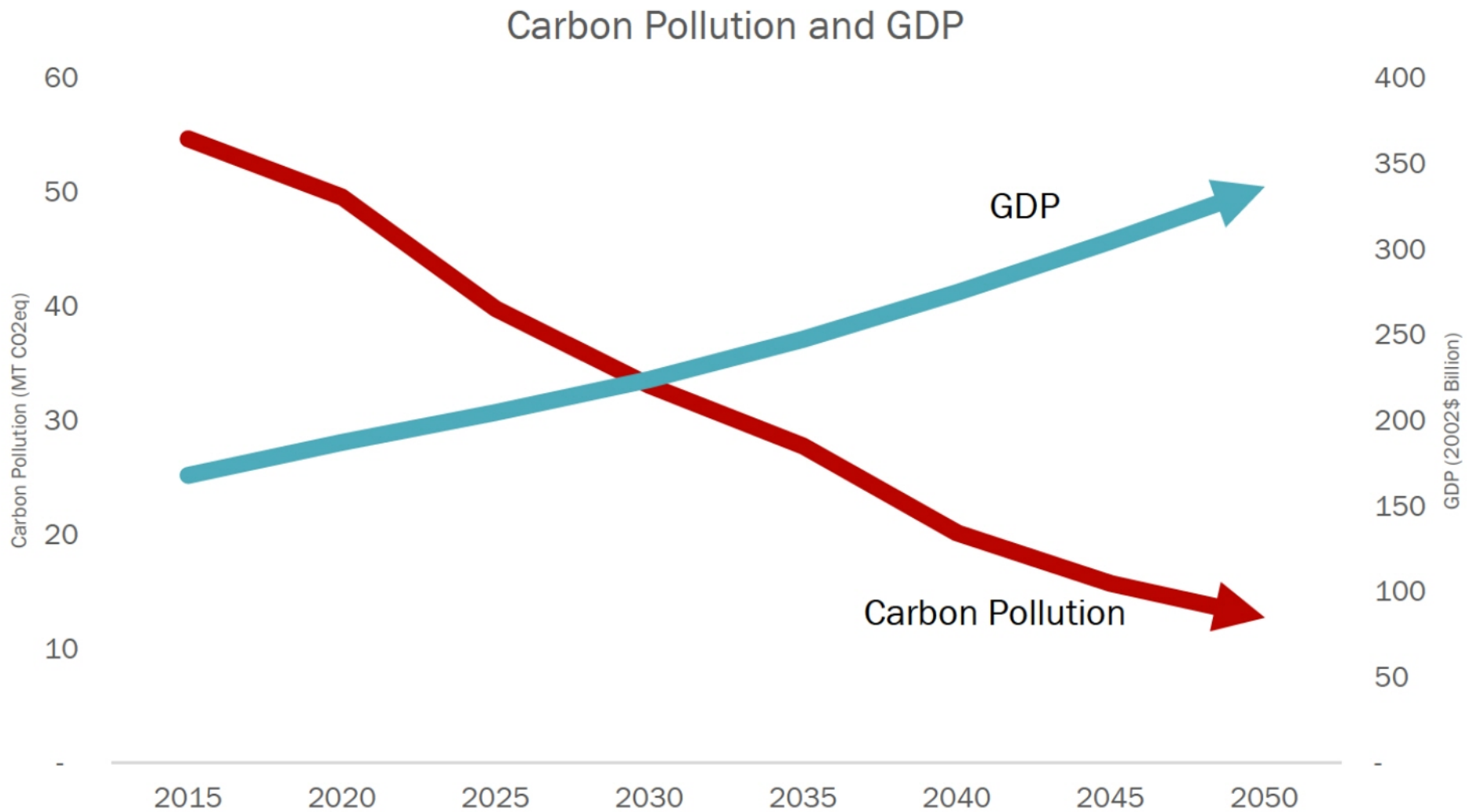


# Outline

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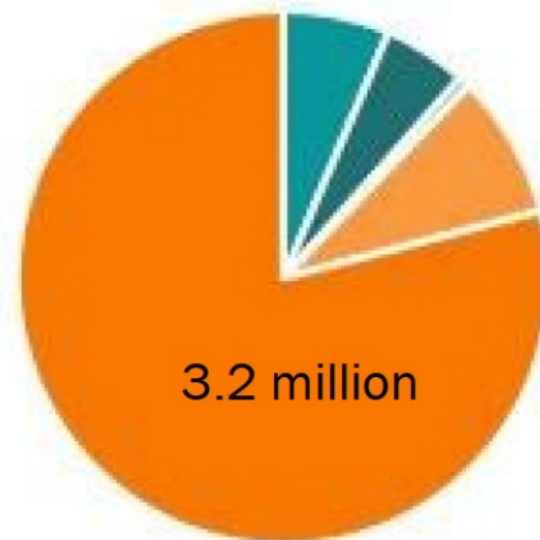
# It's still B.C. – economic growth



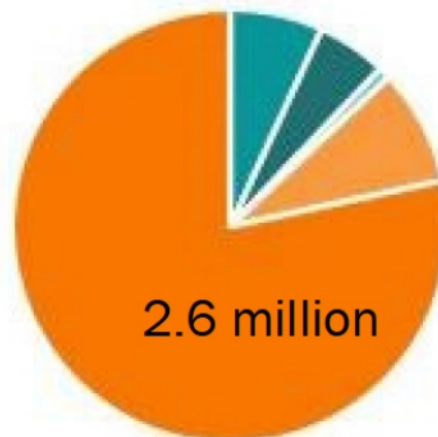
# It's still B.C. – diverse economy and jobs

- Biofuels, Manufacturing and Renewable Electricity
- Construction

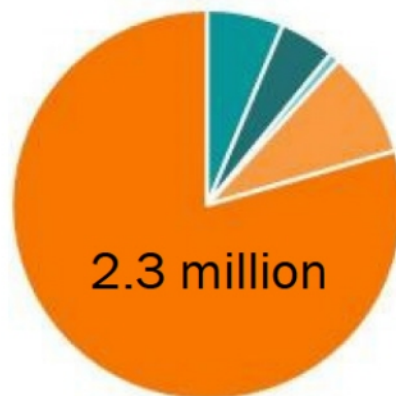
2050



2025



2015



- Traditional Resource Sector
- Natural Gas
- Service

# Natural gas sector continues to grow

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- Natural gas: Increase from 20,000 to 23,000 by 2025
- How?:
  - Electrification
  - Fugitive emission reductions
  - Carbon capture and storage

# It's affordable

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Living in detached  
house



Living in apartment

Save \$1,200 a year      Save \$900 a year



# Drive down carbon pollution

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# Near-term (2016 to 2020) - Timeline

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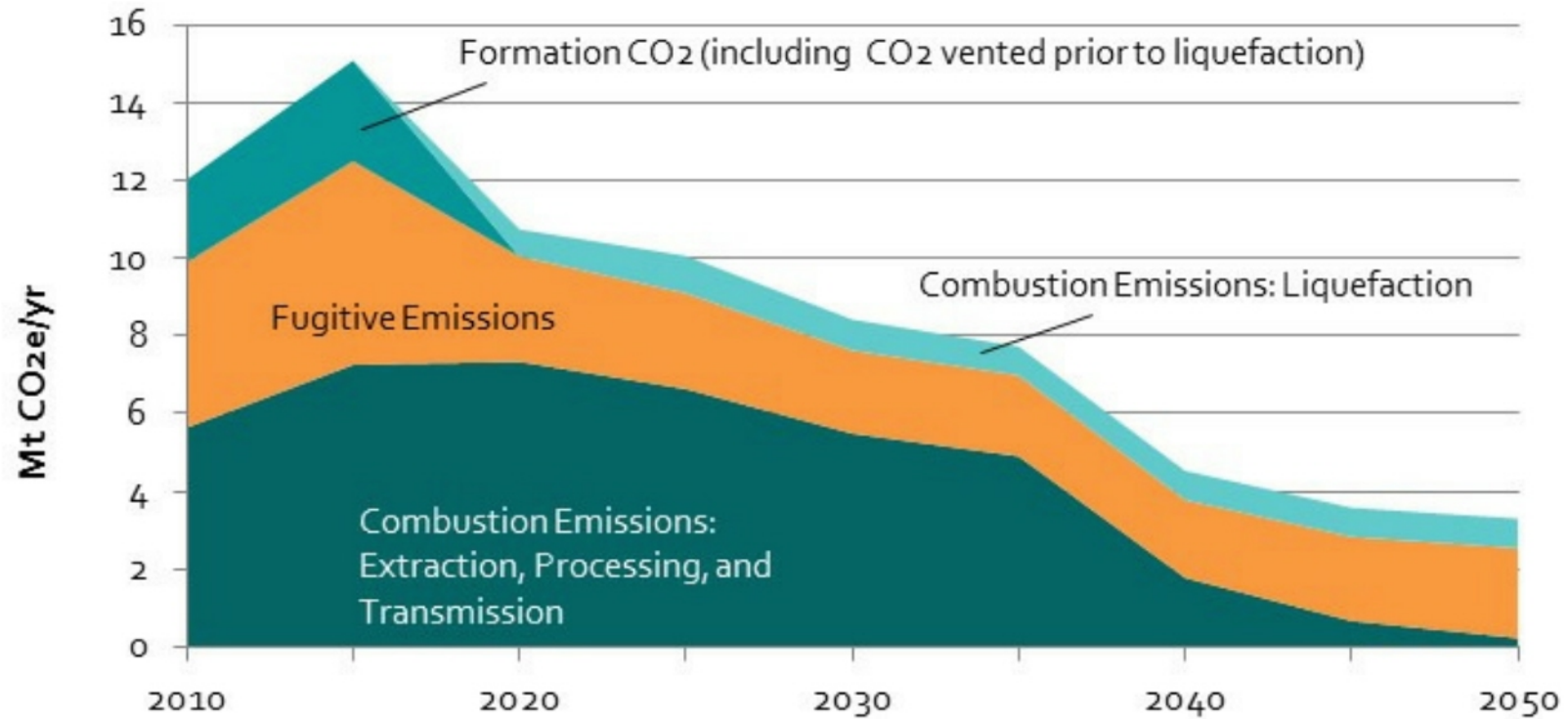
- **Electrification** – All new natural gas production, processing and transportation drives – pumps and compressors – must be electric by 2018.
- **Fugitive emissions** – Set an intensity standard such that fugitive emissions decline by 50% relative to today.
- **Carbon capture and storage** – Set a standard that all upstream emissions must be captured and stored by 2020.
- **Carbon tax** – Announce a 10 year carbon tax increase schedule at \$5 to \$10 per tonne CO<sub>2eq</sub> starting in 2018 rising to \$80 per tonne CO<sub>2eq</sub>.
- **Clean economy fund** – Announce and launch a clean economy fund for infrastructure like transmission lines and transit as well as supporting businesses and individuals to reduce their carbon pollution

# Specifics – Carbon Tax

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- **Schedule:** Implement a 10 year schedule of increases.
- **Rate:** Increase at \$5 to \$10 a year with a review after 5 years and index to inflation – we have an \$8 per year increase.
- **Protect low-income:** Increase the low-income tax credit to keep pace with increasing costs.
- **Funds:** Consider a mix of uses for the funds including tax breaks and a clean economy fund.

# Natural gas processing reductions



# Conclusion

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*“We will continue to provide a positive example to the world that there is no need to choose between economic growth and fighting climate change.”*

—The Honourable Judith Guichon, Lieutenant Governor of British Columbia, [Speech from the Throne](#), February 10, 2015

- British Columbia can provide this example
  - We can electrify natural gas production
  - We have the experience
  - It will still be British Columbia
  - It's affordable for British Columbians



# Thank You!

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Merran Smith – Executive Director

Clean Energy Canada

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604-947-2200

Jeremy Moorhouse – Senior Analyst

Clean Energy Canada

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From: [Piccinino, Ines MNGD:EX](#)  
To: [Schwabe, Michelle MNGD:EX](#)  
Cc: [Laaksonen-Craig, Susanna ENV:EX](#); [Grieve, Richard MNGD:EX](#); [Woolley, Paul GCPE:EX](#); [Beaupre, Darren GCPE:EX](#); [Byers, Lindsay GCPE:EX](#)  
Subject: Fw: Embargoed copy of report on cost-effective methane reductions in Canada  
Date: Saturday, October 3, 2015 9:13:41 AM  
Attachments: [Canada MAC Final Report w-Embargo.pdf](#)  
[EDF-Pembina ICF release 100215 draft.pdf](#)

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Good morning, and sorry to bug you on a Saturday morning!

I got this email from Matt Horne last night, indicating this is embargoed and will be released Monday morning. I am assuming CAS might be preparing something but not % sure. Just in case, copying Susanna, who I would imagine has received a similar embargoed copy.

According to the note below, Michelle met with Drew Nelson, so at the risk of adding more to your plate, Michelle, I would ask if you guys can work together with CAS staff to prepare something for GCPE.

Susanna: if your team has already put something together on this, please let us know so we can then only plug into whatever has been done already (now that I typed your name I see you might be out of the office though).

Paul W: same thing... you might already know if something's being done at ENV GCPE.

Thanks everybody!!

Ines

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**From:** Matt Horne  
**Sent:** October-02-15 23:36  
**To:** Piccinino, Ines MNGD:EX  
**Cc:** Drew Nelson  
**Subject:** Embargoed copy of report on cost-effective methane reductions in Canada  
Hi Ines,

EDF and Pembina are pleased to partner together to release the attached embargoed report on reducing methane emissions from the Canadian oil and gas sector by ICF International (ICF), a leading energy industry research firm. An embargoed copy of the near final media release is also attached. Both will be publicly released on Monday morning, and our expectation is that this research will be a helpful contribution to the development of B.C.'s Climate Leadership Plan and the parallel process in Alberta.

Drew Nelson from EDF briefed Michelle Schwabe on an earlier draft of the report.

As you will see, the report finds those methane emissions can be reduced 45 percent below projected 2020 levels at a cost of C\$2.76 per metric tonne of carbon dioxide equivalent. This is cost-effective and

comes out to less than one cent per thousand cubic feet of gas produced. This 45% reduction would reduce 27 million metric tonnes of carbon dioxide emissions, equivalent to taking every passenger car off the road in British Columbia and Alberta. In the case of British Columbia, a reduction of 37 percent of upstream methane emissions is possible for C\$1.69 per metric tonne of carbon dioxide equivalent.

These findings are in line with a similar analysis undertaken by ICF looking at the cost of oil and gas methane reductions in the United States. The large reduction and cost-effectiveness of achieving those reductions in both countries suggests that there is scope for the cross-border cooperation to achieve these reductions.

Please let me know if you have any questions.

Best,

Matt

--

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[www.pembina.org](http://www.pembina.org)

**From:** [Piccinino, Ines MNGD:EX](#)  
**To:** [Schwabe, Michelle MNGD:EX](#); [Grieve, Richard MNGD:EX](#)  
**Subject:** Fw: joint letter regarding opportunities to reduce GHG emissions from upstream gas development and LNG terminals  
**Date:** Thursday, April 16, 2015 3:50:22 PM  
**Attachments:** [Energy Forum LNG letter - April 16 final.pdf](#)

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Fyi - haven't read it yet.

