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Chair

The Honourable Wayne Easter

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• (0850)

[English]

The Chair (Hon. Wayne Easter (Malpeque, Lib.)): We'll call the meeting to order with our new gavel. We couldn't get through airport security with our gavel in Ottawa, so they seized it on us.

In any event, welcome, witnesses. I know we seem to be starting a little earlier, but the witnesses here are perhaps ready for their presentations.

We have at each session on the road what we call an open-mike session, which gives those who didn't have a chance to appear formally before the committee with their presentations an opportunity to come to the mike and state their concerns, whatever is on their mind, and do it in, hopefully, a minute. There are no questions from members, but their remarks go on the record and are considered as part of the pre-budget consultation.

We have eight, and we'll start with Leigh Anne Swayne.

Dr. Leigh Anne Swayne (As an Individual):

Good morning. My name is Dr. Leigh Anne Swayne. I'm a neuroscientist and professor in the division of medical sciences at the University of Victoria.

My productive research program is funded primarily from grants from the federal tri-agency. The sort of fundamental science research we do is critical to understanding how the brain works in health and disease. It will ultimately help to design more effective and safe treatments for neurological disorders affecting Canadians.

History has shown that fundamental research underlies the vast majority of major breakthroughs. Despite this, non-targeted federal tri-council grant programs remain sorely under-resourced. I ask today therefore that you support the recommendations of Canada's Fundamental Science Review to substantially increase investments in non-targeted funding programs in 2019.

Thank you.

The Chair: Thank you, Leigh Anne.

Catherine Choi, welcome.

Ms. Catherine Choi (As an Individual):

Good morning. My name is Catherine Choi. I'm a graduate student at Dr. Leigh Anne Swayne's lab at the University of Victoria. For me as a graduate student in neuroscience, research funding and

training awards make a big impact on my ability to conduct my research and support my goal of becoming a neuroscientist.

I believe that Canada can be an example for world-class training and support in scientific research. However, since 2007, the number of Canada Graduate Scholarships has not increased, and the value of these scholarship awards has not changed since 2003.

For Canada to continue to attract and retain talented trainees, this needs to change. The number and value of these awards should reflect Canada's commitment to our future scientists and the growth of our research industry. I hope the government will increase funding for scientific research and training.

Thank you.

The Chair: Thank you very much, Catherine.

Ms. Patricia Baye is next.

Welcome, Patricia.

Ms. Patricia Baye (As an Individual):

Thank you and good morning to everybody.

I'm here representing the National Association of Federal Retirees, which has branches all across Canada, and I am from the branch here in Victoria, which has approximately 4,000 members. On behalf of the branch, there are a couple of items I would like to point out to the pre-budget committee for consideration.

As a seniors group, we would like to look after not just seniors from our group but also all Canadian seniors. We would like the committee to consider having a comprehensive national seniors strategy for the provinces and territories. We would like you to address affordable and appropriate housing to promote friendly communities and combat the isolation of seniors and ageism.

We would also like to see that you ensure robust and sustainable social services and improve the focus on seniors' housing, community care and caregivers. We would also like you to consider creating a feasible and affordable pharmacare program for all Canadians. Also, we would like you to guarantee income security for all Canadians and ensure that retirement savings regimes are effective and that Canadian retirement security needs are met to assist Canadians in building improved retirement security.

We would like the government to honour the promises made to retirees when pension plans change. We would also like you to immediately withdraw Bill C-27 and to continue to improve the Canada Pension Plan and the old age security.

We would hope that this report would be out by the spring so we can look at it and see everything that has gone, and we hope too that this government will resolve by 2019 the Phoenix pay system so that all issues are cleared up and that all retirees and employees are properly compensated.

Thank you.

The Chair: We have David Stinson, and next after David will be Randall Joynt.

Go ahead.

Mr. David Stinson (As an Individual): Good morning. I also am from the National Association of Federal Retirees. I represent the branch in Sidney, north of here. We have about 1,200 members in our group.

I'm not going to repeat what Patricia has said. You already have some of that information in cards that were presented to you this morning, and you've heard this in other presentations to the committee, but I would ask that the committee consider trying to remedy an item of discrimination that was imposed almost a century ago on certain family members for certain retirees.

It has to do with something colloquially known as the "gold digger clauses" in the superannuation act. I would draw to your attention the Canadian Forces Superannuation Act and the RCMP Superannuation Act, which both say that if a member of the forces or the RCMP marries after the age of 60, his wife or conjugal partner, as the case may be, cannot receive half his pension, as would be the case if he had married at 59 years and 11 months. In the case of the military, this has been in force since, I think, 1920. It is discrimination on the basis of age, and it is something that should be taken out of the act.

Mr. Morneau is well aware of this one. I would add that it has also been before Parliament once, in 2011.

Thank you for your attention. I have left a copy of my notes with the clerk.

•(0855)

The Chair: That will be distributed to the committee, David.

Randall Joynt, welcome.

Mr. Randall Joynt (As an Individual): Good morning. My name is Randy Joynt. I'm with the Royal and McPherson Theatres.

I want to thank you for travelling all the way to Victoria, particularly as I know that you've been on our other coast recently. In the performing arts industry, that's what's known as a "tour".

Now, a well-run tour is incredibly important for performing arts presenters because it allows them to amortize production costs over a number of performances and also be very efficient with travel expenses—in effect, to be more productive. It also allows venues on Vancouver Island, for example, to bring in performances from Toronto or Montreal instead of bringing them in on a one-off basis.

Touring networks are very important, and they're in dire need of support, which is why I ask you today to recommend an increase of \$30 million to the Canada arts presentation fund. This Canadian

Heritage program is incredibly important to our industry and it allows access to the arts for folks in our part of the country.

Thank you.

The Chair: Thank you very much, Randall.

Janelle Hatch is next and will be followed by Lori Nolt.

Ms. Janelle Hatch (As an Individual): Good morning. My name is Janelle Hatch. I am here today to speak passionately about a topic I feel strongly about because I am a mother, a dietitian and an employee of the health system and school sector. I am a member of Dietitians of Canada, one of more than 40 members of the Coalition for Healthy School Food, which is coordinated by Food Secure Canada.

Approximately 20% of students in Canada receive a meal or snack at school. These programs are largely volunteer-run and have multiple funders, including parents, schools, community groups, businesses, municipalities, territories and provinces.

Evidence shows that a national universal healthy school food program would increase children's consumption of healthy foods, reduce their risk of chronic diseases, improve mental health, improve educational outcomes, and increase graduation rates. Also, a national school food program has the potential to create jobs and grow local economies by investing in local agriculture and food businesses.

A national school food program has been recommended by the Senate social affairs committee, a former House finance committee, the Ontario Healthy Kids Panel and the former chief health officer, as well as in Senator Art Eggleton's June Senate motion number 358.

Today we are asking your government to invest \$360 million in your next budget to partner with provinces, territories, municipalities, community groups, parents and other stakeholders in funding a cost-shared program estimated at \$1.8 billion. Your support will make a positive difference in the lives of our schoolchildren.

Thank you.

The Chair: Thank you very much.

Lori Nolt, go ahead, please.

Ms. Lori Nolt (As an Individual): Thank you.

My name is Lori Nolt, and I'm representing the Canadian Association of Student Financial Aid Administrators.

CASFAA represents many personnel across Canadian post-secondary institutions. We're dedicated advocates in helping Canadian students achieve financial wellness and success. To build Canada's economic growth and ensure competitiveness, we believe that the following three recommendations can help ensure student success.

First, we should allow students adequate time to establish stability before beginning the regime of student loan repayments. This can be achieved by reinstating the Canada student loan interest subsidy for the six months following completion of studies. Second, we should empower post-secondary students to acquire loans through the Canada student loan program, with mandatory entrance and exit counselling. Third, we should reduce the educational gaps between indigenous and non-indigenous Canadians by providing a Canada student loan grant program for indigenous students.

CASFAA believes that these measures will not only help to instill and develop financial literacy and awareness in our students but also position them to immediately engage in our economy when they have completed school.

Thank you so much for your time and consideration.

• (0900)

The Chair: Thank you very much, Lori.

Maclaren Forrest is next and she will be followed by Catharine Robertson. That will be it for the open mikes.

Go ahead, Ms. Forrest.

Ms. Maclaren Forrest (As an Individual):

Good morning, honourable members.

My name is Maclaren Forrest, and I'm a youth advocate with World Vision Canada. I believe in equality, peace and prosperity for all.

I am fortunate to have been raised in Canada with access to health care, a good education and a safe community to grow up in. However, I note that this is not the reality for millions of boys and girls around the world who lack these basic human rights and services. I've seen the impact of Canada's investments abroad. Far fewer people are dying around the world and communities are thriving thanks to international development efforts. Canadians can be proud of this.

However, there is still a lot to be done. The needs are great. International assistance has a reputation for being about charity, but it's about much more than that. It's about strengthening the global community, promoting democratic values and creating sustainable opportunities. It's not just for the world; it's also good for Canada. On average, every Canadian dollar spent on aid provides a return of \$1.19 in Canadian exports. These investments in aid benefit middle-class families such as mine.

I'm encouraged by the recent increases in international assistance, but we need to be ambitious, and ambitious goals require ambitious financing. Therefore, I urge you to recommend annual, long-term increases in international assistance in your report to Parliament on budget 2019.

Thank you for your time.

The Chair: Thank you very much.

Catharine Robertson is next.

Ms. Catharine Robertson (As an Individual):

Good morning.

My name is Catharine Robertson, and I'm on the board of directors with the community futures program of B.C.

I'm here today to reinforce what you'll hear when the CF network of Canada meets with you folks in Winnipeg on Thursday. We're encouraging you to consider our recommendations to support the valuable program of community futures in which we serve the economies of rural Canada.

As you may know, the community futures program was started by the federal government 30 years ago. We're a vibrant program that helps keep rural communities strong. We do that in partnership with local governments, provincial governments, and mostly through volunteers who support our organization. In B.C. alone, there are 14,000 hours given by our volunteers who dedicate their time, their expertise and their knowledge to our program because they understand the meaningful impact of community futures.

We're here to support business growth and economic development projects. We get involved in supporting our regional and rural economy, seizing opportunities and sometimes removing barriers for business growth for our traditional business sectors. Primarily through our loans program, we help great businesses grow businesses, which, in turn, create jobs in rural Canada. There are 260 offices across the country. There are 34 in B.C., of which four specifically serve indigenous populations.

We kindly ask that you consider our recommendations.

Thank you.

The Chair: Thank you very much.

Thank you to all, and we'll start the more formal part of our meeting. As everyone knows, these are the pre-budget consultations in advance of the 2019 budget. Before we start, just to give you a little bit of an indication of the makeup of the committee, we are missing one member on the government side this morning, who missed his flight.

First, I'm Wayne Easter, member of Parliament for the riding of Malpeque, Prince Edward Island. If you get any of those good oysters out here, they actually do get across the Rockies and get here.

Mr. McLeod.

Mr. Michael McLeod (Northwest Territories, Lib.): Thank you, Mr. Chair.

Good morning, everyone. Thank you, all, for coming out this morning.

My name is Michael McLeod. I represent the Northwest Territories riding, a riding that's bigger than Alberta and Saskatchewan combined. I'm the lone MP for that riding.

Ms. Kim Rudd (Northumberland—Peterborough South, Lib.): Thank you, and welcome.

I'm Kim Rudd. I'm the member of Parliament for Northumberland—Peterborough South, and for context, that's a rural riding in southeastern Ontario.

Welcome.

• (0905)

Mr. Pat Kelly (Calgary Rocky Ridge, CPC): I'm Pat Kelly, member of Parliament for Calgary Rocky Ridge.

Mr. Matt Jeneroux (Edmonton Riverbend, CPC): I'm Matt Jeneroux, member of Parliament for Edmonton Riverbend. There are two of us from Alberta, so we can take Northwest Territories today.

The Chair: Peter.

Mr. Peter Julian (New Westminster—Burnaby, NDP): I'm Peter Julian, from New Westminster—Burnaby. I'm the NDP vice-chair of the committee and I'm glad to be here on the other side of the pond, and I will note that of all the places we've been to across the country, this is the first place that has given us chocolates.

We're happy to have a legislative assembly providing chocolate for each member.

The Chair: On that note, I'd also like to recognize who is with us and who presented us with the chocolates, but that was mainly to sweeten up the NDP, Peter, I think.

Kate Ryan-Lloyd, who is the deputy clerk and clerk of committees, and two of her colleagues are here. We met at a meeting where we were talking about how finance committees operate. Kate and her colleagues are here to see that we do things right, so everybody will be on their best behaviour.

With that, we'll start with the Chartered Professionals in Human Resources Canada, and Mr. Ariganello.

Mr. Anthony Ariganello (President and Chief Executive Officer, Chartered Professionals in Human Resources Canada): Thank you, Mr. Chair.

[*Translation*]

Good morning, everyone.

Mr. Chair, on behalf of CPHR Canada, the national voice of the human resources profession, I am very pleased to participate in the committee's consultations in advance of the 2019 budget.

Since the committee has already received our brief, my remarks will be quite short.

CPHR Canada's members know that we are in a time of great innovation and of profound and turbulent changes. We must ensure that Canadians have the resources to face those changes and to be ready to adapt to the new reality.

Government policies and programs, therefore, must quickly evolve to keep pace with the evolution of work and employment.

[*English*]

CPHR Canada is far from alone in taking this position. We partnered with the U.S.-based Society for Human Resource Management to produce a joint paper, entitled "Demystifying Technology in the Workplace".

In this paper, we note that technology can have positive impacts on firms and workers, but as you know, technology can also have negative impacts. For example, third party online workers are exposed to greater career uncertainty and have fewer protections

than do workers in traditional employment. For firms, business continuity, data privacy concerns, and increased regulation are among the risks.

Those and other impacts on employment have important implications for governments. For example, online freelancing does not clearly fit into traditional employment. Therefore, online workers in most countries do not receive the benefits of unionization, collective bargaining, social benefits or legal protection such as minimum-wage laws.

Increasingly, full-time, full-year work is giving way to more precarious arrangements that lack the same pay, benefits and protections enjoyed by previous generations. This shift to non-standard work arrangements disproportionately affects younger, better-educated, and older Canadians.

In short, these best of times for innovation are not necessarily the best of times for all Canadians, but with innovation in government policy and support, and effective engagement by key economic players, the times can be made much better and more equitable.

Fortunately, a start has been made. For example, the Global Apprenticeship Network mobilizes the private sector, business federations and associations to share best practices, to advocate and to commit to actions for job creation and skills development. Joining that network would be a benefit to Canada.

Business, too, is acting. According to a 2018 Business Council survey, businesses are creating diverse partnerships with post-secondary institutions; employers are spending more on employee training, and a diverse and healthy workforce is a priority.

Provinces, too, have taken note. The Government of Quebec launched a five-year labour market strategy, investing \$180 million, and \$49 million of that specifically on training.

Federally, budget 2018, with its innovation and skills plan, set out broad-reaching objectives focused largely on skills development and education, as well as support for innovation. In other elements, it also set out clear support for families and to encourage gender equity. We welcome these initiatives.

CPHR Canada would strongly support efforts in budget 2019 to directly address issues surrounding those in precarious positions who may not be best able to take advantage of the budget 2018 provisions, and to continue to support a diverse, welcoming workforce.

The initiative could include consultation with Canadians, including business, labour and individuals, to identify gaps and weaknesses in current legislation governing non-traditional employment. CPHR Canada members would be pleased to support and participate in such consultations. It could include improved monitoring and reporting on employment trends, including the precarity of work, emerging skills shortages, and conversely, areas where existing skills may be challenged by technology. It could include improved labour market information to better align immigration with the needs of employers, and policies and programs to help workers transition to the human economy, where their know-how and skills no longer give them advantages over increasingly intelligent machines. It could provide indigenous Canadians with training opportunities and facilitate the transition of foreign students into the Canadian workplace. It could pursue initiatives from budget 2018 to ensure the full participation of women in the workforce, which would include ensuring that foreign students in Canada can gain Canadian work experience, especially where this is required to gain admission to Canada's professions. Last, it could continue to ensure that new Canadians are able to apply their skills and professional qualifications in support of their families and the Canadian economy.

Efficient and productive human resources propel the economy. They are human capital.

We are confident that the House of Commons Standing Committee on Finance will chart the course needed now to support Canadians and to enhance competitiveness.

● (0910)

It is a privilege for CPHR Canada to take part in your meeting. I will be pleased to answer your questions.

Thank you.

The Chair: Thank you very much, Anthony.

We turn now to D-Wave Systems Inc. We have Mr. Brownell, chief executive officer, and Mr. Wall.

Welcome.

Mr. Vern Brownell (President and Chief Executive Officer, D-Wave Systems Inc.): Good morning, Mr. Chairman, and members of the committee. My name is Vern Brownell, and I'm the CEO and president of D-Wave Systems. I'm here with my colleague Warren Wall, who's our EVP of corporate affairs.

Both Warren and I are delighted to be here today to discuss with you an item of critical importance to federal investment, the application of quantum computing. This is an area in which Canada is already a world leader, but frankly this position is at risk unless an ecosystem of key players, including government, private sector and academia, is able to come together and help us move forward to the next generation.

