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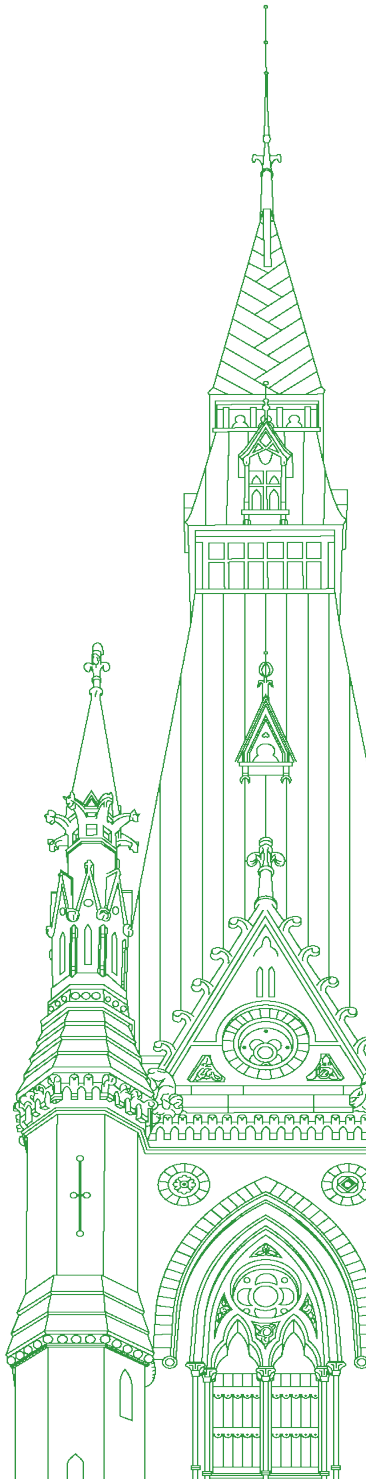

Chair: The Honourable Wayne Easter

Standing Committee on Finance

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● (1530)

[*English*]

The Chair (Hon. Wayne Easter (Malpeque, Lib.)): I call the meeting to order. Pursuant to Standing Order 108(2), the finance committee is doing a study on corporate subsidies.

I want to welcome all the witnesses here.

We have you on video, Mr. Oldham, from London. We can see you. We hope you can see us as well. We'll get to you as the third witness.

We will start with, as an individual, Dr. Jack Mintz, president's fellow with the School of Public Policy at the University of Calgary.

Mr. Mintz, welcome. The floor is yours.

Dr. Jack Mintz (President's Fellow, School of Public Policy, University of Calgary, As an Individual): Thank you very much, Mr. Chair. It's a pleasure to be before the finance committee. Over the years, I have done this a number of times, so it's always nice to see you again.

“Corporate welfare” is a loaded term that most economists would simply define as business subsidies or grants. Tax incentives can also be included, since they are simply an alternative method of providing grant support, although with different implications.

Why do governments provide targeted business subsidies? Three arguments can be made.

First, businesses tend to underinvest in innovation if they cannot capture all the returns from their activities, even though they bear the full cost. While patents protect a significant amount of the return since other businesses must license the knowledge, some innovation is simply widespread and can be used by others without paying for the cost. To encourage an optimal amount of innovation, tax credits or grants are justified. The question is how much innovation support should be provided. Obviously, if patents are available, less support is needed.

Second, an argument has been made to subsidize infant industries where learning-by-doing, scale and risk may deter investment activity. It is not clear why the market cannot support an infant industry; large companies can easily invest capital in new projects and bear the risk themselves, and venture capital investors may support many small firms as well.

Third, support may be provided if smaller companies have difficulty raising risk capital. This argument relies on information asymmetries that occur when outside investors cannot easily distinguish between good- and poor-quality firms. It results in good firms underinvesting in capital, since the cost of capital is too high. While good firms may convey that they have certain strengths, such as a low leverage ratio, to separate themselves from bad firms, it still will not eliminate the problem of high financing costs due to informational asymmetry. The economic answer is to provide investment grants or tax credits that benefit stronger firms more, and not subsidize equity, since the latter encourages too many poor-quality firms to enter the industry.

Politically, governments often provide business subsidies simply to favour activities deemed to be important. Instead, these subsidies create three economic costs.

The first is a misallocation of resources, as capital is subsidized to support low-productivity enterprises that should naturally decline, rather than those with strong opportunities. Too many poor economic projects become supported, leading to a decline in economic growth. Although economic impact analysis is often conducted to support some subsidy programs by measuring direct and indirect job gains, these studies are based on poor economic assumptions, since they typically assume that indirect jobs come from unemployed resources—in other words, people who are just sitting on park benches—when in fact they are drawn from other productive parts of the economy.

The second is that business subsidies might increase the demand for inputs and hence cause rising input prices. The impact of tax credits for investments in fishing, for example, can be offset by higher boat prices. Little or no activity might be generated, as owners of land, capital or labour might capture the value of the subsidy through higher rents, profits and wages.

The third is that business subsidies are a cost to government budgets. A government may have to raise taxes. That has a cost of its own—corporate and land transfer taxes having the highest economic burden, followed by personal income taxes and then sales and property taxes—or the subsidy is paid by cutting back other expenditures, such as education and training, which might have bigger returns to society.

In a recent publication, Elizabeth Pringle of EY Canada provides a review of government incentives for targeted businesses, taken from an international database, wavteq. This does not include broad subsidies, such as research and development tax credits, but it tracks various announcements by governments to support specific firms. Subsidies include loan guarantees, grants, tax concessions, training grants, etc.

I'm going to use U.S. dollars for all this, because that's what the publication used. Besides, the exchange rate moves them up and down anyway.

From 2014 to 2018, Canadian federal and provincial governments provided $5.2 billion U.S.—or right now, roughly $7 billion Canadian—in incentives to support $31.6 billion U.S. in capital expenditure. This is a subsidy rate of 14.9% of capital expenditures for those firms that benefit from these subsidies.

● (1535)

The largest subsidies accrued to the automotive sector—that's $834 million—which is almost one-fifth, followed by consumer goods, $465 million; and non-renewable energy at $391 million. The highest subsidy rates as a percentage of capital expenditure were in consumer goods, 30%; electronics, 25%; services, 21%; and industrial goods, 19%.

The largest subsidies are paid to companies in Ontario and Quebec, with $2.5 billion in Ontario and $1.8 billion in Quebec, making up 82% of all subsidies provided in Canada. However, the biggest subsidy rates are in Newfoundland and Labrador, at 57%, and Saskatchewan, at 50%; while Alberta and Manitoba have the least, at 5%, as percentages of their capital expenditures, or CapEx.

In comparison to other countries, Canada has a lower subsidy rate for specific companies than Brazil or the Czech Republic, but we have a higher subsidy rate, which is more than the U.S. rate of 10% or Australia at 10% or the U.K. at 4%. We're at 15%, as I mentioned earlier.

I think we should be asking ourselves whether our business support programs make sense. Are they helping to grow the economy, or are they reducing productivity? Many subsidies are directed to companies that could be failing or have low economic returns. If that is the case, it would be better to reduce expenditure and direct funds to broad tax relief or program spending, which matters most to productivity.

Let me just add a few things.

Recently I wrote a piece on equity-based tax incentives. These include things like labour-sponsored venture capital credit, Quebec stock savings plans, the B.C. investor tax credit, the Alberta investor tax credit and a lot of these things.

Theory would predict that you'd end up getting too many bad projects entering the industry: Investors don't really pay as much attention to the economic returns because they're just looking at the tax benefits they get from that. Also, they can get very significant tax benefits, not only from the individual credits but also by using RRSP deductions, flow-through shares, donation credits, and things like that, which play a role.

What every study has shown is that the economic returns—this is when you take away the tax benefits—are close to zero. That's why I've been very much against many of these equity-based incentives. In fact, I would argue more strongly for investment-based incentives such as grants and investment tax credits and the R and D tax credit, which I think can have positive impacts.

Thank you.

The Chair: Thank you very much, Jack.

Turning to Canada's Digital Technology Supercluster, we have Ms. Paish, CEO; and Ms. Gill, vice-president, government relations.

The floor is yours, Ms. Paish. Welcome.

Ms. Sue Paish (Chief Executive Officer, Canada's Digital Technology Supercluster): Thank you, and thank you for inviting me to speak here today. My name is Sue Paish. I am the CEO of Canada's Digital Technology Supercluster.

Like many Canadians, you may be asking, “Who are you? What do you do? How do you do it, and why should we care?”

I'm going to answer those questions in a moment, but first I want to start to talk to you about why I'm part of this organization.

I am the proud mother of three amazing young women. For the past 35-plus years that I've been in the business community, everything I have done is to build a better Canada for my children and all of their friends, which in today's connected world includes hopefully your children as well.

As chair of the Greater Vancouver Board of Trade in 2010, and for the past two years as the chair of the Business Council of British Columbia, I have seen data on Canada's declining competitiveness. I wondered whether we were doing enough to address our society's most pressing issues, issues such as climate change, sustainable health care, the competitiveness of our economy and being able to scale companies emerging from our vibrant technology and other sectors. To me, it did not seem that we were getting Canada ready for an increasingly complex and competitive world.

The notion of an entirely new approach to innovation caught my attention. The more I looked into it, the more I concluded that this is gutsy stuff. I decided I was going to see what I could do to test this program and its potential, so here I am, 22 months in the role, and I can tell you that I see the potential of the program.

For example, Protein Industries group, out of the prairies, uses technology to make Canada a leading source for plant protein. The Next Generation Manufacturing group in Ontario will build manufacturing capabilities using technology such as advanced robotics and 3D printing. The scale ai company will bring retail, transportation and other sectors together to build intelligent supply chains through AI and robotics. The Ocean Supercluster is focused on capturing the big opportunities from our oceans.

But returning back to the digital supercluster, who are we? We are a member-based not-for-profit organization composed of over 450 organizations representing some of Canada's brightest minds and names in health, communications, technology development, natural resources, research and industrial manufacturing. We are solving some of industry's and society's biggest problems through a collaborative innovation model the likes of which this country has not seen before.