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**From:** Matt Horne  
**Sent:** Thursday, April 16, 2015 15:06  
**To:** Piccinino, Ines MNGD:EX  
**Subject:** FW: joint letter regarding opportunities to reduce GHG emissions from upstream gas development and LNG terminals

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Hi Ines – fyi – see below for a letter that was sent to Ministers Polak, Coleman and Bennett regarding the opportunities to reduce greenhouse gas emissions from upstream gas and LNG. The same group is also working on opportunities around transportation that will also hopefully help in the development of CAP 2.0.

Thanks again for your time yesterday.

Best,

Matt

--

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**From:** Matt Horne <[matth@pembina.org](mailto:matth@pembina.org)>  
**Date:** Thursday, 16 April, 2015 12:03 PM  
**To:** "[ENV.minister@gov.bc.ca](mailto:ENV.minister@gov.bc.ca)" <[ENV.minister@gov.bc.ca](mailto:ENV.minister@gov.bc.ca)>, "[MEM.Minister@gov.bc.ca](mailto:MEM.Minister@gov.bc.ca)" <[MEM.Minister@gov.bc.ca](mailto:MEM.Minister@gov.bc.ca)>, "[MNGH.minister@gov.bc.ca](mailto:MNGH.minister@gov.bc.ca)" <[MNGH.minister@gov.bc.ca](mailto:MNGH.minister@gov.bc.ca)>  
**Cc:** "[Steve.Carr@gov.bc.ca](mailto:Steve.Carr@gov.bc.ca)" <[Steve.Carr@gov.bc.ca](mailto:Steve.Carr@gov.bc.ca)>, "Shoemaker, Wes" <[Wes.Shoemaker@gov.bc.ca](mailto:Wes.Shoemaker@gov.bc.ca)>, "[Dave.Nikolejsin@gov.bc.ca](mailto:Dave.Nikolejsin@gov.bc.ca)" <[Dave.Nikolejsin@gov.bc.ca](mailto:Dave.Nikolejsin@gov.bc.ca)>  
**Subject:** joint letter regarding opportunities to reduce GHG emissions from upstream gas development and LNG terminals

Dear Ministers Polak, Coleman and Bennett,

Please find attached a letter from 15 power producers, industry associations and non-governmental organizations regarding opportunities to reduce GHG emissions from upstream gas development and LNG

terminals in British Columbia. We look forward to discussing the opportunities with you and how they can be part of Climate Action Plan 2.0, which we were excited to see the Premier's commitment to on Monday.

I will follow-up with your offices regarding the meeting request we've made.

Sincerely,

Matt Horne

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Associate Director, British Columbia | Pembina Institute  
t: 604-874-8558 x223 c: 778-235-1476  
610, 55 Water Street, Vancouver, BC V6B 1A1  
[www.pembina.org](http://www.pembina.org)

on behalf of:

- Alterra Power Corp.
- Boralex
- Canadian Wind Energy Association
- Chinook Power Corp.
- Clean Energy B.C.
- Clean Energy Canada
- David Suzuki Foundation
- Ecofish Research Ltd.
- Finavera Wind Energy
- Innergex
- MK Ince and Associates
- Pembina Institute
- Sea Breeze Power Corp.
- Watershed Watch Salmon Society
- West Coast Environmental Law Association



**From:** [Grieve, Richard MNGD:EX](#)  
**To:** [Schwabe, Michelle MNGD:EX](#)  
**Subject:** RE: Important - Local Government Consultation meetings on Climate Leadership Recommendations  
**Date:** Friday, March 4, 2016 1:26:06 PM

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I'm sure we can arrange to change the meeting on the 8<sup>th</sup>.

Regards,  
Richard

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**From:** Schwabe, Michelle MNGD:EX  
**Sent:** Friday, March 4, 2016 11:26 AM  
**To:** Grieve, Richard MNGD:EX  
**Subject:** RE: Important - Local Government Consultation meetings on Climate Leadership Recommendations  
Yes I can attend these meetings. The only scheduling conflict that concerns me is the meeting with Andrew /OGC on March 8. Could we possibly change the meeting time with Andrew?  
Michelle

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**From:** Grieve, Richard MNGD:EX  
**Sent:** Friday, March 4, 2016 10:42 AM  
**To:** Schwabe, Michelle MNGD:EX  
**Subject:** FW: Important - Local Government Consultation meetings on Climate Leadership Recommendations  
Hi Michelle, are you able to attend these meetings?  
Regards,  
Richard

---

**From:** Piccinino, Ines MNGD:EX  
**Sent:** Thursday, March 3, 2016 9:27 AM  
**To:** Grieve, Richard MNGD:EX  
**Subject:** FW: Important - Local Government Consultation meetings on Climate Leadership Recommendations  
Could Michelle take these? Just listening I imagine...  
Thanks!!  
Ines

---

**From:** Faganello, Tara CSCD:EX  
**Sent:** Thursday, March 3, 2016 9:19 AM  
**To:** Piccinino, Ines MNGD:EX  
**Cc:** Mueller, Brent CSCD:EX; Hill, Jennifer CSCD:EX; Andrade, Ana CSCD:EX  
**Subject:** FW: Important - Local Government Consultation meetings on Climate Leadership Recommendations  
Hi Ines,

I am writing to request your or a delegates participation in six regional video- and/or tele-conference meetings with Mayors and Chairs and CAOs to engage with them and receive their input on the CLT's recommendations. All of the recommendations except the fiscal policy recommendations will be reviewed. As you know, Ministry of Finance is holding a separate consultations on the fiscal policy recommendations. We realize that this is short notice but can't be helped re the deadlines and we have had to organize these dates and times around the MLAs schedules. If you aren't available please provide the name of your delegate who can attend to take questions and answers.

Our plan is for Parliamentary Secretary Linda Reimer to open and close each session, and Parliamentary Secretary Jordan Sturdy will also be in attendance to hear what local governments have to say about the recommendations. MCSCD will likely play a facilitation role. We are still developing the agenda for the meetings, but the concept is based on the premise that we will

present the recommendations according to the four categories in the Consultation Guide. TABLE 2 below identifies the recommendations covered in each category, and the agency leads for each recommendation.

The six meetings are scheduled as follows:

March 8, 2016 Kootenay-Boundary Region 1:00pm-3:00pm

March 9, 2016 Vancouver Island and Coastal Communities 10:00am -12:00noon (stays the same)

March 10, 2016 Lower Mainland Region 2:00pm-4:00pm

March 15, 2016 North Central Region 1:00pm-3:00pm

March 16, 2016 Southern Interior Region 10:00am -12:00noon(stays the same)

March 17, 2016 Province-wide 1:00pm-3:00pm

We are looking forward to your participation in these meetings and would like to count on you to address questions about the recommendations related to your work. We are still establishing how best to review each category of recommendations and expect that the overview will be quite high level. This means that we do not expect you to have to prepare a detailed slide deck presentation. I will forward an agenda and meeting materials this week.

**I'd ask that you please indicate who will attend the sessions by listing name(s) in the last column of Table 1.**

Thank you for your collaboration on this task,

Tara

**TABLE 1: ADM Leads and Staff Attending Sessions**

Lead Agency	ADM for Lead Agency	Please List any staff who will attend the March engagement sessions
AGRI	Arif Lalani	
FLNR	Diane Nicholls	
JTST	Okenge Yuma Morisho	
MARR	Laurel Nash	
MEM	Les MacLaren	
MNGD	Ines Piccinino	
MOE (CAS)	Susanna Laaksonen-Craig	
MOE (EAO)	Michelle Carr	
MOE (EPD)	Mark Zacharias	
OHCS	Jeff Vasey	
TRANS	Deb Bowman	

**TABLE 2: CLT Recommendations by Consultation Guide Categories**

Consultation Guide Category	Subcategory	Recommendations	Lead Agency	ADM for Lead Agency
What We Value	Targets, Reviews, Intergovernmental Relations	1, 2, 3, 32, 30 29	MOE (CAS) <i>FIN</i>	Susanna Laaksonen-Craig
	Fiscal Policy	7C 4, 7a, 5, 6, 7b	MCSCD <i>FIN</i>	N/A at this time
	Adaptation	11 16 24a-d 25a-b	MOE (EAO) AGRI MOE (CAS) MARR	Michelle Carr Arif Lalani Susanna Laaksonen-Craig Laurel Nash
The Way We Live	Communities	21 22	MCSCD MOE (EPD)	Tara Faganello Mark Zacharias
	Buildings	20a-d	OHCS	Jeff Vasey
The Way We Travel	Transportation	19a-d	MEM	Les MacLaren

		23 <i>19e</i>	TRANS <i>FIN</i>	Deb Bowman
The Way We Work	Natural gas and LNG	14 15	MEM MNGD	Les MacLaren Ines Piccinino
	Forestry and Agriculture	17 18	FLNR AGRI	<a href="#">Diane Nicholls</a> Arif Lalani
	Electricity	12, 13 26	MEM MARR	Les MacLaren Laurel Nash
	Low Carbon Economy	10 27 28	JTST MARR ENV (CAS)	Okenge Yuma Morisho Laurel Nash Susanna Laaksonen- Craig
Other (CLT Recommendation not in a Consultation Guide Category)		31 8,9	MNGD <i>FIN</i>	Ines Piccinino

From: [Mezynska, Urszula MAH:EX](#)  
To: [Mezynska, Urszula MAH:EX](#)  
Subject: Summary of Local Government Engagement on the CLT's Recommendations  
Date: Friday, June 17, 2016 11:34:48 AM  
Attachments: [CLP Regional Engagement Webinars- Input.pdf](#)  
[CLP Regional Engagement Webinars 2016 - Provincial Staff Contacts.pdf](#)

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*This email is being sent on behalf of Tara Faganello, ADM, Local Government Division, Ministry of Community, Sport and Cultural Development*

Dear Mayors, Chairs, Chief Administrative Officers and other webinar participants:

In March 2016, the Ministry of Community, Sport and Cultural Development hosted six engagement webinars on the Climate Leadership Plan with local governments from across BC, and committed to sending you a summary of the content discussed during the webinars.

In preparation for the anticipated release of the government's Climate Leadership Plan, I would like to share with you a summary of input on the Climate Leadership Team's 32 recommendations, that was received from participants during the webinars. The comments recorded during these consultations will continue to be useful in informing government's direction on climate action.

For context and reference, please find attached the previously sent list of Provincial Staff Contacts, and the Climate Leadership Team's 32 recommendations are included in the January 2016 Consultation Guide: <http://engage.gov.bc.ca/climateleadership/files/2016/01/ConsultationGuide-ClimateLeadershipPlan.pdf>

If you have any questions about the engagement process or the content of the attached materials, please contact the Intergovernmental Relations and Planning Branch at [IRPD@gov.bc.ca](mailto:IRPD@gov.bc.ca) or call 250 387-4037.

Thank you,

**Tara A. Faganello**, CPA CGA BA Ec.

Assistant Deputy Minister

Local Government Division

Ministry of Community, Sport and Cultural Development

Telephone: 250-356-6575

*{please be green with this email content}*

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From: Mezynska, Urszula CSCD:EX

Sent: Friday, March 18, 2016 2:57 PM

To: Mueller, Brent CSCD:EX

Subject: Staff Contacts - Local Government Engagement on the CLT's Recommendations

*This email is being sent on behalf of Tara Faganello, ADM, Local Government Division, Ministry of Community, Sport and Cultural Development*

Dear Mayors, Chairs, Chief Administrative Officers, and other webinar participants,

Please consider this a preliminary follow up message to our engagement webinars with local governments on the Climate Leadership Plan Recommendations.

Thank you to those who were available to participate, and we appreciate that some of you could not join us.

Over the past two weeks, we completed six engagement sessions with local governments across all regions of the province, and received valuable feedback on the Climate Leadership Team's 32 recommendations.

Staff is currently working on a thematic compilation of the comments that were received during the sessions, and those will be sent to you in the coming weeks. If you have any follow up questions

related to the webinar discussions, please find attached the contact information for provincial government staff who participated in the consultations.

In the interim, while we prepare to send out additional follow up materials, if you have questions about the consultation process, please contact Brent Mueller, A/Director, Intergovernmental Relations at [Brent.Mueller@gov.bc.ca](mailto:Brent.Mueller@gov.bc.ca) or 250 387-2540.

Finally, a reminder to everyone that submissions on the Climate Leadership Team's recommendations are being accepted until March 25, 2016 (at noon). Submissions can be emailed to [climateleadershipplan@gov.bc.ca](mailto:climateleadershipplan@gov.bc.ca)



From: Jeremy Moorhouse  
To: [D'Souza, Don ENV:EX](#); [Grieve, Richard MNGD:EX](#); [Schwabe, Michelle MNGD:EX](#); [Piccinino, Ines MNGD:EX](#); [Kitchen, Curtis MNGD:EX](#); [McKenzie, Dara MIT:EX](#); [Mou, Cathy MNGD:EX](#)  
Cc: [Merran Smith](#); ["Matt Horne"](#)  
Subject: Thank you and copies of briefing note and presentation  
Date: Thursday, October 1, 2015 4:17:29 PM  
Attachments: [image001.png](#)  
[30.09.2015 Briefing note job, economy and climate strategy.pdf](#)  
[30.09.2015 MNGD job, economy and climate strategy, Clean Energy Canada.pdf](#)

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Hello all,

Thank you again for making the time to meet with us yesterday. Our apologies for being late. A good discussion none-the-less and we appreciated the open feedback.

I've attached both the briefing note and presentation.

You – I'm using the collective you here because I can't remember who asked the questions – about where gas development happens in our model and why implement CCS if it's only in the Montney. Partial answers to both these questions below:

**Where is natural gas produced?:** In the model no company develops the Horn river because it's cost prohibitive relative to other areas. Natural Gas is produced from other fields in B.C. I don't have a more detailed break-down at this time. The model works by assigning costs to different fields – cost include carbon mitigation – and then simulates competition between which source of natural gas would be developed. Higher cost options don't get developed. This doesn't account for any existing agreements or licenses.

**Why CCS in the Montney?** I'm digging deeper into this question, but for now we show 2 million tonnes of formation CO2 released today and that would increase with more natural gas development. And so we have a policy requiring CCS. We assume 2020 so that any additional emissions from LNG induced natural gas production are captured. However, if LNG happens later than that date would be pushed back.

Feel free to follow up with any other questions/comments.

Regards,

Jeremy

**Have you let B.C. know you want a clean energy future?** [Climate Action Consultation](#)

Jeremy Moorhouse, P.Eng MRM | Senior Analyst

Suite 721 – 602 W Hastings St | Vancouver, British Columbia | Canada V6B 1P2

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**MINISTRY OF NATURAL GAS DEVELOPMENT  
AND MINISTER RESPONSIBLE FOR HOUSING  
UPSTREAM DEVELOPMENT DIVISION  
ESTIMATES BRIEFING NOTE 2016/17**

**ISSUE:** Climate Leadership Team Recommendations for the  
Upstream Natural Gas Industry

**KEY MESSAGES:**

- In Spring 2016 a new Climate Leadership Plan will be released that will layout the path for BC to achieve its greenhouse gas reduction targets while growing the economy.
- The Plan will include actions for emissions reductions from the upstream natural gas sector.
- Input for the new Plan has been received through public consultation and from the Climate Leadership Team (CLT) which was created by Honourable Christy Clark, Premier, in 2015 and made up of leaders from BC businesses, First Nations, local governments, academia, and the environmental sector to provide advice and recommendations to government.
- The CLT released its report in October 2015 with 32 recommendations on potential GHG emission reduction opportunities.
- The Province of British Columbia has engaged in a detailed review and analysis of the CLT's recommendations as well as other actions to develop a robust plan to achieve emissions reductions.
- The CLT recommendations relevant to the natural gas sector are:
  - facilitating the electrification of the upstream,
  - reducing fugitive and vented methane emissions, and
  - increasing and/or expanding the carbon tax.
- Public consultation is currently underway on the CLT recommendations.
- In addition, the Ministry of Natural Gas Development is consulting with industry on the electrification and methane emission recommendations. The Ministry of Finance is consulting with industry on the carbon tax recommendation.

