



December 10, 2015

The Hon. James Gordon Carr, P.C., M.P.  
Minister of Natural Resources  
580 Booth Street  
Ottawa, Ontario K1A 0E4  
Canada

Dear Minister:

In October, the Canadian Chamber of Commerce concluded its 86th Annual General Meeting (AGM) in Ottawa. A major highlight of the Canadian Chamber's AGM is the Policy Session. It is during the Policy Session that resolutions submitted by local chambers of commerce and boards of trade from throughout Canada are debated and voted on by accredited delegates. Once approved, these resolutions become policy of the Canadian Chamber for the following three years. In 2015, our delegates issued a clear and decisive national policy mandate that we intend to pursue vigorously with the federal government over the coming months.

Our renewed national policy mandate includes the following issues that falls within your portfolio.

#### **Clean Technology and the Renewable Energy Sector in Canada**

For the first time in more than a century, multiple signs suggest that the dominance of fossil fuels is beginning to decline. We are seeing the beginning of a new technology revolution that will provide huge economic benefit for those able to place themselves at the forefront. The scope of the clean technology and renewable energy opportunities are poorly understood. While investments in renewable energy are well underway in many jurisdictions, the scope of change required will be well beyond electricity generation. Innovation in terms of new technologies and new practices will be required in a range of other areas.

The Canadian Chamber recommends that the federal government:

1. Develop, expand and implement plans to make Canada a global leader in the sustainable technology and energy sectors
2. Work with the business community, provinces/territories and international institutions and governments to ensure that individual jurisdiction carbon pricing programs work toward a common target for emissions reductions.

I am also bringing the preceding resolution to the attention of Minister McKenna, Minister Bains and Minister Dion, since there are aspects of it which fall within their portfolios.

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*Office of the President and Chief Executive Officer | Cabinet du président et chef de la direction*

**The Canadian Chamber of Commerce | La Chambre de commerce du Canada**

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### **Energy Productivity: A Win-win for Canada's Economy and Environment**

Energy productivity, the amount of economic output possible at a given energy supply, can improve Canada's economic competitiveness while effectively addressing greenhouse gas emissions and other environmental impacts of energy production and use. Unlike many other productivity measures, Canada has had success in improving its energy productivity performance. Between 1995 and 2010, Canadian GDP grew by 46%, while demand for energy rose by only 12%.<sup>1</sup> Yet Canada has not made continuous improvements in energy productivity an explicit part of its approach to economic competitiveness or action on climate policy. This is in contrast to other peer nations. In 2013, President Obama pledged to double energy productivity from the 2010 level by 2030, while Australia's government recently released an energy white paper proposing an increase of up to 40% in energy productivity by 2030.

The Canadian Chamber recommends that the federal government work with provinces and territories to:

1. Identify the means for overcoming the economic and environmental barriers of increased energy productivity/efficiency to business and promote energy efficiency measures.
2. Research and adopt across Canada the best available science to measure barriers, record and implement energy productivity and efficiencies.

### **Preserving Economic Benefits under the Extractive Sector Transparency Measures Act**

The new Extractive Sector Transparency Measures Act (ESTMA) contains measures to ensure sustainable resource development in foreign countries in which Canadian companies operate, however there remain significant concerns that it could complicate development within Canada and potentially harm industry relations with Aboriginal communities.

The Canadian Chamber recommends that the federal government:

1. Undertake consultations with Aboriginal groups and communities in order to ensure that Extractive Sector Transparency Measures Act (ESTMA) reporting requirements are appropriate and that Aboriginal interests are properly considered.
2. Undertake consultations with extractive industries to ensure that the process for reporting payments to Aboriginal communities under the ESTMA is not duplicative or unduly cumbersome, and that it does not contravene existing non-disclosure agreements.
3. Guarantee that federal funding for Aboriginal communities will not be reduced in response to financial disclosures made under the ESTMA, ensuring that those communities will be funded

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<sup>1</sup> Ralph Torrie and David B. Layzell. "The secret life of Canada's Energy System." Canadian Energy Systems Analysis Research. <http://www.cesarnet.ca/blog/secret-life-canada-s-energy-systems>.

appropriately as per their needs and prior federal obligations and commitments, regardless of any investments made by third parties engaged in resource extraction.

I am also bringing the preceding resolution to the attention of Minister Morneau, since there are aspects of it which fall within his portfolio.

### **Support for TransCanada's Energy East Project**

All Canadians should benefit from Canadian oil. Energy East is a rare nation-building opportunity that will move oil from the West to refineries and terminals in the East, creating jobs and economic growth from Alberta to Ontario to Quebec and New Brunswick, while reducing our reliance on foreign oil.

The Energy East Project is subject to extensive evaluation by the National Energy Board (NEB), a recognized authority on pipelines in Canada that is committed to examining 16 different areas of interest before approving, amending or not approving the project. Among the conditions is whether the project will follow sustainable development practices of creating wealth while respecting the environment and communities. There is a lot of dialogue around this project and it is important for the national voice of business to weigh in on this conversation because of its economic benefits, potential for trade and new jobs across the country.

