CANADA'S OIL & NATURAL GAS PRODUCERS

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Via e-email: enev@sen.parl.gc.ca
Clerk of the Senate Standing Committee on Energy, the Environment and Natural Resources

CAPP Submission to the Senate Committee on Energy, the Environment and Natural Resources

RE: Study on Climate Change: Canadian Oil & Gas Industry

Executive Summary

The Canadian Association of Petroleum Producers (CAPP) is committed to being a constructive, solution-oriented partner in addressing the triple challenge of emissions reduction, energy security and affordability. Canada is a global leader in emissions-reducing innovations and technologies and Canadian oil and natural gas producers have been an important part of this leadership.

The Canadian oil and natural gas sector provides $116 billion to Canada's gross domestic product (GDP) and supports almost 450,000 jobs across the country. This sector provided $36 billion dollars in total government revenue between 2019-2021 and spent more than $2 billion in procurement with Indigenous-owned and affiliated companies. The sector is vital to the Canadian economy.

Canada's natural gas and oil producers have been on a path of continuous improvement for decades and are proving growing production while lowering emissions is possible.

Energy Security

- Canadians depend on oil and natural gas producers for consistent and reliable supply of energy in good times and in times of need.
- Canada's allies are looking to our country to help support them and Canada should respond. Canadian oil and natural gas can help deal with the triple challenge of emissions reduction, energy security and affordability. Canada can be a leader in the world.

Federal-Provincial Jurisdiction

- The federal government and the provinces, have unique areas of authority when it comes to the oil and natural gas industry and environmental policy.
- Not all provinces have the same economic or emissions composition. Provincial governments can best understand and create policies that work for their unique jurisdictions.

Complexity

- **One size can't fit all:** Application of emissions abatement processes will vary depending on regulations, the resource recovery techniques required by location and extraction type.
- **Varying, unknown impacts on regions:** In the oil and natural gas sector, there are hundreds of companies, tens of thousands of facilities, and over one hundred thousand producing wells.
- **Electrical externalities:** Electrification is one of the opportunities to reduce emissions. Yet producers are externally dependent on electrical utilities to 'green' their grids and build their transmission and distribution lines.

Policy Approach to Support Decarbonization

- The government should avoid a sector-by-sector approach to policy tools for decarbonization as that approach will slow emission reduction progress overall through limiting markets.
- The layering-on of additional policies while competing jurisdictions continue to support their industries only makes low-carbon investment in Canada challenging.

Performance

- Since 2012, conventional natural gas and oil producers have driven down Scope 1 (direct) emissions by 24% while growing total production by 21%.
- Singular emissions reduction targets on oil and natural gas producers cannot be achieved without full participation from co-dependent companies in other sectors, various levels of governments, and Indigenous peoples.
- Methane and CO_2 reductions to date have been realized within the current policy framework.

Opportunity

- Both natural gas and oil have a role to play in the energy mix for many decades to come. Canada has a tremendous opportunity to be the global low-carbon intensity supplier of natural gas and oil to the world. Canada's oil and natural gas industry is a key economic driver with five producing provinces and supply chains spanning most of the country.

Offshore

- As countries continue to seek lower emission oil in the coming years, Canada's offshore sector, which is producing some of the lowest emissions intense oil in the world can play a bigger role. Canada has a tremendous opportunity to be the global low-carbon intensity supplier oil to the world.

Canada can be a supplier of secure energy to the world while making investments in technology that produce lower-emission natural gas and oil.

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Introduction

The Canadian Association of Petroleum Producers (CAPP) is committed to being a constructive, solution-oriented partner in addressing the triple challenge of emissions reduction, energy security and affordability.

Canada is a global leader in emissions-reducing innovations and technologies and Canadian oil and natural gas producers have been an important part of this leadership. This sector provides three-quarters of all spending on clean technology development in the country, which amounted to over $3 billion in 2019.[1] At this time of global uncertainty over energy security, the the oil and natural gas sector is playing a major role as secure suppliers of sustainable energy and as global leaders in greenhouse gas (GHG) emissions reduction.