**BACKGROUND:**

- The CLT's mandate was to provide advice and recommendations on how to update BC's current Climate Action Plan as well as propose new programs and policies required to achieve BC's greenhouse gas (GHG) reduction targets within the context of economic growth, BC's Liquefied Natural Gas Strategy and the BC Jobs Plan.
- Background information and additional policy information was provided to the CLT by government staff based on the work done by five cross-government working groups on carbon pricing, transportation, industry, built environment and adaptation.
- Approximately 64 percent of GHG emissions attributable to the natural gas sector are covered by the current BC carbon tax. The remaining emissions are mainly classified as vented or fugitive emissions and are currently not covered by the carbon tax.
- Electrification of the upstream would involve installing generation capacity and transmission lines to areas where natural gas production is expected to occur. Challenges include ensuring timelines coincide with industry development scenarios, and ensuring costs are comparable to the current status quo of using natural gas-fired equipment. Greater electrification of the upstream will reduce both combustion related emissions as well as fugitive and venting emissions. Reducing combustion related emissions will also reduce carbon tax revenues.
- The CLT recommendation on electrification involves BC Hydro supplying clean electricity to facilitate the electrification of upstream natural gas, LNG and associated infrastructure. Consultations are currently underway with industry and BC Hydro regarding the CLT electrification recommendation.
- Fugitive emissions are gas leaks that frequently occur from valves and fittings, while vented emissions occur from certain types of natural gas driven equipment at production and transmission sites. These GHG emissions can be reduced through targeted programs to replace or install technologies that vent less gas during operations, and ensure proper maintenance procedures are followed to find and reduce fugitive gas emissions.
- The CLT recommendation on reducing fugitive and vented emissions in the upstream include establishing a goal of 40 percent reductions within 5 years; requiring leak detection and repair programs that are aligned with North American best practices; working with industry and other stakeholders to develop best practices for GHG reductions; and determining new actions after 5 years that could include new reduction goals, expanding the carbon tax to include these emissions, or through regulation.
- In 2015 Environment Canada and Climate Change began consultations with industry and provincial Ministries on potential regulations aligned with proposed actions in the United States to reduce fugitive and vented methane emissions from the oil and gas sector.
- The Ministry of Natural Gas Development is developing the Clean Infrastructure Royalty Credit program in 2016, which will provide companies with royalty deductions in exchange for the deployment of technologies or processes that reduce greenhouse gas emissions and/or water use in the upstream. The main focus of the program in 2016 will be on reducing fugitive and vented emissions (see note #27).

- Modelling scenarios from 2011 demonstrated that increased regulatory burden in the form of a carbon tax on process emissions, cap-and-trade system or a requirement for carbon capture and storage would increase the costs of natural gas production and lead to a decline in activity and levels of gas production.

**CROSS-REFERENCE / ATTACHMENTS:**

2 - Greenhouse Gas Emissions and the Natural Gas Industry

26 – Clean Infrastructure Royalty Credit Program



## BC Climate Leadership Plan

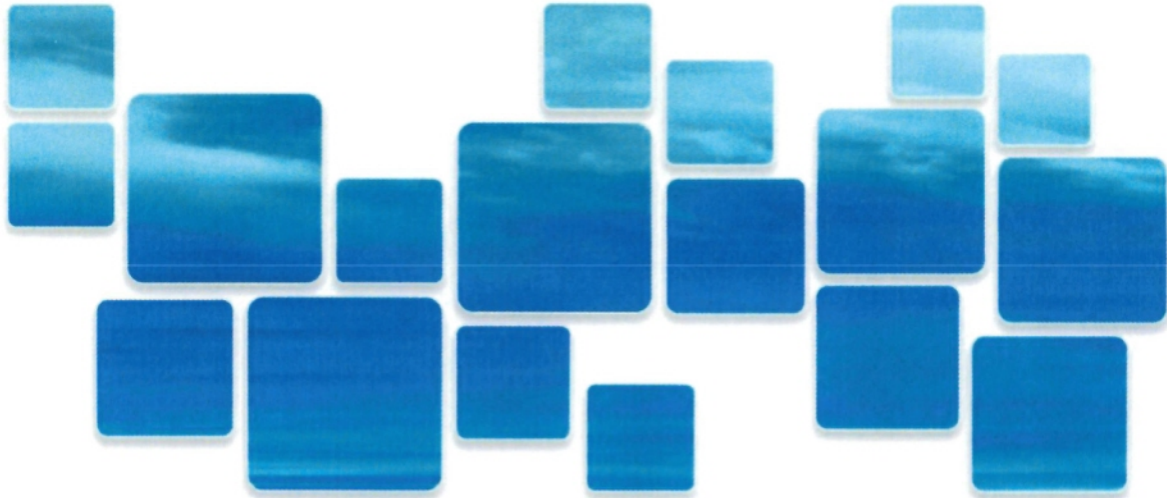
### Natural Gas Issues Related to LNG

<i>Action Area and Action</i>	<i>Lead/Contributors</i>
Natural Gas: Launching a Strategy to Reduce Methane Emissions	UDD, OGC
Natural Gas: Regulating Carbon Capture and Storage Projects	UDD, OGC
Natural Gas: Using Electricity to Power Natural Gas Production and Processing	EAED <sup>1</sup>
Industry and Utilities: Fuelling Marine Vessels with Cleaner Burning LNG	EAED <sup>1</sup>

<sup>1</sup>indirect link to LNG

### Natural Gas Issues not Related to LNG

<i>Action Area and Action</i>	<i>Lead/Contributors</i>
Transportation: Incentives for Using Renewable Natural Gas	EAED
Forestry and Agriculture: Creating Renewable Natural Gas from Manure and Organic Waste	EAED
Industry and Utilities: New Energy Efficiency Standards for Gas Fired Boilers	EAED
Industry and Utilities: Expanding Incentives to Promote Adoption of Efficient Gas Equipment	EAED



# CLIMATE **LEADERSHIP** TEAM

## Recommendations to Government

October 31, 2015

British Columbia



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## BACKGROUND

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On April 13, 2015, Premier Christy Clark announced a challenge to jurisdictions around the world - to meet or exceed the world-leading standard B.C. has set for climate action. She also announced that work was underway to build on B.C.'s successful Climate Action Plan, to move the Province's climate agenda forward, ensuring B.C. remains a global climate leader.

On April 21, 2015, Mike Bernier, Parliamentary Secretary for Energy Literacy and the Environment, was announced as the chair of a new Climate Leadership Team of leaders from B.C. businesses, First Nations, local governments, academia, and the environmental sector to provide advice and recommendations to government on a new Climate Action Plan. Vice Chair Jordan Sturdy, Parliamentary Secretary for Energy Literacy and the Environment for the Minister of Environment, took over as Chair of the Climate Leadership Team on July 30, 2015.

On May 12, 2015, Climate Leadership Team members were announced and the Climate Leadership Team's mandate was established, to provide advice and recommendations on:

- how to maintain B.C.'s climate leadership;
- updates to the current Climate Action Plan as well as new programs and policies required to achieve British Columbia's greenhouse gas (GHG) reduction targets within the context of economic growth, B.C.'s LNG Strategy and the B.C. Jobs Plan;
- actions to achieve GHG reductions required across the industrial sector, transportation sector and built environment;
- how to further the Province's government-to-government relationships with First Nations while constructively finding climate solutions; and
- how to further the Province's collaboration with local governments within the context of mutually-beneficial climate actions.

The Climate Leadership Team had nine face-to-face meetings, some of which were two day meetings. There were also four dedicated sessions concerning natural gas and LNG issues and a number of teleconference meetings. The background information on past action and effectiveness was provided by government staff. The emission and economic modelling supporting the Climate Leadership Team recommendations was provided by Navius Research Inc., a private consulting firm specializing in climate and energy modelling. Extensive policy information was provided by government staff based on the work done by five cross-government working groups on carbon pricing, transportation, industry, built environment and adaptation. A number of stakeholders were also invited to provide information and feedback to inform Climate Leadership Team recommendations.



## VISION AND CONTEXT

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The latest climate science shows that unprecedented climate changes are already upon us. Without significant new climate policies to reduce carbon pollution we will increase the warming of the climate system by +4 Celsius or more, unleashing "severe, widespread, and irreversible impacts globally."<sup>1</sup>

The US Council of Economic Advisors reports that "An analysis of research on the cost of delay for hitting a specified climate target (typically, a given concentration of greenhouse gases) suggests that net mitigation costs increase, on average, by approximately 40 percent for each decade of delay. These costs are higher for more aggressive climate goals: each year of delay means more CO<sub>2</sub> emissions, so it becomes increasingly difficult, or even infeasible, to hit a climate target that is likely to yield only moderate temperature increases."<sup>2</sup>

The costs of inaction are real. British Columbia, in common with the rest of the North America, is already experiencing a dramatic increase in the severity and frequency of violent storms. The Canadian insurance industry warns that the cost of extreme weather events is skyrocketing, costing Canadians over \$3.2 billion dollars last year alone. By taking decisive action now to reduce our carbon pollution and stimulate innovation B.C. will be sending consistent, credible long term policy signals to the marketplace, protecting our economy and our health, and working to ensure a stable climate.

The good news is that numerous studies have now shown us that reducing emissions can be done while maintaining economic growth and in fact, can be cheaper in the long term than delaying action to address climate change.

Heading into the next major climate conference, Paris 2015, the majority of world leaders (representing more than two thirds of the world's GHG & GDP) have made public commitments to peak and lower emissions. For the first time, many major developing nations are committed. Joining these major nation states is a rapidly growing list of global financial, religious and civil society groups.

Evidence of this global momentum abounds. Within the past year and a half, a variety of developments have set the stage for new and renewed climate leadership:

- Leading large economies have agreed to collaborate, set goals, and share expertise on climate and clean energy. A new spirit of problem solving has replaced a once-adversarial diplomatic atmosphere.
- Carbon pricing is spreading around the world and is emerging as the new normal. The share of global carbon pollution being priced has tripled since B.C. implemented its carbon tax.
- Eighty-one companies with a combined market capitalization of more than \$5 trillion USD have pledged to cut their carbon pollution, invest in clean energy, and support a strong global agreement at Paris 2015.

All of these efforts—from national governments, large industries, states and provinces, cities and individual citizens—are starting to have a collective impact. This past year, global carbon pollution from fossil fuels levelled off, even as GDP continued to grow. It was the first time in nearly half a century that

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<sup>1</sup> IPCC 2014 Synthesis Report: <http://www.ipcc.ch/report/ar5/syr/>

<sup>2</sup> The Cost Of Delaying Action To Stem Climate Change 2014:

[https://www.whitehouse.gov/sites/default/files/docs/the\\_cost\\_of\\_delaying\\_action\\_to\\_stem\\_climate\\_change.pdf](https://www.whitehouse.gov/sites/default/files/docs/the_cost_of_delaying_action_to_stem_climate_change.pdf)



carbon pollution decoupled from GDP globally. The International Energy Agency, which reported the finding, cited policy action on energy efficiency and renewable energy as the main factor driving the change.

It was a remarkable signal and—as the impacts of climate change become increasingly visible and acute—it telegraphed a clear message to governments: Your efforts are essential, and you are making a difference. Keep going.

In B.C., the province's existing suite of climate policies is already globally renowned. The carbon tax currently prices pollution from combustion sources at \$30 per tonne. The province cancelled two coal-fired power plants and required BC Hydro to source almost all of its electricity from clean and renewable sources. Meanwhile, a low-carbon fuel standard has averted the release of millions of tonnes of carbon pollution from tailpipes across the province.

Independent studies have verified that these climate policies are working. Carbon pollution fell in the province while the economy grew. B.C.'s businesses now enjoy one of the lowest general corporate income tax rates in North America and the G7 nations. The province is home to an industry of clean power producers that has attracted billions in investment and provides renewable electricity to 1.5 million homes.

B.C.'s climate leadership policies have telegraphed a signal to investors that the province is open for business in the growing global low-carbon economy. A modest but thriving clean tech sector is creating jobs and innovation in zero-emission transportation, renewable energy manufacturing, high-efficiency building materials, energy intelligence software, and much more.

All of this success is heartening. But carbon pollution levels have started creeping up again and are projected to continue rising. As the province has acknowledged, stronger climate policies will be required to change those projections so that they align with the province's climate targets. The need for stronger policies introduces a second challenge for B.C. in that the competitiveness of key sectors such as forestry, mining and natural gas could be negatively affected if B.C.'s climate policies are significantly stronger than other jurisdictions. Focusing on reducing emissions or maintaining competitiveness in isolation will lead to failure. It is critical that both challenges be addressed in an integrated manner.

The task of the Climate Leadership Team is to address these two challenges by recommending policy actions that would ensure British Columbia meets its climate targets while maintaining a strong economy. Given the new wave of positive action sweeping the globe in the lead-up to the United Nations Paris climate summit—and the increasing need to act urgently and decisively—the government's timing is fortuitous.

With the opportunity to work collaboratively with a new federal government, now is the time to leverage past successes and renew our commitment to lead. By embracing the actions recommended within this document, British Columbia can build on its experience, significantly bending the curve on carbon pollution while keeping the economy strong.

The Climate Leadership Team understands its mandate to develop recommendations that concurrently achieve to the greatest extent possible the following Cornerstone Objectives:

- a) Achieving B.C.'s legislated GHG emission reduction targets;
- b) Maintaining a strong economy (including consideration of B.C.'s LNG Strategy and the B.C. Jobs Plan);
- c) Mitigating negative impacts on vulnerable populations; and
- d) Maintaining B.C.'s reputation for world-leading climate policies.

Considerable research informs our recommendations. While the Climate Leadership Team reviewed options other than those included in our package of recommendations, none were as effective in concurrently achieving the Cornerstone Objectives as those described below.

Given what is at stake, and on behalf of all of our children and their children, we urge the government to adopt the integrated and interdependent package of recommendations we present. A piecemeal approach will not prove effective economically or environmentally.

On behalf of our entire team we thank you for this opportunity. It has been an honour to serve in this important endeavour.

Sincerely, All Members of the Climate Leadership Team

Parliamentary Secretary Jordan Sturdy (MLA), Chair

Tzaporah Berman

Ian Campbell

Michelle Edwards

James Gorman

Linda Hepner

Matt Horne

Paul Ives

David Keane

Susanna Laaksonen-Craig, Ex-officio

Tim Newton

Dr. Nancy Olewiler

Zach Parker

Dr. Thomas Pedersen

Merran Smith

Luke Strimbold

Dr. James Tansey



## OVERARCHING FRAMEWORK

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Based on a review of its mandate, and a discussion of its mandate with the Minister and the Chair, the Climate Leadership Team focussed its work on developing recommendations for the B.C. government that would concurrently achieve to the greatest extent possible the previously mentioned Cornerstone Objectives. If any one of the Cornerstone Objectives were to be deemed not a priority, the substance of the recommendations of the Climate Leadership Team may well be different.

The recommendations of the Climate Leadership Team are to be considered as a package. Except where otherwise noted, there is consensus on the overall package of recommendations, but it is not to be assumed that there is consensus on individual items within the overall package.

