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Chair

Mr. Leon Benoit

Standing Committee on Natural Resources

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● (1535)

[*English*]

The Chair (Mr. Leon Benoit (Vegreville—Wainwright, CPC)): Good afternoon, everyone. It's good to be here again to continue our study of resource development in northern Canada.

We have today as witnesses, to continue this study of resource development in northern Canada, the following: from Gedex Incorporated, Keith Morrison, chief executive officer; from Diamonds North Resources Limited, Mark Kolebaba, president and chief executive officer; and from Advanced Explorations Incorporated, John Gingerich, president and chief executive officer.

Welcome to all. If you'd like to introduce those with you when you make your presentations, go ahead and do that. We'll go in the order in which you're listed on the agenda.

Monsieur Gravelle, you have something you want to bring to the committee.

Mr. Claude Gravelle (Nickel Belt, NDP): Yes, thank you, Mr. Chair.

I'd like the indulgence of the committee on this. Next Monday we'd like to set aside maybe 15 or 20 minutes towards the end of the meeting to talk about the upcoming calendar and the upcoming witnesses.

We just want to straighten out or have a look at what's coming so that we can get prepared.

The Chair: Is it agreed that we do that next Monday?

Some hon. members: Agreed.

The Chair: Okay. It's agreed.

Moving straight to the witnesses, then, we'll start....

Yes, Mr. Anderson.

Mr. David Anderson (Cypress Hills—Grasslands, CPC): I think we need to be aware that a concurrence motion has just been moved by the NDP. We're going to have a vote in the hour. I just want to make sure we're all aware that we're going to have to go and vote at some point during this time.

I think we should hear the witnesses. We may not get the questioning in that we need—

The Chair: Okay.

We have some things going on in the House. We're going to be interrupted. You will have time to make your presentations. We'll start the questioning, and then we'll have to see how we proceed from there.

We'll begin with Gedex and with Keith Morrison, chief executive officer.

Go ahead, please, with your presentation.

Mr. Keith Morrison (Chief Executive Officer, Gedex Inc.): Thank you, Mr. Chairman and honourable members of the committee. It's truly an honour and a privilege to have the opportunity to present to you today.

I have a couple of quick apologies. One is that I'm challenged enough by the English language, so I won't be able to do it personally in French, but we have the benefit of a great translator here. Secondly, this is my first time presenting in this kind of format, so it's a learning process for me as well. I apologize for any lack of effectiveness in the communication today.

That being said, we have a 14-slide powerpoint presentation with a small video embedded in the middle. We're going to go through this in page-turn format. I'm not going to undertake to read the slides; instead, I'm going to provide what I consider colour and context in addition to those slides.

In starting, I will say I'm here to tell you a good news story that is uniquely Canadian and, by the end of the presentation, I hope you'll agree with me that it's a story that makes sense and is definitely important, as it supports the long-term competitive advantage of our country in natural resource exploration and development.

Our company, Gedex, is a small Canadian company. It's unique that a technology of this complexity and sophistication, which I'll get into explaining, would be successfully developed and commercialized by a company of our scale in terms of numbers of employees and of capital resources.

Having looked into some of your backgrounds, I would say that in many ways it's a story you people have contributed to already, because without Canadian commitment to higher education—you'll see a number of Ph.D.s and participation with a number of partnerships and universities in Canada—without programs such as SR and ED, and without targeted programs like as FedDev, the risk and the difficulty of achieving this level of technological advancement wouldn't be possible.

The reason I'm giving you this context, as we turn the page and focus on the technology and the applications to northern development, is that I want you as stewards of the Canadian environment to see something that has benefited from all the things you provide in terms of that environment in Canada. It's very important to me.

So it's a good story, and we'll start at the beginning.

The beginning in Gedex's case is the story of the two founders, two icons of Canadian business, Bill Breukelman and his friend Dr. Barry French. Their friendship started at the University of Toronto in chemical engineering 50 or 60 years ago.

They've both had numerous successes. Commercially, probably the best-known ones are MDS Sciex, which is an analytical imaging company, and IMAX, which is the wide-format theatre chain, which is probably the more broadly known one.