Since 1999, D-Wave, proudly based in Burnaby B.C.—your home riding, Mr. Julian—has been a pioneer in the research and development of quantum computing, and today we're the world's leading developer of commercial quantum computing systems.

For those of you who may not be familiar with it, quantum computing represents one of the most exciting frontiers in technology. It harnesses the remarkable properties of quantum mechanics in a novel computing device, enabling new algorithms and applications that promise to deliver unprecedented computational power to solve some of the world's most difficult and complex problems.

Indeed, some of the organizations at the forefront of global innovation, like Google, NASA, Lockheed Martin, and Volkswagen, are today using D-Wave systems. Simply put, D-Wave's quantum computational technology has put Canada and B.C. on the map as a global pioneer in this kind of cutting-edge technology development.

Canada must seize the opportunity it has in front of it to position the country as the world leader in quantum computing. With the appropriate level of financial support from government, and in the face of international competition in investment, Canada can capitalize on its significant first-mover advantage and secure its position as the global leader in quantum computing.

I understand that the theme of your pre-budget consultations is ensuring Canada's competitiveness. I can assure you that without more systematic strategic investment in quantum computing by the Government of Canada, we will be eclipsed by others, including China and the United States. Just last month, the U.S. House of Representatives passed the National Quantum Initiative Act to provide resources, regulatory assistance, and \$1.275 billion to bolster the United States in its quantum computing fields.

The conversation around the world has for the most part been focused on advancing theoretical models and building low-level hardware devices as proof of concept. There is certainly much more to be learned, and Canada should continue to strongly support its domestic quantum players who currently lead the theoretical and science research.

D-Wave's experience with our customers has shown us that the industry is ready to take quantum technology out of the laboratory and introduce it for broader commercial use and benefit. To that end, D-Wave is contributing as a founding member of Canada's digital technology supercluster to apply our innovative systems to the problems of real value to Canadians.

There are more than 90 published examples of early applications using D-Wave's current quantum computing systems, in areas as diverse as health care, energy, finance, manufacturing, transportation, defence and security. Problems in these fields are so complex that even the fastest supercomputers cannot deliver acceptable results in reasonable time frames.

The next generation of D-Wave's quantum computers will deliver the power required to drive innovation well beyond the realm of any classical computing system. The advent of this machine will represent a major milestone globally, and one led from within Canada. However, this cannot be achieved by industry on its own. It requires creative partnerships and collaborations, including with the Government of Canada.

In this regard, we have three recommendations for the committee in the context of the 2019 federal budget.

One is to provide funding of a minimum \$50 million over five years for a program specifically designed to establish Canada as the world leader in the application of quantum computing to address high-value business, public policy and fundamental research problems.

● (0915)

Two is to encourage Canadian companies to explore and invest in quantum application development on challenging problems that will ensure Canada's competitiveness as an innovation leader using this new technology.

Three, where appropriate, is to provide seed funding to universities and research-intensive organizations in Canada in order that they may focus on developing programming and related infrastructure to facilitate the application of quantum computing in real-world problems.

I'll just mention briefly that we have no systems in Canada. All of our current customers are in the U.S., Japan and Europe. I think this is unfortunate. It really seems to me that we should have research systems based in Canada.

The future of quantum computing will be dominated by those who seize these opportunities. Canada is well positioned to be the world leader, if our recommendations are adopted.

I thank you for your time and attention and look forward to any questions. I would appreciate that.

The Chair: Thank you very much, Mr. Brownell.

Turning to Mitacs, we have Mr. Adem, CEO. Welcome.

Dr. Alejandro Adem (Chief Executive Officer and Scientific Director, Mitacs): Mr. Chair and members of the committee, thank you for giving me the opportunity to appear before the Standing Committee on Finance today to discuss what steps the federal government can take to support Canadians and their businesses to grow the economy in the face of a changing economic landscape.

Canadian companies across sectors recognize that the nature of jobs is changing. New hires need adaptable and flexible skills to perform jobs that may not yet exist. A recent report by RBC, entitled "Humans Wanted: How Canadian youth can thrive in the age of disruption", found after extensive consultations with companies across the country that 25% of jobs will be disrupted due to technology in the next decade, and half of Canadian jobs will require a significant adjustment in required skills.

Despite this disruption, over 2.4 million jobs will likely be added to the Canadian economy over the next four years. These jobs will require new skills and combinations of skills to allow companies to

seize opportunities, develop new technologies and access markets around the world.

Fortunately, Canada has a highly educated population, an outstanding post-secondary system with world-class universities, and a robust system of colleges and polytechnics. These institutions prepare Canadians for a changing workforce while ensuring that businesses can access the talent and ideas they need to grow.

Experiential learning opportunities, including work-integrated learning and international experiences, equip students with the skills and knowledge needed to succeed in the 21st century workplace. In building these sought-after skills, work-integrated learning opportunities strengthen Canada's capacity to adapt to changing labour force demands while providing businesses with the tools and talent they need to innovate, commercialize ideas, and succeed on a global stage.

Mitacs, as a key partner in the Government of Canada's innovation and skills plan, is moving towards its goal of delivering 10,000 innovation internships annually by 2020 through programs designed to strengthen links between Canadian businesses and post-secondary institutions, enrich graduate student development, and meet the evolving needs of companies large and small.

The current Mitacs platform is unique in its approach to work-integrated learning, with our business development experts proactively working with partners to ensure that each internship focuses on research that is of shared value to the company or host organization, the academic institution and the student. Mitacs internships are designed to incentivize private sector research and development, support business growth and promote innovation while simultaneously developing Canadian talent and attracting top minds from around the world.

To meet the needs of Canadian industry and ensure that students across the post-secondary education sector can gain practical work experience during their studies, Mitacs is proposing to extend our programming by, one, expanding current program eligibility for university graduate students and post-doctoral fellows to university undergraduate students and scaling up the number of projects with the college and polytechnics sector, as well as providing pathways to employment for recent graduates and, two, providing a unique national platform for students across the post-education sector to access meaningful, paid work-integrated learning internship opportunities beyond research. This platform will allow Mitacs to scale up pilot programs for start-ups in incubators and accelerators, as well as for businesses looking to commercialize their ideas and/or access global markets.

With an expanded mandate covering a range of mechanisms, Mitacs can tailor business solutions to meet the evolving needs of industry and address Canada's skills needs. Properly supported and deployed, Canadian post-secondary education students will become tomorrow's innovation leaders, helping Canadian businesses overcome challenges, commercialize ideas and compete globally.

Mitacs looks forward to working collaboratively with the Government of Canada and other stakeholders to advance Canadian competitiveness while equipping the next generation with the skills, talent and experience they need to succeed. Building on a successful track record and expansive national networks, Mitacs can serve as a more strategic partner in the delivery of work-integrated learning experiences that include and go beyond research, reach a full spectrum of post-secondary students and grow Canadian businesses.

• (0920)

Mr. Chair and members of the committee, thank you again for the opportunity to appear before the Standing Committee on Finance.

I would be happy to answer any questions.

The Chair: Thank you very much.

From Stand.earth, we have Mr. Biggs, energy and climate campaigner.

Welcome.

Mr. Sven Biggs (Energy and Climate Campaigner, Stand.earth): Thank you.

I would like to begin by acknowledging the territory of the Songhees and Esquimalt first nations, and by thanking the committee for the invitation to appear today.

I'm going to start by drawing your attention to the recent report from the United Nations Intergovernmental Panel on Climate Change. This report shows that we cannot avoid the worst impacts of climate change unless we reduce our emissions by one-fifth in the next 12 years.

I raise this here because I believe that climate change is not only the largest environmental and moral crisis we face but also the biggest economic challenge of our time. The IPCC report points out that while the cost of addressing the crisis will be high, the costs of not acting are even higher. We are already paying the costs of climate change. We have seen steady increases in disaster financial assistance arrangement liabilities. Two decades ago they averaged around a \$100 million a year. Today the Parliamentary Budget Office estimates that they have grown more than sixfold to \$673 million a year. Meanwhile, Canadian insurance companies have seen claims following natural catastrophes rise over the same period from \$400 million to over a billion dollars a year.

As the impact of climate change becomes more and more real, these costs are only going to continue to rise. Case in point, here in B.C. we had a record-breaking forest fire season in 2007, losing over 1.2 million hectares of forest to wildfires and costing the provincial government more than half a billion dollars.

However, that record did not stand long. Although the season is not over and there are still fires burning around the forests today, we have already this year lost 1.3 million hectares of forest in British

Columbia fires. Experts warn that these kinds of wildfires are going to be the new normal.

Obviously the costs of climate change are not limited to natural disasters. The economists at the University of North Carolina have modelled the growth rate of the U.S. economy under several climate scenarios. They've found that in the most optimistic climate scenario model where we meet our targets and limit rising temperatures to 1.5 degrees, climate impacts on the economy could represent as little of a reduction as 0.4% of GDP over the next 100 years. If we allow temperatures to rise by just 2.8 degrees, they predict a 10% loss in the growth of GDP. With an increase of 3.4 degrees, they calculate that the cost of climate change could be as large as one-third of the growth of GDP. We can see quite clearly that climate change has a real cost to the economy and that it grows exponentially with inaction.

I'm here today to offer a couple of concrete examples of actions that this government can take in its next budget to address climate while reducing spending.

First, we must end fossil fuel subsidies. Currently, Canadian taxpayers give fossil fuel producers \$3.3 billion a year in tax breaks and direct subsidy. In addition, since this government came to power it has given a further \$12 billion in loans to fossil fuel companies through Export Development Canada. I will remind you that in the last election the Liberal Party promised to end these subsidies. In addition, the Canadian government has made commitments to the G20 to end fossil fuel subsidies by 2020. Despite these stated commitments the Auditor General has found that this government has no plan to meet them. If this government hopes to keep Canada's climate goals, it must stop incentivizing the very industry that is driving climate change.

Finally, I would suggest that this government not invest any more public funds in the Trans Mountain pipeline. Construction costs are currently pegged at \$9.3 billion. That number has more than doubled since the project was first announced, and is likely to continue to rise as delays continue.

Typically construction for this kind of infrastructure is paid off over a 30-year term, meaning we'll still be paying for this pipeline in 2050 when we need to reach the goal of reducing emissions by 80%. Simply put, we cannot do both simultaneously. We must choose. We can either build this pipeline or we can save the climate.

Thank you for this opportunity. I look forward to your questions.

• (0925)

The Chair: Thank you very much, Sven.

We will turn now to Mr. Wilson, vice-president with the Vancouver Fraser Port Authority.

Welcome.

Mr. Duncan Wilson (Vice President, Corporate Social Responsibility, Vancouver Fraser Port Authority): Thank you very much, Mr. Chair and honourable members.

My name is Duncan Wilson. I'm vice president, corporate social responsibility with the Vancouver Fraser Port Authority. Please note that we previously provided a comprehensive submission to the pre-budget consultation. Today I will discuss a few of the highlights included in that submission.

The Vancouver Fraser Port Authority is responsible for the stewardship of the Port of Vancouver, Canada's largest port. Our mandate, as set out by the Canada Marine Act, is to ensure that port infrastructure is in place to meet Canada's trade objectives, protect the environment and consider the impact of port activity on local communities.

The Port of Vancouver and the Port of Prince Rupert are Canada's gateway to Asia. Trade with Asia is expected to grow dramatically as the economies of China and India in particular continue to expand. At present, about \$1 of every \$3—so 30% of all of Canada's trade and goods outside of North America—goes to the Port of Vancouver.

Our challenge as a port authority is how to grow Canada's trade in a way that is environmentally sustainable and that also takes into consideration the impacts of growing trade on local communities. A lot has already been done to improve the port's surrounding infrastructure and to increase capacity; however, there's a lot more work to do, especially given new trade agreements with Asia, if Canada is to realize the economic benefits to increasing global trade.

In response to the question of what steps the federal government can take to support and encourage Canadians and their businesses to grow the economy in the face of a challenging economic landscape, I'd like to share the following recommendations.

On access to capital, if port authorities compete in the market for land and project funding, it is critical that we have access to capital in a timely manner when needed or risk effects to Canada's competitiveness. A great example of that is trying to purchase land in the Lower Mainland with rising industrial land prices—rising land prices overall.

Therefore, we recommend that government allow access to capital through timely borrowing limit adjustments, or an alternative approach to borrowing limits such as creating a borrowing limit that's based on a multiple of EBITDA to facilitate borrowing for core port infrastructure and growth.

For long-term government leadership on strategic infrastructure spending, we commend the government for its commitment to national infrastructure spending through the national trade corridors fund.

For the second phase of funding, we want to ensure that trade enabling continues to be at the forefront of investment. Therefore, we recommend increasing funding for the national trade corridors fund, and focusing this funding on trade-enabling infrastructure projects with national economic importance and significant long-term impacts.

Tremendous potential exists to improve Canada's competitiveness through the strategic sharing of data amongst supply chain participants to optimize the supply chain. To capitalize on this, we recommend regulation to support data sharing, through optimized supply chain performance and dedicated funding to support

resources for data collection such as the Canadian Transportation Agency.

With regard to the protection of marine mammals, much of the commercial vessel activity within the southern coast of B.C. transits through critical habitat for southern resident killer whales. We are committed to conducting operations in a responsible and sustainable manner within the port's jurisdiction.

We also want to take a leadership role in addressing the impact of marine shipping even outside of our jurisdiction. That's why we launched the port authority-led enhancing cetacean habitat and observation program, ECHO, in 2014, with support from Transport Canada among others, for which the port authority is very grateful.

We envision that we will continue to lead this program over the next five years, and would like to recommend that the government continue its support in the order of a minimum contribution of \$1 million per year over the next five years.

We recommend the creation of a clean transportation innovation fund. We support the government's commitment to reduce greenhouse gas emissions, and we understand that the transportation and shipping sectors are major contributors to greenhouse gases. Therefore, we recommend a clean transportation innovation fund to support the transition to low- and even no-emission transportation alternatives wherever possible.

In conclusion, the Port of Vancouver continues to be recognized as a world-class gateway because of the leadership of the federal government in implementing strategic nation-building infrastructure improvements that have allowed the gateway to facilitate tremendous trade and growth.

Ensuring the sustainability of Canada's major trade and transportation corridors and overall goods movement through strategic infrastructure and innovation is vital to maintaining and enhancing the competitiveness of the gateway and the Canadian economy.

● (0930)

Implementing these recommendations will stimulate employment through infrastructure construction and strengthen the transportation backbone of Canada's trade, benefiting all Canadian businesses reliant on transportation infrastructure for exports, imports and the efficient movement of goods. In doing so, the federal government will be able to support and encourage Canadians and their businesses to grow the economy in the face of a changing economic landscape.

Thank you.

● (0935)

The Chair: Thank you very much, Duncan.

Thank you all for your presentations.

I might note for those who did send in earlier submissions, prior to August 15, that they are on people's iPads or whatever electronic technology they have. They are a major part of our consideration for the consultations as well.

We will start with seven-minute rounds. Go ahead, Ms. Rudd.

Ms. Kim Rudd: Thank you very much, Mr. Chair.

For those of us who still like paper and support the forest industry, some of us have paper.

Thank you very much, and thank you to the presenters who had this short period of time to provide their comments. This is my first time travelling with the committee, and it has been very informative. I did not know there was something called a “gold-digger clause”, so thank you for that. It is amazing the information we find out, valuable information, all kidding aside.

There are really interesting perspectives in this panel on a number of fronts. I'm going to start with Alejandro from Mitacs.

I'm very aware of the work you do, and thank you for your collaboration. I know you have been a very strong partner with the government as we work through what is an ever-changing landscape in terms of employment and in terms of business and industry.

You made a comment about how many new jobs would be created over the next four years. Can you give me that number, please? I'm sorry; I was writing and didn't get quite to it.

Mr. Alejandro Adem: Yes. I think I said 2.4 million jobs will likely be created and added to the Canadian economy over the next four years.

Ms. Kim Rudd: I thought maybe I written down the wrong number, but there we go. Thank you very much. That's a lot of jobs.

One of the things you talked about was the opportunity for internships and apprenticeships. Someone else mentioned about immigration and making sure that we have those pathways for immigrants who are coming to our country with maybe a set of skills, a degree, a profession—an engineer, medical doctor, various professions—how they can find that path through.

Can you talk a bit about the work you have been doing with provinces and territories as well? As you know, a lot of this is determined by the provinces and territories, whether it's apprenticeship, whether it's professional designation, or those kinds of things.

Mr. Alejandro Adem: Our business is to really connect universities with industry, with companies, and embed students in companies so they obtain experiential learning opportunities. Our funding comes primarily from industry, the federal government and provincial governments. We work with all 10 provincial governments at this time.

In terms of your question, when a student comes from a foreign country to UBC, SFU or Ryerson and wants to gain traction in Canadian society, what our internships provide is the opportunity to embed in a company or not-for-profit organization and get real-world experience while working on a research deliverable that could conceivably lead to commercialization or some idea for social innovation.

For us, this is a very clear path for making that person feel that they're part of the fabric of Canadian society. When they graduate, they will know that there's the option of working in that company or similar companies within Canada instead of moving south of the border or to Europe or Asia. Everything we talk about is in the context of very fierce competition for talent across the globe.

That's how we see it: as a mechanism for getting these new Canadians into our system, people who want to be part of the Canadian system but don't have the appropriate certification, the roots or the connections.