Here are a few examples.

What if we could use data to speed up the time it takes to identify and locate major weather events such as forest fires, and reduce their impact? Perhaps we could even get to the point where we can forecast where and when these events might happen through data collected by Canadian-built earth observation satellites.

What if we could build an integrated data platform to collect, secure and leverage data on the health of our freshwater resources and use this data to better protect the health of our lakes, rivers and streams? This is something that we do not do now in a country with tens of thousands of these water bodies.

What if we could reduce the diagnosis time for malignant melanoma from six months to a matter of days? One in six Canadians will get this disease in their lifetime right now. Your survival rate over the period of six months goes from 85% to 15%, but It takes you six months to get an appointment to see a dermatologist for diagnosis.

These are just three of the 21 examples of the problems we are solving through the projects we have selected to date so far.

How do we do this? This is where it gets interesting.

We start with identifying the big problems, the problems that need solving to build a better Canada and to improve the strength and resilience of our economy. Next we bring disparate organizations together to discuss potential solutions. This is not generally how Canadian industry solves problems. Generally if there's a problem, a single organization or two get together and try to solve the problem. If they don't have the talent or the tools they need, they go and buy it. That's not what we do.

We bring together small entrepreneurial companies, researchers, large enterprises and medium-sized organizations and invite them to explore potential solutions to these problems. As they do this, we have seen that solutions emerge that are different from and better than any single organization could do on its own. This is collaborative innovation.

It's exciting to see this level of activity and the results that we're delivering in less than two years. We've received over 100 expressions of interest and we've invited 36 teams to submit formal proposals over three competitive project calls that we have launched since summer 2018. We have many more in development.

● (1540)

What's equally exciting is what we did not expect, and that is the benefits that flow from ideas that we did not advance and the benefits from interactions that come from the work that this organization does by bringing different organizations together.

Consider Finger Food Advanced Technology Group in Port Coquitlam, B.C. If Mr. Julian were here, I would point to him. It's just down the street from his riding.

Finger Food was part of a team that submitted a proposal in 2018. We did not select that proposal; however, as a result of the relationship built during the development of the proposal, there was a ripple effect, including a new partnership with Enbridge, as well as other companies. This prompted the opening of an office in Calgary for Finger Food where they now project hiring an additional 200 people by 2023. It's exciting to see that what we do is becoming a material, fundamental element in creating a new culture of innovation that is spawning new ways for organizations, small and medium, to grow and succeed.

There's DNAstack from Toronto. Since joining the supercluster, this company's Toronto office has doubled in size, growing from eight to 16 employees and with a 50% jump in revenue forecast for this year.

Vancouver-based MetaOptima, which raised $8.6 million in series A funding in 2018, has now grown to more than 70 employees since joining the supercluster.

We're launching competitive calls for projects approximately every six months. Our fourth call for projects is slated for this summer, so the next time I am here, I look forward to sharing the success stories with you.

Projects selected to date have budgets totalling $65 million, 60% of which is from industry and partners. Half of this investment is from small and medium-sized enterprises. SMEs make up 52% of our project participants, and we're just getting started.

Our real-world successes and failures have calmed my personal apprehension about this program and this policy. I can see the stunning potential of the entire innovation supercluster initiative, and in particular what we are doing in our innovation supercluster organization in British Columbia.

I started telling you that everything I do in my life I do to build a better country for my kids and all of their friends as well as my granddaughter. I am both proud and determined to tell you that this initiative is part of filling my obligation to my children and yours.

Thank you. I'd be happy to take your questions.

● (1545)

The Chair: Thank you very much, Sue.

Turning all the way over across the water there, to London in the United Kingdom, we have Mr. Oldham, who is with Carbon Engineering Ltd.

Welcome, Steve. The floor is yours.

Mr. Steve Oldham (Chief Executive Officer, Carbon Engineering Ltd.): Thank you.

Good morning, good evening, good afternoon, whatever it may be.

Let me start by apologizing for the fact that I'm not physically present with you today, but I think I have a very good reason.

Yesterday I met with His Royal Highness Prince Charles. We were asked to come over and brief him on the technology that we've developed.

That was one of several meetings. I've also been in 10 Downing Street, talking to the Prime Minister's personal advisers. I've seen every major British government department in the last three days.

This comes on the back of work in 2019, when we did the same thing in the United States, seeing several of the candidates for the U.S. presidency through the Senate and through Congress, and seeing multiple senators and departments dealing with addressing climate change.

Here in Canada, we're doing the same thing. Why is that? How can a small Canadian company with less than 50 people at the time possibly get in at that level to see those types of people? The answer is that Canada has developed a technology through what we do at Carbon Engineering that can make a material and significant impact on the fight against climate change.

We are one of only three companies in the world that has developed a technology to pull CO2 directly out of the atmosphere.

You hear so much about emissions control. How do you stop CO2 from going up? It's very hard. It gets a lot easier if you can pull CO2 molecules down at the same time. The technology that we've developed here in Canada allows you to uniquely do that on a large scale.

When you can eliminate any CO2 emission from any point on earth, of any type and at any moment in time, you now have a way to address climate change, and you have a way to get to net zero without causing massive disruption by banning flying and all the other various measures that will have a material impact on our way of life.

Again, how can a small Canadian company get to the point where it can develop that type of technology? It's thanks to the support of a lot of Canadian government institutions, and thanks to some pretty detailed review of our technology, our business plan and our value proposition.

Capturing CO2 from the atmosphere is very hard. It's 400 parts per million. It's like pulling a single drop of ink out a swimming pool. It's the same technological challenge. It's taken us 10 years to get there. We started that technology before anybody talked about the need for negative emissions, before the IPCC wrote their reports saying that unless we start pulling CO2 out of the atmosphere, we're going to have a huge climate change problem.

Who do you go to when you're developing that type of technology, when you are ahead of the trend and you are pre-revenue?

We went to various government departments, and over the last 10 years, we've received $14 million in funding from Canadian government departments. Now we've more than matched that. We've raised over a $113 million in private funding, the vast majority coming from outside the country and now being spent in Squamish, in Vancouver, in our other sites, and at our research partners across the country.

This was not a trivial exercise. We lost many grants too. We competed for work with SDTC, with NSERC, with IRAP, with NRCan, and we lost plenty of times too.

Crucially, we won a few. Those pieces of work that we won in those early days, backed by the other funding that we got, allowed us as a company to develop the technology that today, in my meeting with Prince Charles, he identified as potentially a world-saving technology. I don't see this as a subsidy. I see this as strategic support for early-stage companies that have great ideas.

When getting external money is the hardest thing to do, government support is critical. We've benefited from that every step along the way; we're grateful for that, and we think the Canadian taxpayers will benefit from that, way beyond any investment that the Canadian government has made.

We think one of the critical elements of any government is to support the development of critical ideas and to assist companies in their early days, but only when there's evidence that those ideas make sense, when they're in the public good, and when other people are willing to put their money in as well to back them.

● (1550)

In summary, I think the structure of R and D support in Canada is strong. If it wasn't for that, we would not be here as a company with a world-leading technology with a potentially massive impact on the number one issue facing the planet today.

I would urge the committee to think long and hard about the success stories that have occurred in Canadian technology development, and in other fields as well, thanks to the support of Canadian government departments.

Thank you.

The Chair: Thank you very much, Steve.

Turning to Connexion Matawinie, we have Ms. Cormier, director general.

Welcome. The floor is yours.

[*Translation*]

Ms. Caroline Cormier (Director General, Connexion Matawinie): Mr. Chair and honourable members of the committee, thank you for your invitation to appear today.

My name is Caroline Cormier. I am the director general of Connexion Matawinie, a non-profit organization mandated by the Matawinie regional county municipality, located in the Lanaudière region of Quebec. Our mandate is to build a fibre optic network for the entire territory of Matawinie RCM to ensure that all residents, businesses and industries have access to broadband telecommunications services—in other words, high-speed Internet.

The completion of this project will require the installation of 2,700 kilometres of fibre optics in 15 municipalities. 42,500 residences and businesses will be served throughout the Matawinie RCM municipal area, which is as large as Belgium. That will give them an opportunity to have an Internet connection with a speed of up to 100 megabits per second. To my knowledge, our project is the largest one undertaken by an RCM in Quebec so far.

The cost of our project to build a fibre optic network is estimated at $60 million. Despite a number of studies and the inability of major telecommunications service providers to provide the required broadband Internet access throughout our territory, our project was rejected, as it was too big. Therefore, the council of mayors of the Matawinie RCM decided, in 2016, to carry out a feasibility study.

Now, the Quebec department of municipal affairs and housing has provided a $60-million loan. That loan must be reimbursed over 25 years, which will be done in part using royalties from telecommunications service providers and municipal taxes paid by local citizens.

It is inconceivable that, in 2020, a number of regions like mine have no access to a reliable Internet service. The Matawinie RCM is among the poorest in Quebec and its economic vitality is fairly weak. More than 6% of its population was living below the poverty line in 2015.

Every week, business owners and citizens from the region share problems that their Internet access causes them. Here are a few examples. A graphic designer must drive for 45 minutes to Joliette, the closest urban centre, to send files to a client. A business owner specializing in digital marketing has been unable to work since she decided to live in the country. A manufacturing company cannot compete for international jobs simply because it cannot automate its factory. Some tourist companies cannot accept online payments, and that is reducing tourist access to our region, which is quite pretty, by the way.

In addition, the region's changing demographics and the exodus of young people are seen as inevitable. After high school, those young people leave the region to continue their studies, and only 5% of them return to live in Matawinie. We cannot attract newcomers because we don't have Internet access, which complicates workforce retention. We are also unable to attract vacationers, even though our region has a lot of cottages and offers many tourist activities. Those people could not live in Matawinie full time even if they wanted to because Internet access is lacking.