Generally speaking, the Climate Leadership Team has focussed on strategic-level recommendations. It is recognized that successful implementation will require much more in the way of detailed specifics at the policy and program level.

With the assistance of Navius, the Climate Leadership Team undertook extensive modelling of different pathways for concurrently achieving to the greatest extent possible the four Cornerstone Objectives. On the basis of this modelling, and robust discussion of options, the Climate Leadership Team concludes that any pathway that concurrently achieves these four objectives will require the following four elements:

- a) An increasing and expanded carbon tax;
- b) Adjustment mechanisms within the carbon pricing framework to address both competitiveness impacts on emissions-intensive, trade-exposed industries (with such adjustments being designed in a manner that does not undermine the incentive to reduce emissions) and vulnerable populations;
- c) Complementary policies that either enhance the effect of the carbon pricing regime and/or target emissions not effectively reached through carbon pricing; and
- d) Periodic review of the foregoing three elements over time.





## RECOMMENDATIONS

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These recommendations, if implemented in their entirety, will best concurrently achieve to the greatest extent possible the Cornerstone Objectives. Except as otherwise noted, the following represent a consensus of the Climate Leadership Team. The recommendations in this report, and the associated rationale, reflect the opinion of Climate Leadership Members as individuals and do not necessarily represent the views of their employers or any organizations that they belong to. It is important that these recommendations are read and understood within the context of the background and rationale provided for each of them.

### GHG REDUCTION TARGETS

#### Context and Rationale

Targets are an important tool to signal how ambitious a jurisdiction intends to be in tackling climate change. Evidence from many jurisdictions (UK, Sweden, German and the EU as a whole) suggests that setting ambitious targets for GHG reductions, coupled with policies aligned with the target, is an effective way to ensure goal-oriented public policy.

As part of the original Climate Action Plan, B.C. set ambitious greenhouse gas reduction targets. The *Greenhouse Gas Reduction Targets Act* (GGRTA) set B.C.'s GHG emissions to be reduced by at least 33 per cent below 2007 levels by 2020, and at least 80 per cent below 2007 levels by 2050. Interim reduction targets of six per cent by 2012 and 18 per cent by 2016 were also set to guide and measure progress.

B.C.'s 2020 target was ambitious when it was established in 2007 and the original Climate Action Plan included a set of policies that were an important step on the way to that target. Those policies are one of the main reasons why B.C. was able to meet its first interim target in 2012. New policies have not been added to the original policies, which plateaued in 2012. The 2020 target is extremely difficult to meet at this point. Because of these challenges, the Climate Leadership Team's recommendations will not enable the province to meet its 2020 targets.

The 2050 target is within reach with ambitious actions. We also recommend a new 2030 target that is achievable and would put the province on a credible pathway to its 2050 targets. Our recommendations are focused on getting the province on this pathway quickly and remaining on the pathway over time.

In addition, we recommend new 2030 sector-specific targets for industry, transportation, and buildings. These are based on the economic modelling done for the Climate Leadership Team, and in combination they equal the recommended province-wide 2030 target. We believe they will help foster a renewed sense of excitement for B.C., and provide guidance to the government on the more detailed policy development work that will be needed to complement our recommendations.

#### Recommendation 1

Reaffirm British Columbia's legislated 2050 target of achieving a reduction in GHG emissions of 80 per cent below 2007 levels.

#### Recommendation 2

Establish a legislated 2030 target of 40 per cent GHG reduction below 2007 levels.



### Recommendation 3

Establish the following sectoral GHG reduction goals (below 2015) for 2030

- a) 30 per cent for the transportation sector totalling 6.3 MT of CO<sub>2</sub>;
- b) 30 per cent for the industrial sector totalling 8.4 MT of CO<sub>2</sub>; and
- c) 50 per cent for the built environment totalling 3.4 MT of CO<sub>2</sub>.

## FISCAL POLICY

### Context and Rationale

Fiscal policy is one of the strongest tools a government can use to encourage or discourage behaviours. Such policies can be helpful tools to encourage investment and reduce carbon pollution. They can also provide flexibility to address specific challenges within a jurisdiction, such as equity and competitiveness challenges for specific sectors. Modelling the Climate Leadership Team's recommendations shows that this suite of fiscal policy recommendations will maintain provincial GDP growth, ensure industry competitiveness and support families and jobs in the province.

Pricing carbon explicitly is an essential policy tool for reducing carbon pollution and building more resilient, low-carbon economies. Currently more than 60 countries, cities, states and provinces use carbon pricing or are planning to implement it. The value of these systems was estimated to be just under \$50 billion USD in 2015. These carbon-pricing instruments include carbon taxes, emissions trading systems, and combined systems. The Climate Leadership Team reviewed these various mechanisms and recommends continuing to use a carbon tax as the pricing mechanism in British Columbia.

B.C.'s revenue-neutral carbon tax is the foundation of the province's current climate plan and it applies the same price (\$30 per tonne) to almost all fossil fuel combustion in the province. Since its establishment in 2008, the carbon tax has set a price signal to encourage the market's transition to a low-carbon economy. A carbon tax doesn't require specific technologies or behaviours, but by making all renewable energy and energy efficiency options more affordable relative to fossil fuels, it drives a broader adoption of solutions.

Two important aspects of the first phase of the carbon tax were the steady schedule of increases and revenue neutrality. The low starting price that increased gradually on a transparent schedule provided certainty for businesses and investors, and gave them time to make informed decisions. The revenue neutral requirements that were established by the government mean that every dollar collected in carbon taxes is returned to businesses and households via cuts to corporate and personal income taxes. Revenue is also returned through transfers to people with low incomes and in rural and northern communities.

A significant body of evidence points to the conclusion that B.C.'s carbon tax is working both economically and environmentally. Independent research has found that since the implementation of the tax, fuel use in B.C. has dropped by 16 per cent per capita, while it has risen three per cent per capita in the rest of Canada. Within the same timeframe, between 2007 and 2013, B.C.'s real GDP grew 9.2 per cent (more than the Canadian average). The province's fiscal transfers have also assisted low-income households to adjust to a carbon price. Based on this evidence and the economic modelling from Navius, the Climate Leadership Team is recommending that B.C. continue to use our strongest tool to reduce emissions, and recommence the annual increases in the carbon tax starting in 2018, when the

carbon tax freeze ends. The Climate Leadership Team further recommends that the annual increases in the carbon tax are reviewed in five years, however, the modelling indicates that increases in the range of \$10 per tonne per year will be required through to 2050 in order to achieve B.C.'s 2050 targets.

We also recommend expanding the carbon tax to include non-combustion sources of carbon pollution that can be accurately measured. Expanding the coverage will allow B.C. to meet its climate targets as cost-effectively as possible as the carbon tax currently covers only the combustion emissions that account for about 70 per cent of B.C.'s emissions. We recommend that this expansion begin in five years to continue improving data quality, and to give the sectors with significant fugitive or process emissions, such as natural gas, coal mining, and cement and metal production, time to plan and make investments to reduce their emissions where possible.

These carbon tax recommendations should not be viewed in isolation because they are just one element of fiscal policy. They should be viewed alongside the accompanying measures we are recommending to maintain B.C.'s economic competitiveness. On an economy-wide basis, and to continue B.C.'s strong support for families and businesses through revenue recycling, we recommend using a major share of the revenue from the carbon tax to reduce the PST by one basis point supported by incremental carbon tax.

Beyond the economy-wide measures, we recommend several targeted measures to maintain or enhance competitiveness – particularly for emissions-intensive, trade-exposed sectors if B.C. moves ahead of the carbon pricing and regulatory policies in place in competing jurisdictions. The government must develop clear policies that protect emissions-intensive, trade-exposed industries because there is a real risk that their competitiveness will be materially impacted if the increases in B.C.'s carbon tax exceed the rate at which carbon pricing and regulatory policies are strengthened in competing jurisdictions. Government policies need to avoid an outcome where economic activity shifts from B.C. to another jurisdiction because of B.C.'s carbon tax. We believe that this objective can be accomplished through the targeted use of carbon tax revenue and that this is a preferable approach to waiting for other jurisdictions to strengthen their climate policies first. Doing so will allow B.C. to reduce carbon pollution and maintain the competitiveness of the economy – including emissions-intensive, trade-exposed sectors.

The recommendations include the elimination of PST on business and industry electricity rates (residential customers are already exempt). They also include an innovation fund to help establish and grow companies with the clean energy solutions needed globally, including the potential to work in partnership with other funds such as Sustainable Development Technology Canada (SDTC) and Climate Change and Emissions Management Corporation (CCEMC), and support for targeted industries to assist them in remaining competitive.

The impacts of carbon pricing on households – especially low-income households – have also been an important consideration in our deliberations. To help vulnerable communities sustain their disposable income when the carbon tax rate rises, we recommend adjusting the existing low-income and northern/rural tax credits. These adjustments should be based on the best available data to ensure that tax credits are providing an adequate level of support. We also recommend using a portion of the incremental carbon tax revenue to assist communities in making local investments that will help their residents and businesses make lower carbon choices. This could include projects such as district heating systems, car pooling, transit, walking and cycling infrastructure.





The summary of the modelling results supporting these recommendations is in the appendix. The summary results also show that external factors, such as stringency of climate policies in other jurisdictions, have a significant impact on the level of reductions the province will be able to achieve in certain sectors (e.g., if other jurisdictions fail to implement transportation policies as strong as we have recommended, the availability of zero-emission vehicles may be limited). The scale of the LNG development that will unfold in B.C. and the technologies available will also influence the level and timing of achieving the emissions reduction targets and goals.

**Recommendation 4**

Lower PST from 7 per cent to 6 per cent, supported by incremental carbon tax.

**Recommendation 5<sup>3</sup>**

Increase the carbon tax by \$10/yr commencing in July 2018 and, also supported by incremental carbon tax revenue, concurrently:

- a) Maintain those current tax reductions achieved through the existing carbon tax that are broad based, provide support to vulnerable populations, or promote GHG reductions;
- b) Adjust the current low income and rural and northern tax credits to ensure the most vulnerable individuals and families are not adversely impacted; and
- c) Establish targeted and transparent mechanisms for emission-intensive, trade-exposed sectors that mitigate the competitiveness issues created for those sectors if B.C.'s carbon pricing is materially greater than jurisdictions with which they compete, provided that such mechanisms are structured in a manner that does not adversely impact the price signal to reduce emissions. These adjustments should remain in place until such time that carbon pricing and regulatory policy equivalency with other jurisdictions is achieved.

**Recommendation 6**

Expand coverage of the current carbon tax to apply to all greenhouse gas emission sources in B.C. after five years, starting with measurable GHG emissions covered by the current reporting regulation.

**Recommendation 7**

Use the other incremental revenues generated from the increase in the carbon tax to:

- a) Eliminate PST on all electricity rates;
- b) Establish mechanisms to facilitate investments in technology and innovation that reduce GHG emissions; and
- c) Establish mechanisms to provide local governments with funding for projects that will result in demonstrable reductions in GHG emissions.

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<sup>3</sup> One CLT member is not in a position to support recommendation 5.

**Recommendation 8**

The scheduled annual increases in the carbon tax and the competitiveness adjustments for emission-intensive, trade-exposed sectors should be reviewed by the Province, with the support of a Climate Leadership Team, every five years, or more often where warranted, taking into consideration GHG reductions, economic competitiveness, carbon pricing and regulatory policy in other jurisdictions, and impacts on vulnerable communities.

**Recommendation 9**

The fiscal policies described in these recommendations should be included in the 2016 budget where applicable.

**INDUSTRY POLICY****Emerging economic opportunities**

The Fiscal Policy recommendations will reduce emissions and are intended to stimulate innovation and jobs within B.C.'s existing industries. There are also new economic opportunities that could become important parts of B.C.'s economy over time – particularly as the global demand for clean energy solutions grows. While some of those opportunities may develop organically over time, we think it is important for B.C. to give more thorough consideration to the province's strengths and how they match with emerging needs and opportunities. This will allow the province to determine if there need to be any additional strategies to target specific economic opportunities.

**Recommendation 10**

Create a task force with appropriate expertise (e.g. economics, global markets, clean innovation, environment-economy policy) to research B.C.'s competitive advantages and potential growth areas in a low-carbon economy, both within and across sectors, and to develop recommendations on stimulating these areas.

**Environmental assessment**

New industrial projects typically have lifespans of 30 to 50 years and the environmental assessment process is intended to examine the full project life. In the same way that B.C. is beginning to require project proponents to explore how climate change could impact their project in the future (e.g., changing precipitation patterns impacting a hydro-electricity project), it is important that the Environmental Assessment process also considers how an increasing value on reducing carbon will impact projects over the next 30 to 50 years. B.C. requires a transparent and rigorous environmental assessment process that measures the economic prospects of new development along with the GHG impacts of any project. Adding in the value of carbon treats GHG emissions as any other cost that a proponent of a project must account for in its assessment of viability of the project.

**Recommendation 11**

Amend the *Environmental Assessment Act* to include the social cost of carbon<sup>4</sup> in the Environmental Assessment process and ensure consistency with the climate action plan and carbon pricing signals.

**ELECTRICITY**

Under the *Clean Energy Act*, electricity generation is required to be at least 93 per cent renewable. B.C.'s clean electricity supply provides a significant advantage as the province works to reduce emissions by providing businesses and families with a low-emission alternative to fossil fuels. B.C. can build on the existing *Clean Energy Act* and move to a target of 100 per cent renewable electricity by 2025, joining the many cities, states, and nations that have made this leadership commitment.

In the near term, the role of natural gas generation on the integrated grid should be limited to providing backup and ensuring reliable service to customers. In the longer term, the fossil fuel uses should also be phased out as soon as is practicable, as renewable energy technologies mature and costs continue to decline.

There are approximately 60 remote communities — including many First Nations — in B.C. that are not connected to the integrated electricity grid. Most of these communities rely on diesel generation for power supply. While 100 per cent renewable energy alternatives are not always technically feasible, a joint effort of communities, the province, BC Hydro, and federal government agencies will help these communities displace diesel generation with a mix of renewable sources complemented with the efficient use of fossil fuels where necessary.

**Recommendation 12**

Amend the *Clean Energy Act* to increase the target for clean energy on the integrated grid from 93 per cent to 100 per cent by 2025 (except where fossil fuel capacity is required for back-up or reliability).

**Recommendation 13**

Establish a strategy (including funding) to phase out, by 2025, diesel generation in remote communities and replace it with reliable, low-GHG electricity service.

**NATURAL GAS AND LNG**

Natural gas production accounts for 16 per cent of the province's greenhouse gas emissions and is the largest industrial sector. In addition to being a significant provincial source of emissions, it is also the most uncertain due to market forces that affect the potential for LNG development and the accompanying upstream operations, and increased competition from U.S. natural gas for North American markets.

Natural gas production also offers some of the most significant emission reduction opportunities. The modelling and stakeholder information demonstrates the potential for substantial improvements by increasing the use of existing technologies and practices such as electric drive technologies, energy efficiency improvements, carbon capture and storage, and reduced methane leaks. All of these solutions have been used with success in B.C.'s gas sector, but they are not yet commonplace.

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<sup>4</sup> The cost of impacts associated with an additional unit of greenhouse gas emissions.



LNG plants offer a similar set of technical opportunities to reduce emissions. The plants can rely on clean electricity instead of natural gas for both the liquefaction process and their auxiliary demands. These technologies are included to varying degrees in the different LNG proposals in B.C., but like upstream gas, they are not yet commonplace across proposals.