Ms. Kim Rudd: Certainly what we're experiencing across the country, and I know in my community, is a labour shortage in varying degrees.

That brings me to you, Mr. Brownell, and what you talk about. I'm familiar with your organization as well, and I know that the work you've been doing has been well recognized, as you mentioned, around the world.

One of the questions I have for you is, who is doing the work for Canadians? If you're a Canadian company working around the world but you're not working in Canada, who's doing the work in Canada?

Mr. Vern Brownell: There are many universities across Canada that do fundamental research in quantum computing, and they're an extremely valuable resource for us. We're the only commercial company in the world, so we're the only company that has the capability to provide a quantum computer that can be used for those kinds of applications that I talked about.

It's a unique position. The unfortunate part of it is that access to a system is not available to Canadian researchers today, whereas the systems that we have placed in the states—there's one at NASA and one at USC—are all available to U.S. researchers. Most of the hundreds of applications that I mentioned are being developed outside of Canada, ironically, even though we're a Canadian company.

● (0940)

Ms. Kim Rudd: I became familiar with you through your application. I was out here in Vancouver speaking to the folks who put in the application for the supercluster. Can you tell me a bit about why you joined that supercluster consortium and where you are in that process currently?

Mr. Vern Brownell: Warren is most familiar with the supercluster, so I'm going to turn it over to him.

Mr. Warren Wall (Executive Vice-President, Corporate Affairs, D-Wave Systems Inc.): D-Wave is a founding member of the supercluster, and I'm on the board of directors for the supercluster as well. We invested, or will be investing, \$10 million of our own effort, time, money and people in order to advance the objectives of the supercluster.

The supercluster is focused on developing technology innovation in certain areas, in particular in health care, natural resources and data science. We felt that our particular technology would be a great platform for some of those applications. We wanted to work with these local companies to be able to drive some of these specific applications forward.

There's a much broader sense of where quantum computing can be used, though. We think this technology does need to be used outside of even the supercluster. It needs to be developed within the universities across Canada to allow access to those kinds of systems.

Ms. Kim Rudd: Can you talk a little bit about the application? Applications of the type that you are doing can be very helpful within the health care sector in terms of being able to take huge amounts of data and produce the outcomes. I understand that before folks like you came along, there was no end in sight in terms of the amount of time it would take to get to an answer. Now it's relatively short. When we talk about this process, can you talk about how that could impact health care?

Mr. Vern Brownell: Yes, you hit upon one of the most important application areas for our technology, and one I'm personally most excited about. It's the use of this for health care and bioinformatics.

We've already done work with the Vancouver Prostate Centre on trying to come up with some interesting models to use our technology to identify prostate cancer. We've worked with a start-up company in San Diego on identifying better kinase inhibitors—which are oncology drugs—using our technology. We see that as one of the most important areas. We also see that as a strength of Canada, and B.C. in particular, that we would like to leverage.

You're bringing up a good example. We're not looking for, say, another quantum computing centre; we're looking for a vehicle whereby we can put this technology into the hands of researchers, particularly in bioinformatics and problems like that, and allow them to use it, develop use cases for it, and leverage that technology to change the world and improve our conditions and so on. I think we have great early examples of that. We would like to have thousands of researchers with access to this technology so they can make further progress in those areas.

That is, I think, the most important application area for quantum computing into the future. We have a unique opportunity to do that in Canada.

The Chair: Thank you all.

We'll turn to Mr. Jeneroux for seven-minute rounds.

Mr. Matt Jeneroux: Thank you, Mr. Chair. Thank to all of you for being here today, and to those of you who have travelled to be here.

I do want to come back to you guys at D-Wave, but I will start with you, Mr. Adem, from Mitacs. How many projects does Mitacs have on the go right now?

Mr. Alejandro Adem: Right now we have around 7,000 internships.

Mr. Matt Jeneroux: How does a project become funded by Mitacs?

Mr. Alejandro Adem: The process is the following. We have a business development team around the country, in all 10 provinces, and they knock on the doors of industry and ask the companies which problems keep them up at night and what they would be able to do if they had some more expertise in their companies. Keep in mind that we are a country of SMEs, and a lot of companies don't have in-house resources for R and D.

When our business development specialists receive some idea of the possible problem, which could lead to commercialization and so on, they go back to the university or college. Because they've been trained to do that matchmaking, they can locate an appropriate

professor or school dean. One of their graduate students is then embedded in the company or the not-for-profit.

That requires preparing a project description, which is submitted to the Mitacs research committee. It is sent out for peer review.

• (0945)

Mr. Matt Jeneroux: Is the committee based at your head office in Toronto?

Mr. Alejandro Adem: No, our headquarters is still in Vancouver.

Mr. Matt Jeneroux: I toured something in Toronto.

Mr. Alejandro Adem: We have offices in Toronto, Montreal and Ottawa.

That's an arm's-length committee of the board of directors, which is made up academics, industry people and government people. It's very important for us to have scientific integrity for the adjudication decisions. They come back with a recommendation, and we try to do this in a time frame that is realistic for industry—around six weeks.

Mr. Matt Jeneroux: So it's largely applied research.

Mr. Alejandro Adem: I would say it's research that has an economic impact.

As a mathematician, I can tell you that very abstract ideas from number theory are used every day when you use your ATM. That spectrum goes in that direction.

Mr. Matt Jeneroux: That's an interesting analogy. That's good.

I have a couple of things. First of all, the majority of your projects are based in Ontario and Quebec, from what I understand, and there are very few in the Prairies. I'm curious as to why that would be. There's nothing in the north either, and I'm curious as to why that would be.

I largely want to talk to you about.... The last budget supported the Naylor report to an extent, but it didn't support the research support funding. I imagine the research support funding is something that Mitacs in particular would be supportive of funding, perhaps because research support funding has an impact on the graduate students who access your funding.

Mr. Alejandro Adem: To your first comment, actually B.C. does extremely well. It does well beyond its per capita, because we started in B.C. We also have a good presence in Alberta. We could do more. Manitoba has increased its funding. We depend on the federal-provincial partnership in our model, so we have to get the appropriate buy-in from the provinces.

Mr. Matt Jeneroux: But the committee ends up approving who applies. I don't mean this to be a criticism of your program, but is there more education we need to do in the Prairies to encourage applications?

Mr. Alejandro Adem: I think there's good uptake, but there are always financial constraints. We're always trying to get the maximum number impact over delivering beyond our contract. We also understand that some of the provinces have gone through hard times, and we work with them to find leveraging that can make this work.

Mr. Matt Jeneroux: That's particularly in Alberta, but I wanted to get your comment on the impact on the research support funding.

Mr. Alejandro Adem: Of course nothing can happen without fundamental research. It's a knowledge-based economy. Knowledge is created through fundamental research. Then this research has an impact, and how we make that have an impact on the economy is very important.

In the end, we want to have an impact on GDP with the return on investment, but we understand why government supports research. It's for our prosperity. That full spectrum and story comes from some fundamental research, and then when applied, ultimately commercialization. Absolutely my—

Mr. Matt Jeneroux: You're still keeping the lights on, to an extent. The researchers who are doing projects are still being funded.

Mr. Alejandro Adem: Absolutely.

Mr. Matt Jeneroux: What could be funded if the research support fund were funded?

Mr. Alejandro Adem: Is the research support fund the one for university overhead costs?

Mr. Matt Jeneroux: Yes, to keep the lights on and for basic equipment.

Mr. Alejandro Adem: It is a big issue at our post-secondary institutions. I know that compared to other jurisdictions... For example, in the United States, the overheads on the grants are much larger and they go to support facilities, which is very important to the labs. Absolutely you need to have the equipment, talent and pathways to industry to have an economic impact.

● (0950)

Mr. Matt Jeneroux: Thanks. I don't have a lot of time, and I do want to go quickly to D-Wave.

Mr. Wall, you mentioned the superclusters and the role that you in particular are playing. When it comes to the superclusters, I couldn't help but notice that you talked a lot in the past tense—i.e., you “wanted” this, you “needed” this. I'm curious to know where that's at. The announcement was a year ago. We haven't seen a lot of movement yet in terms of funds. I'm curious to know what you're hearing and where your plans are. Maybe you have more information than the minister's telling me about certain things.

Mr. Warren Wall: First off, I want to say that we're strong supporters of Mitacs. They're working with us and helping us commercialize a lot of technology. I wanted to mention that.

As far as the supercluster goes, we are reaching, I hope very soon, a final contribution agreement from the government to fund the supercluster. I know that this negotiation is happening.

Mr. Matt Jeneroux: It's been a year, though. You're still waiting for it.

Mr. Warren Wall: Yes. That was from the announcement. The agreement with the government has been under way since early in the summertime. Nonetheless—

Mr. Matt Jeneroux: As a member of Her Majesty's loyal opposition, is there anything I can do to help move that along?

Mr. Warren Wall: I think it's getting very close. I think we're almost there.

It hasn't stopped the supercluster from moving forward. As a group of organizations, we have established an entity that's moving forward. We've already selected the first projects that will move forward as soon as funding is available. We will move very quickly once that agreement is signed.

The Chair: You'll have to end it there.

Mr. Julian, the floor is yours.

Mr. Peter Julian: Thank you very much.

This has been very interesting testimony. It will be very helpful, I think, for our pre-budget report.

I'll go to you first, Mr. Biggs, just so that I understand what you said in your presentation.

You talked about the pipeline purchase. I think we've been hearing a lot of that across the country. People are concerned about the \$15-billion cost. You also raised the overall economic cost of climate change. If I got the figures correctly, you said that moving from a 1.5° increase in global temperatures to 1.8° would cost the Canadian economy \$150 billion a year. That's 10% of GDP. Is that correct in terms of what the economic impacts are of climate change?

Mr. Sven Biggs: The study looks at the impact on growth of GDP, not GDP as a whole, so it is less than 10% of GDP. It's a measure of slowing down the growth in the economy.

Personally, I think the methodology that the study used was very conservative. I would note that it's based on an older IPCC report, not the most recent one that just came out. If that study were run again, I think you'd find more dire numbers.

Mr. Peter Julian: What would be the figure, though? For our pre-budget report, rather than talking in percentages, it would be better to quote the actual cost in terms of billions of dollars. Do you have that figure available, or is that something you could provide to the committee?

Mr. Sven Biggs: I could provide that to the committee at a later date. We'd have to do some math and figure out where we expect the GDP growth to be, going forward.

Mr. Peter Julian: Okay. I think that would be very helpful for the committee. If you could provide it to us in the next week or so, that would be wonderful.

Mr. Brownell and Mr. Wall, thank you very much for coming all the way over from Burnaby—coming overseas to Victoria. It was very good of you.

I note that you said you currently have no customers in Canada. You also said that the final contribution agreement is being negotiated now. It looks like four or five months, but it seems to be coming together. I would add my voice in terms of anything we can do as a committee to push that to a conclusion.

Do you think the fact that you have no customers in Canada is linked to our very poor performance in terms of R and D funding? We're last among major industrialized countries in terms of public funding for R and D. We're last in terms of the number of patents that come from Canada. We're second to last in terms of the number of doctorates we produce. Is the fact that you don't have clients from Canada linked to that chronic underfunding in terms of research and development in Canada?

• (0955)

Mr. Vern Brownell: I think it is. I think it's also related to the fact that with regard to the researchers we tend to fund, a lot of it is theoretical and not practical in nature. Certainly those sorts of researchers are of paramount importance, but what we're asking for is more funding of applied methods.

For instance, we can use this computational capability in bioinformatics, in all of those application areas that we talked about for practical researchers who are looking at problems like that. Rather than just focusing on quantum computing and developing the actual physics behind quantum computing, it's about moving it more into a practical form of research.

However, I agree with your premise, certainly.

Mr. Peter Julian: Mr. Wall, do you have anything to add to that?

Mr. Warren Wall: Mr. Brownell mentioned funding, and there is a fair amount of funding of quantum computing in Canada. Most of it goes to IQC in Waterloo, which is great. We strongly support the work they are doing in those areas. It's very much at the theoretical and early device level, though, so we do need to expand the role of government in supporting application research.

I would say that in the case of industry, we don't see the big industries in Canada that we have seen in the U.S. that are interested in taking the risk to develop quantum computing. It does cost money. It does take time and effort to invest in those particular areas, so we see companies like Lockheed Martin, Google and the U.S. government investing in those areas in order to do the research, and we don't see that investment happening in companies in Canada.

Mr. Peter Julian: Thank you very much.

I'd like to move now to Mr. Ariganello and Mr. Adem.

You both mentioned issues around the precariousness of work and disrupted jobs. In both cases, you spoke to the fact that we have real gaps in terms of policies and programs.

In terms of precarious work, Mr. Ariganello, providing public support, public pharmacare and public pensions and making sure that even somebody who is in a precarious work environment gets these supports makes a big difference in terms of our competitiveness internationally, because those employees, if they're well supported by public policies, can have long careers and contribute to the Canadian economy.

What do you think we need to change in terms of public supports for those who are experiencing precarious work so that there is in place a really effective social safety net?

Mr. Anthony Ariganello: I believe that money has been spent in the past on traditional training programs, but that is really changing dramatically because of the disruptive change with respect to

technology, and specifically artificial intelligence. It's here and it's coming, and the speed of change is just immense.

Traditional training mechanisms aren't really the solution going forward. Government really needs to be aware of what needs to change. How do we equip the population, specifically those who are going to be affected by change, especially the unskilled labour force? How do we equip them to effectively do different jobs?

When we speak about robotics specifically, or bots in this case, there are going to be new roles at play, trainers and influencers who essentially teach machines how to build empathy and emotional intelligence and be aware of certain dynamics with respect to ensuring there is no bias when machines are essentially deciding on someone's credit rating, whether they get a loan, and so on.

These robotics, if we want to call them that, need to have individuals who are better skilled to be able to do those jobs, so I think we need to spend. I believe that government needs to really push the boundaries and ensure that we equip tomorrow's population with better tools and skills to be able to do those jobs. Studies have shown that if we don't, the loss in productivity for Canada could be anywhere from \$6 billion to \$18 billion annually if we really don't get moving quickly with respect to the disruptive change that is coming. That is going to be a toll on the Canadian economy if we're not aware of that.

Mr. Peter Julian: Thank you.

The Chair: I'm sorry. We're a little over time—

Mr. Peter Julian: Can he answer? I just wanted to make sure Mr. Adem could answer the same question.

The Chair: Certainly. Go ahead.

Mr. Alejandro Adem: I'd like to echo what my colleague said. The point here for us is we have thousands of students entering universities and colleges, and what kind of future are they going to have if they are not learning the skills that companies will expect?

Companies are no longer really training employees. They expect them to be work-ready. A description of appropriate skills for the upcoming decade or decades is quite a challenge to get, and our model works based on the marketplace. All our projects are based on market demand, so they are constantly changing as companies change and start using new technology.

The fact that our projects are focused on a deliverable, which is tied into things like commercialization, makes it what we call the kind of teaching that cannot be done in a classroom, and that has an impact on the life of the student, on the company and on the whole framework of the economy in Canada.

• (1000)

The Chair: Thank you all.

Before I go to Mr. McLeod, it was you, Mr. Wall, who said that you don't see people taking the risk in order to do the research in Canada. Why not? What's the reason for that?

I looked at your submission and I think you're asking for \$50 million over five years. I think you indicated the U.S. is spending \$1.275 billion. That's a huge difference. Can we do the same thing with \$50 million? Why is that happening? Why are we not producing more risk-takers, because we have to get there?

Mr. Vern Brownell: I think part of it is the U.S. is home to global companies like Google, for instance, a customer of ours, and NASA, and organizations of that kind that had the scale and risk appetite for getting involved in technology very early.

I think our economy, our industry and our commercial customers, potential customers, need to have partnerships to help them share that risk. They don't have the resources that a Google does. Another customer of ours is Los Alamos National Lab, the folks who invented computing back in the 1940s. They have the scale and the reach, and they're actually providing access to researchers in the U.S. outside of those institutions.

What we want to do is create an ability for Canadian researchers, and even folks who are early within the commercial side, to have access to quantum computing so they could start to look at how they can apply it to their businesses. That's something that I think the United States, because of the scale, does a little bit more naturally.

Another example is Volkswagen, which is a customer of ours. They are probably the largest industrial company in the world. They have the resources to look at the earliest technologies. We need to somehow arm our Canadian companies to be able to do that.

AI is a good example as well. We do a lot of work with AI. We have leadership positions in both AI and quantum computing. Without these kinds of investments, I think they'll tend to move south of the border and elsewhere in the world.

The Chair: That, I think, is helpful.

Go ahead, Mr. McLeod.

Mr. Michael McLeod: Thank you, Mr. Chair.

Thank you to all the presenters here today for some very interesting topics.

My first question is to the Chartered Professionals in Human Resources. I appreciated very much your presentation flagging the different areas that need consideration and further investment in the area of human capital. It's something that I, as a member of Parliament and in other capacities in my life, really put a lot of energy on, because I think it's the way forward for many people in the north.

I represent the Northwest Territories. In the north, it's something that we really need. I represent a riding that is over half indigenous, so we have a lot of challenges in many different areas, and we talk about education as being our way forward, and investing in human capital. We talk about it in the same breath.