Nowadays, there is a lot of talk about COVID-19. Many businesses in Canada will have to ask their employees to work from home. Unfortunately, telework is practically impossible in Matawinie, as very few people have that option in the RCM.

The region's economic future is dependent on broadband Internet access, as that would mean increased productivity for the region, not only for businesses, but also for citizens. Better Internet access will help revitalize our region's economy and will enable our young people to receive a distance education and our citizens to become better educated.

● (1555)

Despite a number of technical obstacles we are experiencing with the major telecommunications service providers, we need financial support to carry out this project. So far, the funding is coming through the Quebec program Régions branchées and the broadband fund. We are competing directly with major telecommunications companies, but they do not provide that service to our region's entire population.

Additional funding will help us lighten our citizens' financial burden and enhance our region's vitality. We must not forget that the average age of our citizens is currently 48 years and that more than 6% of the population is living below the poverty line.

Our objective is to enable the Matawinie citizens to have the world at their fingertips. As a non-profit organization, however, we are competing with major telecommunications service providers, which have priority in terms of funding.

In closing, thank you for your invitation. I would be happy to answer your questions.

[*English*]

The Chair: Thank you very much, Caroline.

We'll turn to Philip Cross with the Macdonald-Laurier Institute.

Welcome, Philip.

Mr. Philip Cross (Senior Fellow, Macdonald-Laurier Institute): Thank you for having me back.

The federal government currently spends at least $18 billion on corporate subsidies, although the government does not publish easily accessible estimates of how much it allocates. This is equivalent to one-third of all corporate income tax revenues of $52 billion. The largest programs were administered by Natural Resources Canada, ESDC, Industry Canada, regional development agencies and Canadian Heritage.

Subsidies can be of short-term benefit to individual companies and specific regions; however, they also distort Canada's overall economy, encouraging investment in areas that are less productive. Spending on subsidies ultimately is supported by higher taxes that penalize the competitiveness of businesses positioned for growth in the marketplace.

Reducing even a small number of subsidies and using the savings to lower the corporate income tax would restore Canada's tax advantage over the United States, encouraging more investment in Canada.

More broadly, focusing government policies on creating a favourable business climate for growth and innovation through less government regulation and lower taxes would encourage all businesses to pursue growth strategies using Canada's skills and knowledge honed over decades of experience.

Canada's economic development has been guided by entrepreneurs who understood the opportunities and skills shaped by our history and geography, not subsidies provided by government. Canada created global brands in oil and gas, banking, railways, hydro power, pipelines, communications and mining by building on our natural advantages.

The list of subsidies to unsuccessful businesses is a long one: cucumber farms and an oil refinery in Newfoundland, a heavy water plant in Cape Breton, steel mills and auto plants in Quebec, the New Flyer bus plant in Manitoba and the Arrow plane manufacturer. The graveyard for high-tech companies that received subsidies is particularly crowded, including companies such as Consolidated Computers, Telidon and Dynalogic Hyperion.

Billions of dollars are given to companies to encourage research and development and innovation, with little evidence that these activities have materially improved as a result. Billions more are spent on regional diversification. What started as a program to help poorer regions, such as the Atlantic provinces and northern Ontario, has now been extended across the country, which is both costly and self-defeating for regional development.

Instead, these programs operate more as slush funds for politicians to reward favoured industries and supporters, with little evidence that they reduce entrenched patterns of regional inequality or boost overall economic growth. Quebec's recent economic resurgence, as government spending and taxes are curtailed, shows that good governance, not corporate subsidies, best reduces regional inequality.

There is a place for temporary direct government support of particular firms and sectors with a proven record of success. During the 1986 oil price crash, federal government intervention kept the Hibernia project afloat, an investment that paid off handsomely for workers, governments and other members of the consortium. When the 2009 great financial crisis threatened the survival of auto manufacturers and parts suppliers, government support helped this industry survive and restructure.

However, interventions such as Hibernia and the auto sector should be the exception during times of crisis and not a model for routine and recurring government subsidies of business. Too close a relationship between government and a company creates conditions for corrupt practices. The renowned economist Dani Rodrik said, "State-business collaboration is just another name for corruption."

Subsidies have an insidious effect on corporate priorities and strategies. Instead of focusing on innovation and efficiency, firms focus on lobbying government for handouts. In 1972 the National Association of Manufacturers moved its headquarters from New York to Washington, stating that "We have been in New York since before the turn of the century because we regarded this city as the center of business and industry. But the thing that affects business most today is government."

It is a sad comment that a major business organization believes success for its members depends more on its relationship with government than with suppliers or customers. Until recently, a notable exception has been America's hugely successful big tech companies, almost all of which are on the west coast, where their focus is on customers and growing their business, not on lobbying Washington.

If anything, the nexus between government and business is worse in Canada. Its origins go back at least to the British government granting a monopoly to the Hudson's Bay Company. It grew with the development of railroads in the 19th century and tariff protection for manufacturers under the National Policy. Industry minister C.D. Howe extended government's reach during the war by entrenching monopolies in the private sector or by creating Crown corporations.

● (1600)

Robin Broadway of Queen's University recently wrote that Canada is developing a "rent-rich economy". Rents are captured when government confers a benefit on one party and not others, usually by insulating it from competition. If StatsCan had an industry classification for rent-seeking, it would probably be Canada's largest industry. Too much effort is devoted to the granting of favours and subsidies from governments in Canada, and not enough to creating innovative and efficient companies that can compete on the world stage.

The federal government mandates an exhaustive inventory of contacts between lobbyists and government officials, yet the end goal of much of this communication—either direct subsidies to firms or an exemption from competition—remains opaque. Creating an inventory of such outcomes would help document for the public not only the frequency but the substance of the extensive communication between business, lobbyists and government.

Thank you.

● (1605)

The Chair: Thank you very much, Philip. We've kind of touched all the bases, I'd say, going across the line.

We'll be able to go to full rounds for this panel. That is six minutes for the first round.

You're up, Mr. Poilievre.

Hon. Pierre Poilievre (Carleton, CPC): One of the problems with this debate is that while the beneficiaries of government handouts are highly visible, the payers of those costs are dispersed and therefore invisible. We have the visible benefit and invisible cost.

It reminds me of about four years ago when the Ontario government showed up to a manufacturer and gave a big fat grant. The company took the money and said afterward that the existence of the grant will create no additional jobs. They said that they would do the project in which they were investing with or without the grant, but given the opportunity for free money, they'd take it. There's a saying in economics that if somebody's throwing money out a window, stand next to the window. You can't really blame the business for doing the rational thing, although it's irrational for taxpayers to be paying the cost. That cost is real, and the only benefit was to the shareholders of that company and to the politicians in the provincial government who got to show up, present a cheque and pretend that they were responsible for a bunch of jobs that would have happened with or without them.

My question is for Mr. Cross. These economic development agencies and governmental bureaucracies will regularly generate one-sided reports to claim benefits from their subsidies. They will say that this subsidy created 10 new jobs. They won't prove that those 10 jobs would not have existed without the grant; in many cases, they would have. They will say, for example, that the subsidy has leveraged $5 of investment for every $1 in taxpayer contribution, but offer no proof that the $5 would not have otherwise been invested somewhere else, acting on the assumption that the investors would have taken their $5 and just put it under a mattress had there not been a subsidy in place.

They don't perform any calculation for the costs to a competitor. For example, in my riding, a guy developed a smart phone app, only to discover that a competitor who invented the same app a year and a half later got a subsidy to do it. Now his competitor has taken all of the business because he has an extra pile of free cash to pay for his marketing. They don't measure the cost to the original inventor of a subsidy being given to his competitor.

There are all these invisible costs, such as opportunity cost, the cost to taxpayers and the cost to competitors. All of these costs are real, but they're not calculated anywhere.

Dr. Cross, you are the former chief economic analyst of Statistics Canada, so you would know more than almost anyone about how to measure and calculate things. How could we create a model to properly calculate the cost of corporate welfare, so that we no longer have these one-sided analyses from government departments, lobbyists and other insiders that only show the purported benefits?

Mr. Philip Cross: Yes.

The Chair: If anybody also wants to come in, raise your hand and I'll let you in.

Go ahead, Mr. Cross.

Mr. Philip Cross: It's going to be very difficult. I think it would take a dedicated group to study it, first of all by compiling a list of all the subsidies given to corporations and then by looking at those that succeed and pay off and also those that don't.

When I started looking into this, I phoned up StatsCan and my former colleagues and said, "What is the total number of subsidies?" The people in the national accounts basically gave me an incomprehensible answer, because in their definition, subsidies are only those that fit the national accounts, which is very restrictive and rather strange. It wouldn't be something that would be of interest to this committee. It certainly wouldn't be useful for evaluating the usefulness of these programs.

Therefore, it's going to take a group embedded somewhere else in government or a new group created at StatsCan to look specifically at this issue, but as I mentioned, I think it's something on which we do need more information.

● (1610)

Hon. Pierre Poilievre: Look at the list of costs.

One, let's say we spend $7 billion on corporate subsidies. That's $7 billion that had to be taken out of the economy in the first place; taken from entrepreneurs, consumers and workers in the form of taxation. What would have been the benefit of leaving that money in the economy in the first place?

Two, you have the administrative costs. Effectively, we have businesses that send money to CRA. Then the money goes from CRA to the industry department. Then the businesses have to hire a consultant to apply to get a subsidy back. Then the bureaucrats at the industry department have to review that application. Then the business has to hire a lobbyist to go and lobby for some of the money back. Then after some time and delay, the government decides it's going to provide the subsidy, and so the business gets some of the money back that it paid in taxes in the first place. All of that administrative cost is inculcated into the system.

Then as I said earlier, you have the cost to the competitor, who has to pay taxes so that his competition can get a subsidy from the government.

None of these costs ever come out when politicians release communications products at the cheque-writing ceremony.

Dr. Mintz, do you have any idea of how we could calculate these real costs so that we can do a real cost-benefit analysis?

Dr. Jack Mintz: Well, there are some ways in which people do try to estimate some of the costs, but not all the ones you're thinking of.