Both consider Gedex their most important undertaking in terms of continuing investment in that family of imaging technologies. But it develops technologies that are applied specifically to subsurface imaging, providing new data that can be used to interpret geology in terms of supporting petroleum, mining, and water exploration and development—globally, but everywhere in Canada.

Applications and benefits from the technology range from east coast petroleum applications and marine applications through to New Brunswick, Quebec, and Ontario, where you have the metals camps, and to the daughter of endowment now, Saskatchewan, which is enriched with potash, uranium, sophisticated agribusiness, and now tar sands as well, to Alberta, through Foothills petroleum applications and tar sands, and to B.C.'s coal. And today we're going to focus on the expansion and development of exploration and the attraction of risk capital to northern development.

Turning to page 2, you'll see a slide that consists of some of the key relationships around Gedex. The fundamental intellectual property that enabled the technology I'm going to introduce in a couple of slides really came from a combination of Rio Tinto and the University of Maryland. The remaining strategic partners have contributed predominantly through strategic finance and support of the cost of the development and the engineering.

● (1540)

The relationships with each of the schools and universities have been multi-level. It has been a source of key employees. In many cases, they have been co-developers of underlying and supportive intellectual property. All of these relationships are active, ongoing, and important to the success of Gedex Inc.

Bringing this technology into the broad context of the Canadian Arctic, exploration for natural resources is fundamentally a risk management process. It's extremely challenging, as I'm sure you're all aware. Our information is never perfect. The cost of perfect information is impossible to achieve.

It's always risking what you believe you know versus the cost of getting more information. This is a continual process, from early stage geological mapping and airborne geophysics through drill evaluation and right to the environmental assessment and commercial stages of development. There is always a trade-off with assurance of information, cost of information, and the ability to advance a project.

What Gedex Inc. is introducing and bringing to the market is a unique value proposition that we believe provides risk takers, at a very early stage of exploration, with better information and better data with which to derive underlying geological interpretation, which is fundamental to understanding the prospectivity, the justification for why a company would invest in the next stages of information, which are going to be increasingly more expensive.

Gedex's role is to provide new information that provides a higher quality subsurface geological mapping and understanding of the geology and prospectivity.

The fundamental proprietary instrument, which is the core of our technological differentiation, is really an extraordinary instrument. We refer to it as an airborne gravity gradiometer. I will explain in a little more detail what that is. Fundamentally, it measures minute part-per-billion changes in the earth's gravitational field. From that, it derives a density function: a change in the subsurface geology that is related to the density of the geological units themselves.

This instrument is an order-of-magnitude improvement over any current commercial capability. Arguably, it is one of the most sensitive instruments that has ever been engineered in the history of mankind. You're literally looking at a Nobel Prize level of physics.

It is the measurement of a change in the shape, or micrometry, but we have to be able to measure that change to one part in 10^{-15} metres—or one femtometre, from a scientific unit point of view. To provide scale to the committee, the nucleus of an average atom is about 10^{-10} metres. We're several orders of magnitude smaller than the nucleus of an atom in the resolution we require in this measurement, and we're doing that in a moving aircraft, so it's a very significant engineering challenge. Our direct investment today is approaching $100 million in development.

We have built the technology up and the instrument is buried deep inside our test aircraft. The total weight is about 500 pounds and it is completely isolated from all of the aircraft accelerations around it. That is critical to getting that resolution and accuracy. The entire 500-pound instrument is actually floating on high-pressure air bearings. It's so finely balanced that if you were to walk up to it and spin it with your finger very lightly, it would continue to spin in a frictionless environment for several hours.

● (1545)

The data controller for about 200 sensors that are internal to the instrument communicates to the instrument without wires. There is absolutely nothing attaching that instrument to the isolation technology that you see here on the slide or, ultimately, to the aircraft. The instrument itself thinks it's flying in free space. Ultimately, from a bizarre perspective the aircraft is moving around it without ever touching it. Like I say...extreme technology. Apologies if the video doesn't work.

Going back to gravity gradiometry very quickly, what is it? In high school when we were introduced to gravity, we were taught that it's a constant, and we worked on problems throwing balls off cliffs, and projectile problems, and we were taught that gravity is 9.18 metres per second squared.