The Canadian Chamber recommends that the federal government create favourable conditions for the Energy East project to move forward, as the project will have significant economic benefits for Canada.

### **Support Future Mineral Exploration and Mining in Canada**

The long-term viability of the mining industry is in jeopardy due to a decline in base metal reserves and production volumes. Permanent financial incentives are needed to inspire investment in mining development, especially in remote and northern areas where costs are significantly higher.

The higher cost profile of exploration and mining in remote and northern Canada is reducing the competitiveness of those regions as a destination for mineral investment. This is particularly challenging during the current downturn, which has seen equity financing levels for mineral exploration drop 80% since 2007. Without creative action to address these challenges, the industry may not be able to sustain the same level of economic benefits for future generations of Canadians.

Since 2006, the mineral exploration tax credit (METC) has allowed mining companies to raise over \$5.5 billion for exploration and development. In 2013, more than 250 companies issued flow-through shares eligible for the METC to over 19,000 investors.

The Canadian Chamber recommends that the federal government:

1. Make the 15% Mineral Exploration Tax Credit (METC) permanent: and,

2. Create a new and enhanced 25% Mineral Exploration Tax Credit (METC) for projects in locations more than 50 kilometres from a supply route.

I am also bringing the preceding resolution to the attention of Minister Morneau since it also falls within his portfolio.

### **Supporting Canada to Become a Leader in Global Mining Innovation**

Mineral and metal deposits are becoming increasingly more difficult to locate, requiring new tools and techniques. Innovation has allowed Canadian companies to maintain their competitive edge and has helped Canada become a safer, more cost-effective and environmentally-sound mining jurisdiction. In face of growing competition from nations with lower wages and less stringent environmental regulations, Canada has little choice but to innovate. Governments at all levels in Canada have to recognize that Canada is just one player in the globalized mining business.

The Canadian Chamber recommends that the federal government:

1. Provide funding for mining innovation projects that go beyond academic research exclusively and include those aspects that incorporate mining industry, supply & service companies and cross-sector industries to support implementation and commercialization requirements.
2. Increase funding ratios and manage funding flows as appropriate based on the size and timeframe of innovation projects.
3. Facilitate and support co-ordination and collaboration between research and innovation organizations, funding bodies and business organizations to meet Canadian and global mining innovation needs.

I am also bringing the preceding resolution to the attention of Minister Bains and Minister Freeland.

### **The Importance to the Economy of Expanded Oil Pipeline Infrastructure**

Through the development of new pipeline infrastructure, oil can create exceptional opportunities for our small and medium-sized enterprises and the communities they operate in, serve as an important source of near and long-term job creation, and generate lasting benefits for the country, provinces and territories and municipalities. Oil pipeline infrastructure has national economic significance. Canada's primary energy transmission pipeline systems total approximately 115,000 km in length. By comparison, there are 38,000 km of primary highway transportation linkages across the country.

The public discussion about the Trans Mountain expansion, and other pipeline projects, overlooks the foundational role that oil pipeline infrastructure plays in the Canadian economy, not to mention the commitment of the National Energy Board to conduct a thorough and transparent review of the project. This review process will help assure the Canadian public that these projects meet high standards for safety and environmental protection.

The Canadian Chamber recommends that the federal government:

1. Continue to support a responsible framework for resource development that understands, assesses, mitigates, manages and monitors all economic, social and environmental impacts and benefits, including a world-class marine tanker safety regime with enhanced marine spill response capability, and a world-class terrestrial safety system.
2. Engage Chambers and other organizations in project pipeline construction communities to maximize opportunities for local businesses during construction and operation of all major projects, including increased opportunities for Aboriginal peoples' participation.

I am also bringing the preceding resolution to the attention of Minister Tootoo.

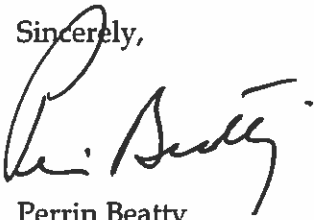
### **Canadian Nuclear Innovation<sup>2</sup>**

The Canadian nuclear energy industry represents a vital part of the Canadian economy. The industry employs 70,000 Canadians directly and indirectly (via support industries), generating over \$7 billion dollars a year in economic activity and over \$1.5 billion in both federal and provincial revenues.

The current restructuring of Atomic Energy of Canada Limited and the need for an innovation mandate for Canadian Nuclear Laboratories (CNL) creates an opportunity for the Federal and Ontario governments along with nuclear industry partners to play a lead role in fostering nuclear innovation by leveraging CNL's S&T capabilities. The Canadian Chamber recommends that the federal government work with provincial and territorial governments to establish a joint government-industry nuclear science, technology and innovation program. This program will ensure that Canada retains its leadership position in the global nuclear industry.

A copy of the complete text of these resolutions is attached. I look forward to the opportunity to meet with you soon.