Of course, we have now many indigenous governments that are being formed and taking control of their destiny. They are also looking at investing in education and human capital, but we're finding that investing in post-secondary or traditional types of training doesn't work as well as it might because of the many challenges that are still in our communities, where a large number of

people are still struggling with addictions. We have a cultural disconnect with some of our practices. We have the residential school legacy, and our elders still strongly promote that our young people try to live their traditional life and know the skills of living on the land.

Many of the indigenous governments focused on post-secondary education. Now they're starting to realize that we have to start as soon as the young girls are pregnant or they're going to be living a lifestyle that is not going to allow the baby to be healthy. We have to focus on the young people. It's a different path that the indigenous people have to focus on to try to get our young people into the world where they can deal with the new lifestyle that is out there for them.

I heard you talk about indigenous Canadians and about training for them. I was just wondering if you can talk a little bit about what you see and if there's anything different that is being targeted to this population of people.

• (1005)

Mr. Anthony Ariganello: From a CPHR Canada standpoint, we believe that a lot more needs to be done there. As you well know, the population of the indigenous community is growing at a rate 40% higher than that of the rest of Canada, and specifically in certain geographical areas. More importantly, unemployment rates are nearly double the average in Canada.

We feel, and I think you touched upon this in your commentary, that improved labour market information and improved data overall are necessary. I think there are a lot of unknowns there. You touched on that in discussing where we need to provide more data, more information, more substance.

The federal government should be investing in this area to be able to gather more data and information and be able to use that research and essentially put together some key public policies to assist the indigenous community. It's a shame that we're not at par, and I think we should be in Canada; it's extremely important. That is an area we focused on to ensure that all Canadians live prosperous and healthy lives, and with respect to employment specifically, that we all have opportunities.

Mr. Michael McLeod: You also talked about online freelancing. I'm not sure if I totally understood what you were talking about.

Mr. Anthony Ariganello: You've probably heard of the term "gig economy". Essentially, the workforce is changing. You have individuals today who want to work on their own time and when they want. I take Uber as an example. People will work when they choose.

Similarly, computer analysts work from home more and more. Telecommuting is the way of the future. It's a big deal here in British Columbia, more so than in the east. I recognize that, but it's the evolution, it's the future, it's what people expect going forward. We call them online workers, but essentially they're not in a brick and mortar building every day. They may not have the same protection mechanisms or social benefits that your traditional employee will have. I believe the federal government needs to keep an eye on that, because of course we don't want to disenfranchise that up-and-coming employment group.

Mr. Michael McLeod: Stand.earth, thank you for the presentation. I think there was a strong message there. We certainly have to be aware of what's happening around us in the disasters and the wildfires, and many of us in the Northwest Territories and across the north are constantly challenged by the practices in the south that are coming over the borders into the north.

I know for a long time we've been dealing with contaminants in the air and acid rain, the type of things that are happening to some of our rivers, and yet we in the north have few greenhouse gas emissions. It's almost not even on the radar, except when it comes to power generation.

Almost all our communities are diesel-powered, and our options are limited. We can't look at solar because we have long periods of darkness. We are looking at wind turbines, but up to now everything we've tried in wind turbines.... The ice buildup and the remoteness are challenging, and we can't accommodate the cost. We provide power subsidies to all our residents in the north. I wouldn't mind hearing what you think is the solution for us in the north. If we did what you suggested and removed all fuel subsidies, we'd have some real challenges. What we have to pay to live in the north is a real incentive for us to reduce our greenhouse gas emissions. I think that's why you see where it's at. Development is also virtually untouched for the most part.

• (1010)

Mr. Sven Biggs: Certainly. One of the great ironies, and perhaps one of the reasons that the climate crisis has become so acute, is that the people who contribute the least to climate change through their emissions are the people who bear the brunt of it. We see that both in the developing world and the industrialized world, where the developing world pays a higher cost and will face greater impacts. Also, in the north, they're feeling the impacts of climate change more strongly and they're coming on more quickly, so indigenous people around the world are paying a disproportionate cost from climate change.

When we talk about fossil fuel subsidies, we're talking about subsidies to the producers. This has been a long-standing practice by many industrialized countries to create cheap energy. I think that we need to work on technological solutions and a more distributed electrical system. There are some interesting projects going on here in British Columbia. On Haida Gwaii, as an example indigenous community-owned renewable power is replacing diesel generators.

There are communities like that all across here. Not far from here, in Sooke, British Columbia, the T'sou-ke first nation has gone completely renewable through solar panels. Obviously in the north you face extra challenges with those technologies, and there's probably not enough R and D money going into developing solutions to your unique challenges there.

I would say that part of the renewable economy has to be to find the solutions that work for local situations. We have different challenges here in British Columbia, where most of our electricity comes from hydro, than you might in Alberta, where they're trying to phase out coal and are looking at natural gas as a bridge fuel, but ultimately, they need to get to a fossil-free grid.

The Chair: Do you have a supplementary—

Mr. Michael McLeod: I just have one final comment.

I think in the Northwest Territories and Nunavut, we are probably the people who want to get off diesel more than anybody else. The diesel generators are noisy and they smell, so we're looking at a plan to try to get off diesel, but it's challenging.

The Chair: Thank you.

We will have time for three more questions from each of the parties, following Mr. Jeneroux.

Go ahead.

Mr. Matt Jeneroux: Great. Thank you, Mr. Chair.

I'm coming back to you, Mr. Adem. I want to get your thoughts on a public access policy, and we'll do that, but I want to also indicate that you guys received more money last year from the federal government than the previous year. Is that correct?

Mr. Alejandro Adem: Yes. In budget 2017 we got the increase.

Mr. Matt Jeneroux: I only ask because it says on your statement that federal government contributions went up. It appears to be \$5 million from 2017 to 2018.

Mr. Alejandro Adem: Of course, it was a contribution agreement, and that got ramped up.

Mr. Matt Jeneroux: That's good, because I think you guys do good work, so I think it's certainly something that's worth supporting and continuing to support.

That said, I'll go back to the previous question about ensuring that you guys are supported, not just centrally in Ontario and Quebec, but making sure we have that support outside.

You would know very well from your background that outside of Ontario we have polytechnics, NAIT and SAIT in Alberta in particular. You don't currently have partnerships with them, but I'm thinking that those would be great institutions where you could continue to pursue those partnerships. I hope there are continued talks on the way when it comes to that.

Regarding the public access, though, I believe that in February of 2015, the science minister at the time, Ed Holder, announced that public research dollars to the granting council were to be made public, so every dollar spent or put forward through the tri-agency councils had 12 months to be made public to other researchers. That doesn't apply to organizations like Mitacs, the Canadian Cancer Society, the MS Society or whatever. Would you be supportive of a policy that would encourage that? It would encourage other researchers to continue to develop, based on the knowledge of the funding that Mitacs would receive.

• (1015)

Mr. Alejandro Adem: Sure. I'm fully supportive of transparency in everything that gets done. Absolutely.

Mr. Matt Jeneroux: Perfect.

Mr. Alejandro Adem: On your previous question about the colleges and polytechnics, we did start to work with them last year. We started a small project, a program. We're very encouraged by that, and that's precisely one of the points of our expansion.

The first project we did was with Saskatchewan Polytechnic, and I met with their president. It was excellent.

Mr. Matt Jeneroux: Anything we can do to continue to help you guys grow into the west would be excellent as well.

Mr. Wilson, I think it has been an hour since you spoke. Quickly, on the port authority and in particular the impacts of certain legislation that may have unforeseen results on your industry, is there stuff out there right now that you're finding is not helpful, something that was perhaps intended to be helpful but isn't at the end of the day? Is there something we could take forward to recommend as the finance committee?

Mr. Duncan Wilson: A piece of legislation we're watching very closely is obviously Bill C-69. Frankly, it's less about the legislation and more about the regulation that will come with the legislation.

Currently, there's a regulation in place that defines a major projects list, which determines what's included and what's excluded in the scope of environmental assessments. Bill C-69 preserves that list under clause 82. However, one of the things that we understand is being considered as an addition to the list is brownfield port terminal redevelopment projects for vessels greater than 25,000 deadweight tonnes, which are currently excluded.

Those are projects that currently go through a port authority-led review process. In our case, we have a very robust project and environmental review process that has been evaluated by a former deputy minister of environment and has stood the test. In the last several years, through that process we have seen almost \$3 billion worth of infrastructure move forward in the port of Vancouver.

Mr. Matt Jeneroux: You're confident with your current process.

Mr. Duncan Wilson: Yes, and we're quite concerned about the prospect of losing that review authority. There have been grain terminals, potash terminals and a number of facilities, so it's of great importance to us.

The Chair: We'll go to Ms. Rudd, but just as a further question to you, Mr. Wilson, in your statement you mentioned allowing access to capital through timely borrowing limit adjustments to facilitate borrowing for core port infrastructure growth. Can you expand on that? What needs to be done to make that happen?

Mr. Duncan Wilson: There are two places where we see this as an issue.

One is, as I mentioned, land acquisition. In the Lower Mainland, there's a tremendous shortage of industrial land required to facilitate growth of our trade. Our borrowing limit was set in 2008 when the Lower Mainland port authorities were merged. Since then, our earnings and our financial position have more than doubled in a positive direction, yet our borrowing limit remains the same. We're trying to buy land and secure it for Canada's trade with that same borrowing cap. One of the things we're recommending in the port modernization review is that our borrowing limit be tied to EBITDA, as a multiple of EBITDA, which would effectively double the limit.

The second thing that is a constraint is in terms of major terminal development. For example, right now we're pursuing a major terminal development, and in order for us to be able to go out to market, to infrastructure developers, we need to show that we have the borrowing capacity to move forward with the project. Otherwise, we won't get a competitive bid process. The effect of that not

happening is basically delaying, potentially, a \$3-billion terminal investment by an additional two years.

• (1020)

The Chair: Do we set that borrowing limit federally?

Mr. Duncan Wilson: Yes. The borrowing limit is set. It's a discussion between Finance Canada and Transport Canada, and obviously approved by Treasury Board.

The Chair: Thank you. We can look at that.

Go ahead, Ms. Rudd. These are five-minute rounds.

Ms. Kim Rudd: Thank you very much.

Duncan, just to follow up on a couple of things in your recommendation 8, as you know, the government has gone forward with a number of innovation funds around clean energy, clean transportation, biofuels, electric vehicles and a whole range of things. You're suggesting something that's different from what's there now. What would that look like?

Mr. Duncan Wilson: We applaud the government's investment in all these other areas. What we have found, though, is there isn't something that fits squarely within where we have identified a need.

We've looked at the gateway's climate footprint. We applaud and support the government's GHG reduction targets. We have a very sophisticated GHG model that we've developed in the port for gateway emissions, meaning rail, shipping, road—you name it. However, even with the most advanced technologies available today fully implemented across all of the four transportation sectors, we will not be able to achieve those targets.

What we would like to see is a fund or a centre of excellence established around those specific transportation areas. A great example would be, in the Lower Mainland, container trucks. As Mr. Julian will know, it's a very challenging area for us. There are zero-emission technologies available that could be implemented, but they come at a high cost. Getting that take-up and that buy-in from the sector is challenging, so we need to get something to jump-start it.

That's basically where we're coming from on that question.

Ms. Kim Rudd: That's very helpful. Thank you so much for the clarification.

Vern, I want to mention, in terms of... I've recently taken on a new role as chair of the parliamentary research caucus. One of the things we are recognizing is the importance of technology as we move forward on a number of these fronts, and not just in Canada. As you may know, we are part of... New Zealand has a similar caucus, and so do other countries. Do you see your organization and those organizations you support being engaged at the national and international level in some of these conversations around health research?

Mr. Vern Brownell: Absolutely. We should.

At the stage we are now at as a company, it's probably a little bit early for us, but it's absolutely the kind of organization or caucus that we would like to participate in.

Ms. Kim Rudd: I'll keep that in mind. Thank you.

Sven, I want to come back to your presentation.

I'm from Ontario. As you know, we reduced our emissions significantly because we got rid of coal plants. Over 60% of the power in Ontario electricity generation comes from nuclear.

I'm going to follow up on something my colleague Mr. McLeod talked about in connection with some of the rural and remote communities and the off-diesel program, on which Natural Resources Canada has a lead in terms of various options for going off diesel.

To your point, it's different everywhere. There is no one-size-fits-all solution for any of this. There are a couple of things I want to mention and maybe get some feedback from you.

Let me make a comment first. In terms of the elimination of the coal plants, the data has been accumulated since 2012, and we're seeing around 7,000 fewer hospital visits for asthma and other respiratory problems. The anticipated savings to the health care system are about \$1 billion over a 10-year period. These aren't insignificant results of a policy around reduction of pollution, which is exactly what this is. As you know, we're very committed to our cost-of-pollution policies.

In terms of making this more available in other parts of Canada, such as in our indigenous and northern and remote communities, do you have any comment about providing support for the small modular reactors that are about to go into demonstration phase, and in fact, in some cases, have gone into demonstration phase in the U.S.? It's not just about a community that....

You may know that in Ontario, 16 indigenous communities have come together to buy a power grid, to create a power grid for those 16 communities, with Fortis as a partner. Their intention is to eventually buy Fortis out of its 49% over the next number of years.

We're looking at creative options, but energy generation in the north and in remote communities is also about economic development around mining, which also uses diesel, unless there's a good source of hydro power next door. They're very much looking at these SMRs, these small modular reactors, as an option. Do you have any comment on that?

• (1025)

Mr. Sven Biggs: Generally, nuclear has higher costs than other renewables, and the nuclear waste problem has yet to be adequately addressed in a way that makes sense. I would suggest to you that run-of-river hydro, solar or geothermal options are probably better investments for communities and taxpayers.

Ms. Kim Rudd: Can I just make a comment, Mr. Chair?

The Chair: Go ahead.

Ms. Kim Rudd: One of the interesting things we need to keep in mind is that in operations like mines, it's about safety. It's about a reliable source of energy that can operate that mine, so intermittent sources.... We're not even close to the battery power, and in the northern communities where there's no sun, as my colleague suggested, I think we need to keep an open mind about what those unique solutions are for unique operations.

The Chair: Mr. Kelly is next, and then Mr. Julian.

Mr. Pat Kelly: Thank you, Mr. Chair.

Mr. Wilson, in response to Mr. Jeneroux's question, you mentioned Bill C-69. It seems that every time I end up in a discussion about this bill, I learn something new about how this bill may prevent projects from being built or prevent products from getting to market.

The committee is charged with receiving submissions for pre-budget consultation with an eye on competitiveness in the Canadian economy. Your port is one of the most important parts of an export-driven economy, in terms of access to markets. I'd like you to perhaps continue in that vein and explain the responsible way in which you have been able to expand and build your port and the ways in which this bill will perhaps prohibit your ability not only to expand your own port but to have customers for your port and to be able to deliver product.

Mr. Duncan Wilson: Thank you.

There are two types of projects on which Bill C-69 will have a major impact. One type is those port authority-led projects, such as our proposed terminal 2 project in Delta, which is currently undergoing a CEAA panel review under CEAA 2012. Even under CEAA 2012, we are three years delayed in that process, and container capacity on the west coast of Canada will be restricted for five years. We will lose that business to the United States. It's as simple as that. That's even under CEAA 2012.

Therefore, we're quite anxious. We know that Bill C-69 is well intentioned. The desire is to be able to adhere to timeline. Our confidence is somewhat shaken, given that the previous legislation was also intended to do that but unfortunately failed. We're still experiencing the consequences.

The second thing is what I mentioned in terms of the major projects list. From our perspective, if Canada wants to bring additional projects into the CEAA review processor or into the impact assessment review process, frankly I'd say we should learn to walk before we run. Rather than adding to the workload of the CEAA and the agent and the NEB or the new impact assessment agency, whatever it will be, let's get the stuff that they're already handling right, and then maybe let's look at those things. If it's not broken, don't fix it.

• (1030)

Mr. Pat Kelly: Nobody likes the idea of excessive regulation that simply prevents things from getting done, and yet we layer it on at every opportunity, it seems.

Competitiveness of the Canadian economy is our theme, Mr. Chair. I'll end with a comment that we've heard at this committee before: The differential on Canadian crude and world prices, mostly being a function of our distribution channels leading only to Cushing, Oklahoma, costs the Crown billions and billions of dollars in lost tax revenue. When transportation bottlenecks prevent us from being able to receive tax revenue, that affects the competitiveness of the Canadian economy. The record of the analysts in their preparation of the report needs to bear this in mind, since last year's budget assumed that the differential was going to shrink rather than grow.

The Chair: We'll leave it there and go to Mr. Julian.

Mr. Peter Julian: Thanks very much, Mr. Chair.

I just have one final question for Mr. Wilson regarding the clean transportation innovation fund.

I think it would be helpful for the committee to know what kind of green innovation other port authorities worldwide are putting into place that you're aware of, particularly in other countries. How would the importance of having a clean transportation innovation fund—a clean energy innovation fund—help the port authority get those best practices that other port authorities have in other parts of the world?

Mr. Duncan Wilson: Thank you, Mr. Julian.

Where we see a lot of innovation in our sector is, frankly, in Europe. There's a tremendous amount of investment by both the European and state-level governments in terms of innovation in these sectors. There's a huge opportunity.