Unfortunately, that's not true. It works for very simple problems like that, but the underlying assumption would be that the earth is homogeneous, that the density structure of the earth everywhere is uniform, but we know from geology and common sense that that's just not true. If you were to hold a rock in your hand that was full of lead, it would be heavy and dense, as opposed to holding a reservoir rock from a petroleum trap that was full of water or gas, which would be very porous and very light.

So if we know that the density of the underlying geology is changing, it only follows logically that the earth's gravitational field can't be constant. It has be changing as well. The trick is, what sensitivity of measurement do you have to make to be able to resolve subsurface geological changes from a gravitational measurement?

The magnitude of measurement that we're making is about a part per billion change and the unit that is applied to that is an eotvos. On a previous slide you see a reference to one eotvos per root Hertz. To put that in order of magnitude again, a part per billion change in the distance between the earth surface and the moon would be about the first 40 centimetres of that voyage. From our moving aircraft, we're measuring the change of the earth's gravitational field in three components to that sub-part per billion resolution. Again, it's extreme engineering and technology.

Moving on to the images shown here, the data is used to interpret subsurface geology, and it can do that essentially from the surface down to depths of about 10 kilometres, which is an extraordinary range in terms of depth of effective mapping. The data are recorded in an image similar to the upper left image on this screen that you can see. Geological units are interpreted from that, and then the prospectivity of those geological units is analyzed by resource companies.

What is key from an Arctic perspective is, that this technology is capable of sub-ice measurements in mapping, and it's also extremely differentiated in that it provides high-value information for the petroleum industry, in addition to effective information for mineral and water applications as well.

● (1550)

The Chair: Mr. Morrison, we're trying to get the other presenters in before we have to go for votes. I don't know whether we can do that or not. We had allocated 10 minutes per presenter, and you're almost at 14. If you could wrap it up quickly...?

Mr. Keith Morrison: Yes, I can wrap it up quickly.

The Chair: There will be questions. Hopefully we'll still have questions, and if so, I am sure it will bring out a lot of the information you would like to give us. It's fascinating, but we do have to allow the other presenters to make their presentations.

Mr. Keith Morrison: I agree. I'm sorry about that. I should have kept a closer eye on the time.

This technology is being deployed in aircraft that is very capable of significant success in long-range Arctic deployments and able to survey up to 400 square kilometres per day, so it's very rapid coverage. It is also very environmentally sensitive, with minimal impact on the environment.

In closing, I think there is a good news Canadian story here. Canadian technology that is leading the world can provide a new generation of geological information that will give resource investors a higher degree of confidence in terms of initiating arctic exploration. We look forward to working with the Canadian government in enabling that. Thank you for your time, and my apologies for going over.

The Chair: Thank you very much for your presentation.

We go now to Diamonds North Resources Limited and Mark Kolebaba, president and chief executive officer.

Please go ahead with your presentation, sir.

Mr. Mark Kolebaba (President and Chief Executive Officer, Diamonds North Resources Ltd.): Thank you for the opportunity to speak. I'll drop right into it.

Diamonds North has been operating in the north for about 10 years, most of them involved with another company called Uranium North. These two companies have spent probably in the order of $100 million in the last decade or so.

I've been working in the Arctic since about 1985. The far north is a great place for mineral wealth, but it also contains almost every commodity of economic value. You have copper, zinc, lead, gold, silver, uranium, diamonds, and rare earths, so it's a good place. That's not including oil and gas, water resources, and coal. It's a strategic place for Canada and I think that's the point I want to get across.

It is a great place to look for minerals. One of the downsides is that it's a very expensive place to operate. It's expensive to operate for a couple of reasons: mainly, short seasons and a harsh climate. There's also a lack of infrastructure and the lack of a labour force. Anybody who goes up there and any equipment, anything that goes up into the Arctic, has to be flown in and flown back out. That really does a lot to the cost.

Another one of our concerns is Arctic sovereignty and mineral title. The Prime Minister has said that the Arctic is a place where you have to use it or lose it and that the government was intending to use it. I think those are very encouraging words, but I think it suggests that one thing is missing, which is that we are actually using in terms of mineral exploration and mining, and I think a lot of Canadians overlook that, and so do the international communities.