Sincerely,



Perrin Beatty  
President and Chief Executive Officer

Attachments

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<sup>2</sup> Data for this resolution was generously contributed by industry members including Ontario Power Generation, CANDU Energy Incorporated, and the Ontario Society of Professional Engineers.

## Energy Productivity: A Win-win for Canada's Economy and Environment

Growth in productivity is closely related to growth in standards of living, innovation and economic competitiveness. In Canada, much ink has been spilt over labour or multifactor productivity growth rates. Yet another productivity statistic deserves closer attention. Energy productivity, the amount of economic output possible at a given energy supply, can improve Canada's economic competitiveness while effectively addressing greenhouse gas emissions and other environmental impacts of energy production and use. There are several ways investments in energy efficiency that improve energy productivity benefits the Canadian economy:

- *Large international market* – The global market for energy efficient products and services is very large. According to the International Energy Agency, investment in energy efficiency worldwide was between \$310 billion and \$360 billion in 2012. This sum was larger than the money put into renewable, coal, oil or gas electricity generation, and around half the size of upstream oil and gas investment.<sup>2</sup> Due to increased global demand, the market for energy efficiency-related goods, services and technologies could reach \$550 billion per year by 2035.<sup>3</sup>
- *Source of jobs* – According to a report by Natural Resources Canada, in 2011 there were about 100,000 people working in energy-efficiency related occupations in Canada with total annual wages of \$7.7 billion. Every \$1 million spent on energy efficiency programs within Canada generates between 30-57 job years in firms that sell energy efficient products or services.<sup>4</sup>
- *Freeing up resources for reinvestment* – Reducing energy use can act like a tax cut, releasing funds for reinvestment into a business or allowing households to spend more in other areas, ultimately resulting in job growth and improved overall economic performance. Between 1990 and 2011, more than \$34 billion in energy savings was reinvested into the Canadian economy. Companies addressing energy efficiencies often end up improving other characteristics and thereby improving overall performance, efficiency, innovation and market share.<sup>5</sup>
- *Freeing up energy for export* – Aside from its impact on the domestic economy, improved performance on energy productivity can also promote exports. Energy that is produced but not consumed within Canada can be exported, creating broader economic benefits through royalties and taxes collected. Energy savings, if passed to consumers, increases price competitiveness usually resulting in increase market share.

Improving Canada's energy productivity will have significant environmental benefits as well and could play an essential role in an effective climate change strategy for Canada. Reducing waste in energy production and transportation and reducing the need to use energy in the first place will result in lower greenhouse gas emissions and the need for fewer power plants and transmission lines.

<sup>2</sup> International Energy Agency. 2014. "Executive Summary". *Energy Efficiency Market Report 2014*.

<sup>3</sup> International Energy Agency. 2014. "Factsheet". *World Energy Investment Outlook 2014*.

<sup>4</sup> Natural Resources Canada. 2014. *Energy Efficiency Update 2014: Economic Benefits of Responsible Energy Use*.

<sup>5</sup> Ibid.

Unlike many other productivity measures, Canada has had success in improving its energy productivity performance. Between 1995 and 2010, Canadian GDP grew by 46%, while demand for energy rose by only 12%.<sup>6</sup> Yet Canada has not made continuous improvements in energy productivity an explicit part of its approach to economic competitiveness or action on climate policy. This is in contrast to other peer nations. In 2013, President Obama pledged to double energy productivity from the 2010 level by 2030, while Australia's government recently released an energy white paper proposing an increase of up to 40% in energy productivity by 2030.

There are two significant barriers to further improvements in Canada's energy productivity that the federal government could address. First are measures to reduce the costs of energy efficiency. In the 2014 Canadian Energy Efficiency Alliance conducted a survey of business attitudes toward investments in energy efficiency, with over half of respondents cited costs as the most significant barrier to improved energy efficiency. A fifth suggested and improved incentives would be the most effective approach to removing these barriers.<sup>7</sup>

A second significant barrier is the need for effective and accurate methods by which to measure and record energy productivity/efficiency. Without proper methods to track and report on energy productivity, making businesses or government accountable for progress will be difficult to achieve.

### Recommendations

That the federal government work with provinces and territories to:

3. Identify the means for overcoming the economic and environmental barriers of increased energy productivity/efficiency to business and promote energy efficiency measures.
4. Research and adopt across Canada the best available science to measure barriers, record and implement energy productivity and efficiencies.

### Preserving Economic Benefits under the Extractive Sector Transparency Measures Act

While the new Extractive Sector Transparency Measures Act (ESTMA) contains measures to ensure sustainable resource development in foreign countries in which Canadian companies operate, there remain significant concerns that it could complicate development within Canada and potentially harm industry relations with Aboriginal communities.

Having received royal assent in December 2014, the ESTMA was originally developed in response to reports that some foreign governments were improperly spending mining revenues generated by Canadian companies. To address the issue, Canadian extractive industry partners worked with the federal government to develop regulations requiring public disclosure of payments made to governments and government entities, resulting in the ESTMA.