In considering the opportunities to reduce emissions from LNG and natural gas in B.C., there are some important positives. As mentioned, most of the technologies are well established and have been used in B.C. in some existing operations and proposed for new ones. Alberta, the province's closest competitor, has recently strengthened its carbon pricing policy and is in the process of a larger update, which is expected to include further progress on carbon pricing. And there is a broader momentum to reduce methane emissions from the oil and gas sector, which has resulted in stronger policies in states like Wyoming, Colorado and Pennsylvania. The U.S. Environmental Protection Agency is in the process of developing similar regulations.

The sector also faces some important challenges that we have accounted for in designing our recommendations. North America now has abundant supplies of relatively low cost natural gas, so B.C. is competing with a number of new suppliers for a limited market. Our recommendations to reduce the PST (generally by 1 basis point and entirely on electricity rates) and make available transitional support for emissions-intensive, trade-exposed sectors are intended to address this reality – particularly if B.C.'s climate policy materially exceeds the stringency of our competitors.

The availability of electricity transmission is also a challenge more specific to the gas and LNG sector. If a proponent wants to use clean electricity instead of gas, they need to be confident that the electricity transmission and supply will be available on the timelines they are advancing their project. Our recommendation for BC Hydro to be able to make supply commitments is intended to address this challenge. One aspect of providing electricity in a competitive, timely manner is ensuring that BC Hydro is able to commit to supply contracts that provide, on reasonable commercial terms used in other jurisdictions in similar circumstances, for damages in the event of failure to deliver new supply within agreed upon time frames and, in the case of LNG, for liquidated damages in the event of interrupted supply. In the event of any damages being payable by BC Hydro, the ratepayers should not bear the burden.

In the event that B.C.'s carbon tax is implemented in a manner recommended, and BC Hydro successfully develops and implements the recommended strategy to develop the competitive, timely supply of electricity to support electrification, an inevitable economic consequence is that within a decade, future LNG projects will take place by way of e-drives or other zero emission technology.

Our recommendations to restart annual increases in the carbon tax in 2018 and broaden the base of the carbon tax in five years are intended to be the main drivers of change in the gas sector. The carbon tax has already worked to improve the business case for electrification and increased energy efficiency, and we are confident that building on this approach will yield results in a way that gives the sector an opportunity to innovate and gives government an opportunity to manage concerns related to competitiveness. A potential exception is fugitive and vented methane emissions. While we think the default approach should be to expand the carbon tax coverage, we recognize that methane regulations for the oil and gas sector are evolving rapidly in Canada and the U.S. As a result, it will be important to evaluate the environmental- and cost-effectiveness of those regulations, along with the learning from

B.C.'s five-year effort to reduce methane emissions by 40 per cent, and the anticipated effectiveness of expanding carbon tax coverage.

The five-year window before the carbon tax coverage is expanded to non-combustion sources within the natural gas sector is intended to give the industry an opportunity to make progress reducing GHG emissions. This is particularly true for methane emissions where, based on analysis from Navius, ICF, and B.C.'s natural gas producers, we believe a 40 per cent cut is possible over the five years. This will be a challenging objective to achieve, but the opportunity to take advantage of existing incentives such as offsets and the forthcoming green infrastructure tax credit make it feasible.

We believe that our package of recommendations can help the gas sector contribute to the province's climate goals while also maintaining its competitiveness. These efforts will also allow B.C. to contribute to broader efforts in the US and Canada aimed at reducing methane from the oil and gas sector. B.C. can become the preferred jurisdiction when it comes to developing natural gas with near zero emissions.

#### **Recommendation 14**

Instruct BC Hydro to develop a strategy (generation and transmission) to supply in a competitive, timely manner the clean electricity required to facilitate electrification of upstream natural gas, LNG, and associated infrastructure. Amongst other things, the strategy should enable BC Hydro to commit to supplying new industrial projects with clean electricity by project start up, if necessary through the use of temporary natural gas generation until transmission infrastructure is available.

#### **Recommendation 15**

Reduce fugitive and vented methane emissions by:

- a) Establishing a goal of 40 per cent reduction for fugitive and vented methane within five years;
- b) Requiring industry through regulation to implement leak detection and repair (LDAR) programs in line with best practices in North America;
- c) Developing best practices for methane reduction, including transparent reporting, through a collaborative initiative involving the provincial government, industry, and other stakeholders with expertise in this area (in a manner similar to Colorado and Pennsylvania) and seek alignment with Canada and other provincial jurisdictions in this regard; and
- d) Providing that at the time of the first five year review of the Climate Leadership Plan, a new reduction goal for fugitive and vented methane emissions should be established and a determination made whether future reductions in fugitive and venting methane emissions are best achieved through expanding the coverage of the carbon tax to such emissions as provided for in recommendation 6 (the default), a continuation on a voluntary basis of the best practices developed above for methane reduction (provided the industry has reached the 40 per cent methane reduction goal within five years), or such best practices developed for methane being mandated by regulation at that time (with such regulations to be reviewed every five years thereafter).





## **FORESTRY AND AGRICULTURE**

Forestry and the forest sector play a significant role in both climate adaptation and mitigation. Managing B.C.'s forests for improved climate resilience through enhanced silviculture activities and adapting protected areas strategies to address climate adaptation would increase carbon storage, resiliency and future timber supply. The consideration should cover all aspects of climate change resilience from species selection and pest resistance to growing more trees. These outcomes would generate increased economic activity and jobs in the forest sector, as well as in the tourism sector and across B.C.'s economy as a whole.

Programs like "Wood First" encourage the forest industry, government and other stakeholders to advance innovation in B.C.'s forest manufacturing, new products and the built environment through value-added wood products. This helps spur further innovation in other jurisdictions and expand local and global markets for new and existing products, while promoting climate-friendly construction and supporting B.C.'s forest-dependent communities.

Improving the utilization of wood can increase available fibre for all forest products. Improved utilization of lower-quality wood and wood residue provides a fibre source particularly suitable for energy purposes, including bioenergy and new products such as biofuels. There is also an opportunity to improve energy efficiency through fibre-based products used, for example, in insulation. Given the increase in lower quality fibre in B.C. due to the mountain beetle infestation, increased utilization and use of these fibre sources is particularly important.

Climate change will significantly increase the agriculture sector's business risk and management complexity, but will also bring opportunities for the agriculture sector. To reduce the risks and to take advantage of the opportunities, the sector will need to adapt and build climate resilient farm practices in the face of issues such as increasing frequency and magnitude of drought and extreme weather events.

### **Recommendation 16**

Update current forest and agriculture policy, regulation and protected areas strategies to account for climate change impacts.

### **Recommendation 17**

Update current forest policy and regulation to increase utilization of forest residue for energy purposes and increase carbon sequestration.

### **Recommendation 18**

Create a task force with appropriate expertise to review and update carbon management best practices for the agriculture sector.

## **TRANSPORTATION**

### **Context and Rationale**

Transportation is responsible for 37 per cent of emissions in B.C. We now have the technologies – such as biofuels and hybrid-electric vehicles – to enable a transition to zero and low-emission transportation options. Our recommendations focus on making these technologies and fuels available to individuals and industry across the province.

The existing acts, regulations and standards provide a solid foundation for further action. The Low Carbon Fuel Standard is among B.C.'s most successful policies for reducing greenhouse gas emissions — takes the equivalent of 190,000 cars off the road every year. Keeping that success going requires increasing and expanding the standard.

The Greenhouse Gas Reduction (Clean Energy) Regulation, announced in May 2012 and enabled under the *Clean Energy Act*, allows utilities to offer incentives for natural gas vehicles and to build natural gas vehicle fuelling infrastructure. The Regulation also allows utilities to make time-limited investments with spending caps on expenditures, in total up to \$102 million over five years, in order to “kick-start” the natural gas vehicle market.

B.C. also has legislation for a zero-emission vehicle standard, but has yet to implement it. Since cars and trucks account for 13 per cent of B.C.'s total emissions, it is necessary for car buyers to have cleaner options. This standard would increase zero-emission vehicle choices for consumers in the province by mandating sales targets for electric vehicles. Leading jurisdictions, such as California, have used this standard to successfully drive electric vehicle adoption. Canadian research also shows that a zero-emission vehicle standard is the optimal policy for increasing zero-emission vehicle sales<sup>5</sup>.

This combination of policies would work to give B.C. businesses and individuals access to the affordable vehicles and fuels necessary to run B.C.'s economy while meeting its climate targets.

Building on expertise already in B.C. and on the availability of natural gas and propane in the province also creates opportunities to reduce transportation emissions. Supporting both the vehicle and fuelling infrastructure simultaneously is important to maximize the impact of the policies. Improved commercial transportation efficiency can also be achieved through, for example, larger vehicle size, which reduces both the number of vehicles on the road and the total fuel used and GHG emissions produced to transport a given payload.

#### **Recommendation 19**

Develop a low-carbon transportation strategy for transitioning the transportation sector to emit 30 per cent fewer GHGs by 2030 including the following key elements:

- a) Establishing the following Zero Emission Vehicle targets for the sale of new light duty vehicles:
  - i) 10 per cent of sales by 2020;
  - ii) 22.5 per cent of sales by 2025; and
  - iii) 30 per cent of sales by 2030;
- b) Increasing the Low Carbon Fuel Standard to 20 per cent by 2030;
- c) Broadening the LCFS coverage to include all vehicle fuel use with the exception of aviation fuel;
- d) Enhancing incentives and infrastructure necessary to support both increased commercial transportation efficiency (size of vehicles) and natural gas/propane conversions in the commercial transport sector (including marine); and
- e) Establishing revenue neutral PST for all vehicles based on grams of CO<sub>2</sub> per km, similar to many European vehicle registration systems.

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<sup>5</sup> Axsen, Jonn. (2015) Electrifying Vehicles: Insights from the Canadian Plug-in Electric Vehicle Study. <http://www.rem.sfu.ca/people/faculty/jaxsen/cpevs/>



## **BUILDINGS**

### **Context and Rationale**

Buildings represent 11 per cent of B.C.'s total greenhouse gas emissions. The province has significant opportunities to reduce the amount of energy that buildings need, meet those needs with clean electricity instead of fossil fuels, and increasingly rely on materials that store carbon (e.g. wood) to build them. By acting on these three opportunities, B.C. can reduce carbon pollution, cut energy and carbon costs, and improve comfort and indoor air quality. The province's building sector has the skills and experience to help with this transition.

Modelling of our recommendations finds that B.C. can reduce emissions by 50 per cent by 2030, which is the target we have consequently recommended for the sector. To achieve that outcome, we have highlighted four buildings-specific recommendations that are designed to complement the fiscal policy recommendations: accelerate improvements in the building code's energy efficiency requirements, provide further public sector leadership for government's own buildings, target programs for existing buildings, and enhance standards for heating equipment and appliances.

B.C. can maximize the benefits from these recommendations if their objectives and implementation are aligned over the next 10 years. Doing so will provide a longer planning horizon for the province, local governments, and industry that can set up bigger gains that wouldn't be possible with less foresight and leadership now. Experiences such as Brussels', which saw energy efficiency requirements in new construction transform from amongst the worst in Europe to amongst the best over an eight-year period, give us confidence that B.C. can achieve these benefits over the next decade. Doing so will require the province to start quickly and develop and commit to a long-term roadmap.

Affordability for building owners, occupants, builders, developers, and the provincial government is a critical consideration. As a first step, constructing higher performance buildings and upgrading existing ones will reduce energy and carbon costs, and help offset the costs of making those investments. We also recommend financing programs to help British Columbians and B.C. businesses access the capital needed. Support for training, more efficient permitting, increased building code compliance and a simplified code will also support better results and help to manage costs. And where possible, we recommend working in partnership with leading jurisdictions such as California and the Pacific Coast Collaborative to achieve and maximize economies of scale.

The buildings sector also represents an important economic export opportunity to the province, particularly as it relates to new buildings. Our recommendations would see increasing use of wood products and a rapid transition to buildings that are energy efficient enough to be able to meet most of their energy needs with on-site renewable energy (e.g., equivalent to net zero ready or Passive House standards). In taking a leadership role in moving towards these higher levels of performance, B.C. will be well positioned to supply the design and construction expertise, and building materials to other jurisdictions.



### **Recommendation 20**

Establish by 2016 a buildings strategy that by 2030 reduces greenhouse gas emissions from the sector by 50 per cent, and includes the following core elements:

- a) Commencing in 2016, require that all new public sector buildings increase the use of materials that sequester carbon, and have the capacity of meeting most of their annual energy needs by on-site renewable energy;
- b) Revisions to the building code that require new buildings to (i) increase use of materials that sequester carbon and (ii) have the capacity of meeting most of their annual energy needs by on-site renewable energy within 10 years;
- c) Programs (such as on-bill financing) that encourage retrofits that reduce GHG emissions and encourage energy efficiency in existing building stock; and
- d) Standards that transition the market to high-efficiency electric heating equipment, building components and appliances.

## **COMMUNITIES**

### **Context and Rationale**

Communities have influence over approximately 40 per cent of greenhouse gas emissions in British Columbia and are a key partner in reducing greenhouse gas emissions. The B.C. Climate Action Charter has been a successful approach to encourage communities to take action, and 96 per cent of all local governments have signed the Charter. By signing on, local governments commit to measure and report on their community's greenhouse gas emissions profile. They will also work to create compact, more energy efficient communities and accelerate the uptake of district energy systems, renewable energy, and green and resilient infrastructure. The Climate Action Revenue Incentive program offsets the carbon tax for local governments who have signed the B.C. Climate Action Charter.

We recommend that the B.C. government and municipalities reinvigorate their relationship around the Climate Action Charter and focus on taking it to the next level.

A significant share of all food is wasted. About half occurs at the household level and the rest through production, processing, transportation and retail of food. Reducing waste would save businesses and consumers money, and reduce waste disposal costs. Improved organic waste diversion would prevent the loss of organic waste as a resource.

While the analysis shows only modest greenhouse gas emissions reductions from mode shifting in the long-run, in the short-run a variety of measures can facilitate emissions reductions, including improved transit access, reliability and frequency, as well as the creation of communities more conducive to transit, walking and biking.

Communities have also been dealing with climate variability and extreme weather events for decades, and have developed forecasting and preparedness tools and processes to cope. As the frequency and severity of weather events increase, communities will need new information as well as new resources and strategies to empower them to apply their existing knowledge, and to continue to offer their residents a stable environment in which to live, grow and work.

Communities are not unique in their need to adapt to climate disruption. Broad action is required across the economy and land base. However, the adaptation recommendations are captured in this section as many of the impacts are experienced by communities and their residents.

Risk management begins with clearly assessing the sources of risk. Adequate protections can then be resourced and put in place over time. Monitoring the sources of risk, the level of preparedness and the success of solutions when they are deployed will allow communities to ensure they are sufficiently protected from the potential economic and ecological impacts future climate change may bring.

#### **Recommendation 21**

Undertake a collaborative review and update of the Climate Action Charter to align provincial and community goals.

#### **Recommendation 22**

Create a waste-to-resource strategy that reduces GHG emissions associated with food waste, organic waste, and landfills.

#### **Recommendation 23**

Support increased use of public transit and other mobility options that reduce GHG emissions.

### ***Adaptation***

#### **Recommendation 24**

Undertake the following actions regarding climate change adaptation and mitigation:

- a) Update by 2020 hazard maps for all climate related hazards;
- b) Invest in sufficient monitoring systems, especially in the areas with monitoring information gaps, to ensure the change can be managed effectively;
- c) Develop a policy framework to guide the provincial government's management of the risks associated with a changing climate; and
- d) Increase communications to public.