For example, the cost of raising tax revenues has been studied quite a bit. In fact, my colleague Bev Dahlby at the University of Calgary, who is actually one of the international experts in this area, has estimated the marginal cost of taxation.

Usually you might think that when you raise a dollar of taxes, it costs a dollar, but then when you start adding on the economic costs, which result in, let's say, discouraging work effort, risk-taking, savings and investment, depending on the type of tax you're looking at, one can then incorporate those costs. For example, typically corporate income taxes are the highest in terms of economic costs. The marginal cost of funds, instead of being a dollar, would be two dollars or more with the corporate tax.

Land transfer taxes are actually really high. Australian studies and some others have shown that these real estate transfer taxes actually could be almost as high as the corporate tax in terms of their impact, especially when they apply to commercial property, because of all of the distortions that are imposed. Then when you get down to the property tax, it's actually not too bad in terms of its distortions on the economy,

As you can see, there are measures right now that one can include.

The other big issue, which both Philip Cross mentioned and I mention in my notes, is the whole question of displacement, and that's the competitor issue. When you give a subsidy to somebody, usually they go to various groups that will do what's called an economic impact analysis, which is, frankly, the biggest joke in the world when it comes to economic analysis.

What is it based on? It says, “Okay, we're going to create so many jobs in the sector”, which again is the point you raised. There are ways of trying to estimate how much the net job increase would be, but then you also have to take into account whether there's displacement from other sectors. What economic impact analysis assumes is that there's never displacement, but in fact it's the opposite: If you create more jobs here, then there is an indirect impact, such that the industry is going to buy more goods from another industry, etc. Then they start adding up and say, well, that's going to create jobs in every other sector as well.

That's pure garbage, because really what happens is that there's a displacement of labour and capital in the sense that if you give a subsidy to somebody—let's say somebody who's competing with somebody else—then you may be taking business away from the other person and reducing demand for labour and capital in the competitor.

Economists have taken that into account. It's usually called “general equilibrium analysis”, and there are ways of actually incorporating that so you take into account the constraints in the economy.

Let me give you my favourite example. Quebec, at one point—

● (1615)

The Chair: We'll have to do it very quickly. We're substantially over your time, but we're going to have plenty of time in this round.

Dr. Jack Mintz: I'll be very quick. It's such a great example.

Quebec decided to give a tax holiday to high-tech companies that would set up in...I think it was three buildings in Montreal. The people who owned the building were pretty smart. They just jacked up the rents and they captured most of the subsidy. Meanwhile, the landlords of all the other buildings that didn't qualify for these companies with tax holidays to come into their building were really angry because they didn't get these benefits.

This is a good example of a subsidy that doesn't work at all.

By the way, the more targeted the subsidy is to a very particular firm, especially amongst competitors, the worse it gets. The only area where I think subsidies do make sense—and I have to admit some of the points were made here—is with respect to innovation. However, you can define innovation way too broadly. You start including everything.

Certainly there is a strong argument for supporting innovation. There are different ways of doing it, including tax credits and grants. Lately I've been more interested in the grant side, if it's done properly, without the political favouritism.

I think those are things that could be considered.

The Chair: Okay, thank you.

Mr. Fraser, the floor is yours.

As I say, if anybody wants to make a comment on a question, raise your hand and I'll get you in.

Mr. Sean Fraser (Central Nova, Lib.): Excellent. Thank you very much, Mr. Chair.

Thank you to our witnesses for being here.

I'll start with our friends from Canada's Digital Technology Supercluster.

One of my favourite reads over the past couple of years was a book called *The New Geography of Jobs*, by Enrico Moretti. It focused on the U.S. and it was largely an argument in favour of implementing measures that encouraged the construction of ecosystems that might not exist otherwise.

One of the themes that I picked up through the testimony of a number of our witnesses is that some of the kinds of subsidies that have benefited your organizations have allowed different industries to solve problems that might not otherwise have been solved. I appreciated Mr. Mintz's testimony about focusing on innovation in particular.

Ms. Paish, you focus specifically on things like reducing wait times for cancer diagnoses or the prevention of fires.

I'm curious if you have advice for us on how we can focus the investments we make to help build these ecosystems that will have a long-term return on investment and allow us to solve social problems of pressing concern that would otherwise not be solved.

Ms. Sue Paish: Thank you, Mr. Fraser. I appreciate the question.

One thing we do in our organization that I think is different from what has been done in previous attempts to encourage economic development and innovation is that we focus first on the problems.

One of the things that I mentioned we have done, and it might be useful to consider it in other contexts, is to go to different groups in society, whether those be families or communities in remote rural areas or experts in a certain area, and ask for a discussion on what they perceive to be the biggest problems. We've been quite surprised, I will say, in approaching issues from that perspective. Start with the identification of the problem.

The second thing is to resist, with all that we can, tunnel vision. I'll use an example here.

When we are building new hospitals—and we are doing a lot in British Columbia right now—we tend to look at other hospitals around the world to see how they've been built. What if you look at how aircraft are produced? A lot of the things that you're trying to do when you're building an aircraft in terms of quality, efficiency and fast turnaround times are similar. You have a product coming out at the end that is better than the product that went in the front door, so once you identify the problem, avoid having only organizations that are in that sector or in that industry opine on that problem. Encourage different groups to come to the table.

There are two really important outcomes.

One is that people start to think about solutions differently. If we can encourage people to listen more than they talk—it's a learned skill—then it's amazing what we can learn.

The other thing that happens is that if an organization in the conversation doesn't have a solution to the particular problem, they hear about things that other organizations are doing and then they follow that thread. They start to build that ecosystem of, "Oh, I didn't know you were involved in this. I'm also interested in this." I gave some examples of this in some of my comments, and I do have more examples.

There's an example I can give you in respect of a company called Terramera. They may be known to some folks here. It's very much focused on precision agriculture. At one of the events we held, a social event to get people to start listening to each other around some of our industry areas of focus, the chief scientific officer of Terramera bumped into an entrepreneur from a small company called Compression.ai, which has really exciting technology. It is what it sounds like: taking the massive amounts of data that arise from AI and compressing the data so that it's more usable and much cheaper to use. As a result of that connection, that collision, and two people listening to each other, Compression.ai now has its first customer for the industrial application of its technology through a project that Terramera is doing to improve crop health.

What I would say is identify problems; invite unusual, disparate organizations to have a conversation; and avoid having people with their elbows up who think they have all the solutions and ask them to listen before they talk.

● (1620)

Mr. Sean Fraser: Thank you.

To our guests from Carbon Engineering, congratulations on your recent success. The folks you're meeting with obviously have an impressive background, to say the least.

I've been reading about your technology for a couple of years and I find it absolutely phenomenal. In particular, you gave some advice near the end of your testimony about focusing on early start-ups and targeting businesses that can actually serve the public interest, or the public good, which is, I believe, how you phrased it. I'm curious if you can describe in a little more specific detail how a direct investment has allowed you to commercialize a technology that was in the inception stage and actually solved a problem. Where would you be without the support of federal departments along the way?

Mr. Steve Oldham: It's very difficult to start a major business. We're just north of Vancouver, in Squamish. To do that, you need to get clear recognition of your technology and what you can do. We had a good idea—not me, but the founders of the company, my employers, had a good idea. Bringing that to light and convincing people that this was a way they could make a big difference in climate change required the technology to be demonstrated.

The real birth of Carbon Engineering was the pilot facility that we were able to make in Squamish, British Columbia. To do so, we attracted funding from two or three different government departments at the federal level, at the provincial level and from both sets of governments, Conservatives and Liberals, through time. We were able to build that facility.

Since then, we've raised $100 million. We've had many visitors come to our facility. Every single one of them wants to see the technology working. No matter how good an idea you have, if you can't demonstrate that it's working physically and show the results—in our case, through four years of operations—you can't make an impact. Now when I go out to do those meetings and talk to people, I'm backed by evidence. I'm not saying, “Here's a good idea” and showing a really jazzy PowerPoint slide; I'm showing real work. That real work was done through both private investment and investment from the government.

I will say that the investment was not easy to get. The gentleman was talking about the difficulty of economic impact assessment. It's a very valid point. It's very hard for us to predict how many jobs our company may create or have in 10 years' time. I know how many we'll have next year and the year after, but not in 10 years. How many indirect jobs? All of that's really hard.

What should be clear is if you're doing innovation in an area in the public interest—like climate change, for example, and many of the things Sue's talking about—those ideas merit support as long as they're thoroughly evaluated and as long as there's evidence that other people are backing them too.

● (1625)

Mr. Sean Fraser: Thank you very much.

Is there time for one more quick one?

The Chair: I can balance you and Pierre out.

Mr. Sean Fraser: Dr. Mintz, at the very end of your final response, you finished by explaining that there might be some instances where targeted grants in the innovation space may be an effective strategy, though it may buck the ordinary trend. I'm curious if you have guidance for us on whether there's going to be a preferred strategy to target those kinds of grants to maximize productivity or growth. Where should we be looking?

Dr. Jack Mintz: I do like the IRAP. In fact, I have talked to some start-up companies that have qualified for some of the various government programs. One of the interesting things that I've talked to some of the entrepreneurs about is that they got a lot of help vis-à-vis business plans when going through the process. In fact, this kind of struck me as something better than research and development tax credits that are just given to companies where—who knows?—there's no business plan involved or anything like that.

For a long time, a lot of people—including economists and others—might have argued that it's better to have tax credits than to have grants because governments go through politics and they start giving to friends and things like that. There is a lot of history of that. Let's be honest. It's true, but if you run a very competent program that is based on scientific and financial expertise to make the determination, then I think it's a much better way of proceeding compared to just giving blanket tax credits to all sorts of different industries.

I see this happen in the United States, where most of the money is actually done through grants and not as much on the tax side. Over the years I've become more enamoured with the grant process, as long as it's handled in an effective way.

The Chair: Ms. Paish, you wanted to step in for a minute. Then we'll go to Mr. Desilets.