The foreign disclosure measures outlined in the ESTMA will apply to large mining, oil and gas companies making payments over \$100,000, and to junior firms making payments over \$10,000; these will take effect in the

<sup>6</sup> Ralph Torrie and David B. Layzell. "The secret life of Canada's Energy System." Canadian Energy Systems Analysis Research. <http://www.cesarnet.ca/blog/secret-life-canada-s-energy-systems>.

<sup>7</sup> The Canadian Energy Efficiency Alliance. *CEEA 2014 Survey: Canadian Business Attitudes on Energy Efficiency*.

summer of 2015, and have been thoroughly supported by industry as a means of increasing transparency and sustainability for regions in which Canadian companies operate.

However, throughout the consultation process, industry was clear that their support was never intended to be viewed as an approval for the ESTMA to be applied domestically;<sup>89</sup> nevertheless, the federal government inserted such measures into the final version of the legislation, requiring the mining, oil and gas industries to disclose payments made to Aboriginal groups and communities within Canada as of June 2017.

While industry groups continue to embrace the concept of increased transparency, the mandatory inclusion of Canada's Aboriginal groups within this legislation creates many complex questions which have yet to be fully addressed by the federal government. This includes concerns around the lack of meaningful consultation with Aboriginal groups leading up to the passage of ESTMA, which industry groups have argued to be necessary to ensure that any designated reporting requirements are appropriate, and that Aboriginal interests are adequately considered<sup>10</sup>. Without full and comprehensive consultation, the possibility remains that ongoing disapproval of these measures could place existing and future relationships between extractive companies and Aboriginal communities at risk.

This risk of harm to these relationships is heightened by the lingering fear among industry partners and Aboriginal groups alike that the federal government will reduce funding for Aboriginal communities who have received payments as disclosed under the ESTMA. From the Mining Association of Canada and the Prospectors and Developers Association of Canada to the Assembly of First Nations and the Canadian Aboriginal Minerals Association, many have expressed concern around the lack of any provisions in the Act that would prevent this from occurring.

Any such clawback would effectively harm Aboriginal communities' ability to benefit from resource development. Related agreements also often allow for much-needed enhancements to infrastructure and social programs that are otherwise not covered by federal payments: for example, in 2011 and 2012, oil sands companies provided more than \$20 million to Aboriginal communities in Wood Buffalo and Lac La Biche in northeastern Alberta, which funded school and youth programs, celebrations, cultural events, literacy projects, and more<sup>11</sup>. Similarly, De Beers Canada's Victor Mine project in northeastern Ontario provides roughly \$2 million in annual royalties to the nearby Attawapiskat First Nation, and has funded housing, training options, and other opportunities.

These improvements also benefit the resource development industry, not only in the form of the community support required to move new projects forward, but also by establishing the training facilities, local capacity, and general infrastructure necessary for the effective operation of their future projects. As such, it is crucial that the federal government protect these investments from being effectively nullified, and provide legislative guarantees against related clawbacks prior to the implementation of the domestic ESTMA provisions in June 2017.

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<sup>8</sup> PDAC-MAC Submission to the Government of Canada Consultation on Mandatory Reporting, 2014

<sup>9</sup> Resource Revenue Transparency Working Group Submission to the Government of Canada – Consultation on Mandatory Reporting, 2014

<sup>10</sup> Mining sector supports new disclosure rules, Vancouver Sun, March 27 2015

<sup>11</sup> Oil Sands Community Alliance, 2013



## Recommendations

That the federal government:

4. Undertake consultations with Aboriginal groups and communities in order to ensure that Extractive Sector Transparency Measures Act (ESTMA) reporting requirements are appropriate and that Aboriginal interests are properly considered.
5. Undertake consultations with extractive industries to ensure that the process for reporting payments to Aboriginal communities under the ESTMA is not duplicative or unduly cumbersome, and that it does not contravene existing non-disclosure agreements.
6. Guarantee that federal funding for Aboriginal communities will not be reduced in response to financial disclosures made under the ESTMA, ensuring that those communities will be funded appropriately as per their needs and prior federal obligations and commitments, regardless of any investments made by third parties engaged in resource extraction.

## Support for TransCanada's Energy East Project

All Canadians should benefit from Canadian oil. Energy East is a rare nation-building opportunity that will move oil from the West to refineries and terminals in the East, creating jobs and economic growth from Alberta to Ontario to Quebec and New Brunswick, while reducing our reliance on foreign oil.

The 4,600 km pipeline will transport about 1.1 million barrels of oil per day from Alberta and Saskatchewan to the refineries of Eastern Canada. The project implies converting part of an existing natural gas pipeline to an oil transportation pipeline. The business communities of Ontario and Quebec are encouraged to see TransCanada and the gas companies (Gaz Metro, Enbridge and Union Gas) have signed an agreement to ensure a continued reliable and affordable supply of natural gas to help power both provincial economies. The project also implies constructing new pipelines in Alberta, Saskatchewan, Manitoba, Eastern Ontario, Quebec and New Brunswick. Finally, it includes constructing the associated facilities, pump stations and tank terminals, including marine facilities.