## **FIRST NATIONS**

### **Context and Rationale**

First Nations communities are an important part of the cultural and economic fabric of British Columbia. As with new resource development, infrastructure programs and revenue generation in the province, First Nations governments and the provincial government will need to collaborate and partner. This will help ensure that already vulnerable and under-resourced First Nations communities are not excluded from the benefits of a climate resilient strategy. It will also include them in the potential future economic benefits of adopting innovative approaches to reduce emissions and energy consumption. First Nations have strong potential to champion clean economic growth that respects the values they hold for nature and their communities.



Over hundreds of years, First Nations have developed a deep understanding of the land and hold extensive traditional knowledge that can benefit the existing data, information and knowledge regarding B.C.'s land base. First Nations are also uniquely positioned to implement adaptation on the land base.

Climate change pays no attention to cultural or economic differences, but access to adequate solutions is often limited by these differences. All British Columbians should have access to similar programs to ensure their families and communities are prepared and resilient.

#### **Recommendation 25**

##### **Adaptation**

- a) Traditional knowledge should be used when appropriate and available as part of the hazard mapping information.
- b) Allocate appropriate resources for research and modelling of the impacts of climate change on the inherent and treaty rights of indigenous people.

#### **Recommendation 26**

Work with First Nations communities and federal agencies to ensure transition to reliable, low GHG electricity service in communities currently dependent on diesel generation.

#### **Recommendation 27**

Ensure the First Nations clean energy business fund effectively enables new business opportunities.

## **OFFSETS**

### **Context and Rationale**

Greenhouse gas offsets have played a vital role in the development of international climate agreements and are an important vehicle to convey technology and financial assistance to developing countries. Many jurisdictions—including B.C., California, Canada and the European Union—have used offset programs to make it possible to adopt stronger reduction targets while managing the economic impact on their economies and stimulating innovation. As offsets allow for one unit of carbon pollution in exchange for one unit of reduction, offsets must be credible, additional, and conform with stringent international standards and jurisdictional regulations.

B.C. has an offset program operated under legislation. The province could expand the use of offsets beyond the Carbon Neutral Government Program to specific industrial sectors, or use them to help meet provincial carbon reduction targets. The amount of offsets permitted and the timeline for using them should be limited in B.C. to ensure they don't become a barrier to reducing carbon pollution directly.

Limited use of high-quality, credible greenhouse gas offsets from other jurisdictions could make additional funds available to invest in higher-cost innovative reduction technologies in B.C., and those technologies could be exported once developed and proven. Like taking out a loan to allow a business to invest in the equipment it needs to generate revenue, offsets can provide a short-term financial bridge to lower-cost, larger-volume reductions. However, given concerns about the credibility of offsets from some jurisdictions outside of B.C. and their ability to ensure greenhouse gas reductions, any external offsets considered should meet or exceed the standards set in B.C.



**Recommendation 28**

Undertake a review of the current offset policy to determine if changes are required to support the new Climate Leadership Plan.

## **INTERGOVERNMENTAL RELATIONS**

### **Context and Rationale**

Major jurisdictions around the world are currently moving aggressively with new greenhouse gas reduction strategies and commitments, including the United States, China and the European Union. In Canada, there is significant effort underway in a number of jurisdictions to develop and implement policies that address climate change at multiple levels. Currently, Quebec is pricing carbon through an emissions trading system with California under the Western Climate Initiative and Ontario has announced it intends to join this cap and trade system. Furthermore, carbon policy in Alberta is also under review.

**Recommendation 29**

If the majority of Canadian provinces opt for carbon pricing via emissions trading to cover greenhouse gases from large final emitters, a review should be undertaken of mechanisms to integrate a carbon tax with a cap and trade framework for the B.C. context.

**Recommendation 30**

British Columbia should work closely with the federal government and the other provinces, as well as with the other jurisdictions in North America to achieve parity with B.C.'s climate action policies.

**Recommendation 31**

British Columbia should take leadership in seeking alignment with Canada and other provincial jurisdictions regarding best practices for methane reduction from the oil and gas sector, including transparent reporting and carbon pricing and regulatory policies.

## **PERIODIC REVIEW**

### **Context and Rationale**

Once targets are set, they must be reviewed periodically to ensure they remain relevant and B.C. makes progress toward meeting them. This periodic review is critical to maintaining momentum in transitioning away from fossil fuels to low-carbon targets for 2050. Emissions levels, economic impacts, costs to households and quality of life, business conditions, and actions taken by other jurisdictions are all factors that will shift over time. As such, they require monitoring and adjustments in the focus and degree of effort expected from specific policies, programs, communities and technologies. Regular review and monitoring will allow B.C. to intentionally adjust its strategy and tactics as needed to ensure success.

A changing climate will bring new challenges for generations. The sooner a jurisdiction can adopt approaches to monitor climate change and its impacts, the sooner a dynamic platform can be established to support a vibrant low-carbon economy and a resilient environment.

A five-year review cycle will allow time for new policies to take hold and demonstrate their effectiveness. A five-year cycle is also likely to be needed to cull or revise underperforming or ineffective policies and programs, to allow for timely and efficient redeployment of climate action resources.

As the climate changes, B.C.'s critical economic, ecological and food supply sectors—such as agriculture, energy, forestry and fisheries—will need closer management attention. This will help ensure they are sustainable under long-term climate scenarios and have adequate assistance surviving short-term extreme climate events. Reviewing B.C.'s climate targets and progress every five years balances timeliness and cost-management considerations appropriately, in recognition of B.C.'s size and complexity.

**Recommendation 32**

Government should undertake a review of its Climate Leadership Plan and policies at least every five years supported by a Climate Leadership Team.





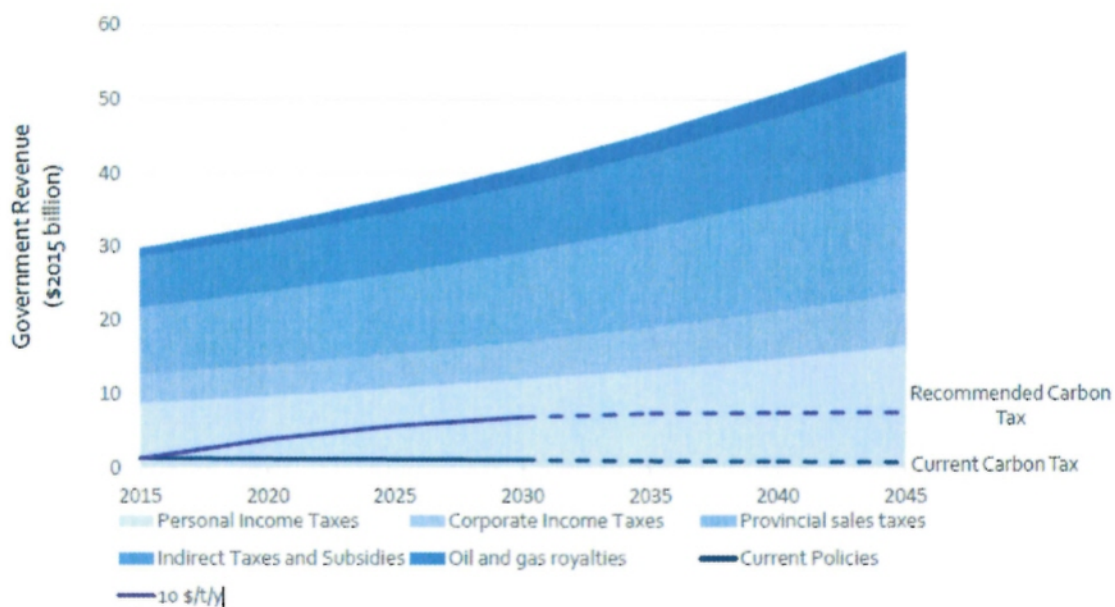
## Appendix

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### Summary of Modelling Results