Ms. Sue Paish: I will just add to what Dr. Mintz has said. I wholeheartedly support the notion of IRAP. If we want to build ecosystems, we have to help companies go beyond understanding how to build business plans and help them understand and learn how to compete, how to grow, how to attract customers and how to build new products. There's a series; it's a continuum. IRAP is very helpful for very small organizations that start up. Once they learn the power of a business plan, and—as Steve has said—the power of not just having a good idea but being able to demonstrate it, then there's a new level of learning that needs to go on, which is different from IRAP.

One thing we're seeing in the organization that we run is the learning that goes on when you put small companies in an environment with big companies, with research and development and with some of our folks. It really challenges some of the thinking and some of the planning.

There is not a slingshot approach to this. If you want to build an ecosystem, you need to have an ecosystem approach that understands how companies grow and evolve. You need to define success.

The Chair: Thank you all for that discussion.

Mr. Desilets has the floor.

[*Translation*]

Mr. Luc Desilets (Rivière-des-Mille-Îles, BQ): Thank you, Mr. Chair.

I thank all our witnesses for joining us.

My question is for Ms. Cormier, of Connexion Matawinie. An article published in the November 2019 issue of the *Nouvelliste* says that the relationship between Maskicom and Bell Canada is fairly complex, even difficult, long and painful. The situation is apparently the same for the Maskinongé RCM and the Laurentides RCM.

I would like you to briefly tell us about your relationship with that telecommunications giant.

Ms. Caroline Cormier: Mr. Desilets, thank you for your question, which is very relevant.

Last Wednesday, I submitted a brief to the CRTC that describes all the obstacles we are facing in Matawinie related to telecommunications giants like Bell Canada. Those issues are experienced by the RCMs you mentioned, but also by the Bécancour RCM.

Bell is really lengthening the process we have to follow and thereby slowing down the permit-obtaining process. With a project like ours, which covers a distance of 2,700 kilometres in the Matawinie region, we have to ask Bell for a building permit for each of the 55,000 planned telephone poles. We are rather putting in requests for groups of 50 poles, but you can calculate that the number of requests we must submit remains huge. Bell has three months to respond to us.

So the speed at which permits are obtained is not very high. I would say that what is slowing down the project the most is not the obtaining of governments' or MPs' support, but rather the difficulties we are having in connecting to the telephone poles that belong to Bell Canada.

I know that Maskicom has appeared in the media. We decided to take another approach and to document our problems in a public brief that we sent to the CRTC and that anyone can read. It is a 36-page novel, with supporting photos and charts. Since April 2019, we have applied for more than 600 permits from Bell, but we have only received 68.

So our project is being slowed down by telecommunications giants, which are creating obstacles for us.

● (1630)

Mr. Luc Desilets: I will continue in the same vein.

In your opinion, how important would a federal subsidy like those of the connect to innovate program be for Matawinie?

Ms. Caroline Cormier: Currently, if there were no subscriptions and our network was fully funded by municipalities, that would mean a $40 annual increase over 25 years in every citizen's property taxes. Therefore, a government subsidy would help lighten that financial burden—citizens would still have to pay for their Internet access, whether they like it or not—in addition to helping regional businesses and attracting new businesses to set up in the region.

Our territory is large and beautiful. I am talking about Matawinie, but I would say that, across all regions—be it in Quebec, Ontario, the Maritimes or Alberta—rural communities don't have access to high-speed Internet. Therefore, that hampers those regions' economic development.

Mr. Luc Desilets: Okay.

Could you explain to us the process elected officials and the community had to follow to create your organization?

Ms. Caroline Cormier: The Matawinie RCM has made many representations over the past few years, especially to the Quebec government, but also to private telecommunications companies to get them to set up in Matawinie, but without being limited to serving only the main street of municipalities.

The 15 mayors met and decided to build a shared network that will belong to them—a type of community project that is really the RCM's project.

Once we have reimbursed the $60 million, which is not going to happen overnight, we will reinvest the benefits in our 15 communities, which will be able to develop economically thanks to this fibre optic network that will belong to them. So our project is the result of collaborative efforts by 15 municipalities, each of which have their own separate reality, but which decided to collaborate. We have followed the same principle as that of the Bécancour RCM project, in the Trois-Rivières region. I also know that a project underway in the York Township in Ontario is following the same approach as us.

Mr. Luc Desilets: Thank you very much.

[*English*]

The Chair: Thank you.

I have a quick question, Caroline. Who do you have to apply to for these permits for each pole? Where do you apply? Is it a federal or provincial or...?

[*Translation*]

Ms. Caroline Cormier: We are sending our requests to the consortium Duss, of which Bell Canada is a member, and Bell is responding to us. We have tried to establish connections with the CRTC to speed up the process, but the next step will be the notice of publication that must be submitted by April 24. Usually, however, everything is done through that internal platform used by Bell Canada.

● (1635)

[*English*]

The Chair: So it's Bell itself that decides whether they'll give you a permit on their pole.

Ms. Caroline Cormier: Yes.

The Chair: There are some obligations there. I know we went through that in P.E.I.

Are you at liberty to tell us how much rent you had to pay on each pole? You don't have to if it's commercially confidential.

[*Translation*]

Ms. Caroline Cormier: The process is so cumbersome that we no longer really know to whom to speak, and that ends up slowing down the obtaining of permits. That is unfortunate because taxpayers' money is being used to refurbish a network that covers all of Quebec and Ontario. We have to pay for that.

[*English*]

The Chair: The reason I ask is that I remember the previous government, this government and the government before the previous government. I remember in about 1998 when John Manley said we'd be the most connected country in the world. We're still far, far from being connected in rural areas. Bell Aliant, or Bell, is a problem.

I know they have lots of money from both levels of government in my territory, and I can tell you how we operate in P.E.I. A permit is granted, yes, and a second pole has to be put in between each one, and another company will run that Internet system sometimes, and it's worked reasonably well, but there is absolutely no way that a permit can't be granted in 30 days. That's ridiculous. I might talk to you offline.

Mr. Julian is next.

[*Translation*]

Mr. Peter Julian (New Westminster—Burnaby, NDP): I thank all our witnesses for being here and for contributing a great deal to our study.

[*English*]

I am going to start with Mr. Cross and Mr. Mintz.

I think there's a public perception accented around the Loblaws subsidy. Loblaws is a very profitable corporation. There was $12 million given for fridges. I know in my riding people talked about that. There's this very profitable company that's getting a subsidy for fridges when people in my riding are struggling to find affordable housing. There's no pharmacare, so people are struggling to pay for their medication, and there isn't child care. It's all of these things, and indigenous communities don't even have access to clean drinking water, yet this subsidy was given to a very profitable corporation. When we look at loan forgiveness as well, we see that General Motors had well over $1 billion in loans, which they never had to repay, at the same time shutting down Oshawa with that loss of jobs.

I wanted to ask both of you this. What is your sense of the public perception of these subsidies, and whether people feel this is a fair way to proceed when they're struggling to make ends meet?

I'll start with you, Mr. Cross.

Mr. Philip Cross: Maybe I'll start. I'll be very short because I want Jack to have as much time as possible, since he's much more authoritative on this and most other points on economics that I am.

What's the public perception? The NDP first raised this as a major national issue, I believe, in the 1972 or 1974 campaign. Here we are, almost 50 years later, and never mind that we still don't have a good grasp on the extent of corporate subsidies and certainly don't have a good evaluation of them overall. It's easy to cite examples of where it pays off, as fellow witnesses have testified, but that has to be weighed against all the obvious failures, or the instances in which they're just subsidizing activity that would have taken place in corporations anyway.

I think overall the public sense is that this isn't a good expenditure of public dollars even if, obviously, specific actors within industry are extremely enthusiastic about it.

I'll leave the rest of the time for Jack to answer.

Dr. Jack Mintz: Well, I haven't taken a poll to talk about political views on it, but I think what your point raises goes back, I think, to the heart of the question: What's the point of the business subsidies in the first place?

Today we're hearing a lot about the positive stuff. Even I would argue that supporting innovation is an appropriate thing to do. You need to have, actually, an ecosystem for innovation, which includes a whole bunch of things. It's not just the grant itself. I think a number of things have been done right in Canada, although I would say that right now our personal tax system is a serious issue in terms of discouraging innovation. In fact, some of the calculations I've shown—and I can give those to your committee, if you'd like—show that small businesses in the United States are now taxed less heavily than large businesses, once you include not just the corporate income tax but also the personal income tax. It's important to keep that in the count.

To get to your point specifically, it goes to the question: What's the point of the subsidy? I totally agree with you. I don't see any economic rationale that Loblaws needed to get a subsidy to buy some refrigerators. They could do it themselves. The question is that this was a climate change policy. If you have a proper carbon tax and a carbon price, which we now have in Canada, Loblaws will make that investment itself in order to reduce some of the carbon costs.

That's all you need to do. We don't need to have all these subsidies thrown around. I think this one was really quite wrong.

● (1640)

Mr. Peter Julian: Okay. Thank you very much for that.

Now I want to raise the mother of all corporate subsidies, which is the Trans Mountain boondoggle. Now at over $17 billion, it is running—

The Chair: I thought we had that discussion the other day. It's an asset.

Mr. Peter Julian: The chair hasn't fully understood all of the ramifications of this project. There's no business case. The private sector walked away. The federal government came up with $4.5 billion—overpriced—to buy the existing assets.

The construction costs are escalating now. The shippers are now backing out, which means you have to subsidize the shippers to try to even maintain the fiction of this being a viable business, so $17 billion, given the $150 million that was lost on the existing project last year, is probably a minor part of what the overall costs will be to the Canadian taxpayer, and it's all done to fuel companies that aren't willing to do their upgrading and refining in Canada. The companies that do upgrading and refining in Canada receive a price differential that is to their advantage.

I would ask both of you this, and anyone else who wants to answer: Do you think it's a good use of taxpayers' money to throw tens of billions of dollars onto the Trans Mountain development?

The Chair: Go ahead.

Dr. Jack Mintz: Well, I'll start on that one.