This critical new piece of energy infrastructure will result in the expansion of Canada's oil transportation network, generate additional tax revenues for federal, provincial and municipal governments and, according to the Conference Board of Canada<sup>12</sup>, Energy East will also generate an estimated \$11.5 billion in additional GDP for the Canadian economy during the seven-year development and construction phase and \$24.9 billion the first 20 years of operations.

On the issue of job creation as related to Energy East, The Conference Board of Canada predicts the project will support high quality direct and indirect jobs in several provinces during the seven year construction phase and the first 20 years of operation of the new pipeline<sup>13</sup>.

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<sup>12</sup> <http://www.energyeastpipeline.com/wp-content/uploads/2014/11/economic-backgrounder-en.pdf>

<sup>13</sup> Ibid.

The Energy East Project is subject to extensive evaluation by the National Energy Board (NEB), a recognized authority on pipelines in Canada that is committed to examining 16 different areas of interest before approving, amending or not approving the project. Among the conditions is whether the project will follow sustainable development practices of creating wealth while respecting the environment and communities.

There is a lot of dialogue around this project and it is important for the national voice of business to weigh in on this conversation because of its economic benefits, potential for trade and new jobs across the country.

### **Recommendation**

That the federal government create favourable conditions for the Energy East project to move forward, as the project will have significant economic benefits for Canada.

## **Support Future Mineral Exploration and Mining in Canada**

### **Issue**

The long-term viability of the mining industry is in jeopardy due to a decline in base metal reserves and production volumes. Permanent financial incentives are needed to inspire investment in mining development, especially in remote and northern areas where costs are significantly higher.

### **Background**

Mineral exploration and mining are mainstays of Canada's economy, particularly in northern and remote regions. In 2013, Canada's mining industry accounted for approximately 20% of Canada's annual goods exports and contributed \$54 Billion to Canada's Gross Domestic Product (GDP). The industry employs over 380,000 Canadians in mineral extraction, processing and manufacturing. Mining is the largest private sector employer of Aboriginal peoples in Canada on a proportional basis, and employment is poised to increase.

There are two indicators of challenges to the long-term viability of the industry: reserves of base metals have experienced significant declines since the 1980's; and, production volumes of key commodities have been declining. These indicators point to a twofold problem: the need to make more discoveries and the need to bring new and existing discoveries into production.

Remote and northern parts of Canada hold the key to resolving both challenges. However, exploring and mining these areas come with a hefty cost premium. Companies operating in remote and northern areas face a unique set of challenges that are linked to the characteristics that define the geographical regions themselves: remoteness, severe weather, undeveloped infrastructure and sparse populations.

The Mining Association of Canada, the Prospectors and Developers Association of Canada, the NWT & Nunavut Chamber of Mines, the Yukon Chamber of Mines and the Association of Consulting Engineering Companies - Canada released a very detailed report, "Levelling the Playing Field" in April 2015 that outlines the cost implications of mining in northern and remote areas of Canada. We have used their data in this resolution.

The primary driver of cost variations is the distance of a project from the transportation infrastructure required to service the needs of the project during exploration, construction and production. As an example, exploration costs at the most remote project (in the Arctic Circle) were six times higher than the costs incurred at the least remote project.

	Non-remote (50km or less from supply route)	Remote (51km to 500km from supply route)	Very remote (>500km from supply route)
<b>Exploration Costs</b>	Average cost: \$202.69/metre drilled	1.7 times higher	2.8 times higher

The higher cost of exploration at a remote site includes the need to fly-in equipment and personnel by fixed wing aircraft and/or helicopter. In addition, personnel are often lodged in a bunkhouse at the exploration site at a cost that is higher than living in a hotel in a small town nearby, which is done where road access is available.

The capital cost of constructing a mine in remote and northern areas often includes construction of assets such as a power plant, accommodations for the workforce, winter and permanent roads of hundreds of kilometres, large storage facilities, aircraft and airstrips, and shipping ports. Capital costs are about double for gold mines, 2.5 times higher for base metal mines and 15% - 20% higher for diamond mines. In addition, operating costs for these mines are 30% - 60% higher.

The higher cost profile of exploration and mining in remote and northern Canada is reducing competitiveness of those regions as a destination for mineral investment. This is particularly challenging during the current downturn, which has seen equity financing levels for mineral exploration drop 80% since 2007. Without creative action to address these challenges, the industry may not be able to sustain the same level of economic benefits for future generations of Canadians.