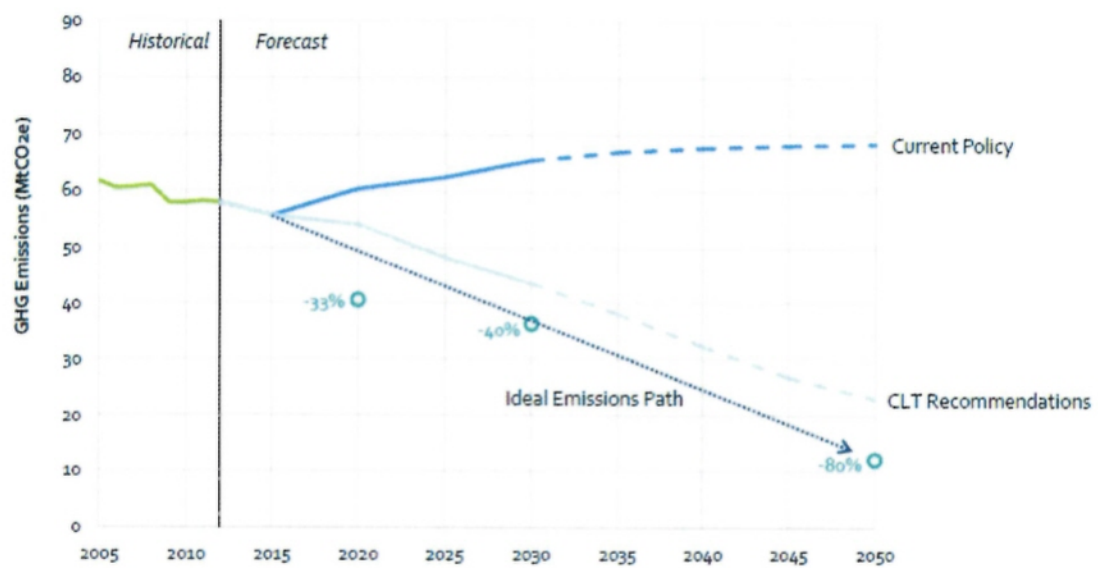


## Carbon tax revenue forecast



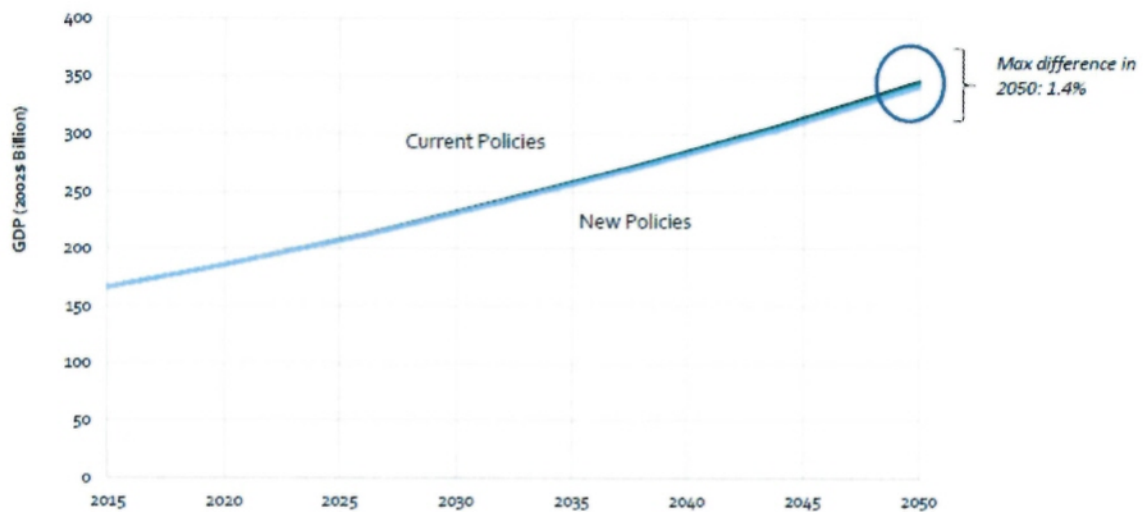


## Greenhouse gas emissions forecast





## Provincial GDP forecast

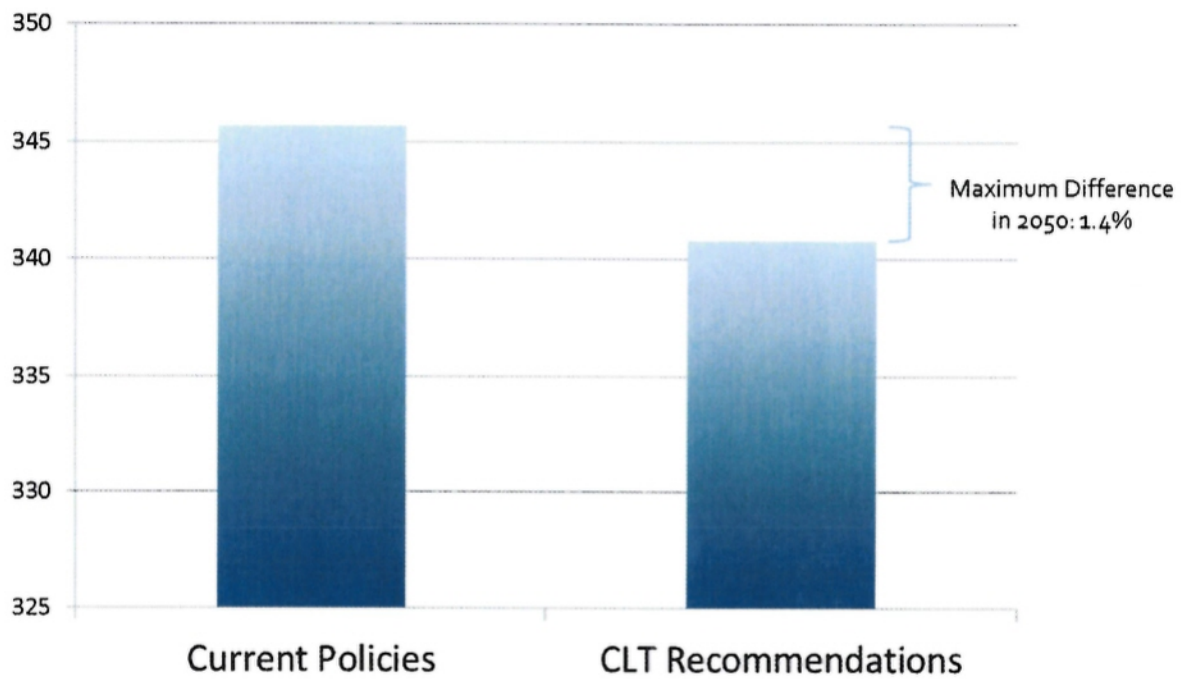


Economy continues to grow - Average annual growth in GDP, 2015-2050

- Current Policy: 2.11%
- CLT Recommendations: 2.07%



## Provincial GDP forecast for 2050

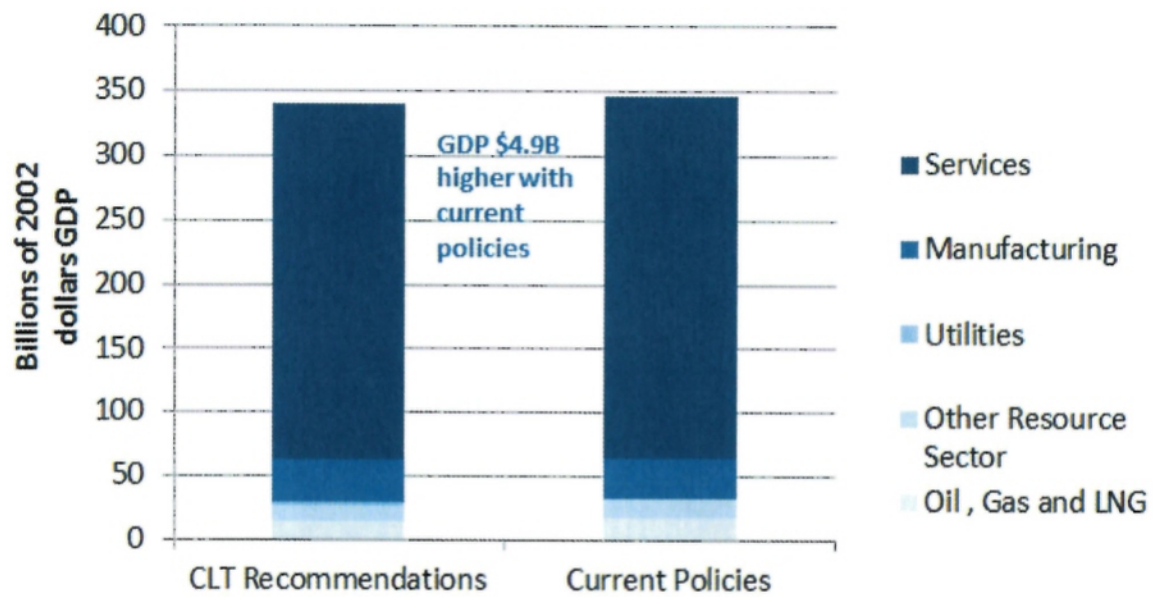


**Economy continues to grow – The forecasted maximum difference is small**

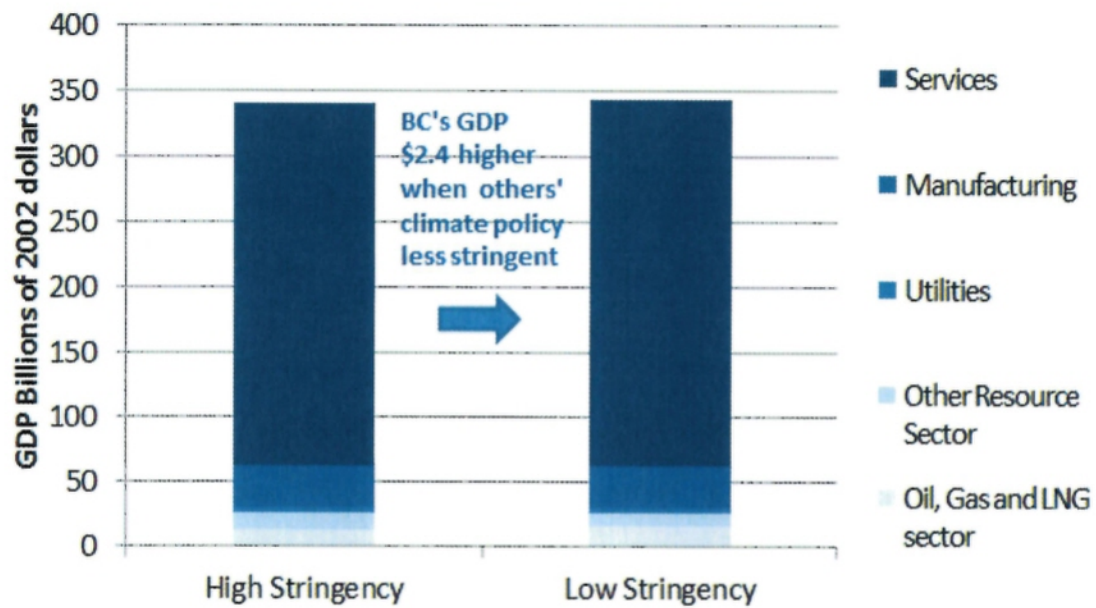




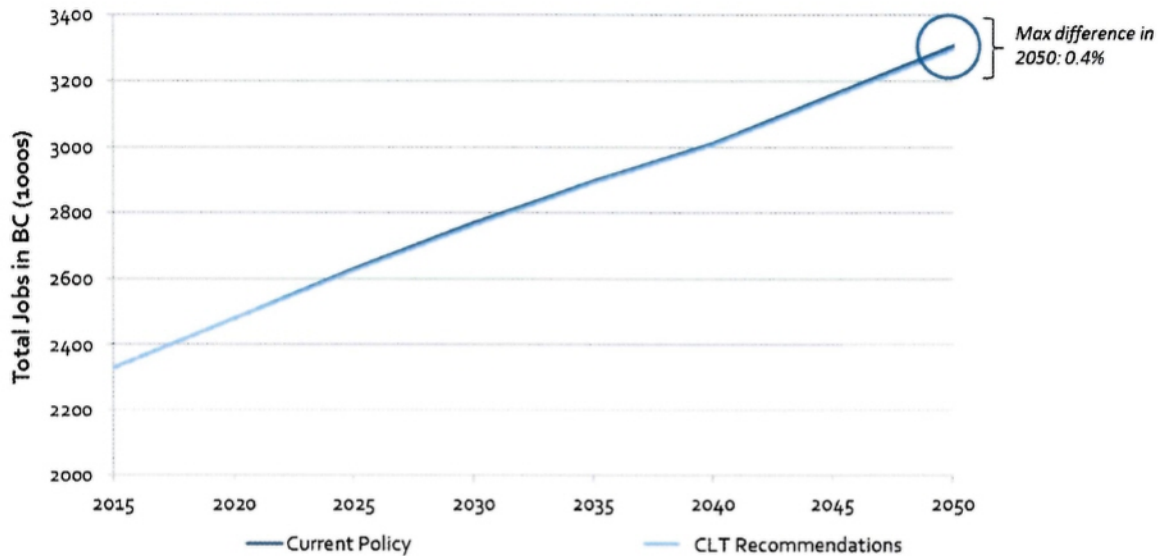
## Provincial GDP forecast for 2050 by sector



## 2050 GDP forecast – effect of other jurisdictions



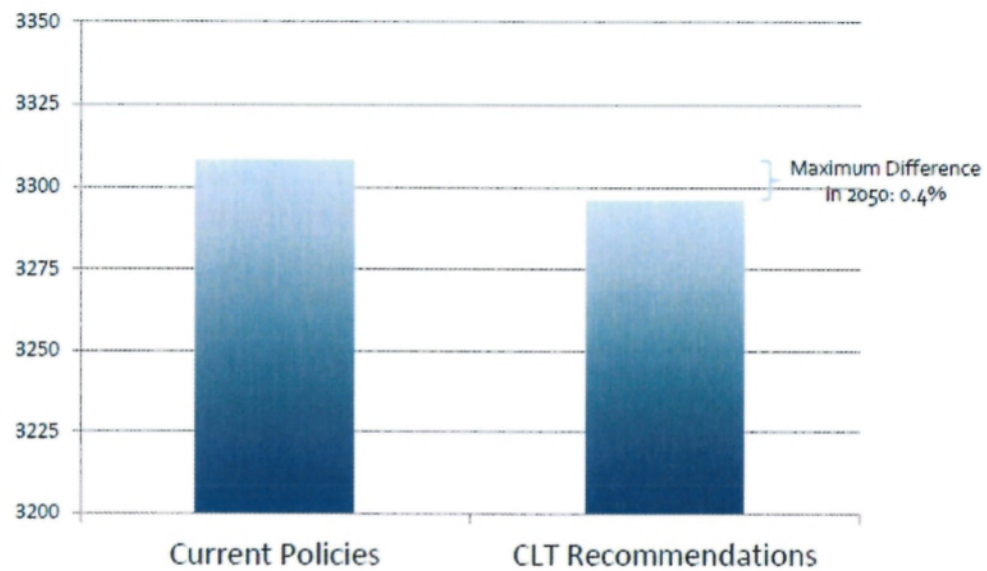
## Provincial jobs forecast



Climate policy will not have a large impact on jobs. Total jobs in BC will be in the millions, whereas the impact of climate policies will be in the thousands



## Provincial jobs forecast for 2050

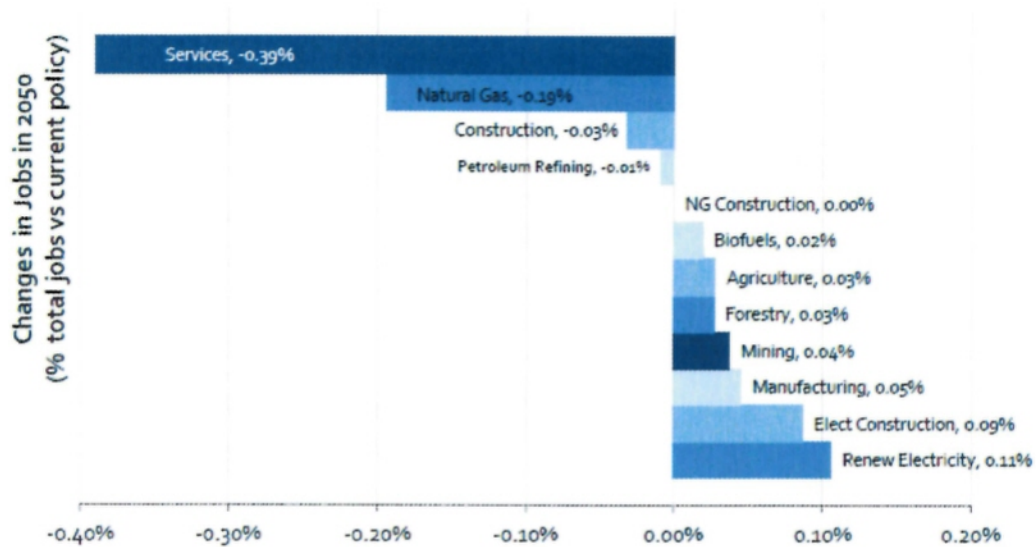


The jobs continue to increase – The forecasted maximum difference is small





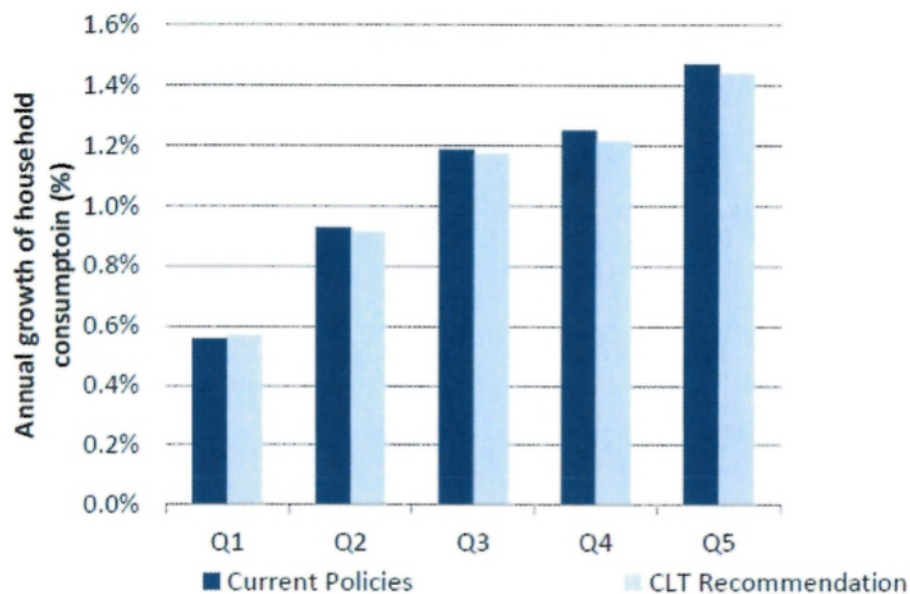
## Provincial jobs forecast for 2050 by sector



Like with GDP, the job outcomes of different sectors vary.



## Potential distributional impacts



Household consumption continues to grow in each quintile. In general, the impact of the policies are felt most by the wealthiest households (i.e., households in the top two quintiles).

## Summary of forecasted fiscal impacts

The estimated fiscal impacts are based on the policy assumptions used in the Navius modelling. As such, they need to be considered illustrative, order of magnitude estimates. A diligent analysis will need to be conducted by the Finance Ministry to fully examine the fiscal impacts. The Climate Leadership Team is not suggesting to have revenue and expenditure to be out of balance and has not, for example, explicitly recommended a PST 1% cut in 2018 in their recommendation 4. The Climate Leadership Team suggests that government consider phasing in the tax reductions, tax credits, targeted measures for emissions-intensive, trade-exposed sectors, and other fiscal expenditures at a rate that more closely matches incremental revenue.

**Estimated Fiscal Implications of the Recommendations**  
(\$bn unless otherwise mentioned)

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Rate (\$/t)	30	30	40	50	60	70	80	90	100	110
Scope (Mt) - illustrative, no emissions resp	44	44	44	44	44	44	44	60	60	60
Revenues existing (\$bn)	1.2	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Revenues new (\$bn)			0.28	0.56	0.84	1.12	1.4	2.86	3.22	3.58
Revenues total (\$bn)	1.2	1.3	1.58	1.86	2.14	2.42	2.70	4.16	4.52	4.88
Existing tax cut package:										
corporate \$bn	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23
personal \$bn	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
Low income and rural and Northern \$bn	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27
New Tax Cut Package										
PST 1% cut			0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Low income household adjustment total			0.27	0.31	0.35	0.39	0.43	0.79	0.85	0.91
Low income/households adjustment new			0.04	0.08	0.12	0.16	0.2	0.56	0.62	0.68
Targeted EITE measures %			31.40%	31.40%	31.40%	31.40%	31.40%	41.00%	41.00%	41.00%
Targeted EITE measures \$bn			0.50	0.58	0.67	0.76	0.85	1.71	1.85	2.00
PST elimination for electricity			0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
<b>Total Tax Cuts</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>4</b>	<b>4</b>	<b>4</b>
<b>Net Revenues</b>	<b>0</b>	<b>1</b>	<b>-0.7</b>	<b>-0.5</b>	<b>-0.4</b>	<b>-0.2</b>	<b>-0.1</b>	<b>0.2</b>	<b>0.3</b>	<b>0.5</b>
Technology Fund								0.08	0.15	0.23
Local Government								0.08	0.15	0.23

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s.12;s.13



## Pukteris, Jazmin MNGD:EX

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**From:** Restall, Analise MNGD:EX  
**Sent:** Thursday, December 22, 2016 11:34 AM  
**To:** Wray, Jennifer MNGD:EX  
**Cc:** Manahan, Suzanne MNGD:EX  
**Subject:** FW: Request for Consultation - OOP-2016-64737  
**Attachments:** OOP-2016-64737 LNG Harms.pdf

Hi Jenn,

This is the consult we have with the PO on CWG material items and emails (page count is 3-118, 117 is not included). I've gone through and made a few redactions based on what we requested on our own records for this request. This is due December 30, however I've let our FOI team know that Brian will want to review this one before we send it out and s.22 . I've severed the following:

s.12,s.13

Let me know if you have any questions.

Analise

---

**From:** MEM FOI MEM:EX  
**Sent:** Tuesday, December 20, 2016 2:03 PM  
**To:** Restall, Analise MNGD:EX; Janes, Darci MEM:EX  
**Subject:** FW: Request for Consultation - OOP-2016-64737

Good afternoon,

Attached please find a FOI consultation for review.

Please review the attached record (OOP-2016-64737.pdf) and provide any recommendations regarding its release. Attached is the record being consulted on.