First of all, I think we need to go back to history a little bit. The project itself would make a lot of money. There's no question that it would have been able to charge a toll that many shippers were interested in. Why? Because it was an opportunity to sell oil to either California, where there was a need for more heavy oil, or Asia, where the margins were sufficient enough. From the financial side, there was no need for government subsidies whatsoever, because both the proponent at that time, which was Kinder Morgan, and the shippers themselves could have easily handled the costs associated with it.

As we know, we've had a regulatory system that keeps moving the goalposts when it comes to approvals. As soon as you start changing the goalposts all the time, and the length, and the delays and everything else, the costs start rising. Kinder Morgan, quite intelligently, said they'd had enough, that there's too much political uncertainty in this country and there was no point in making an investment when these goalposts are continually changing. They said, "We're going to get out of this."

At that point, because the government said it does believe in responsible energy development, it said that it would support this project because it thinks it's important for it to get built, from the point of view of responsible energy development. The government has now bought the project. It is an asset. It might make enough money to cover it. There might be a loss. We'll have to see.

However, I think we have to ask the more serious question. It is on our regulatory system in Canada, which is absolutely throttling the energy industry right now. Is that something we want to have in this country? It's one of the biggest assets we have. That can be done in a responsible way.

In fact, there were all sorts of very interesting carbon analyses done. I really enjoyed the presentation done by your friend from England, sitting in England. I do know that one technology that people are thinking about in climate change is just actually drawing the carbon, the CO2, out of the air. That could actually be a far better approach than trying to go through a huge energy transition, with huge costs. It also means that we could also continue to develop our resources, which create huge benefits for the country as a whole.

● (1645)

The Chair: Does anybody else want in? The floor is open.

We'll go to Mr. Morantz. We're down to five-minute rounds, but we'll stretch it a little.

Mr. Marty Morantz (Charleswood—St. James—Assiniboia—Headingley, CPC): Thank you, Mr. Chair.

Thank you all for being here. It's been a very interesting discussion.

Dr. Mintz, I want to start with you. You touched on this already a little bit today. I have been going back and reading some of your past comments.

I know in the past you've talked about how these types of programs can be ripe for political meddling. In one of your interviews you talked about how SIF—the strategic innovation fund—was the sort of fund that could be mishandled. This is from an article back in 2018 in the National Post, written by Jesse Snyder.

Sorry. I just want to go back to my notes.

Interestingly about SIF—and we had this discussion the other day—there's a large regional disparity in terms of how funds are allocated in that program. For example, my home province of Manitoba received $30 million, or about $22 per capita, out of the over $2 billion in funding in that program. In Ontario, it was well over $60, as well as in Quebec and British Columbia.

If you were to advise us or if you were hired to advise government on what measures could be taken to reduce the likelihood of political meddling in these sorts of situations, what types of alternatives could government adopt to make these types of programs more arm's length and credible in the eyes of the public?

Dr. Jack Mintz: I think one of the first things is to make very clear what the criteria will be for awarding the money. I know there was a competition that went on, although it was amazing how it was regionally distributed across Canada in the end, which kind of asks the question whether the criteria included a regional factor behind where the money was going to be spent.

That has to be done. I think you also need to have more of a separate board or a separate Crown corporation or whatever that would be less influenced by the funding. The criticism of the ACOA—the Atlantic Canada Opportunities Agency—over the years was that it was very much politically driven. In fact, a paper that was done by Michael Smart showed that a lot of the money went to the constituencies of the government that was in power at that time. They tended to get more of the money. Obviously, that is not a process that's going to work very well.

Again, there was a lot of criticism of ACOA that the money wasn't necessarily being used for innovation and supporting innovation. There is an argument for being part of an innovation ecosystem to do that sort of thing. Instead, it was money that was being used to fund another little craft company that, frankly, wouldn't do that much for economic growth in Atlantic Canada.

If one is running these strategic funds, I do think it can be done in a way that takes the decision-making out of the hands of the politicians. If that's not done, it's always going to be a problem. That's where I would go with it.

I want to add one other thing. We keep talking about some of the good things here around the table, as our colleagues here are at this table, but there are a lot of subsidies that aren't working and aren't good, and we don't have anyone here to talk about those.

In fact, that's why I mentioned this EY study. I think it would be worth it for you to get it, because you have to sit back and ask questions like whether we should be funding some of the stuff that we're doing, like refrigerators at Loblaws.

It's not to say that all business subsidies are bad. It's to say that some are good, particularly if they have huge innovation benefits, because that's where the economic argument is, but there are a lot of bad subsidies out there. Those are the ones that could do a lot of harm to the economy. Not only do they themselves hurt the economy, but the funding that goes into them hurts the economy because either the taxation for them has an economic cost or the money is taken from other important government expenditures that could have very important positive benefits.

That's why I'm particularly very concerned about the size of all these business subsidies. I can bet you that Phil's.... Was it $18 billion you mentioned from your estimate? It is hard to get an estimate of it. I tried myself and didn't see one that I liked very much. Of the $18 billion, I can bet you that not all $18 billion are worthy subsidies.

● (1650)

Mr. Philip Cross: There's not a lot.

The Chair: Make it a fairly tight one. You're out of time, but be fairly tight, Marty.

Mr. Marty Morantz: This is for Dr. Cross. You won't have a lot of time, but I wanted to circle back to the concepts of transparency and accountability, which have really become more than a talking point, one would hope, in government.

From an economic perspective, what is the more efficient use of capital—leaving it in the hands of taxpayers, or having government collect more tax and then granting those monies to enterprises selected by bureaucrats? That's really the crux of this study.

However, in order to make that determination, we really don't have the information we need. What kinds of steps could we take to make the process more transparent and accountable to taxpayers, so that we understand actually what the net cost to society is of taxing this money and centrally planning its expenditure?

Mr. Philip Cross: The brief answer—I know you're pressed for time—is to start with an accounting of all the subsidies made and then try as best you can to come up with the overall rate of return. As Jack suggested, some of these have clearly paid off. I noted some of the winners myself, but a lot of them haven't, and we need a full accounting of what the rate of return on average is on these. You can then compare that to the rate of return on private investments.

The Chair: Thank you, all.

Ms. Dzerowicz is next.

Ms. Julie Dzerowicz (Davenport, Lib.): Thanks so much. I want to start off by just thanking everyone for their excellent presentations and give a special thanks for Mr. Oldham. I know you're about five hours ahead, so I know it's a special effort for you to be joining us today. Thank you.

My first question is to Ms. Paish. Ms. Paish, the superclusters were originally created because we wanted to take companies' creative ideas and investments already made in a fairly promising industry and we wanted to add government funding and investment so that we hopefully would create a world-class industry. We wanted to start anchoring and start investing in key industries that we thought not only would be great for the Canadian economy but also would create world-class sectors within Canada.

One of the criticisms that I've been hearing is that 22 months later, or two years later, we don't have very much to show for it. They say we haven't created any jobs and ask what the value is for money that Canadians are getting right now.

How would you respond to that? How has Canada invested thus far, specifically talking about the Digital Technology Supercluster? How have we benefited, and how are you evaluating success as we move forward? I believe it's a 10-year investment.

Ms. Sue Paish: Thank you for that question.

I'm going to focus my responses on digital. I'm not informed to speak on behalf of all the others.

Building an innovation ecosystem and seeing the results of these kinds of ecosystems is a medium- to long-term exercise. It doesn't happen overnight. I'm immensely proud of what we have done through our organization. We currently have 450 organizations involved, and those range from small entrepreneurial companies through to research organizations and national and international companies.

We have run three competitive calls. Our calls for expressions of interest are competitive. You don't just have to hit our criteria—and I'll come back to that in a minute—but you have to be better than anybody else in your call.

In our criteria, we include an assessment of the technology. Is this viable technology? What's the TRL? Does it have commercial application, and do you have a plan for commercial application? One thing we're not doing is investing in your strategic plan. We're investing in technologies that are going to solve big problems and put Canada on the world map.

We evaluate that in two stages. The first stage is your expression of interest. You have to file a written submission as well as give an in-person presentation by your entire team.

The second is at the full proposal stage. We have EOIs that come through. We evaluate those through an in-person presentation as well as a written submission, and then you go to a full proposal. Our full proposals are evaluated in three contexts. We have international experts. We have more than 50 experts from 11 countries in domain expertise, so if you're suggesting that you're going to build a data commons, a digital platform, then we're going to put that out to international experts. At least three international experts evaluate every full proposal. You then have to make a full presentation in person again—this is round two—as well as appear in front of our project selection committee, which is made up of internal as well as external experts.

We evaluate the technology readiness, the commercial application, and then—we've talked about business here—we look at the business elements. Do you have the right management team for your consortia? Do you have a business plan? We want to know about your budget and who's doing all this stuff, because we don't do that.

● (1655)

Ms. Julie Dzerowicz: I hate to cut you off, but I have one more question that I'd like to get to Mr. Oldham.

My sense is that you're basically helping to select digital companies that show promise, that will produce results in the medium to long term.

Ms. Sue Paish: We're selecting technologies that are produced by a combination of companies, big and small.

Ms. Julie Dzerowicz: You mean companies that have the best chance of actually—

Ms. Sue Paish: Producing a result.

Ms. Julie Dzerowicz: A result within the medium to long term.

Ms. Sue Paish: Yes, and you don't get investment from the supercluster until you deliver results. This is not upfront investment.

Ms. Julie Dzerowicz: Okay, thank you.

I have a question for Mr. Oldham, very quickly.

One of the things that Professor Mintz mentioned is that in many cases corporate subsidies don't grow the economy but actually reduce productivity.

You've given us a wonderful example of your company. Are you able to articulate how your company has positively contributed to the Canadian economy and how it has improved productivity?

Mr. Steve Oldham: Sure.

It's early days for us, even though the business is 10 years old. We're trying to solve a massive long-term problem for society in climate change. So far, we've grown from 20 jobs to just under 100 today. We've attracted over $100 million of funding from outside the country, which is being spent in British Columbia and Alberta. We've provided a way forward on climate change.