The mineral exploration tax credit (METC) was introduced in 2000 and provided a 15% tax credit on top of the 100% tax deduction for Canadian Exploration Expense (CEE). The METC was reintroduced in 2006 and subsequently renewed for two years and has since been extended on a yearly basis. In the April 2015 budget, the METC was again extended for an additional year to March 31, 2016. The METC and flow-through share financing continue to serve a critical role as they allow junior companies to raise needed capital, keep investment in Canada and sustain grassroots exploration activity. Since 2006, the METC has allowed mining companies to raise over \$5.5 billion for exploration and development. In 2013, more than 250 companies issued flow-through shares eligible for the METC to over 19,000 investors.

The creation of a new and enhanced METC at 25% for remote and northern projects would reduce the costs of financing one metre of drilling by approximately 12% and would make investments in these projects more attractive to investors and help to attract much needed investment to northern Canada.

## Recommendations

That the federal government:

1. Make the 15% Mineral Exploration Tax Credit (METC) permanent: and,

2. Create a new and enhanced 25% Mineral Exploration Tax Credit (METC) for projects in locations more than 50 kilometres from a supply route.

Source data: PDAC (2015) *State of Mineral Finance 2015*. Accessible at: <http://www.pdac.ca/docs/default-source/securities/levelling-the-playing-field---final.pdf>

## Supporting Canada to Become a Leader in Global Mining Innovation

Mineral and metal deposits are becoming increasingly more difficult to locate, requiring new tools and techniques. Innovation has allowed Canadian companies to maintain their competitive edge and has helped Canada become a safer, more cost-effective and environmentally-sound mining jurisdiction.

The 2013 Conference Board of Canada's Innovation Index rates Canada as 13<sup>th</sup> out of 15 of its peers. Although Canada is a leader in mining innovation, there currently exists an innovation gap which is preventing Canada from becoming the global leader in innovation. Strengthened coordination, improved funding flows and ratios as well as a broader vision of innovation are all elements that will help propel Canada to the top of the list of global innovators.

Three national mining organizations, the Canadian Mineral Industry Federation (CMIF), the Canadian Mining Innovation Council (CMIC) and the Centre for Excellence in Mining Innovation (CEMI) have identified the lack of national scale coordination of government and industry research, development and innovation (RDI) funding as a barrier to advancing mining innovation. There are over 4,000 different and uncoordinated sources of RDI funding in Canada, carried out and supported by a myriad of academic, government and industry entities. There are also over 40 different mining research organizations that at times operate in silos.<sup>14</sup>

Because the development of new mining technologies and practices is capital intensive, collaboration has become increasingly necessary. Individual firms are hesitant to make standalone investments in innovation because of the risky and uncertain environment and are turning to partnerships with suppliers and academia to advance their initiatives. The Canadian Chamber's 2013 Mining Capital report states that due to the collaborative nature of the natural resource sector, a systematic and coordinated approach that enhances linkages between the various stakeholders is vital to propelling mining innovation.<sup>15</sup> Gains are being made in addressing the coordination gap, such as the establishment of CMIC by government, industry and academic researchers to lobby for mining innovation.

Key to their efforts was the identification for innovation through coordination of industry-led RDI. CEMI, an active participant in the mining innovation space, is closing the co-ordination gap by working collaboratively with the mining industry, academia, mining service & supply sector, SMEs and cross-sector industries (oil & gas, space technology). However, to catapult Canada as a leader in mining innovation, there is an increased

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<sup>14</sup> The Canadian Chamber of Commerce, "Mining Capital: How Canada Has Transformed Its Resource Endowment Into a Global Competitive Advantage," 2013.

<sup>15</sup> Ibid.

need for more co-ordination and co-operation in terms funding (government, industry) and between research and implementing organizations.

Further, for innovation to work, it must be adopted. For this, mining innovations need to be demonstrated and implemented as workable beyond the theoretical, but also show commercial viability. The lack of commercialization is one of the reasons why so little of the funding for mining research has impacted mine operations. The majority of funding in Canada is targeted at research in academia that may not necessarily translate into industry-relevant innovation or commercialization. While university-based research is essential, research in operating mines and with suppliers is equally important. The Research, Demonstration and Implementation (RD +I) approach to focus on practical applications, distinct from academic research was developed by CEMI in 2011 and is aimed at addressing this very important issue. Closing the loop by driving commercialization activities for mining innovations should be strongly supported by government, which will have direct and dramatic economic impact to Canada and in bringing these Canadian mining innovations to the world stage. Mining service and supply firms also make significant contributions to the commercialization process and their efforts should be supported in an integrated manner. Funding and programming in such areas will further help to encourage commercialization and industry adoption of important mining innovations.

Although funding is vital to mining innovation, it is also impacted by: the time it takes for funding to flow; and the government to industry ratio of funding.

In some jurisdictions proposals can take over a year to be processed and it can take another year before approved funding begins to flow. The time required impacts the momentum of the project as a whole, available talent and resources, as well as the delay in the potential economic impact and adoption. It also impacts the willingness of management within industry to commit to funds. Most managers and business heads are willing to commit to funds for projects that accrue benefits within their "lifetime" within a particular position, generally between 1-3 years. This incents shorter-term thinking, unless the commitments are approved at the highest levels.