The Canadian oil and natural gas sector provides $116 billion to Canada's gross domestic product (GDP) and supports almost 450,000 jobs across the country. This sector provided $36 billion dollars in total government revenue between 2019-2021 and spent more than $2 billion in procurement with Indigenous-owned and affiliated companies. The sector is vital to the Canadian economy.

The oil and natural gas sector is vital to Canada's economy and many regions of the country are dependent on the sector, directly and indirectly. The critical regional role and global competition faced by the industry should always be top of mind when considering policy that may impact the sector, as these decisions can inadvertently drive premature shut-in of resources and lost economic benefits such as jobs and tax revenue. In Newfoundland and Labrador's offshore, for example, it will be important to leverage that sector's world-leading low emissions and access to international markets, by ensuring appropriate flexibility to retain investment while working to decarbonize the industry.

Canada can be a supplier of secure energy to the world while making investments in technology that produce lower-emission natural gas and oil. Government and industry must continue to meaningfully collaborate to craft a pragmatic, workable path.

Energy Security

Canada is lucky to be a country gifted with an abundance of natural resources that are coveted and needed around the world. The war in Ukraine has only further shown the importance of energy security and highlights the fact that much of the current supply of global oil and natural gas comes from countries that are not as secure or friendly toward Canada and its allies. Canada is a stable and secure supplier of energy for the world. More importantly, the continued growth of the Canadian oil and natural gas sector can ensure Canada will always have domestic supply for our population and can insulate our citizens and economy from potential global energy supply shocks. It is important and positive for the world to have Canada as a major producer of a vital products that will continue to be needed for decades to come.

In the absence of a Canadian strategic petroleum reserve (SPR) to handle potential shortages, our industry delivers the energy needed daily by Canadians, and the world. Canadians depend on oil and natural gas producers for consistent supply in good times and in times of need. For example, in Ontario approximately 50 % of the oil refinery feed is sourced from conventional Canadian production.[2] As well, approximately 37 %per cent of the energy used in Ontario is sourced from natural gas. [3] Much of this natural gas is for residential use, which accounts for approximately 62 % of the total demand. Canada's allies are looking to us to help support them and Canada should respond. Canadian oil and natural gas can help deal with the triple challenge of emissions reduction, energy security and affordability. Canada can be a leader in the world.

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[1] Statistics Canada, Capital and operating expenditures: https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3810013001

[2] CAPP, StatsCan, UN Comtrade

[3] CAPP, StatsCan

Federal-Provincial Jurisdiction
The federal government and the provinces have unique areas of authority when it comes to the oil and natural gas industry and environmental policy. Each province is unique and has a distinct set of circumstances facing its people and economy.

Not all provinces have the same economic or emissions composition and it is the provincial governments that can best understand and create policies that work for their unique jurisdictions.

For example, given the Atlantic Accord, the policy needed for the offshore sector can vary drastically from what is needed for natural gas production in British Columbia, just as the needs for heavy oil production in Saskatchewan differ from light oil production in parts of Alberta.

Opportunity
Responsibly produced Canadian natural and oil gas can help reduce emissions both in Canada and around the world. Some of Canada's largest recent emission reductions have occurred because of provinces moving from coal to lower carbon intensity natural gas for electricity generation.

Canada has a critical role to play in addressing global climate change through displacing coal in the global energy mix with lower-carbon Canadian natural gas[4] exported as liquefied natural gas (LNG). In the G7 communication released on May 20, 2023, it was noted that the G7 Leaders *"… stress the important role that increased deliveries of LNG can play, and acknowledge that investment in the sector can be appropriate in response to the current crisis and to address potential gas market shortfalls provoked by the crisis…"*

Exporting LNG from Canada to markets in Asia and Europe would reduce net global emissions by displacing coal and would enhance both Canadian and our allies' energy security and prosperity, while helping to address energy poverty in developing areas.

One of the key issues facing the world today is the increase of inflation and the cost of living, with energy costs being one of the primary concerns around the world. Ensuring costs to the public are managed is one of the key policy items for global governments. Natural gas is a reliable low-cost fuel that countries can use to shore up energy supply while moving toward net zero emissions.
Our industry is an important economic driver within Canada, with five producing provinces and supply chains spanning most of the country.
Canada has a tremendous opportunity to be the global low-carbon intensity supplier of natural gas and oil to the world.