As Mr. Mintz was describing, if you can decarbonize by pulling CO2 out of the air, you can continue to grow your energy and resource economy and all the jobs and prosperity that come with it and decarbonize at the same time. With regard to how you assess the economic benefit of that, we have probably hundreds of thousands of people employed in our resource sector, but we have to decarbonize.

Through the work that our company has done, we've provided a route for that. That's a long-term benefit that will impact many areas of the economy, as well as the near-term benefit of the money we've brought into the country.

Ms. Julie Dzerowicz: Thank you.

The Chair: Thank you.

Mr. Cumming is next.

Mr. James Cumming (Edmonton Centre, CPC): Thank you to all of you for coming here today. It's been an interesting journey, listening to witnesses who are looking at this particular issue.

Canada has developed this subsidy program that filters through a lot of different departments and different areas. We're looking at early-stage companies, innovation, mature companies, cash-flowing companies and all over the map. It's a significant issue.

My question is to Mr. Cross or Mr. Mintz.

The government talks about this as an investment. I always think of investment as outside investment, where it's the private market and capital markets investing in countries, in businesses and technologies. This investment is borrowed—it's taxpayers' money—which we have already heard takes money out of the economy.

Is there a jurisdiction you can think of that has tried a different strategy, one that is lowering the general tax burden? Is there one that is less program-based, with a lower tax burden, to attract businesses and investment back into the country, rather than the government making those decisions?

We could maybe start with Mr. Mintz.

● (1700)

Dr. Jack Mintz: There are two places that I can think of. One is Hong Kong, which lately is having its own challenges, but if you look at the history of Hong Kong, it's had a tremendous amount of success. In fact, it moved away from manufacturing, because a lot of the manufacturing industry moved into China, to become a regional financial power instead. In fact, manufacturing jobs went from half the GDP in Hong Kong in the 1950s to, by the time you hit 1995-2000, down to only 5% of GDP in Hong Kong.

They did a very good transformation doing that. They had an amazingly strict policy about no business subsidies, no tax credits and no special concessions to any business; instead, they kept rates very low. In fact, they had a very low corporate income tax rate; I think it was 15% when I was there in the early 2000s. They had a very low personal income tax rate. They had no withholding taxes, and anyone who tried to suggest having a special incentive was immediately clamped down on, and this was a government with the full backing of the public, making it clear that this was not the way that we're going to go. It was, by the way, a very different strategy from what Singapore did, and Singapore grew quite a bit.

The other one that is close to that model is Ireland. Ireland started off with a 10% tax rate on manufacturing and certain financial services, and then they decided to broaden it to everybody, and they had a 12.5% corporate income tax rate, which is still there today. They did have some R and D tax credits, so there's a little support for innovation that way. I'm not sure about the grant side; they may have done some things on the grant side.

Generally, Ireland had a philosophy of getting their tax rates really low. Ireland is a remarkable story, because when you go back to 1960s, it was a poor cousin of Europe, and it had an immigration outflow. The best people were moving away to either the United States or to Great Britain. It had very poor growth, but they pursued the strategy on the tax side and put money into infrastructure—that was the other important thing—and education. They strongly believed in trying to get their population educated, because people only had educations up to high school. They not only made sure people had their high school education, but they actually had Bernie Sanders-type free tuition for all university and post-secondary education because they wanted people to get skills and broaden their skills.

What happened, of course, is that Ireland's growth was phenomenal. In fact, it became the fastest-growing country in Europe. Companies were flocking to Ireland, partly because there were good tax-planning strategies, but it wasn't just that. Pharmaceutical companies came to Ireland; all sorts of different ones came, and the strategy really worked. As a result, they reversed the immigration flow. They did go through a very tough time with a financial crisis, because the banks weren't as well regulated as in Canada, so they suffered from that, but they have come back. In fact, the interesting thing is that they have been one of the fastest-growing countries since 2010 in Europe and North America among OECD countries compared to a lot of others.

It has been a remarkable story, and it does show you that good macroeconomic policies, infrastructure, education—this is on the spending side—and a really smart tax system can go a long way in building a much better economy.

The Chair: Do you have another quick one, James?

● (1705)

Mr. James Cumming: I have a really quick one for Steve Oldham.

Thank you. With the big time change, I appreciate your coming today.

Just to get a sense of the scaling on where your project's at, this is a curiosity question. It's been 10 years. Where's the business plan? When do you think you would be cash positive or in a position where you start seeing some return on that $120 million?

Mr. Steve Oldham: We are building our first large-scale plant. It's going to be in Texas, for a variety of good reasons. It will be the largest direct air capture facility in the world. It will do the work of about 40 million trees. That will go operational in 2023, and that will become a cash-positive plant. Then as we roll out more of those plants, as we make synthetic fuel out of CO2 from the atmosphere to help decarbonize the transportation sector, we expect to build more and more plants. Each plant generates a royalty stream back to Carbon Engineering. It's our very strong intent to remain a Canadian company, and we will then invest back into R and D and build that business.

We will start to have plants that are profitable starting in 2023-24, and that's relevant because we started the business almost 15 years ago. The timeline for investment is 15 years and it's very, very challenging in the private sector to raise money that way.

Mr. James Cumming: Why Texas, then, rather than another plant in Canada?

Mr. Steve Oldham: The short answer to the question is it's because right now in the United States, the carbon policies that enable direct atmospheric carbon capture are more advanced than the ones we have in Canada. We're in the process of catching up in Canada, I think, but in Texas and the United States, at the federal and provincial level, they're already in place, so the economics for a first plant for us mean the United States.

I very much want to build my second plant in Canada. I am very keen to have the policy support at the federal government level to do so.

The Chair: That's something we should look into a little further, as well.

Mr. Fragiskatos is next.

Mr. Peter Fragiskatos (London North Centre, Lib.): I want to look into it right now, Mr. Chair.

There's a city called London, Ontario, Mr. Oldham, which I have the honour of representing in the House of Commons, so if you wish to talk about a second plant, I'd be glad to connect with you. I know London would love to have you.

Thank you very much to all witnesses for appearing today.

Mr. Oldham, I want to begin with you. I think it's a fascinating story. Let me ask you this. You got $14 million from the federal government of Canada to help start up the business and propel it forward, but why not alternative lending sources such as like banks or angel investors? Maybe you can tell us if you had that experience and how it turned out.

Mr. Steve Oldham: With regard to angel investors, yes, some of that $113 million that we've pulled in from private sources came from angel investors. Our largest owner is actually Bill Gates, from his own private investments. He can probably afford to take a bet or two on new technology. We also got support from Michael Hutchison, who is a private individual in British Columbia, and a couple of others as well. However, it's hard to get that money. It's really hard to get the attention of billionaires or those types of early-stage investors.

On the equity side—

Mr. Peter Fragiskatos: Sorry to interrupt you, but I want to zero in on that. Is it difficult to get their attention because one might not have the networks that allow you to get their attention?

Can you go into that? I think it's a really crucial point.

Mr. Steve Oldham: Let's use the example of Amazon.

Jeff Bezos has just announced a significant fund for climate innovation. How do I get a hold of Jeff Bezos? I have no idea. We got to Mr. Gates because our founder knew somebody who knew Mr. Gates. Those connections are important.

On the banking side and the equity side, when I first joined the company, we were almost out of money, and it was extremely hard to find any private equity source or any venture capitalists. I went all the way around Vancouver, all the way around Toronto and Silicon Valley, looking for funding. Today, the phone rings every day with people who want to put money into our company, which is great, but that was not the case two and a half years ago, before we'd proved the technology could work.

It's a risk profile. As an investor, you look at the combination of technical risk, market risk, regulatory risk—some of the points raised here—and small early-stage companies really struggle with that.

● (1710)

Mr. Peter Fragiskatos: Thank you very much for your persistence. It's great that the investment seems to have certainly paid off.

Can you talk about your experience with the clean growth fund? I know that prior to 2015, the focus of the strategic innovation fund did not take into account projects that had an environmental focus. The auto sector was prominent, and other sectors were prominent, but not the environment.

How has your experience been with the clean growth fund?

Mr. Steve Oldham: There are two things about the clean growth fund that affected us.

The first is what you said, which is that they put an emphasis on trying to find technology sectors that would be key growth sectors in the 21st century. They applied a bunch of experts to look at candidate investments in that area. That was great. It gave us a target to aim for inside government.

However, the other thing is that one of the challenges you have in a small company is that there are many different government departments that you can talk to, so you end up putting proposals or efforts and ideas into multiple different government departments, and you're not quite sure which one is the right one. What the clean growth hub has done is it has listened to those proposals, consulted among government areas and said, for example, that this isn't really the right thing for the strategic innovation fund, but you should go talk to SDTC.

That really optimizes the process, because then you know who you're talking to. You don't have to put in five or six proposals and hope one of them gets looked at. It's been an efficient method for us to target who we need to go talk to.

Mr. Peter Fragiskatos: Thank you very much.

I'd like to go to Ms. Paish.

Ms. Paish, $153 million, if I'm not mistaken, from ISED is what the supercluster has received. How has that money been spent?

Ms. Sue Paish: The $153 million was declared to be invested in our supercluster.

At this stage, we have paid claims of $3.6 million. The way this works is that once you go through that big process I described earlier and you come out the other end with a project that's contracted, and you reach your milestones, you can make a claim. We have paid $3.6 million. That has been paid across 60 discrete organizations, one-half of which are small and medium-sized enterprises.

We have a staff of 18, plus six contractors. We've grown from one. I was employee number one. We've grown up to that staff, and so some funds have gone there.

The rest will be deployed as projects hit their milestones. We have selected 21 projects so far. They have a total budget right now of $60.5 million. Our investment in that is...$24.2 million. I just had the wrong numbers in my mind.

Mr. Peter Fragiskatos: We all need our staff, I can assure you.

Ms. Sue Paish: Our investment in those projects will be $24.2 million, of which $3.6 million has been deployed. The rest will be deployed as they hit milestones. The rest of the money will be deployed as we approve projects going forward.