I talked about data sharing, for example. One of the things that can be done—and we've actually done this quite successfully here in Vancouver, working with Transport Canada, the railways, shipping lines and terminals—is with respect to the bulk sector and looking at ways of bringing a supply chain visibility project...basically, to understand the movement of cargo so that we can innovate our way to greater productivity.

Things like that are lower-hanging fruit. Then there are places where we really need technology help. We need to invest in innovative technologies and take some risks in terms of some of those investments, as the chair was talking about earlier. We're not going to be able to achieve our targeted objectives without it. Given that the emissions profile of transportation is 30% of greenhouse gases, I think the port sector is a great guinea pig, if you will, for some of these innovations.

Thank you.

Mr. Peter Julian: Do you want me to talk about refining capacity?

The Chair: No.

I do want to ask a question on immigration and skills. That's something we hear about everywhere. How do we make that system work to get the skilled people in place?

It's kind of a Catch-22, and I get this all of the time at home: You bring in temporary foreign workers because companies can't get workers to work in fish plants or drive trucks, etc. Then the local community is angry because they claim they're taking their jobs, yet the business doesn't have the workers to do the jobs.

How do we deal with that problem? What needs to be done from a federal perspective to make skilled and non-skilled workers work? You can't run a business without the labour or skills in place to run the business. We have a serious mismatch at the moment, and it takes forever to get people in through immigration.

I'll give you an example so you know what it's like in my area. Fish plants need 400 workers at the time they're fishing. They're fishing for lobsters for 60 days. The application process starts in

February, and the plant is running for two weeks before they even get those workers in, no matter how quickly they start.

How do we deal with that problem, from your perspective? You mentioned it in your submission. I don't have it right in front of me, but I think you mentioned it.

•(1035)

Mr. Anthony Ariganello: Thank you, Mr. Chair.

For us, it's having government support the immigration of skilled workers, particularly with respect to certain jobs in the unskilled area, but also in the skilled area; there's a shortage of that as well.

You touched upon the temporary foreign worker program. I believe a number of improvements can be made at that level. For example—and in our submission we reference this—including a trusted employer element in the temporary and foreign worker program is, I think, one of the areas that can really improve. This would mean ensuring that employers register...

As an example, in B.C. they are discussing this as we speak. They're looking to have employers register if they're looking to bring in temporary foreign workers, in line with the federal program. It would add an element of trust, and also among the population, in knowing that this employer has done due diligence with respect to bringing in the workforce only because they can't find Canadians to do that work.

That is specific. You mentioned the farming industry in Canada. Whether it's in British Columbia or in Quebec, not being able to get the workers to pick the crops, etc., is a huge issue for farmers.

I also believe that improving data collection and analysis and communicating that analysis to the population would go a long way. As you mentioned, there's an element of distrust, an idea that perhaps employers are turning towards the temporary foreign worker program because they don't want to hire Canadian. That's not necessarily the case, but I think providing data supporting that analysis would actually help the population believe it.

Also, I think we need to ensure that we support businesses and stakeholders who are looking to ensure that they have the workforce to turn the corner. I mentioned earlier the Global Action Networks. I think Canada, and specifically stakeholders within Canada, should be joining the Global Apprenticeship Network. As I mentioned, it was created by the Organisation for Economic Co-operation and Development. A number of organizations have joined it. A few of them are PricewaterhouseCoopers, IBM, Microsoft, Accenture, and so on. I don't believe any Canadian company or stakeholder has joined that network, and I think that would help as well.

The Chair: Thank you very much for all your presentations, your submissions earlier and your answers to our questions today.

We will suspend for about 10 minutes to go to panel two.

- _____ (Pause) _____
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- (1050)

The Chair: We'll reconvene.

Welcome to the witnesses. We appreciate your making the effort to come.

As you know, this is a pre-budget consultation in advance of the 2019 budget. I might mention, for those who have made their submissions prior to August 15, that we have them on our units and people and members will be referring to them from time to time.

Just before we start officially, I'll go around the room and ask members to introduce themselves so you know where they come from and who they represent.

I'm Wayne Easter. I'm a member of Parliament from Malpeque, Prince Edward Island. That's pretty nearly as far away as you can get from here, but not quite.

Mr. Michael McLeod: Welcome. My name is Michael McLeod. I represent the Northwest Territories.

Ms. Kim Rudd: Thank you for joining us today.

I'm Kim Rudd. I'm the member of Parliament for Northumberland—Peterborough South. For context, that is a rural riding in southeastern Ontario.

Mr. Pat Kelly: I'm Pat Kelly, the member of Parliament for Calgary Rocky Ridge. That's the northwest corner of the city of Calgary.

Mr. Peter Julian: I'm Peter Julian. I'm the NDP vice-chair. I just came from the other side of the pond, New Westminster—Burnaby.

The Chair: Thank you all.

We'll start with the Chamber of Shipping. We have Robert Lewis-Manning, who is president, and with him is Bonnie Gee, vice-president.

Mr. Robert Lewis-Manning (President, Chamber of Shipping): Thank you, Mr. Chair and committee members. Thank you for the opportunity to speak today and provide a bit of perspective from a marine transportation context.

The Chamber of Shipping represents the interests of shipowners, agents and service providers responsible for moving people and commodities globally to and from Canada. Commercial shipping results in \$30 billion of economic activity annually, and at 1.8% of the Canadian economy, ships move more than 200 billion dollars' worth of goods to and from global markets. We support significant industries, such as manufacturing, mining, agriculture, construction, energy and tourism.

Overall, there's a sense of optimism regarding the industries that marine transportation supports in the Canadian marketplace and for Canada's efforts to stabilize, expand and diversify our international markets. Notwithstanding that, there are some concerns from marine transportation companies regarding Canada's supply chain. Its regulatory framework has become overly complex and at times unpredictable. Our supply chain is becoming less competitive and suffers from challenges of efficiency and productivity.

In certain instances, cargo destined for Canada is being diverted to the United States as a result of limited berth capacity. A shortage of new industrial land, together with continuous growth in cargo volumes, creates an operating environment that demands a high level of coordination to maximize efficiencies and berth utilization.

For Canada to be a preferred trading partner globally, we must ensure that our supply chain is fluid and resilient in order to handle the increasing volume of cargo and people through our coastal gateways in a sustainable manner. The Transportation 2030 vision is a solid strategic plan, and with the tools provided in the new Transportation Modernization Act, Transport Canada has started the process of identifying key performance indicators for the supply chain.

We encourage that work on the supply chain visibility pilot project to continue, and to be expanded to include all commodities and key partners. This work will help to identify data gaps, constraints and areas for improved productivity.

While a significant effort is under way to better understand performance metrics, it's important to recognize that trade corridors should include marine transportation. This is not always the case in Canada. Through the oceans protection plan, progress has been made on elements of the marine safety framework and coastal protection. When it comes to marine transportation, supply chain fluidity and protecting the environment must go hand in hand. Continued investment in ocean science, adoption of new technology and marine training programs under the oceans protection plan should be a priority.

I'd also like to echo the comments of Mr. Wilson in the earlier session in his request of support funding for programs like the ECHO program to protect marine mammals. Canada needs a whole-of-government approach through a coordinated body that is responsible for overseeing supply chain performance and providing advice on infrastructure investments and on recovery or mitigation strategies when appropriate.

The overarching goal would be to ensure that all commodities have a reasonable probability of getting to market in a timely and cost-effective manner. We encourage a review of the suite of regulations, policies and procedures that affect marine transportation, many of which no longer serve their intended purpose or have become ineffective and cumbersome. This should include a review of jurisdictional boundaries between federal departments, which have become increasingly confusing to ship operators. This type of effort is under way in the United States, and we must ensure that our gateways remain competitive.

The national transportation strategy must drive innovation that makes our marine transportation framework nimble and adaptable so that it can fully support the coastal protection initiatives while remaining competitive. Understanding Canada's supply chain holistically is essential to our economic competitiveness. This can be enabled with a continued and accelerated investment in identifying, collecting and integrating supply chain data. Good data will facilitate improved decision-making at every level of both the private and public sectors.

As ports play a vital role in facilitating trade in our gateways, they need to be continuously striving for increased throughput, innovative management of vessels and cargo operations, and peak levels of productivity from a highly skilled workforce. It is not clear yet if the ports modernization review will take a holistic examination of Canadian ports and benchmark them to other competing ports. This should also be a priority.

The health and protection of Canada's coastal waters is critical to the success of Canada's marine transportation corridors, and therefore a top priority for our member companies. A robust coastal protection regime should also provide for an equally strong and predictable operating environment for commercial marine transportation companies.

• (1055)

The Government of Canada should continue to advance the oceans protection plan and now begin to facilitate a more holistic approach to coastal protection that includes the integration of risk and impact assessment, risk mitigation and planning for sustainable growth.

Thank you for the opportunity to speak with you. We look forward to answering your questions.

The Chair: Thank you, Mr. Lewis-Manning.

Turning to the Foresight Cleantech Accelerator Centre, we have Ms. Jackson.

Ms. Jeanette Jackson (Managing Director, Foresight Cleantech Accelerator Centre): Thank you for having me here.

My name is Jeanette Jackson. I'm the managing director of Foresight, western Canada's first clean tech accelerator. I'm delighted to be here with recommendations that support economic growth and ensure Canada's global competitiveness.

Our mission at Foresight is to accelerate Canadian transformative clean-tech companies from launch through commercialization. We started just five years ago with the support of Innovate BC. This kicked off our launch program to help early-stage companies complete market and technology validation and prepare a viable business model in 12 of our core clean-tech sectors.

Western Economic Diversification Canada and other partners funded our challenge program, which connects industry sustainability problems with top innovators. We have run six successful challenges, and stakeholders are now investing millions of dollars to adopt these technologies.

Due to scale-up challenges, this year we launched our growth program to help companies grow from \$1 million to \$5 million

through operations planning, business development, embedded industry experts and, of course, funding strategies.

Every Foresight program capitalizes on experienced CEOs, executives and advisers. To date, we have supported 100 start-ups, partnered with over 25 organizations, and helped secure over \$100 million in funding to commercialize Canadian clean tech, but it's just not enough.

We have seen first-hand the problems caused by lack of funding. Canadian companies are competing on a global stage. International competition accesses 10 to 100 times more public and private funding. A few of our high-potential companies lost large international deals over \$500,000 in missing funds. Closing this gap will result in better terms for Canadians in the form of economic growth and jobs.

In 2017, \$2.3 billion was allocated to clean tech, though just a small amount has been disbursed. We need to ensure funding gets invested in a timely manner. We hear this every day from companies, mentors, partners and all other stakeholders that we connect with through Canada and the U.S. and internationally.

The real problem is that companies do not know how to access the funding. The process is complicated and fragmented and often does not work for start-ups, because you need money to get money, such as training grants, tax credits and research dollars. Companies often reach a certain stage but are forced to stall, sell or even close when funding cannot be obtained.

Canada is investing in clean tech because that is where the global economy is headed. One Canadian economic strategy table recently acknowledged that clean tech could become a Canada top-five export, reaching \$50 billion in 2022 if we can accelerate growth, access global markets and help technology procurement processes, not to mention the recent UN report on global warming.

We are doing good things, but a major gap remains, and this gap negatively impacted Canada's share of the global market by 12% in 2018.

How can we ensure Canada's competitiveness?

First, support the development of the skills and knowledge required to successfully obtain funding. Early-stage companies need a comprehensive structured program that ensures they have the vision, technology, plan, and team to succeed. At Foresight we do this; however, when it comes time to access appropriate government funding, entrepreneurs report that the environment is complicated and decisions are slow.

Small companies are run by small teams, and a complex process means that 75% of their precious time is spent looking for money instead of finding customers and getting to market. It would be ideal to have a streamlined process to access federal funds best suited to the technology, market and needs of the business. The process could also guarantee that subsequent funds would be released when key success milestones are met.

Second, provide financial support for the development of a program to help clean tech access funding. Though several government organizations such as BDC, SDTC and the NRC have available funds, companies need special hands-on training to ensure they understand the systems and how they work. They need insights into funding readiness, matching fund strategies, public funding life cycles and success monitoring, to name just a few. Foresight has the opportunity to dig deep, but everyone in the ecosystem needs to understand how the programs work together to push this ecosystem ahead.

Three, allocate human resources to assist in the development and delivery of a program to help clean tech access federal funding. As a start-up, finding advice, talent and expertise that you can trust is hard. The support you need for fundraising is multi-faceted and expensive. Organizations like Foresight are well positioned to help companies navigate the path to funding, but we need clarity on the long-term process, expectations and requirements to help our companies successfully navigate the network.

As we look forward to the next five years, we will continue to champion Canadian clean-tech companies through collaboration and partnerships. We are fiercely passionate about clean tech and support an ecosystem that strives to position Canada as a global leader.

Foresight is also taking a unique approach with our dynamic mentorship model and international sector panels that will help vet, validate and support the international scale-up of companies in our 12 sectors.

In closing, I strongly encourage you to allocate funds to provide intensive training on how to access federal funding and to streamline the funding process and ensure the \$12.5 billion earmarked for clean tech is invested in a timely fashion.

• (1100)

The Chair: Thank you.

We will turn to Generation Squeeze and Mr. Kershaw, the founder.

Dr. Paul Kershaw (Founder, Generation Squeeze): Good morning. Thanks for having me.

My name is Paul Kershaw. I'm a professor at the University of British Columbia and founder of Generation Squeeze.

Gen Squeeze is a voice for younger Canadians and politics in the market backed by cutting-edge research. In your role, you may know of the Canadian Association of Retired Persons, or CARP. We're building the CARP for younger Canada.

Adapting to an aging population is not going to be new to anyone on this panel. Just as a reminder, back in the day when we started some of our major social programs, there were about seven workers

for every retiree. Now there are fewer than four workers, and it won't be long before there are fewer than three.

That has huge implications for economic growth and competitiveness. Data shows that as the share of the population over 60 increases by 10%, literally our GDP per person drops by over 5%. That poses a big challenge to folks like you, who are having to anticipate how we adapt and meet the financial and health needs of our aging population, like my mom, who's a senior, and my 102-year-old grandmother, who probably uses more public investment than any other Canadian in the country while simultaneously having to meet the needs of her grandchildren and great-grandchildren.

The data there is weak. The data shows that the typical young adult today makes thousands less for full-time work once you adjust for inflation, even though they're more than twice as likely to have post-secondary education. They start very often with student debt for that luxury and then face home prices that have exploded by hundreds of thousands of dollars.

Alas, it's hard for folks like you to actually plan appropriately, because Canadian governments never break down our revenue and spending trends by age. Although this now happens on a routine basis for EU member countries, we don't do it in Canada, so I come with one very simple ask, and it turns out to be inexpensive: We need to begin, at the federal level, reporting how revenue and spending break down by age on an annual basis. In doing so, we would essentially put age into the "plus" of GBA+, or gender-based analysis plus, which we launched last year.

Why do this? It's a pretty straightforward answer. The goal ought to be organizing budgets that work for all generations. The data suggests that some troubling patterns are emerging in the academic literature, and it would be great if the Department of Finance could actually dig in and confirm if they are also worried about some of these trends.

When should we start? We can do it by the 2019 budget.

Who would perform the analysis? The Department of Finance.

What would it cost? I believe this will be your least expensive ask for the 2019 budget year: one staff person's time.

How would the analysis be performed? We already have a peer review methodology developed at the University of British Columbia that could be adopted outright, or adapted, as judged appropriate, by that one talented staff person in Finance.

What would parliamentarians learn? It would be three things.

First, on a routine basis, you would know how spending and revenue have played out by age in that current year. For instance, looking back on the last budget, you would see that in 2018 the Government of Canada increased its annual spending on the old age security system by \$16 billion as of 2022. By contrast, the additional spending for child care and parental leave didn't even grow by a billion dollars. If the latter two things got bullet points in the press release, the old age security increase didn't even get a bullet point there.

We would also have a chance to see trends over time. Those trends would show that over the last four decades we have increased spending on people over 65 in Canada—like my deserving, lovely grandmother, who is 102—at a rate that's four times faster than we've increased spending on her kids, grandchildren, and great-grandchildren. Simultaneously, we would also learn that we're asking a younger demographic to pay considerably more in taxes today for medical care and old age security for those over 65.

Last, we'd have a chance to look at how debt and deficits have been unfolding. One of the things that we can see over the last four decades is that after adjusting for economic growth and inflation, debt per person under the age of 45 has increased from about \$15,000 in today's terms to over \$45,000, while the ecological debts that we leave for younger people are also three times larger. This is because we now need to reduce our ecological footprint per person at a rate that is three times faster than we have done over the last four decades if we're going to meet our climate commitments to the Paris accord and fend off some of the very worrisome predictions that came out again from the UN intergovernmental panel just recently.

Why might you not do it?

• (1105)

There's really only one reason. The most common concern is that if we report age patterns in spending, it's divisive, kind of pitting younger Canadians versus older Canadians.

Similar sorts of things have been said in the past about providing data broken down by gender. We're going to pit men against women, or if we do indigenous Canadians versus non-indigenous Canadians.... While we could be understanding of those concerns, generally we think they're self-defeating. We're all in this together, and more information is generally better.