Complexity
Our members share the vision that lower emission energy systems are good for society.

Delivering emission reductions is a focus for the entire Canadian economy. Different industries have unique opportunities to reduce emissions that allow them to move faster or slower depending on cost and technology. Frameworks that encourage cost effective reductions enable leadership and quicker emission reductions for all when a whole of economy approach is advanced. Ensuring that existing carbon pricing effectiveness is not compromised (i.e., credit market maintained, emission intensive trade exposed protection, carbon price level consistent, economy wide) is an important consideration. As industry decarbonizes, Canada will need to continue to evaluate whether additional mechanisms are required to protect industry's competitiveness. This is consistent with recent recommendations of the Intergovernmental Panel on Climate Change (IPCC) which noted that "*Economy-wide policy packages, such as public spending commitments, pricing reforms, can meet short term economic goals while reducing emissions and shifting development pathways toward sustainability*."[5]

[4] Natural gas emits 50% fewer CO2 emissions per unit of energy than coal. (Source US. EIA)
[5] IPCC SIXTH ASSESSMENT REPORT (AR6) "CLIMATE CHANGE 2023", C.7.6

Initial efforts to evaluate decarbonization potential have identified and uncovered levels of complexity within the oil and natural gas sector that CAPP suggests must be addressed and understood to ensure climate policy actions yield optimal results in the best interest of all stakeholders.

For example, conventional oil and natural gas operations are often small in scale (a fraction of the size of oil sands or offshore facilities) with shorter operational timelines. This feature of the sector means existing production from the currently producing base of more than a hundred thousand wells is constantly being replaced with new wells and new processing facilities that come online with the latest technology. The net effect of this faster operational turnover yields lower aggregate emissions as well as a reduction in Canada's overall carbon intensity.

Another feature of the conventional sector is that natural gas and oil, which in many cases are produced together from a single well, must be separated before each product heads to its respective market. Gas-to-oil ratios vary greatly across the industry. Recognizing this variation of hydrocarbon types across a wide geographic distance, means GHG-reducing solutions must necessarily vary across the geologic resource base. Hence, care must be taken in designing policies that affect different regions.

Given all the above in consideration of the Question areas from the Senate, below are key areas of uncertainty for the sector that must be addressed to support a smooth path to decarbonization:

- **One size can't fit all:** Application of emissions abatement processes will vary depending on regulations, the resource recovery techniques required by location and extraction type.
- **Varying, unknown impacts on regions:** In the conventional oil and natural gas sector, there are hundreds of companies, tens of thousands of facilities, and over one hundred thousand producing wells. As stated above, there is much regional variation of extraction methods in differing geologic formations. Consequently, cost structures vary greatly across the sector. Royalty structures also vary across five provincial jurisdictions as resource owners. Overarching emission reduction policies can therefore have varying, and in the absence of detailed financial analysis, unpredictable impacts on the viability of different producing regions.
- **Electrical externalities:** Electrification is one of the opportunities to reduce emissions. Yet producers are externally dependent on electrical utilities to 'green' their grids and build their transmission and distribution lines within a reasonable proximity to oil and natural gas fields. In addition, the time to access the electrical infrastructure is an unknown. Permitting electrical transmission lines is challenging—the average time to plan, permit, construct and energize is now 8 to 16 years.[6]
- **Other external dependencies:** Companies in the conventional oil and natural gas sector must rely heavily on emissions reduction solutions from third parties (such as utilities, regulators, and policy makers). Capital allocation toward large emission reduction projects is challenged until all co-dependent parties have visibility on clear policy. In other words, singular emissions reduction targets on oil and natural gas producers cannot be achieved without full participation from co-dependent companies in other sectors along with multiple levels of governments and many diverse Indigenous communities.
- **Prioritization:** Limitations of infrastructure, commercial viability, and gaps in the current regulatory frameworks (in each province) are additional barriers to what may be achieved on a tight timeline. Operators that produce a wide spectrum of hydrocarbon streams (natural gas, liquids, and various grades of oil) in multiple jurisdictions need more time to analyze, identify and prioritize corporate emissions abatement opportunities.