Section 1 of the consultation requires completion. There is a selection of comments to choose from (see below), once you have selected the one that applies to this document please forward your decision along with your electronic approval to me.

Section 1:

Please state which applies:

1. There are no harms in these records. They can be released in full.
2. There are harms in releasing all of these records. They should be withheld in their entirety.
3. There are harms in portions of the records. Please give details so that IAO can apply the appropriate sections of FOIPPA.

Program Area Approval Authority:

*Name, Title, Program*

Due: December 30<sup>th</sup>.

Any questions please give me a call, 2-0293.

Thanks,  
Jan

---

**From:** Craib, Patrick FIN:EX  
**Sent:** Monday, December 19, 2016 4:46 PM  
**To:** MEM FOI MEM:EX  
**Subject:** Request for Consultation - OOP-2016-64737

Hello Jan,

OOP received the following request from a media applicant:

*The business case and cost/benefit analysis for the eDrive program for LNG plants that agree to connect to the BC Hydro grid and use electricity for the liquefaction process, as announced Nov. 4, 2016. (Date Range for Record Search: From 05/01/2016 To 11/04/2016)*

Please select the most appropriate Ministry to provide harms on these records.

I believe both ENV and NGD have an interest in these, but I will leave it to you to decide who gets what. Please see attached.

A response by Jan 9<sup>th</sup> would be appreciated, but that's negotiable.

Many thanks,

**Patrick Craib** | FOI Specialist | Information Access Operations  
**Ph:** 250-387-7620 | **e:** [Patrick.Craib@gov.bc.ca](mailto:Patrick.Craib@gov.bc.ca)

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s.12;s.13

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s.12



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s.12;s.13

Page 01 to/à Page 12

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s.12



## Pukteris, Jazmin MNGD:EX

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**From:** Restall, Analise MNGD:EX  
**Sent:** Monday, March 14, 2016 12:41 PM  
**To:** Trachsel, Daymon MEM:EX  
**Subject:** RE: For action: Integrated Strategic Plan (ISP) review  
**Attachments:** NRS ISPlanning Template - MEM MNGD input - 2016-03-07 udd-kc-dw comments....docx

Hi Daymon,

Here it is. Again, apologies for the lateness.

Analise

---

**From:** Trachsel, Daymon MEM:EX  
**Sent:** Monday, March 14, 2016 10:49 AM  
**To:** Restall, Analise MNGD:EX  
**Cc:** La Vertu, Kate MNGD:EX  
**Subject:** RE: For action: Integrated Strategic Plan (ISP) review

Hi Analise.

Are you able to send this along?

Thanks!

---

**From:** Restall, Analise MNGD:EX  
**Sent:** Friday, March 11, 2016 8:36 AM  
**To:** Trachsel, Daymon MEM:EX  
**Subject:** RE: For action: Integrated Strategic Plan (ISP) review

Hi Daymon,

We're still making a few edits to ours, but I'm hoping to have it to you **this afternoon**.

Analise

---

**From:** Trachsel, Daymon MEM:EX  
**Sent:** Monday, March 7, 2016 3:50 PM  
**To:** MacLaren, Les MEM:EX; Robb, Peter L. MEM:EX; Hansen, Brian MNGD:EX; Piccinino, Ines MNGD:EX; Beltrano, Linda MNGD:EX  
**Cc:** McNeil, Kevin MEM:EX; Musgrove, Kate MEM:EX; Restall, Analise MNGD:EX; Petrini, Teresa MNGD:EX; Marshall, Fraser MEM:EX  
**Subject:** For action: Integrated Strategic Plan (ISP) review

Good afternoon!

In pursuance of Trish Dohan's email below, attached is the latest version of the NR Sector Integrated Strategic Plan for you review and input **by end Thursday March 10<sup>th</sup>** please. I previously added strategies from both ministries' service

plans where I felt we can demonstrate support for the goals listed, and have tracked two new ones for your consideration.

As we are very busy with estimates prep, please focus on pages 8 through 14, and

- Add any other strategies/initiatives from your business area where you feel there are gaps
- Pare down where you feel the initiatives are irrelevant.
- Les, I added Site C to the Climate Goal on Page 10 for your consideration
- Peter, I added the MMPO to the Major Project Coordination Goal on page 14 for your consideration

**Next steps:** Draft combining each ministry's input to be reviewed by NRS ADMs March 17<sup>th</sup>

Thanks very much...with apologies that not every page is numbered as there are many authors working on this.

Daymon.

---

**From:** Dohan, Trish CSNR:EX

**Sent:** Monday, February 29, 2016 4:18 PM

**To:** MacLaren, Les MEM:EX; Robb, Peter L. MEM:EX; Carr, Michelle EAO:EX; Jardine, Kevin EAO:EX; Bangert, Wilf R NRTS:EX; Lord, Michael CSNR:EX; Turner, Robert FLNR:EX; Sutherland, Craig FLNR:EX; Kriese, Kevin FLNR:EX; Manwaring, Richard G FLNR:EX; Ethier, Tom FLNR:EX; Peterson, Dave FLNR:EX; Jensen, Tom R FLNR:EX; Nicholls, Diane R FLNR:EX; Kittleson, Christian ABR:EX; Nash, Laurel ABR:EX; Mayhew, Neilane ABR:EX; Lewis, Kaaren ENV:EX; Standen, Jim ENV:EX; Zacharias, Mark ENV:EX; Lalani, Arif AGRI:EX; Mack, James AGRI:EX; Vasey, Jeff OHCS:EX; Hansen, Brian MNGD:EX; Piccinino, Ines MNGD:EX; Laaksonen-Craig, Susanna ENV:EX

**Cc:** Ellis, Rose FLNR:EX; Laughland, Gwenda J ENV:EX; Martins, Sonja CSNR:EX; Sullivan, Megan ENV:EX

**Subject:** Integrated Strategic Plan (ISP) Update for NRS ADMs

Colleagues,

As you may have heard, the Integrated Strategic Plan is a new initiative that is being asked of all ministries this year (see template attached). DMCTT asked Lean BC to lead a project to coordinate development of ministry strategic plans by March 31<sup>st</sup>, that include:

- Strategic Goals
- Citizens @ the Centre (TNT)
- Lean
- Workforce
- Improvement Projects

Because of the collaborative nature of the NRS, the NR Board endorsed a sector approach for the NR ministries. I am the Executive Sponsor and Gwenda Laughland (ENV) and Sonja Martins (CSNR) are serving as co-chairs. They are working with planning leads from each of the NRS ministries and with representatives from IMB, PAWS, and NRTS. Work is underway with plan development and we are working towards tight timelines to have a completed and approved plan out the door **by the end of March**.

At this point, five draft strategic goals have been identified by the ISP planning team as top sector priorities. These include:

- LNG
- Climate
- Common Authorizations and Permitting
- Cumulative Effects
- Major Project Coordination

To date, NRS ADMs directly linked to these goals have been engaged to help us get to this stage. I thank those involved for your help and support. Given the sector-wide focus, we would like to ensure that all NRS ADMs and ultimately the NR Board are engaged to confirm the priorities for the sector. Rose Ellis, our new Executive Director in FLNR's Corporate Initiatives Division, will also begin to work with the Gwenda and Sonja to bring forward information to the respective committees as required.

Attached to this email is a detailed update regarding the ISP as well as a draft of the NRS ISP Strategic Goals for review. If you have any comments or concerns, please feel free to reach out to your Ministry contact (identified in the attachment), to myself, or to one of the leads identified on this note.

I am very pleased by the progress to date and to see the good work we do at the sector level be given a platform for discussion.

Trish

**Trish Dohan** | Assistant Deputy Minister | Corporate Services for the Natural Resource Sector  
Phone: 250.953.4745





## Natural Resource Sector Integrated Strategic Plan

Ministry of Aboriginal Relations & Reconciliation | Ministry of Agriculture  
Ministry of Energy and Mines | Ministry of Environment & the Environmental Assessment Office  
Ministry of Forests, Lands and Natural Resource Operations | Ministry of Natural Gas Development

Fiscal Period 2016/17 – 18/19



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## Pukteris, Jazmin MNGD:EX

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**From:** Nelthorpe, Colleen MNGD:EX  
**Sent:** Monday, December 5, 2016 9:48 PM  
**To:** Restall, Analise MNGD:EX  
**Subject:** Re: Phone call - [s 22](#)

I tried to book but Brian said no, he didn't want it booked, he said he would just call [s](#) back.

---

**From:** Restall, Analise MNGD:EX  
**Sent:** Monday, December 05, 2016 10:42 AM  
**To:** Nelthorpe, Colleen MNGD:EX  
**Subject:** FW: Phone call - [s 22](#)  
[Let's book this call.](#)

---

**From:** Beaupre, Darren GCPE:EX  
**Sent:** Thursday, December 1, 2016 2:09 PM  
**To:** Restall, Analise MNGD:EX  
**Cc:** Nelthorpe, Colleen MNGD:EX  
**Subject:** RE: Phone call - [s 22](#)  
[This is the best detail.](#)

- A Climate Leadership information campaign launched in November to bring awareness to BC's Climate Leadership Plan and highlight how British Columbians can get involved.
- Through the Climate leadership plan, government is taking steps to ensure B.C. is well positioned to continue to lead the movement towards a lower carbon future.
- There are a number of ways British Columbians can get involved in the plan - through Home Energy Efficiency Rebates, the CEV (Clean Energy Vehicle) program which can save a consumer up to \$8,250 when purchasing a new electric vehicle, and the SCRAP IT Program, which offers incentives to get older vehicles off the road.
- At the same time, with over 200-clean tech companies, abundant clean energy and natural resources, and a strategy to support innovation across all sectors, B.C.'s green economy is creating jobs today and the foundation for a secure tomorrow.

The Climate Leadership information campaign includes four areas of focus:

- Restoring forests: the Forest Carbon Initiative will rehabilitate up to 300,000 hectares of impacted sites and by 2050 the ten-year program is expected to reduce GHG emissions by 11.7 million tonnes.
- Clean tech: B.C.'s clean tech industry is growing, with approximately 200 clean tech firms in the province, generating \$1.7 billion in annual revenue.
- 100% clean electricity: B.C.'s electricity is already 98% clean or renewable, and under our Climate Leadership Plan, 100% of the supply of electricity acquired by BC Hydro for the integrated grid must be from clean or renewable sources, except in circumstances where reliability or cost must be addressed.
- Supplying Clean LNG: B.C. is leading by example by working to develop an innovative LNG industry which - once established - will drive global greenhouse gas (GHG) reductions by becoming one of the world's cleanest suppliers of liquefied natural gas (LNG).

If asked about LNG / Environment:

- The government and BC Hydro have announced a new 'eDrive' electricity rate will be available for LNG proponents who use electricity for the liquefaction (compressing natural gas to make LNG) process.
- This supports actions under the Province's Climate Leadership Plan to encourage electrification, reduce emissions, and enable the development of a new, low-carbon economy.
- It is estimated that by using electricity instead of natural gas for its compression and facility operation - the Woodfibre LNG facility, as an example - will reduce its GHG emissions from 462 thousand tonnes to 123 thousand tonnes.

- Furthermore, the LNG industry – once established – will drive global greenhouse gas reductions by becoming one of the world's cleanest suppliers of liquefied natural gas.

#### LNG Development:

- Major global companies have shown a strong commitment to BC's natural gas sector and its future and are making large investments to prepare for LNG development.
- In early November, the Woodfibre LNG board passed a resolution to move forward with its facility – a major milestone before a final investment decision can occur.
- To date, it is estimated that over \$20 billion has been invested by industry to further B.C.'s LNG opportunity, which has provided jobs and economic benefits to communities, especially in northern BC.

*If asked about cost of Climate Action campaign:*

- The estimated budget for the Climate Leadership Plan Information Campaign is approximately \$1.5 million – which includes production and placement.
- This information campaign is being funded with Ministry of Environment contingency funding.
- Contingencies were accessed because the ministry did not have an allocated advertising budget when the initial advertising budget was developed at the beginning of the fiscal year.
- Government may determine that there is a need to increase the profile of important service information requiring the reallocation of funds within existing ministry budgets or access to the Contingency Vote, both of which require Treasury Board approval.
- A breakdown of the [s.17](#) informational (non-statutory) advertising by campaign/project will be provided by GCPE for Public Accounts, as they have done each year since 2005-06.
- On average, more than 80% of the cost of a campaign goes towards purchasing ad space on the internet, radio or television, etc.

---

**From:** Restall, Analise MNGD:EX  
**Sent:** Thursday, December 1, 2016 1:37 PM  
**To:** Beaupre, Darren GCPE:EX  
**Cc:** Nelthorpe, Colleen MNGD:EX  
**Subject:** RE: Phone call - [s.22](#)  
 Thanks.

---

**From:** Beaupre, Darren GCPE:EX  
**Sent:** Thursday, December 1, 2016 1:31 PM  
**To:** Restall, Analise MNGD:EX  
**Cc:** Nelthorpe, Colleen MNGD:EX  
**Subject:** RE: Phone call - [s.22](#)  
 It might have been updated via marketing team recently....looking into it.

---

**From:** Restall, Analise MNGD:EX  
**Sent:** Thursday, December 1, 2016 1:25 PM  
**To:** Beaupre, Darren GCPE:EX  
**Cc:** Nelthorpe, Colleen MNGD:EX  
**Subject:** FW: Phone call - [s.22](#)  
 Hi Darren,  
 Do you KMs available on this?  
 Thanks,

**Analise Restall**

Executive Coordinator

LNG Task Force | Ministry of Natural Gas Development

Phone: (250) 818-0595 | Fax: (250) 387-6209 | Email: [analise.restall@gov.bc.ca](mailto:analise.restall@gov.bc.ca)



**From:** Hansen, Brian MNGD:EX  
**Sent:** Thursday, December 1, 2016 1:23 PM  
**To:** Restall, Analise MNGD:EX  
**Subject:** Re: Phone call - s.22  
I can call but should have KMs from GCPE b4 I do  
Brian

Sent from my iPhone

On Dec 1, 2016, at 12:20 PM, Restall, Analise MNGD:EX <[Analise.Restall@gov.bc.ca](mailto:Analise.Restall@gov.bc.ca)> wrote:

Brian—would you like to take this or have someone on your behalf?

**From:** Cochrane, Marlene MEM:EX  
**Sent:** Thursday, December 1, 2016 11:11 AM  
**To:** Restall, Analise MNGD:EX  
**Cc:** Nelthorpe, Colleen MNGD:EX  
**Subject:** Phone call - s.22

Hi Analise. Please see the MO request below and ask someone to call s.22

Thanks.

**Marlene Cochrane**  
**Executive Coordinator | Deputy Minister's Office**  
**Ministry of Energy and Mines |**  
**Ministry of Natural Gas Development**  
**and Minister Responsible for Housing**  
**Victoria | British Columbia**  
**Phone (250) 952-0683**

**From:** Sures, Lauren MNGD:EX  
**Sent:** Thursday, December 1, 2016 10:53 AM  
**To:** Cochrane, Marlene MEM:EX  
**Cc:** Barnettson, Luella MNGD:EX  
**Subject:** Phone call - s.22

Hi Marlene,

s.22 called requesting to speak with someone from our ministry about the Global Ad that states LNG is a 'clean energy'.

s.22

Thank-you,

**Lauren Sures**  
Administrative Assistant to the  
Honourable Rich Coleman  
Minister of Natural Gas Development  
Minister Responsible for Housing and Deputy Premier  
Telephone: (250) 953-0900