It is now absolutely worthwhile for us to put age into the plus of GBA+. In fact, age is already identified in the language; it's just not yet being operationalized. Your jobs will be so much easier to do if you have that excellent information before you.

Thank you very much.

The Chair: Thank you very much, Paul.

Next we have, from the Terry Fox Research Institute, Mr. Ling, president and scientific director, as well as Mr. Wouters.

Welcome.

Dr. Victor Ling (President and Scientific Director, Terry Fox Research Institute): Thank you.

I want to introduce Dr. Brad Wouters. He's a senior scientist at the Princess Margaret Cancer Centre and executive vice-president of the University Health Network in Toronto.

The Terry Fox Research Institute, or TFRI, supports cancer research by investing money raised by the three million-plus Canadians who participate in the Terry Fox Run each September. Based on the advice of international experts, we fund world-class Canadian teams of scientists and physicians to pursue cutting-edge research to improve outcomes for cancer patients.

In the past two years, TFRI has embarked on a new and significant project. We have taken steps with our partners to build a Marathon of Hope cancer centres network. This is a powerful, collaborative platform to take full advantage of scientific advances from disruptive technologies such as the mapping of the human genome, high-power computing, artificial intelligence, and high-resolution imaging, so that these and other advances can be applied to benefit cancer patients. The large amount of complex data generated is rationalized so that the right treatment can be given to the right patient at the right time. This is what we call precision medicine.

Precision medicine offers a future in which today's miracles become tomorrow's standard of care. Precision medicine will improve outcomes for all Canadians and will help us spend our health care dollars wisely.

Our Canadian health care system has real advantages for collecting and sharing data. Nevertheless, we are faced with significant challenges at the jurisdictional, cultural and geographic level. TFRI has launched a pilot project to learn how to find solutions to these challenges and how to grow the Marathon of Hope cancer centres network and put it on a solid footing. We have co-invested with the B.C. cancer agency and Princess Margaret Cancer Centre to undertake a \$12-million pilot project to see how two top Canadian cancer centres can share real-world data across institutional and provincial boundaries.

In a similar way, we have co-invested in a \$6.5-million pilot project in Montreal involving four hospitals, three research institutes and two universities to learn how such a consortium can work together. In the coming months, we will be initiating a pilot project on the Prairies and in Atlantic Canada.

We are ready to launch the Marathon of Hope cancer centres network, where we will take all we have learned from the pilot project to develop proper procedures and data governance models. At the same time, the Terry Fox Foundation and our partner hospital foundation are pledging 50% of the funds necessary to build this network over the next five years, to the tune of \$150 million.

We are asking the federal government to match with the other 50% and provide \$150 million over the next five years. Funding this network will allow the federal government to play its proper leadership role in health care by supporting innovation.

Canada must take the lead in precision medicine. We cannot rely on profiting from data generated by other countries. The network will ensure gender equality and ensure that people from all regions of Canada are represented in the precision medicine database. The high-quality database collected by the network on a genetically diverse population, including new immigrants and indigenous peoples, will become an incredible national asset. It will enable deep learning and catalyze home-grown innovation. It will attract investments by entrepreneurs and by biotech and pharma industries worldwide.

Canada is really blessed because we have Terry Fox. The Fox family supports this proposal and has endorsed the use of the Marathon of Hope branding to bring us together to build this Team Canada of cancer research and to really become a world leader in precision medicine. With this Marathon of Hope network, we will have the road map to cure cancer and fulfill Terry's dream.

Thank you.

•(1110)

The Chair: Thank you very much.

From West Coast LEAF, we have Ms. Govender.

Ms. Kasari Govender (Executive Director, West Coast LEAF): It's such a pleasure to be here. Thank you for the invitation.

My name is Kasari Govender. I'm the executive director of West Coast LEAF.

Our mandate is to use the law to create a more equal and just society for all people who experience gender-based discrimination. We use the law as a tool to do that.

I want to talk to you today about access to justice, and specifically about federal funding for legal aid. The question posed to us is "What steps can the federal government take to support Canadians to grow the economy in the face of a changing economic landscape?" We believe that funding for civil legal aid is essential to the economic security of Canadians.

West Coast LEAF has worked extensively in the area of access to justice for women, including through the research we've conducted, a multi-year project funded by Status of Women Canada in which we talked to advocates and service providers across the province and heard a lot about how to best meet the legal needs of women in the province. In that process, we also learned a lot about how inadequate legal aid impacts the lives of people and their communities.

To give you a little of context, the state of legal aid in B.C. is one of crisis. It was slashed in 2002. It was cut across the board by 40%. Family law legal aid services were cut by 60%, and poverty law services were eliminated entirely.

There is a very large gap right now between those who can afford to hire a lawyer in a family law matter and those who need it. For example, a person working full time on minimum wage would not

qualify for legal aid, yet clearly would not be able to pay a lawyer's fee.

What are the costs of underfunding legal aid? The first, of course, is a disproportionate impact on women. Women are less likely to be able to afford counsel. They're more likely to have primary care for their children and more likely to be victims of spousal violence, so they often have more at stake in family law proceedings. Protracted proceedings that do not have counsel to seek resolution often lead to protracted violence.

The human cost is also felt on children if both sides aren't properly represented, especially in provinces without a children's lawyer in family cases, like B.C. There is insufficient evidence of the child's best interest before the court, and their best interest may not be met.

Children's lives and safety are also at stake when family violence is involved, of course, so unresolved legal problems that lead to escalated tension and violence in the home also affect the well-being of children.

Indigenous people, migrants and people living in poverty are also deeply impacted by the underfunding of legal aid.

The costs are not just those costs on the person side of things: There is also a cost to the public purse. We had a public commission on legal aid in 2011, led by Len Doust. In that context Commissioner Doust said "...short-changing legal aid is a false economy since the costs of unresolved problems are shifted to other government departments in terms of more spending on social and health services, the cost of caring for children in state custody, and so on."

There are significant extra costs for justice. The Canadian Bar Association has estimated—conservatively, they say—that because of the inefficiencies caused by unrepresented people, if legal aid were properly funded in family and criminal cases, provincial court would see savings of at least \$50 million per year. Savings by providing legal aid in poverty law cases are estimated at another \$50 million. That's just provincial courts. That's just in those areas. That's just in B.C.

There are significant labour market costs of underfunding legal aid as well. A study in Texas from the Perryman Group found that for every dollar spent on legal aid, there were over seven dollars in benefits in labour market costs, mostly to the private sector. As well, the Canadian Forum on Civil Justice recently estimated that job loss caused by civil and family justice problems account for an estimated \$450 million in annual spending on EI.

Health care, of course, is also impacted. Again, the forum estimated that on an annual basis, the additional cost to the health care system as a direct consequence of people experiencing everyday legal problems is estimated at over \$100 million.

We know there are also significant costs to the health care system in dealing with the medical problems flowing from violence against women in both the psychological and the physical effects of that violence.

Finally, the forum estimates that public spending on social assistance resulting from everyday legal problems costs an additional \$248 million annually. This problem has come to international attention. The CEDAW committee, which is the international committee looking at equality for women, has brought this issue to the attention of the federal government. They called on the federal government to earmark funds in the Canadian social transfer for civil legal aid, to ensure that women have access to justice in all jurisdictions.

• (1115)

The justice committee report—another parliamentary committee report in 2017 on legal aid—recommended that the federal government target increased provincial transfer funds to civil legal aid. I would ask that you make a similar commitment in this committee.

Thank you.

• (1120)

The Chair: Thank you very much, Kasari.

For committee members, the next witness, Westport Fuel Systems, couldn't get on the ferry this morning. We used to have that problem in P.E.I., Peter, too, but we built a bridge.

Mr. Peter Julian: But you missed the ferry ride.

The Chair: That's right, we missed the ferry ride.

Anyway, they presented a brief in August and the remarks that she was going to give will be sent out to members.

With that, we'll turn to questions. The first round is seven minutes.

Go ahead, Ms. Rudd.

Ms. Kim Rudd: Thank you, Chair.

What a great panel. I think it will be a very good conversation around the table.

I'm going to start with Kasari.

For full disclosure, my youngest daughter is a family law lawyer, so I've heard this argument before.

Part of the role of this committee and for us as parliamentarians is to understand what the possible solutions would be in a context that we don't necessarily understand. Broadly, yes, we do, but those doing the work, like you and my daughter, have a very intimate knowledge of what some of those solutions might be.

Not just from her but from colleagues as well I have heard some of the suggestions around an alternate dispute resolution system in family law that could indeed provide the process with a more efficient process, reduce the costs, and ensure that there is a well-represented process for participants. Some of the comments coming back to some degree are taken out of the public realm.

One of the things that happens in family law, as you know, is that if there is a split in the family, it's not often amicable. Having children sit in the courtroom while this is playing out...it's similar to Parliament when things get a little bit over the top.

Do you have any suggestions about solutions that may address not just the financial piece...? Also, to your point, your comments around EI, health care, all of that, are extremely important in this process. Do you have any suggestions around what a model might be that could get us where we want to go and maybe address not just the financial issues, but the other issues as well?

Ms. Kasari Govender: Yes, I do.

It's not a simple answer, but I'll try to give the simplest one I have.

On the unified family court structure, the federal government, as you know, announced that in the last budget for certain provinces, but not for British Columbia. We're not moving forward with that model yet. I would urge the federal government to make the commitment to funding this model in B.C.

I had the pleasure of meeting with the federal Minister of Justice last week on these related issues. I know that those conversations are somewhat ongoing, but there isn't the financial commitment to do that at this point.

The unified family court structure is a relationship between the superior courts, which are the federally appointed judges—in B.C. that's the B.C. Supreme Court—and the provincial court in the province. There is split jurisdiction over family law matters, which greatly complicates issues. The unified family court structure unifies provincial and Supreme Court jurisdiction just on family law issues, and it simplifies the process.

It also can mean that there's a family justice hub. That can mean there are more integrated services. There can be legal aid clinics attached to these hubs. There can be mediation centres attached to these hubs. There can be legal advocates and paralegals who can do work outside the legal realm, which would cost the system less money if those are equally as accessible. If people need lawyers, they can go to lawyers, but if they don't need the full legal spectrum of services, they can go to this more interdisciplinary approach.

I think that the UFCs are the way to go.

Ms. Kim Rudd: Thank you. You did very well. That was the answer I was looking for. You may find on occasion we know what the answer is, but you articulate it much better than we do.

Jeanette, hi. Where did you...?

Ms. Jeanette Jackson: That was Peterborough. Now I'm here.

Ms. Kim Rudd: When I read your brief, one thing that to me comes out very clearly is that it is a system that isn't accessible. Even though it may have all of the elements that we want or need to get the end result, it's not accessible for a number of reasons.

I don't know whether you're aware, but actually that was a complaint of Export Development Canada as well. It provided a new model with a one-window entrance. A number of the program components you have listed are now part of the EDC model. I wonder whether you knew that.

● (1125)

Ms. Jeanette Jackson: Yes. I'm very familiar with EDC. We consider them partners, because we're all trying to work together to find the right mechanisms to help the companies find the best point of access to all these resources.

What we find is that because Foresight is an independent non-profit organization, they have trust in coming to us to lay out what's happening in their company so that we can get them to a point that they are ready to approach various organizations for funding.

I would also say that sometimes the folks assessing the companies might not be those most familiar with what's needed in the industry. They're great at supporting the companies, and they're great at reviewing the applications, but when it comes to vetting the companies, sometimes we're surprised at who gets money and who doesn't. It's an interesting position to be in.

What we do differently from EDC—and again, we work with EDC. At EDC we have folks who are all engaged.... They come to us because we help funnel the companies and, for one thing, get them to a place where they're ready for funding. They need the right team; they need the technology.

It's like going to seek funding from a VC. I don't know whether any of you have fundraised from a VC, but you want to almost get them to the level where they have a market technology.

Then it's understanding who really has funding now. As you know, within NRC IRAP there are often two intakes, and that's it, and then money might become available. There's a lot of uncertainty around when funding can be released and how it can be released.

Export Development Canada are great, because they really foster the concept of exporting technologies to other markets. Some of the funding mechanisms actually prefer that we build the market in Canada. In B.C., hydro is 3¢ a kilowatt. We don't really need a lot of energy companies in B.C., but we'd love the company and the technology to stay here and to then export to the best market they can serve.

Every organization is different, but there's still a big gap.

Ms. Kim Rudd: Thank you.

Paul, I was fascinated by your brief. It's something near and dear to my heart. Some of us read *Boom, Bust & Echo* back in the day when no one was paying attention to this.

I have a couple of things to say for clarity. I will say that I have more research to do now, because there were some assumptions I had that I'm not sure.... You have a lot of figures and data in here that I need a bit more understanding of.

One thing I will ask is this, and a couple of things are playing into it. We have lower birthrates in Canada; we know that.

Dr. Paul Kershaw: Yes.

Ms. Kim Rudd: We need more immigration—we know that—in order to maintain our employment, our standard of living, our tax base, etc. When you talk about the increase in numbers of seniors and the increase in funding to them and a less equitable amount to those under the age of 45, have you factored in the fact that as a percentage there are more seniors than there are—?

Dr. Paul Kershaw: Absolutely. Let me just answer that question really quickly.

There are four million more seniors today than there were in 1976, and the demographic shift of adding four million people into that category has coincided with a \$42 billion increase in annual spending. Let's put that in context. There are also 4.6 million more people under the age of 45 who have post-secondary credentials, and—wait for it—that fact barely budged the post-secondary allocations of spending that we employ provincially.

Simultaneously, there are 2.3 million more women aged 25 to 44 in the labour market today, and yet our budgets for child care and parental leave have increased by about \$6 billion in total, largely in Quebec.

I guess the question becomes why a four-million-person change at a later life core stage drove a \$42 billion increase in annual spending when a 4.6-million-person change in an earlier life core stage didn't really shift public spending at all.

Ms. Kim Rudd: Thank you.

The Chair: Thank you, Ms. Rudd. We're well over.

Mr. Kelly.

Mr. Pat Kelly: Thank you, Mr. Chair.

I'd like to begin with you, Mr. Lewis-Manning. Some great, interesting testimony has come on the heels of what we heard in the last panel. You talked about the competitiveness of supply chains and the implications for the overall competitiveness of the Canadian economy.

When we were in Atlantic Canada two weeks ago, I heard of something that I had not been aware of. This was the inability for shippers to use foreign-flagged carriers between two Canadian ports, the effect being that a Canadian refiner may not efficiently or competitively be able to bring in a Newfoundland crew, for example, to a Canadian refinery. We heard about and all know about the inability to get Alberta crude to market and the implications for the Canadian economy, but I hadn't heard about this before. I'm wondering if you can comment on this. Is there a competitiveness issue with foreign flagging?

● (1130)

The Chair: Just to clarify, that was foreign over 150,000 barrels, wasn't it? Or was it 250,000? I forget.

Anyway, it was a certain size of foreign-flagged bigger ships.

Mr. Robert Lewis-Manning: Thanks, Mr. Kelly. I'll be more general in my response.

In terms of the subject you have identified, these are Canadian cabotage laws. Under the Coasting Trade Act, any ship travelling between two Canadian ports must have either a Canadian flag with Canadian crew or an exemption under the act. There's a process for that, with some limited exemptions at the moment that have come under the comprehensive economic and trade agreement with the EU.

To answer your question, it's a balancing act. We need to promote good, Canadian professional seafarers. To some degree, the cabotage regime allows that to happen. We need to keep them working in Canada because we have a growing domestic requirement for professional seafarers, and at the same time we need to promote competitiveness within international trading. For example, that limited opportunity now under CETA is provided for between certain ports in Canada.

So there's no easy answer. This is a management issue where we have to maintain a good Canadian workforce; encourage them to stay in Canada rather than working abroad, which of course any seafarer can do; and provide good, efficient economic opportunities for foreign trading.

Mr. Pat Kelly: It would seem, though, that there's also the defeat of Canadian workers who are involved in the extraction of the resource that can't then be shipped within Canada, and the reliance of eastern Canadian refiners on imports from places like Saudi Arabia. I hope that most Canadians, especially given the prices and the availability of Canadian crude, would prefer that we could refine Canadian crude rather than Saudi.

Again, you reinforced a lot of what we heard in the previous panel, but I want to ask you as well, then, if you have any particular thoughts on Bill C-69 and the way that will impact some of your industry.

Mr. Robert Lewis-Manning: Thank you. That's another great question.

I would echo everything Duncan Wilson said from the Vancouver Fraser Port Authority. I think he covered the response really well. The success of developing port infrastructure or private capital investment is critical. There's a balance to be had. They need strong environmental reviews and also the ability to do that in a fair and expedited way. I think that would suffice.

Mr. Pat Kelly: So regarding port authorities, this addresses a problem that doesn't exist?

Mr. Robert Lewis-Manning: I think it could. Again, the devil's in the details of how the regulations fall out of that proposed act. There's still work to be done there.

Mr. Pat Kelly: Okay.

I'll shift a bit and ask Ms. Govender a question.

You made some great points here, pointing out that access to a legal service is an incredibly important problem that faces Canadian society now. This is not new. This goes back decades, in fact centuries, with regard to access to justice and the obstacles that exist.

If I understood your specific federal ask correctly, you said you would like to see legal assistance included as a specific earmarked portion of the Canadian social transfer. That's your federal ask here at committee?