[6] S&P Global Electrification Analysis 2023

Offshore
As countries continue to seek lower emission oil in the coming years, Canada's offshore sector, which is producing some of the lowest emissions intense oil in the world, can play a bigger role. Canada has a tremendous opportunity to be the global low-carbon intensity supplier of oil to the world.

CAPP expects the challenges facing the offshore sector to be even more drastic due to the complexity of operations and emission reduction projects. Limited space on offshore platforms, health and safety concerns, distance to land, and harsh operating conditions make emission reductions challenging and very costly. For the offshore sector, creating the proper policies that manage its unique situation will be vital.

The offshore sector is already producing some of the lowest-emitting oil in the world. Offshore operations, due to their distance from land, health and safety requirements and limited platform space to accommodate additional equipment, have limited ability to reduce emissions in the short term. Major step-change technologies to manage emissions are being considered but will require time as retrofits will require significant lead time and are often completed as part of a project turnaround. Any new offshore operation that comes online will deploy innovative technology that will contribute to emissions reduction in the offshore sector.

In the offshore, Hibernia Management and Development Company Ltd. estimates a 50% reduction in GHG emissions from flaring (2005 to 2021) derived from operational efficiencies over time, including optimization of flare purge gas rates and work to improve gas compression reliability.

Policy Approach to Support Decarbonization
Delivering emission reductions is a focus for the entire Canadian economy. Different industries have unique opportunities to reduce emissions that allow them to move faster or slower depending on cost and technology. Frameworks that encourage cost-effective reductions enable quicker emission reductions when a "whole-of-economy" approach is advanced. All of Canada benefits when climate leadership can be monetized – it incentivizes leadership and creates compliance flexibility for other sectors where direct decarbonization is more costly or not technically feasible at the present time.

The government should avoid a sector-by-sector approach to policy tools for decarbonization as that approach will slow emission reduction progress overall progress overall through limiting markets.

Whenever possible, the provinces should take the lead on their own policy designs. This has been successful with the Output Based Pricing System (OBPS) where the federal government created guidelines and then allowed provinces to create their own unique programs to deliver outcomes.

Performance to date
Emissions reduction progress from the sector has been meaningful. Canada's natural gas and oil producers have been on a path of continuous improvement for decades and are proving growing production while lowering emissions is possible.

Since 2012, conventional natural gas and oil producers have driven down Scope 1 (direct) emissions by 24% while growing total production by 21%. Natural gas production has risen by 35% since 2012 while emissions from natural gas production have decreased by 22%. In that same period, natural gas producers have reduced methane emissions by 38%.[7]

Currently, all government progress reports from Alberta, British Columbia, Saskatchewan and the federal government have shown the industry is on track to achieve stated 2025 methane reduction ambitions. This early action is representative of the industry's commitment to responsible development and has been working on solutions.

[7] CAPP, NIR, Stats Can, CER

Methane and CO_2 reductions to date have been realized within the current policy framework. In addition, the oil and natural gas sector has potential for further emissions abatement if constructive policy pairs with the sector's established ambitions to tackle the next round of opportunities, despite the expectations that the task will have to consider many technical, logistical, capital, regulatory and multi-jurisdictional political complexities.

Innovation / Technology Showcase

The oil and natural gas industry is committed to innovation and emission reductions and works hard to develop new practices and technologies. Below are a few illustrative examples of the innovative work that is happening in the sector:

- From 2018 to 2021, Canadian Natural completed over 6,400 pneumatic retrofits and removals resulting in a cumulative reduction of approximately 640,000 tonnes of carbon dioxide equivalent (CO_2e). In 2022, Canadian Natural launched a multi-year project to convert approximately 3,800 pneumatic injection pumps in the company's non-oil sands operations in Alberta and British Columbia to solar configurations. This project will help reduce methane emissions by up to an additional 361,000 tonnes of CO_2e/year.
- The Quest Carbon Capture and Storage (CCS) facility reduces emissions from the Scotford upgrader located near Edmonton, operated by Shell Canada on behalf of the Athabasca Oil Sands Project (AOSP). Quest captures about one-third of the CO_2 from the upgrading process. This CO_2 is compressed to a supercritical state (not quite a gas but not quite a liquid). It is then sent through a 65-kilometre pipeline to one of three deep wells and injected into a porous sandstone reservoir for safe, permanent storage two kilometres below the surface. Since it started operating in 2015, Quest has captured and stored more than eight million tons of emissions (as of March 2023).
- Waste heat recovery units (WHRUs) are heat exchangers that capture heat from high-temperature processes. There are literally hundreds of examples of WHRUs in action across the energy industry – like these: Birchcliff's Energy's Pouce Coupe Gas Plant in northwestern Alberta processes up to 340 million cubic feet of natural gas daily. Four WHRUs at the plant capture heat from compressors, and the heat is then used elsewhere in the plant.
    - The result: total emissions from the plant have been reduced by more than 15,000 tonnes of CO_2 annually, about the same as emissions from 5,000 cars. The heat recovery program is so successful, Birchcliff is installing another WHRU at Pouce Coupe, expected to cost over $2 million dollars.
- Tourmaline achieved its target of reducing methane emissions by 25% a full three years ahead of schedule. Since 2013 the company has reduced Scope 1 carbon intensity by 34% while growing production by 315%. The company is targeting a further 25% reduction in corporate emissions intensity by 2027.
- Crescent Point earlier this year achieved an emissions intensity reduction target of 50%, ahead of their 2025 timeframe, with a goal of a 70% reduction absolute methane emissions by 2025, compared to their 2017 baseline.
- ARC Resources from 2016 to 2020, reduced absolute GHG emissions by 37%, while growing production by 36%, and has set a goal to reduce their Scope 1 and Scope 2 GHG emissions intensity by 20% and overall methane emissions intensity by 20% by 2025.
- NuVista Energy achieved a 50% annual GHG intensity emission reduction between 2012 and 2020, and has set further goal of a 20% reduction in Scope 1 and 2 emissions intensity from 2020 to 2025.

These are examples of systems working to encourage innovation. In addition, to carbon capture utilisation and storage (CCUS), enhanced oil recovery and methane reduction, energy efficiency, electrification, incorporation of bio feedstocks and hydrogen could be key areas for reductions within the sector.

Additionally, as a global leader in technological innovation, Canada stands ready to co-operate and collaborate with other jurisdictions to export expertise and technology for the overall goal of reducing global emissions.

Economic Competitiveness for Emission Reduction Projects
Emissions reduction projects compete with other investments and are global in nature. Canada's framework for decarbonization needs to keep pace with the global markets in which Canada competes.

Canada has taken great steps to improve the attractiveness of major projects, including the announced federal CCUS Investment Tax Credit (ITC). However, other countries continue to take action to seize a global leadership position (e.g., U.S. Inflation Reduction Act) in decarbonization and energy investment. Canada must remain highly attuned to the international landscape to ensure large-scale GHG emission reduction innovation and technology investments in Canada continue to attract capital.

The competitiveness gap for Canada's industry to support major decarbonization projects has only become more pronounced with the introduction of the 45 Q tax credit in the United States. The U.S. government has chosen to incentivize CCUS projects to reduce emissions by creating a strong and certain investment environment that encourages emission reductions. Now, compared to natural gas and oil producers in the U.S., it will become even more challenging to attract capital to Canada. For example, the 45 Q credit is equivalent to an 85 % ITC in Canada, which is currently set at 50 %. The layering-on of additional policies while competing jurisdictions continue to support their industries only makes low-carbon investment in Canada more challenging.
CAPP is also cognizant that the CCUS ITC is not yet available in all provinces, including Newfoundland and Labrador, due to a lack of regulation governing CCUS. In addition, currently measures are not inclusive of operating costs related to CCUS. We recognize the government is working to advance measures to improve competitiveness, but these measures are not yet available.

Conclusion
Canada can be a supplier of secure energy to the world while making investments in technology that produce lower-emission natural gas and oil.