Generally, Canadian mining companies and government contribute research and innovation funds on a 1:1 ratio. In a national perspective, this makes sense as both are vested in developing and building the infrastructure, knowledge base and economy within Canada. However, the global consolidation of the mining industry has impacted the financial commitment for mining innovation in Canada. The Canadian portion of these mining conglomerates accounts for a small percentage of the whole and the evaluation for investment in Canada is measured against the consolidated global view. The interests of these mining conglomerates for their Canada-based companies can diverge significantly from that of Canadian government's economic interest and development. For near-term (1-2 years) smaller projects, the 1:1 ratio is still valid. In order to attract funds and partnership with these global mining companies, the Canadian government needs to consider adjusting its funding ratios and consider options such as increasing ratios to 4:1 or 5:1 to provide incentives to support larger-scale, longer-term, visionary Canadian mining innovation projects to stay the course.

The Federal Government has recognized the issue of funding flows, but support is required. In 2014 the Federal Government, Business-led Networked Centres of Excellence (BL-NCE), in recognition of its RD +I&C (commercialization) approach, awarded CEMI \$15M over five years to CEMI's Ultra-Deep Mining Network (UDMN). The total program is \$46M, funded roughly equally by government, mining companies and service and supply companies in the resources industries (mining and oil and gas). It focuses on reducing geotechnical risk, improving productivity, reducing energy consumption and improving human performance – all critical issues for mines at 2.5 km below surface and deeper – becoming common in many mining jurisdictions around

the world. The UDMN is an example of co-operation, collaboration and that takes into account the time flow of funding and exemplifies how best to move forward.

In face of growing competition from nations with lower wages and less stringent environmental regulations, Canada has little choice but to innovate. Governments at all levels in Canada have to recognize that Canada is just one player in the globalized mining business. Given the relative strength and coherence of mining industry, research and innovation organizations and our mining service and supply sector, we have a tremendous opportunity to become a global powerhouse in this field – so long as all the factors for success are in place in which mining innovators can thrive. Conventional approaches are failing to deliver new mines at greater depths and in more remote locations; innovation is essential if we are to sustain our strength in the mining industry.

### **Recommendations**

That the federal government:

1. Provide funding for mining innovation projects that go beyond academic research exclusively and include those aspects that incorporate mining industry, supply & service companies and cross-sector industries to support implementation and commercialization requirements.
2. Increase funding ratios and manage funding flows as appropriate based on the size and timeframe of innovation projects.
3. Facilitate and support co-ordination and collaboration between research and innovation organizations, funding bodies and business organizations to meet Canadian and global mining innovation needs.

### **The Importance to the Economy of Expanded Oil Pipeline Infrastructure**

Energy and related products are a significant part of Canada's annual exports. Along with metals and mineral products, energy products represent the single largest positive annual contribution to Canada's balance of trade.

Across Canada, energy commodities generate direct and indirect wealth through production and export of coal, oil, natural gas, and electricity. These commodities already support tens of thousands of direct, indirect, and induced jobs. There is an unprecedented opportunity for them to play an even greater role in the economy, to the benefit of all Canadians.

Through the development of new pipeline infrastructure, oil can create exceptional opportunities for our small and medium-sized enterprises and the communities they operate in, serve as an important source of near and long-term job creation, and generate lasting benefits for the country, provinces and territories and municipalities.

Oil pipeline infrastructure has national economic significance. Canada's primary energy transmission pipeline systems total approximately 115,000 km in length. By comparison, there are 38,000 km of primary highway transportation linkages across the country.

Support for this pipeline infrastructure is critical to both the Canadian and provincial/territorial economies, with the ability to transform Canadian oil producers from price takers to price makers in international markets. When this fact is combined with North American oil transportation bottlenecks due to the lack of infrastructure

to markets other than the U.S., Canadian producers are being forced to sell their products at a discounted price, which has cost our economy up to \$50 million a day. That is \$18-\$19 billion a year, in discounted prices selling into the U.S. market compared to the prices that western Canadian oil could achieve through improved access to markets in the Asia Pacific. This price differential, which takes away potential tax revenues that could be used to provide services for the people of Canada, should be a concern for everyone. Especially with the retirement a huge cohort of Baby Boomers, we cannot afford to forego new sources of tax revenue to fund essential services such as health care and other social programs.

The Chamber supports resource development, and the associated infrastructure such as pipelines, that grow our economy and create jobs. One key piece of infrastructure to unlock the forfeited wealth of our landlocked oil resources by providing greater access to tidewater that allows our oil to be moved to new markets that pay world prices is the Trans Mountain Expansion Project (TMEP).

The public discussion about the Trans Mountain expansion, and other pipeline projects, overlooks the foundational role that oil pipeline infrastructure plays in the Canadian economy, not to mention the commitment of the National Energy Board to conduct a thorough and transparent review of the project. This review process will help assure the Canadian public that these projects meet high standards for safety and environmental protection.