• (1135)

Ms. Kasari Govender: Yes. I'd like to see what was in the justice committee report from 2017. It was earmarked funds and an increase in funds. It was both of those things, and they were targeted at civil legal aid, not just legal aid in general.

Mr. Pat Kelly: Okay. So you would like to see an increase in funding—

Ms. Kasari Govender: That's right.

Mr. Pat Kelly: —but specific—

Ms. Kasari Govender: —and targeted.

Mr. Pat Kelly: —and also targeted.

Part of the problem has been that you can target funds through the transfer, and yet a province will sometimes not spend its funds as targeted or as per the transfer. Would you recommend specific mechanisms to ensure that if such transfers are made they are truly spent where they're earmarked?

Ms. Kasari Govender: I believe that every province has a legal aid society. Certainly all the provinces whose legal aid systems I'm familiar with have a legal aid society. That transfer can be made directly. I know that in the last budget there was a commitment to fund legal services around sexual harassment. I've been a little bit involved in consulting on how that happens. That's been targeted. Some of that is going to happen through a grant-based body—that's how I understand it—but one of the mechanisms they were considering was directly through the legal aid bodies. I would fully support that, certainly in British Columbia and the ones that I know about.

Mr. Pat Kelly: Okay.

The Chair: You have time for very short one.

Mr. Pat Kelly: I'm not sure if I have a short one. I was hoping for time to get to Mr. Kershaw.

The Chair: Anyway, Pat, we'll have time to come back. We'll have another round.

Mr. Julian.

Mr. Peter Julian: Thanks, Mr. Chair.

Thanks to the witnesses, and thanks to the folks who came from the Lower Mainland and made that overseas trip to come to Victoria. It's good to have you here.

I'd like to start with you, Ms. Govender. You've been very articulate about the cost of not having an adequate legal aid framework in place. There are \$100 million in court costs in B.C. alone. I imagine that if we expanded that, it would be over a billion dollars nationally. There are half a billion dollars in EI payments, and other costs that are probably equivalent to at least half a billion dollars, so it's costing us billions of dollars not to have an effective legal aid framework in place.

You mentioned the issue of adequate funding. That would be the heart of the argument. Do you have any idea of the figures it would take to adequately fund legal aid across this country so that we can eliminate those huge costs that we're seeing now and provide support for folks in the legal system?

Ms. Kasari Govender: I can't give a figure off the top of my head, but I can tell you that the budget for legal aid in B.C. is approximately \$80 million, so even if you looked at doubling that.... I'm not asking the federal government to double that amount, but we would like to see the overall budget for legal aid go up to at least double. That wouldn't be much, right? It would be a really small drop in the provincial budget.

We're not talking about huge dollars across the country. The budgets vary quite radically in different provinces, so it's a hard number to give, but I am more familiar with the legal aid budget in B.C., as I say. The CBABC has done some of the costing of that in terms of their ask to the provincial government. Again, I don't have that at my fingertips, but I would direct you to CBABC's "An Agenda for Justice – Platform Updates 2018". They've done one for each year for the last few provincial elections, so they've done some of that costing out.

Mr. Peter Julian: Is it possible that you could provide that to the committee as well?

Ms. Kasari Govender: I'd be happy to. I apologize for not having a written brief. I was invited only last week, so I didn't get a chance to prepare that.

Mr. Peter Julian: We're pleased to have you here. It's very important that you're here. We take the information people give in testimony and in briefs prior to the meeting but also after the fact before we prepare the report.

Ms. Kasari Govender: I'm happy to provide that.

Mr. Peter Julian: If you do have any corresponding national figures or figures from other provinces.... It would seem to me that when it's costing us billions of dollars, plus all of the hardship that comes from not having adequate access to the legal system.... I think everyone around this table understands what happens when people can't get adequate defence in the legal system because they don't have the money. There are more than enough horrific stories about what the impacts are. Just on a financial cost-benefit basis, it seems very clear to me that making those investments in legal aid not only avoids that hardship and a wide variety of tragedies and catastrophes but it is also of benefit to the Canadian economy and to Canadian public policy.

• (1140)

Ms. Kasari Govender: Absolutely. If I can just make one clarifying point there, the reason I raised that provincial budget amount is just to point to the CBA number that I gave you, which is about \$100 million in savings in the provincial court per year. They're spending \$80 million on legal aid. On that one measure, it's outweighed per year by costs within the justice system just in provincial court, not in superior court. I'll get those numbers to you if I can.

Mr. Peter Julian: Thank you very much. I'll move on to Mr. Kershaw.

You've been very eloquent in determining the importance of the different generational spending. I certainly support your recommendation. There's also the issue of intergenerational revenues.

When we talk about public policy, we're talking about public spending but also public revenues. We now have the Parliamentary Budget Officer who, finally after a five-year struggle under the previous and current governments, has been able to obtain the tax-gap information—the statistics on the money that goes offshore into tax havens. It's estimated to be anywhere from \$20 billion to \$40 billion a year in lost tax revenues. We will find out within the span of a few months from the Parliamentary Budget Officer what that tax gap is.

Isn't that important to take into consideration as well? I would assume, and we'll find out from the PBO, that it is primarily older Canadians who benefit from these overseas tax havens—in other words, not paying their fair share of taxes. Younger Canadians on salaries are paying their fair share of taxes, and often we're seeing people in low-wage jobs paying more than the corporate CEO who runs the company that they're working for. Shouldn't that be part of the equation as well, this inequality in revenues now that comes from various generations compared to their actual income?

Dr. Paul Kershaw: That's an excellent question. It's a very broad question. I'm not an expert on tax evasion offshore. I tend to be somebody who always has to dig into the data, and there's been a dearth of data about offshore issues. I'm happy to hear the PBO is now going to be sharing that more generally with the research community.

Broadly speaking, here are some key things for federal parliamentarians to bear in mind. In the mid-1990s we started to grapple more with the fact that we were going to have an aging population. We said back then with regard to our Canada public pension plan: "Wow, we started this when there were seven workers for every senior. We set the benefits at that level. It's not going to be that way indefinitely." In the mid-1990s, we had a big conversation about the CPP and adjusted it accordingly.

Ironically, we didn't do the same thing for old age security or medical care, and we should know that about 50¢ of every medical care dollar goes to the population over 65. That's not necessarily a bad thing. As I said, my grandmother uses more than probably any other Canadian in the country, and I'm appreciative of it.

We do have a problem now where, as GDP per capita has gone up, two things have happened: we have reduced income tax rates, although we're able to collect slightly more taxes because people are more affluent; and then we have simultaneously prioritized two things that were built in the past to get additional money. What's happening now is that we ask younger people to spend, over their working lives, what could add up to as much as \$18,000 more today than in the past towards medical care and old age security for the loved ones in their lives who are elderly, while then saying on everything else, we're going to have people contribute less in tax revenue.

That is the issue. We're collecting less revenue for everything else, but growing old age security and medical care, which is why, then, a younger demographic is asking how the government will address the big things in their life, why child care still costs as much as a mortgage payment, and why parental leave, despite the changes that have been made recently, still means a major hit to our financial well-being the moment we have a new person in the household.

I could go on, but you don't have much time, so I'll stop.

Mr. Peter Julian: Thank you.

The Chair: Mr. McLeod.

Mr. Michael McLeod: Thank you, Mr. Chair.

Once again, thanks for the presentation.

I have a question for Chamber of Shipping.

I represent the Northwest Territories, and shipping has increasingly become an issue over the last while as the Arctic ice recedes. We're starting to see a lot more ships coming to the north. By everybody else's standards, the numbers are probably still not high. However, two years ago, we had 70 ships come to the Northwest Territories, and we don't have even one navigational aid in that area. We don't have any Coast Guard presence. We don't have any spill response. We don't have any protection for the Inuvialuit, who are complaining and telling us that their artifacts are being taken and are disappearing.

Therefore, I'm really keen on seeing more review and more research done in the area of Arctic shipping. Even along the Mackenzie River and other areas in the Northwest Territories, 95% of our supplies in the north come through shipping, whether it's through Montreal, or through Hay River and on to the Mackenzie Valley.

I want you to talk about your opinion on where the north needs to go in terms of improving marine protection, improving the opportunities for shipping. There are huge economic benefits in our communities. Cruise ships are now stopping and buying a lot of crafts, and they're also spending money in the communities.

These are opportunities that we never had before. Tourism is growing and people are welcoming it, but there are also concerns.

Maybe you can tell me what your organization is doing in that area, or if they've done any kind of research and have any opinions.

• (1145)

Mr. Robert Lewis-Manning: I think the response could be as vast as the Arctic itself. I think the government's approach is looking towards focusing resources, whether that's research or actual physical resources, into corridors in the Arctic. This is a good strategy. It would be, I think, nearly impossible at the rate of change that's happening in the Arctic, economically, culturally, socially and with regard to climate, to try to address everything all at once, so the focusing of resources is essential in the Arctic.

I think you'll see a wide spectrum of operators in the north and, as you mentioned, the number is still relatively small in comparison to operations in the south. The companies that are involved in resupply of the Arctic are incredibly professional. They are integrated into

many of the communities, and they have a strong understanding of the needs of those communities.

That investment in infrastructure is beginning. I think there's probably a call to accelerate that investment, both in infrastructure and, as you mentioned, in navigational aids and charting. All of that needs to be done in order to understand and also mitigate the risk.

On a larger scale, globally, you're right: There are eyes on the Arctic. I think it's still early for most companies to make an investment in a continuous trading route, but certainly there are companies that are looking toward the Arctic as having potentially shorter routes between major trading centres.

Canada needs to continue its involvement globally in that discussion, both through the Arctic Council and through the International Maritime Organization. Canada has ramped up its game in both of those organizations in the last five years, so I think Canada is on the right track. Maintaining those partnerships with Arctic nations is going to be important to understanding what both the opportunities and the risks are.

I think generally we're on a good track, but we have to make sure that the leadership—and this is largely the federal departments and the bureaucratic levels—is involved in the right places at the right time. At the moment, I would suggest that they are....

Mr. Michael McLeod: I want to kind of steer you to a piece of infrastructure that is lacking in the north—a lot of people are discussing it now—and that's the need for a port.

We have no ports in the north. We bring in a lot of fuel from the Asian part of the world, and because we have to transport it up the Mackenzie River, we have to transfer it to a smaller barge, sometimes in raging storms. You have barges bouncing up and down while trying to transfer fuel. It's an accident waiting to happen. We still don't have any double-hulled barges shipping on the Mackenzie River, so they're all going up on single barges. We have no place for the cruise ships to come up to dump their grey water. I'm not sure what they're doing with their water, because nobody is watching.

Could you maybe talk a bit about where we should open a port? Is that something you would recommend?

• (1150)

Mr. Robert Lewis-Manning: I think the—

Mr. Michael McLeod: I'm trying to get you to recommend it.

Voices: Oh, oh!

Mr. Robert Lewis-Manning: Yes, absolutely, that port-like infrastructure and I guess the port can take on a lot of different looks. It may not look like the Vancouver Fraser Port Authority, but certainly having infrastructure that manages what is essentially industrial activity is important, and I think there is some focusing in towards that.

To answer your first question, this past week, I think, the government announced four—yes, four—double-hulled barges, so that's a great step, and that needs to continue.

Mr. Michael McLeod: Yes.

Mr. Robert Lewis-Manning: To answer your question about how vessels manage all the pollution that they generate, both through industrial activity and through people, for the most part that's held on board, and what Canada is probably lacking is reception facilities to actually process that on-board waste. That is not unique to the Arctic. That is something we need to do more of and a better job of in all of our ports in Canada.

Mr. Michael McLeod: I was there when they made the announcement on double-hulled barges, but those are not going to come on stream for a while yet. They have to be constructed.

I want to quickly ask Foresight Cleantech a question. I'm trying to follow what you were saying about needing financial support to access a fund. You talked about needing more human resources to access the program. Can you explain why you need to apply for funding to help you apply for more funding? Is that what you're saying, or am I misunderstanding that?

Ms. Jeanette Jackson: It's twofold. One, Foresight is a non-profit organization, and funding is never guaranteed. We started off with funding from Innovate BC, formerly BCIC, and our other funding to date comes from Western Economic Diversification Canada, along with matching funds that we get from industry partners, generally corporates and the like. In terms of the companies, it's really the companies.... We only have so many resources. If I told you my team size and the number of people that we've helped.... We're two and a half people, plus the EIRs and mentors that we bring in, doing all this work with hundreds of companies.

For us, we would love to be part of the program, but we need resources to really put the program together to help the companies navigate. They need someone to come in. Imagine the start-ups. They're either one or the other; they're hyper business-focused with maybe a potential technology, or they're really intense technology experts with some business acumen that needs a lot of work to prepare them for all of the rigmarole they're going to go through to apply for funding. That's where we come in. We have only so many resources, and the better we can do to have a repeatable, sustainable message for the companies, the less money we need to do this.

I will say one thing. One thing I find is that we do a great program. I heard you talking about the transportation issues. That's what we do in our challenge program. We worked with the Canadian oil sands group and all their companies—Shell—and we ran a challenge dialogue to help them solve the problem of managing heat—hot water—in their processes. Transportation is one of our segments. We can run a challenge dialogue with you as well, but that aside, we had this program. It was running; it was great; and now we don't know where the next round of funding is going to come from, yet the result of those six challenges was \$65 million invested. We assessed over 50 companies, I would say, with the panels that we put together, the experts, to help us go through this process, and the technology is actually being adopted.

We're making a difference. We're spending money and adopting these technologies to improve sustainability in clean tech in Canada.

For us, helping the companies know exactly what they need to do at different stages to prepare for the funding is what we think funding needs to go into.

The Chair: On that, just before I go to Matt, what's your opinion of the various application processes with the federal government when you have a request in for funding—on any of this, for that matter—in terms of the application itself, the time frame it has, etc.? Call it as you see it. I think it's quite terrible, but what's your opinion?

Ms. Jackson?

• (1155)

Ms. Jeanette Jackson: I thought you were talking to the gentleman.

The Chair: No. I'm talking to you.

Ms. Jeanette Jackson: In terms of—

The Chair: You mentioned access to federal funding in your brief and said to “streamline” the funding process.

Ms. Jeanette Jackson: In full disclosure, I've been CEO of a few tech companies and I've gone through this process myself. It's hard; it's painful and there's a lot of uncertainty, and you never know if you're talking to the right person. If your contact leaves, you lose your champion inside the organization to help you get funding.

Complement that with the process. It's different for every organization. It can be small- or large-scale. We have small-scale, \$2,500 grants that help you hire a student, all the way up to large SDTC applications for \$5 million in funding. Each of them is different in terms of which works better. Some organizations should be using some programs. Some company start-ups shouldn't be using some of the programs because, in the end, they actually don't meet the requirements.

With some of the stipulations around making sure that your technology serves the local market as opposed to an international market, you lose access to the funding. They'd prefer that you make sure you're serving the Canadian market with the resources.

The process is complicated. You might actually get to a certain point where you get a bit of funding but it will be in the next cycle. Some of these companies are actually waiting eight to 12 months for \$100,000 to do a small technology project. By then, they've lost the customer.

There's no certainty that the work you put in to apply for funding is going to get you a result. Don't get me wrong. I don't think everyone deserves funding. In fact, maybe we need to fund less but put more resources into the winners. However, we still need to have a fair, democratic process to vet the companies and make sure that they are properly analyzed so that we know they're the most likely to win with our Canadian tax dollars.

The Chair: However, they do deserve an answer in a timely fashion.

Madam Jeanette Jackson: Absolutely.

The Chair: That is part of it. It doesn't matter whether it's a fisheries request or a technology request.

In the U.S., for instance, there are time frames as to when they have to answer. There's a process around the application itself setting out how much time it takes to fill out and a time frame in which you have to have an answer. You want an answer, yes or no.

Ms. Jeanette Jackson: We had a program at Foresight where we had \$250,000 in matching funds, where the company had to come up with the other \$250,000. We had five companies prepare and they had the matching funds, and then they never received a response from one of the agencies. It was heartbreaking, because three of them broke down. We're investing everything to try to get them to market, and they had to stop the business. Two of them were able to find the matching funds, and we still don't still have feedback on it.

Clean tech is a big venture. The dynamics of clean tech are changing. It used to be \$20-million or \$30-million projects, just to do a test pilot, but now it's different. Clean tech is coming in all shapes and forms. It's software. It's small improvements in a process that might only require a couple of million dollars, but the outcome, not only for sustainability and global warming but also in terms of access to other markets, is huge.

We just need to be more dynamic in how we help the companies.

The Chair: Okay. We need to be more dynamic in the federal bureaucracy as well.

Mr. Jeneroux.

Mr. Matt Jeneroux: Thank you, Mr. Chair. I think that's an incredibly important point that our esteemed analysts had recorded.

Whether it's yes or no, a lot of these companies are hanging in the balance of whether or not they can move forward. How many companies have I spoken to that have said they're waiting on federal funding but have a plan B if they don't get it?

Removing that uncertainty would go a long way. Hopefully that's a recommendation we can see move forward in our final report. There again, it doesn't cost anything. At the end of the day, it's communication.

I do want to turn my questions to Dr. Ling and Dr. Wouters. Thank you for coming and being here today, and thank you for the work you do as part of the foundation and institute.