Mr. Peter Fragiskatos: Thank you very much.

The Chair: We're going to end that round there.

We have time for four more questions at about three minutes each. We'll start with you, Mr. Lemire. I don't know whether Peter wants one or not. I doubt it.

Mr. Peter Fragiskatos: Oh, of course.

The Chair: Go ahead, Mr. Lemire.

[*Translation*]

Mr. Sébastien Lemire (Abitibi—Témiscamingue, BQ): Thank you.

Ms. Paish, I will continue along the lines of the question raised by my colleague.

How will you ensure that the results of your supercluster also reach the smallest players? Are there any credits for that, or would you need additional funding to ensure that your knowledge can benefit as many smaller businesses as possible?

[*English*]

Ms. Sue Paish: Our supercluster is composed of large companies, small companies, and research and post-secondary institutions.

Right now, in terms of the number of companies involved, 50% of our companies involved are SMEs. In terms of the investment in our 21 projects to date, approximately 50% of that investment is in SMEs. We are heavily focused on the small and medium-sized enterprises coming into our supercluster, because they benefit to grow.

● (1715)

[*Translation*]

Mr. Sébastien Lemire: Thank you. In that sense, I assume you have to take action across the territory, not only in British Columbia, but also in the more rural regions of that province, of Quebec and of other parts of Canada.

Are you surprised to discover certain technological challenges, especially in terms of connectivity? We have with us a witness who talked about broadband Internet, and we are also talking about cellular networks. Are you sometimes surprised by technical challenges? Should the federal government invest additional funding to ensure that all Canadians and businesses are finally connected?

[*English*]

Ms. Sue Paish: There are two questions there. I'll try to answer both very quickly.

We're located in British Columbia. We are Canada's Digital Technology Supercluster. We have now received submissions from across the country, from Atlantic Canada, Montreal, Ontario, the Prairies and B.C. We have a strong reach.

When we talk about broadband access, it is an issue that affects British Columbia as well as other provinces, and it does impact the ability of small and medium-sized enterprises to grow in rural communities.

It also impacts something else that we're focused on. In the superclusters, in ours, we are very much focused on developing an effective, diverse, digitally trained talent pool. We talk a lot about digital training, and training for people in remote, rural and indigenous communities. If you can't get on the Internet, then you can't access that training. Advancing and exploring ways to accelerate access to broadband is really important, and we are actually looking at that right now for British Columbia.

The Chair: We will have to go to Mr. Julian.

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

I'd like to come back to Mr. Mintz and Mr. Cross.

We are hearing, of course, some very valid stories of supports from the federal government that have worked, and then we have Trans Mountain. Trans Mountain is an example, I think, of what is a pretty egregious form of support for something that simply doesn't make any business sense because of the threats to the fisheries and to tourism in British Columbia.

There's an economic downside, of course. On the issue of climate change, there's a huge environmental downside. Then we have the escalating construction costs. What's interesting is that when you follow public opinion, initially, I think, around Trans Mountain, there was more support than not, but since the escalating construction costs have come to public attention, more recent polls have shown that most Canadians—not just in British Columbia, but right across the country—are now opposed to Trans Mountain.

My initial question relates to the public perception of corporate subsidies being given without real justification—such as with Loblaws—or forgiving a loan when a company is shutting its plant down and throwing workers out of work. Is there a problem when the government indiscriminately applies large amounts of public funds that come from taxpayers to these kinds of projects—a project like Trans Mountain, which will never make money, is losing money now, and doesn't have a business case?

I'll start with you, Mr. Cross.

Mr. Philip Cross: I would tend to put Trans Mountain in the category of Hibernia and General Motors, as subsidies to businesses during an exceptional time of crisis. It's likely to pay off in the longer term.

I think the business case was there, as Dr. Mintz mentioned. It was a victim of regulatory uncertainty. I think the government's plan to sell this back to the private sector once it's built and this uncertainty is removed is likely to succeed, but that's speculation about the future.

The point is that you and I don't know what the result of that is going to be. I just think that's where the highest probability is. We certainly cannot speak of the project as “obviously a commercial failure”.

Mr. Peter Julian: There is no buyer, and the only way the federal government could unload it would be by subsidizing again the so-called sale. That has become evident as well. There's a problem structurally from the beginning to the end, but I'll give Mr. Mintz a chance to answer as well.

● (1720)

Dr. Jack Mintz: I really don't have that much more to add to what I already said. I think I'll just stop there.

The Chair: You're out of time, although I'd love to get into this discussion too.

We'll go to Mr. Poilievre, go back to Mr. McLeod, and end it there.

You have three minutes, Pierre.

Hon. Pierre Poilievre: Mr. Oldham, did I hear you correctly that your first plant will be in Texas?

Mr. Steve Oldham: Yes.

Hon. Pierre Poilievre: You do have something in common, then, with the Trans Mountain pipeline. In that case, our money is going to Texas as well—

Mr. Steve Oldham: No. No, no. That's not true—

Hon. Pierre Poilievre: If I could just finish, in that case, the money is going to a Texas company, so all our Xs are in Texas.

I'd like to ask how many plants you have opened in Canada.

Mr. Steve Oldham: First of all, let me correct what you said. The first plant will be built using U.S. funding in a U.S. jurisdiction. The royalties on the technology that we've developed will come back to Canada, to Carbon Engineering in Squamish, British Columbia—

I'm sorry, but I can't hear you when I talk.

The Chair: Go ahead, sir.

Mr. Steve Oldham: The Texas plant, while U.S. funded, will bring revenue back to Canada, to Carbon Engineering. We're a royalty business. Think of Subway or something similar.

In terms of plants in Canada, we have a plan to build multiple plants in Canada that we're currently working through at the moment, probably up to 10 across the whole of Canada in the various jurisdictions. We're looking forward to proceeding with that, but our technology needs to be developed a little bit more through that first plant.

Hon. Pierre Poilievre: That first plant's operations will be in Texas, right?

Mr. Steve Oldham: Yes, correct.

Hon. Pierre Poilievre: It will be subject to the U.S. and Texas tax treatment, right?

Mr. Steve Oldham: Yes, and that plant pays a royalty back to us in return for the technology that we invented.

Hon. Pierre Poilievre: Right, it's a royalty to you, but it's going to be taxed there.

Mr. Steve Oldham: We'll pay tax in the U.S. too, yes.

Hon. Pierre Poilievre: You'll pay tax in the U.S.

We see this—sorry; you're shaking your head now. Do you want to change your answer?

Mr. Steve Oldham: It's hard because every time I speak, it cuts out your mike.

To be crystal clear, the plant in Texas will be a U.S.-owned entity, and it will pay U.S. taxes. It also pays a royalty back to us in Canada, and we pay Canadian taxes on that royalty, just like any other Canadian business.

Hon. Pierre Poilievre: You're going to receive a royalty from this Texas plant.

How many employees do you have in Canada?

Mr. Steve Oldham: We have just under 100.

Hon. Pierre Poilievre: You have 100 employees in Canada. When do you expect to become profitable?

Mr. Steve Oldham: We expect the first plant will make us profitable in roughly 2023 or 2024.

The Chair: We'll have to end it there, Pierre. We're out of time.

Go ahead, Mr. McLeod.

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

Thank you to everybody who presented here.

I have a quick question on the issue of setting up a plant in Texas. You said the policies in Texas were better than what was happening here in Canada. Could you explain why or what you mean by that?

Mr. Steve Oldham: In the U.S. you have a policy that differentiates between carbon capture, for example, from a flue stack, which is cheaper to achieve, and carbon capture from the atmosphere.

The U.S., and the states of California and Oregon in particular, have differentiated between carbon capture from the atmosphere, which is ultimately what everybody is going to have to do to achieve net zero, and carbon capture from flue stacks. That allows our business, which has a higher cost because capturing from the atmosphere is hard, to go ahead.

We're seeing policies starting to come up in Canada. We're doing a lot of work with the Canadian government on policies around climate change. We hope to see the same policies in Canada and we'll build plants here too.

Mr. Michael McLeod: I'm the member of Parliament for Northwest Territories, and in the north we know there's incredible potential for clean air innovation. We need it to improve our economy and our environment. We also know that the much-needed transition away from diesel towards clean, renewable energy will not happen without federal investment.

Last year our government announced $2 million in support for an exciting UBC research project on carbon capture in mine waste. It included field trials at the Gahcho Kué mine in the Northwest Territories. These trials will allow for testing of new technologies that could result in the world's first greenhouse gas-neutral mine.

Could you speak to the scalability of your company's technology and especially if it would help serve the energy needs of the far north?

● (1725)

Mr. Steve Oldham: It's a long answer. I'll try to be as brief as I can.

We've built our technology on pieces of equipment that are widely used in other industries, so that makes it relatively straightforward for us to expand in scale, because we're buying equipment that already exists in other industries.

In terms of impact on dealing with transportation fuels and those types of things like diesel, as you mentioned, we make a synthetic fuel as well. We combine CO2 from the atmosphere with hydrogen and make a clean synthetic fuel that can replace diesel but have no sulphur and no black smoke at the same time.

We see that as part of the evolution of our business, and the Canadian fuel standard that's being worked on right now will hopefully help us get there.

Mr. Michael McLeod: I wanted to ask you a question on the fuel that you produce. I'm very curious, because all kinds of new technology has come out and different kinds of fuels and mixtures are being tried. Almost none of them work in the north. I wonder if what you're talking about would be able to work in cold weather.

Mr. Steve Oldham: Certainly the fuel will. It's chemically identical to regular hydrocarbons, so yes, it will work in regular vehicles.

The Chair: With that, we will have to end this panel. I think we had a very interesting couple of hours.

I want to thank all the panellists, including those who are constructively critical on past and present government policy, because I don't think you can move ahead unless you recognize you have a problem in some areas.

It's really kind of exciting to hear some of these new ideas and possibilities that are coming out because of government support. I think we've had the full meal deal, if I could put it that way.

With that, thank you very much again.

The meeting is adjourned.