The capital cost of the TMEP alone is estimated at \$5.4 billion (\$2012), with the expenditures taking place over a seven-year period, from 2012 to 2018.

The development phase and the first 20 years of operations will boost Federal GDP by \$13.3 billion. An additional \$2.4 billion in operations spending will flow into the economy over the 20-year-life of the project. Tax payments through the construction and operational phases will total \$18.5 billion to Canada, including \$2.1 billion to British Columbia, \$9.6 billion to Alberta and \$6.8 billion to the other provinces/territories.

Building much-needed pipeline infrastructure creates well-paying, family-supporting jobs. A project of the size and scope of the TMEP will generate 58,000 person-years of employment across Canada during construction, including 36,000 person-years in B.C. and 15,000 person-years in Alberta. Over the life the project, total employment is expected to reach 108,000 person-years including 66,000 in B.C., 25,000 in Alberta and the remaining 17,000 person-years spread across the country.

Project development will generate \$3.3 billion in labour income across Canada. The project will generate large demands for goods, services and workers, with an emphasis on local hiring, procurement, and sourcing.

There will be opportunities for regional-based employment during construction as well as associated increases in labour income. Key factors to consider include development of an awareness program around pipeline jobs, working with business, industry, community, education, and training organizations.

Aboriginal residents stand to benefit from consideration for hiring and procurement, supported by the initiation of an Aboriginal employment and training program to increase access to Aboriginal employment opportunities meeting the demands of projects such as Trans Mountain.

At the same time, it is not enough for B.C. and other provinces to simply state their provincial interests for pipeline infrastructure to proceed with their support. It is vital these governments fully articulate what they deem necessary to satisfy these interests. In respect of these interests, it should be recognized that project safety and integrity measures already receive extensive study by all pipeline proponents, including marking and protection of sensitive environmental areas during construction, pipeline spill prevention, emergency preparedness and response to land-based and marine environments in the event of a spill.

The new pipeline segments and new facilities associated with the TMEP would withstand a one-in-2,475-year earthquake. The risk of a major marine spill is reduced to a one-in-2,366-year event through enhancements to oil tanker tug escort protocols.

There are also proposed enhancements to spill response and recovery along the tanker route due to efforts of the federal Tanker Safety Review Panel and other ongoing initiatives. Trans Mountain and other pipeline proponents have indicated a commitment to the creation of a world-class spill prevention and response regime and the provincial and federal governments continue to indicate this is a priority for them. The commitment of all stakeholders to this goal and the actions taken so far should give Canadians confidence that the project can be supported.

### Recommendations

That the federal government:

1. Continue to support a responsible framework for resource development that understands, assesses, mitigates, manages and monitors all economic, social and environmental impacts and benefits, including a world-class marine tanker safety regime with enhanced marine spill response capability, and a world-class terrestrial safety system.
2. Engage Chambers and other organizations in project pipeline construction communities to maximize opportunities for local businesses during construction and operation of all major projects, including increased opportunities for Aboriginal peoples' participation.

### Canadian Nuclear Innovation<sup>17</sup>

The Canadian nuclear energy industry represents a vital part of the Canadian economy. The industry employs 70,000 Canadians directly and indirectly (via support industries), generating over \$7 billion dollars a year in economic activity and over \$1.5 billion in both federal and provincial revenues.

The current restructuring of Atomic Energy of Canada Limited and the need for an innovation mandate for Canadian Nuclear Laboratories (CNL) creates an opportunity for the Federal and Ontario governments along with nuclear industry partners to play a lead role in fostering nuclear innovation by leveraging CNL's S&T capabilities. The parties should develop a new collaborative approach for defining nuclear science, technology and innovation priorities and for establishing program funding that will enable Ontario's nuclear industry to be competitive and sustainable in world markets.

With over 400 nuclear facilities in operation globally, 63 currently under construction and 66 in the planning phase, nuclear energy expansion and maintenance of existing facilities will become an increasingly vital source of energy and economic stability in coming years. The Canadian nuclear industry is already well entrenched in the global nuclear energy community, with significant operations in over 20 countries. Support for the Canadian nuclear industry from all levels of government, especially at the Federal level, will become increasingly

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<sup>17</sup> Data for this resolution was generously contributed by industry members including Ontario Power Generation, CANDU Energy Incorporated, and the Ontario Society of Professional Engineers.



necessary due to increased demand for nuclear production, both domestically and internationally, as well as increased competition within the market.

Since 2012, the Greater Oshawa Chamber of Commerce, together with the Ontario and Canadian Chambers, have supported the creation of an oversight committee/panel to address nuclear industry issues and act as a liaison between government and relevant industry representatives.

### **Recommendation**

That the federal government work with provincial and territorial governments to:

1. Through its Energy, Research and Innovation and Economic Development ministries and the Canadian nuclear industry leaders, establish a joint government – industry nuclear science, technology and innovation program. This program will ensure that Canada retains its leadership position in the global nuclear industry.