I've been looking over your balance sheet here and your financial reporting, and I'm just curious about how much money you receive from the federal government currently in the form of grants or contributions. If you could tell me even approximately, that would be fine.

• (1200)

Dr. Victor Ling: Thank you.

The Terry Fox Research Institute gets its money only from the Terry Fox Foundation. We are a charity. We are not for profit. Of course, when we distribute the money to top scientists such as Dr. Wouters and his team, and others, they have also applied to federal agencies like CIHR and Genome Canada, etc. Those are the infrastructures that support and enhance what we give them in a very powerful way.

If I may, I'll ask Dr. Wouters to present from the perspective of his institution.

Dr. Bradly Wouters (Princess Margaret Cancer Centre, University Health Network, Toronto, Terry Fox Research Institute): Thanks for the question.

At the Princess Margaret Centre, funding for research comes from a large number of different places. It comes through the tri-councils, the federal government—primarily to individuals and individual research projects. It comes, to some extent, from provincial governments, although that contribution is relatively small. It comes from industry and industry partners, commercialization activities and so on. It also comes, in large part, from philanthropy. The Princess Margaret Cancer Foundation contributes about half of the entire research budget at Princess Margaret, and its contributions are around the people, the infrastructure, the platforms, and the technologies that enable both the clinical research and basic research to happen there.

What we're talking about creating here is a network of comprehensive cancer centres—and there are other similar comprehensive cancer centres—for which the mission and goals are around delivering excellent care, but at the same time training the next generation of cancer researchers and clinicians as well as doing the research that is going to change what we have to offer patients in the future. That last part is funded, in large part, by that philanthropic effort.

You know, the opportunity we have now is to translate what we've learned into more personalized forms of therapy, the long-term goal being better therapy for patients, but to be able to do that, we really need to do it at scale. The Princess Margaret has put enormous resources into that through its own ability to raise funds. That's how all of the pilot project was funded. It was all through philanthropic donations. It leverages the enormous contributions that are already made in the forms of supporting health care and cancer care and delivery.

The money to date in the pilot project has been through the Terry Fox Foundation, through the BC Cancer Foundation and through the Princess Margaret Cancer Foundation—all philanthropic gifts.

Mr. Matt Jeneroux: I couldn't help but notice that very low administration costs run through the research institute. That's quite impressive.

I'm curious as to how what you're speaking of now differs from or enhances the current node process that the institute does. Every year I do a fundraiser with the Kids with Cancer Society in our local community—I'm from Alberta. What they strongly focus on is the after-diagnosis piece of cancer, and even what happens after they've been given a clean bill of health, if you will. They focus a lot on what happens after the cure. I'm curious about the research institute's focus post-success or the ringing-of-the-bell ceremony that happens, with kids or with adults.

• (1205)

Dr. Victor Ling: The way we treat cancer patients is 360 degrees. It's not just after they have cancer; it's also before they have cancer. Even after they have cancer, you want to have early detection to see if it's going to recur or not.

One other thing about precision medicine is that in the past we treated everybody the same way. If you were a woman with breast cancer, you were given chemotherapy as a standard of care. We know that only two out of 10 women really need it. With precision medicine, we can identify who those two are and save the other eight women from having chemotherapy. This is happening in real time now.

We need to collect our own data so that we can treat our own patients in Canada with the kind of treatment we give in Canada. This idea of precision medicine is really going to not only save lives but also save the quality of life when people don't have to get unnecessary treatments. This is the power of precision medicine.

Mr. Matt Jeneroux: Do you mean the chemotherapy...?

Dr. Victor Ling: Yes.

The Chair: Thank you.

Ms. Rudd, we'll go to five minutes.

Ms. Kim Rudd: Thank you. Matt went down the road I wanted to go down as well.

First of all, I have to let you know, there's a member of Parliament from Oakville North-Burlington, Pam Damoff... You're shaking your head. You know she's a great supporter of your application and the work that you're doing.

We're asked to spend money on a whole variety of things. What would be the outcome of not funding it, in layman's terms?

Dr. Bradly Wouters: Canada has made enormous investments in health. It led the world in the idea of delivery and access and quality, not only from a social and equitable point of view, but also from an investment point of view—investment that is made in Canada and Canada's future.

The ability to leverage that investment and to learn from our patients as a means of improving the opportunities we have to treat patients in the future....

One of the things you see in a cancer centre is that no one is satisfied with what we have to offer many of our patients today. Many patients are treated extremely well, and there has been enormous progress, but there is still a very big unmet need.

Part of the mandate of these comprehensive cancer centres is to change that. We recognize that we need to do that in a collaborative way, where we have an opportunity to generate data, share data and learn at scale across Canada. This will not only accelerate that process, it will coordinate the efforts of doing so, reduce inefficiencies and create access to that network for all Canadians.

Having a federal approach to doing it this way, not only to deliver care but also to learn and change the future for care, is an extreme need. It is built around an amazing opportunity, because of the investments we've already made.

Ms. Kim Rudd: Thank you.

Would this include all types of cancer? As MPs we hear presentations by various cancer organizations. As you know, some of them have joined together recently, but ovarian cancer is one

example of something that hasn't had enough attention, I believe, over the past good number of years.

So would all cancer—I hate to use the word “types”—be included?

Dr. Bradly Wouters: Yes, they would. The large comprehensive cancer centres are the centres that see all those cancers, even when they're relatively rare. I can say that at Princess Margaret, there are 20,000 new patients per year who come there, so even rare cancers are seen by specialists, and there are opportunities to address them in groups.

For the rarest kinds of cancers—and when you start to talk about the individual differences in cancer, at the genetic level, this is why we need to do it at scale. Even in a place as big as Toronto or B.C. or Montreal, these institutes by themselves are not big enough to address those unique aspects of individual cancers. That drives the need to do this in a collaborative and shared way.

Ms. Kim Rudd: Thank you.

The Chair: Mr. Kelly will now speak, and then Mr. Julian.

● (1210)

Mr. Pat Kelly: I do want to return to a point made by Mr. Lewis-Manning on the regulation of your industry.

We've heard and we know that bottlenecks in the distribution channels for Canadian products, and in particular, energy products, are robbing the federal government of tax revenue that could easily and comfortably fund every budgetary ask we've had at this table today.

This is a very important point, that we do something—anything that we can—to shrink the Alberta discount.

In your opening remarks you referred to regulation that is out of date and cumbersome. Do you have some specifics that you want to address, under those headings of unnecessary, out of date or cumbersome regulation, that harm your industry and our ability to get all commodities to market?

Mr. Robert Lewis-Manning: I'm going to turn it over to Bonnie, who has some good examples.

Ms. Bonnie Gee (Vice-President, Chamber of Shipping): We have just gone through a modernization review of the Pilotage Act, and we're also going through one with the ports, with the Canada Marine Act.

There are concerns about the inability of government departments to work together. For example, vessels that come into Canadian ports are subject to the Customs Act, the Canada Shipping Act, the Immigration and Refugee Protection Act, the Plant Protection Act and the Marine Transportation Security Act. Our members have to submit pre-arrival notifications to each individual department. Each individual department reviews the pre-clearance advice and makes its own decision on whether or not a vessel is acceptable to come in.

We feel there needs to be a whole-of-government approach, as we mentioned in our opening statement. There is a lack of coordination and sharing of information between the government departments, which hinders our ability to be competitive in the marine commercial sector.

Mr. Robert Lewis-Manning: Thank you.

The Chair: How would that compare with the case in United States? I noted the whole-of-government point in your brief, but if your same shipping companies are entering the port in Seattle, do they have to go through as many agencies?

Ms. Bonnie Gee: No. They've had a single-window approach in place for some time, where the coast guard receives the pre-arrival advice and sends it out to the various departments that need that information.

The Chair: Maybe our analysts can check that single-window approach in the U.S. and we'll have a look at it.

Sorry, Pat. Go ahead. You have time for one more.

Mr. Pat Kelly: I'll maybe just leave it at that with the Shipping Chamber.

Mr. Kershaw, are there dangers around the efficacy of some of the demographic analysis you've talked about? The reason I ask is that Ms. Rudd mentioned *Boom, Bust & Echo* and I can't help but think that book contained all kinds of terrible advice to people historically. The author drew conclusions that did not bear out over time, especially about the real estate industry. I'll let you comment on that or on whether you think demographic analysis should influence policy.

Dr. Paul Kershaw: In contrast to asking the federal government to make projections, what we're asking for is to report what's happening in the current year and to interpret that in light of what happened in the previous decades. There's a great deal of certainty about that data, and it can provide a great deal of wisdom to inform our current decisions and some estimates going forward. What we're looking at does not fall into some of those risks that you rightly identify about *Boom, Bust & Echo*, although I wasn't citing that in my particular piece today.

We have a nice new deck of infographics that can help bring this to life. We're actually bringing that to Ottawa next week. We'll be in Ottawa on the 24th. Come for lunch. We'll even have wine. We know that can get MPs out. I can send that as part of our follow-up to this meeting.

Mr. Pat Kelly: Thank you.

The Chair: Thank you.

Mr. Julian, you have the last series of questions.

Mr. Peter Julian: I have two fairly straightforward questions.

I'll go first to you, Ms. Jackson. Thank you for headquartering your organization in Burnaby.

• (1215)

Ms. Jeanette Jackson: Thank you.

Mr. Peter Julian: It's a good place to be.

You referenced the small amount spent on clean tech regardless of the budget allocation, so there's obviously a real bottleneck there. You've identified, on the federal government side, the importance of providing funding so that people know how to navigate through the channels.

But there's a greater concern, and that is with the federal government. We have systematic problems with actually providing the funding to everybody from public servants—through the Phoenix pay system, as many public servants aren't being paid—to the federal government paying its accounts for disaster relief. There's the Port Mann Bridge. Recently the federal government was the biggest deadbeat in terms of actually paying the tolls on it. There's an overall problem, and I think we're responsible to try to fix it.

For the clean tech sector, what are the impacts of not having that funding available for these companies? Monies were budgeted and there's a great photo op around that, but the monies don't actually go out to provide funding to these companies.

You mentioned one example of companies simply not being able to sustain a project. What are other examples that you could give us?

Ms. Jeanette Jackson: One of the funds is about \$540 million. In two years, about \$40 million has been disbursed. One of the biggest overarching challenges from a Canadian economic sustainability perspective is that those announcements are made and companies get excited. They go to their prospective customers and say that there are going to be opportunities here; let's line up some projects; let's get some matching funds. Then time continues to go by and confidence is lost from potential buyers of our Canadian technology exports.

There are so many different ways we can try to solve that problem. Right now it seems as though a few people are holding the decision-making card on when and how those funds are going to be disbursed.

We know that some mechanisms to use include the B.C. model, like what happened with the \$100 million B.C. clean tech, or B.C. tech money. Once the application is made, knowing when the decision will come is definitely one piece. From there, knowing how long it will take to actually get the funds disbursed and under what terms....

I think this can happen quite easily. There are a lot of organizations like us. We're supporting hundreds of these. There are 850 clean-tech companies—way more now because everything is clean tech.

We're trying to connect with as many levels of government as we can to understand how we can help facilitate the process. Our goal is to not have tax funding going straight to the companies. It's that they will work on the matching piece so that we know it's a viable business opportunity.

It's becoming quite detrimental. Canadians are also moving outside of the country. They're taking their companies to other regions—Australia, the U.K. and obviously the U.S. as well.

Mr. Peter Julian: Those are pretty eloquent statistics. That's \$540 million—half a billion dollars—and only \$40 million actually disbursed after two years. That's half a billion dollars in lost economic potential, multiplied by what those projects would have leveraged. Thank you.

I'm going to go to Mr. Ling and Mr. Wouters for the Terry Fox centres. You do phenomenal work. We do know, though, that for environmental reasons, cancer rates are increasing. Fortunately, cure and survival rates are also increasing and that's thanks to your good work. What outcomes do you see with the \$150 million over five years? If we could wave a magic wand and provide that funding to you, where would we be in five years? What specific outcomes would you anticipate?

Dr. Victor Ling: Why don't I answer quickly at a high level and then Brad can also chime in for the cancer-centre level?

Number one, we will harmonize the cancer centres across Canada to align everything they do in innovation together, so that we will be one powerful network as a team. Not only will that allow us to do better precision medicine but every part of the country will benefit, including rural and hard-to-reach areas. We are budgeting to make sure that all the outreach programs will get to all these areas as well. That's one.

The training program would be incredible. People could move across the country and get the best training in everything that a network can offer.

Third, I would say that some of the competitiveness of the Canadian system, in which we have a health care system that allows us to collect data from all our people, including indigenous people, will be available for other people, other scientists and physicians to take advantage of within the network.

The Princess Margaret Cancer Centre is one of the top five cancer centres in the world. That centre will be able to share its knowledge and advances with the rest of the country.

Brad, maybe you want to say a few words on that.

• (1220)

Dr. Bradley Wouters: I'll just say three things quickly. One is that it will affect patients immediately within that time period, because patients who are part of that genetic testing and imaging will be eligible for different options for therapy and different kinds of therapy that will benefit them immediately. There is an untapped opportunity to help patients today that is part of unfunded care.

Second, it's going to create a market for innovation. The capture of data on patients across the country, including their outcomes, will create an opportunity for innovation across the country and create more partnership in intersection with industry, and create more industry around it.

In Toronto we see huge investments in artificial intelligence and in data science. What this community is looking for is good data. In the health care system in Canada the kinds of data that we can create provide an enormous opportunity for this other part of the industry that the entire world is investing in.

The third thing is that the creation of this, at the end of the five years, is going to establish a new network, a new system in Canada for the coordination of cancer centres. It will be a legacy through which all cancer centres across the country will have an opportunity to tap into and benefit from the sharing and the data, and we will set up a system whereby we can continue to learn from our patients, going forward.

The Chair: Thank you.

We will have two one-minute statements from the audience.

If you witnesses here want to wait for those two or three minutes, I expect some members may want to chat with you for a few minutes on the side, if you can hold on.

We'll start with Anna Hammond, please, on the floor mike.

Go ahead, please.

Ms. Anna Vanessa Hammond (As an Individual):

Honourable members, I am Anna Vanessa Hammond, a member of the ONE Campaign, and I acknowledge with respect the native Lekwungen-speaking people on whose territorial lands we are meeting today.

I have lived in 12 countries and worked, primarily on development initiatives, in 65. When I had the privilege of moving to Canada, I had the impression that respectful partnerships with others were important in my chosen land. That impression remained for many years, and it was discussed and assumed that our ODA, official development assistance, would reach 0.7% of our budget.

At the same time I was appalled by some of the gender discrimination I experienced and heard about from other women. I was not only surprised but equally appalled when I saw the same thing in our ODA planning.

It's time now, 50 years later—yes, 50 years later—to stop procrastinating and get to that 0.7% as a minimum. These funds are needed to ensure that all girls have equal access to the range of formal education available to their brothers and male cousins.

It's equally important that they be trained as leaders in community development and disaster prevention and response. An ill or an uneducated girl is a personal tragedy, an ethical outrage, an ignored potential environmental expert, and an irresponsibly and cruelly wasted resource.

I am here today to repeat the message of many organizations when I ask that the Government of Canada commit to increasing Canada's spending on global development to equal that of the most ethical of the other OECD countries and to follow the urging of World Vision, Engineers Without Borders and many others.

I ask that in budget 2019 the Government of Canada commit, at a minimum, to increasing Canada's spending on global development over 10 years by a minimum of 15% annual increases to the international assistance envelope, starting next year. Getting to 0.7% by 2030 should be our worst-case aim. Let's commit to this but work to do much better.

One other thing I'd like to add is that in the past there were many opportunities for small projects. Women do great work with very small amounts of money. Girls can do the same. The tendency we've seen towards large projects that overrun their budgets has not been helpful in terms of development.

My thanks to the committee.

• (1225)

The Chair: Thank you, Vanessa.

Mavis DeGirolamo is next.

Go ahead.

Ms. Mavis DeGirolamo (As an Individual): Thank you, Chair and honourable members.

I also wish to acknowledge the ancestral traditional and unceded indigenous territory of the Lekwungen peoples upon whose land we are meeting today.

My name is Mavis DeGirolamo, and I am representing the ONE campaign in Victoria also as Vanessa was before me.

I am here on behalf of the two-thirds of Canadians who believe it is our responsibility to assist others around the world. As you know, Canada invests only 0.26% of its gross national income to official development assistance, which puts us far behind our closest friends and allies in the G7 and the OECD.

Support for the Global Fund and the Global Partnership for Education and an increase in budget 2018 were incredibly important first steps, but we are still not doing our fair share. We must do more.

You have recently heard from Vanessa and other ONE members, Engineers Without Borders, World Vision and others, and I am here today to support them and repeat the message. I ask that in budget 2019 the Government of Canada commit to increasing Canada's spending on global development over 10 years through predictable 15% annual increases to the international assistance envelope starting in the fiscal year of 2019.

Let us continue and make an even greater effort to be proud of Canada's role on the world stage.

I thank you for your kind attention and for allowing me to address you today.

Thank you, Chair and honourable members.

The Chair: Thank you very much.

That will conclude our pre-budget consultations in Victoria.

Thank you to all the witnesses who were here as well and for your presentations sent in previously.

With that, we are adjourned until we hit Edmonton.

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