Here's why I say that. In the Arctic, you have thousands of people working there each year. They're on the mainland. They're on the Arctic islands. They're looking for different commodities. They're employed by Canadian companies. They're funded by Canadian investors. This isn't the wild west. All these people are operating under Canadian law: mining law, Transport Canada law, and Canadian environmental policy. So this is truly a Canadian-regulated place, and I think mining plays a large part in exercising our sovereignty. We're excited that they're bringing in a larger presence from the military, but you also have to look at building the presence of mining and other resource industries in the Arctic.

As the government builds up the presence of the military in the Arctic, we hope the work of mining and exploration companies is also being promoted and grown through different incentive programs. I want to mention a few incentives that would really help grow the mining business in the Arctic.

It comes down to cost. The biggest issue that we have up in the Arctic is cost. Whenever you can reduce the cost, that will be another incentive to bring people in. We're competing with British Columbia, Quebec, and all these places that have much lower operating costs than we have in the Arctic.

Our biggest thing is infrastructure. That's our biggest issue. What we'd like to see in the Arctic is roads or rails that connect the south to the north.

We could bring a road up to a northern port so that you could extend the transport. It's a super project. It's a large, expensive project and the funding for it would have to be done in partnership with government and industry. I'm sure that people in different companies that can't make it economically by building the road entirely themselves would like to contribute to a road or rail that was funded partially by the government.

● (1555)

There would be great benefits from building a road across parts of the Arctic. First of all, there's the construction portion of it and the jobs you would generate from the construction of the road. Secondly, putting a road into the Arctic that goes past several deposits that are not economical now may in fact make them economical; there's a chance and an opportunity to take different deposits, make them economical, and take them into production, which gives a legacy of employment that may last for 10, 20, or 30 years, depending on the life of the mines. Royalties are paid directly to the government. I think those are big benefits.

There would be another benefit. There are northern communities that have absolutely no contact with the south. It's all fly-in and fly-out. This would make the communities more sustainable and self-sufficient.

In addition, it would generate mineral exploration. You would see a vast amount of exploration for 50 kilometres to 100 kilometres on either side of the road or track. It generates jobs and it's very good for the economy, but it's also a good way to demonstrate that we are exercising our sovereignty in that part of the world.

In the interim, the military is building a bigger presence in the Arctic. They're patrolling the borders and the Arctic islands with sea vessels and aircraft. Some of the equipment could be used to transport supplies and equipment for the mining industry and other industries up there. The user would pay. It would subsidize the military, but it would also give industry a dependable means of transportation for goods and equipment in that part of the world.

There are also smaller initiatives that I think would be very beneficial in the Arctic.

Right now, when you stake a claim for minerals, you physically have to put a peg into the ground. This was done back in the days when you had prospectors walking around and putting in sticks. It's now 2011, and other jurisdictions, such as British Columbia and Quebec, are staking online. It would lower costs.

We have to hire fixed-wing aircraft and helicopters to stake in the Arctic. It's a very expensive process because of the fuel. We bring in people. There's a safety issue. If it could be done online, all the money that goes into helicopters and whatnot wouldn't be lost: the money would be transferred from staking to mineral exploration. Mineral exploration is what actually finds the mines, not the physical staking of the ground.

We need to streamline the regulatory process. We have a short season in the Arctic. All the companies understand the need for a regulatory process. We need it streamlined so that we don't miss seasons. Every time we miss a work season, it's a setback of a year. It means a year longer that mineral surveys aren't finished. We also lose credibility with our investors. The investment dollar, because it can't wait forever, goes to southern projects or to companies working in southern parts of the world. Streamlining would make it more productive.

Another fairly big issue has to do with first nations land. For example, Nunavut is completely settled land, as opposed to the NWT. To put it into perspective, the NWT expects to have a GDP decrease of 2.3% in the next year, and Nunavut expects a 16% increase. From our point of view as a company, we spend 95% of our budget in Nunavut and about 5% in the NWT, which is based solely on the fact that the land is not settled. A huge amount of money is not put into the NWT for that reason.

The Geological Survey of Canada does mapping. A lot of areas in the Northwest Territories have had very little mapping. Geological initiatives help us find mines. They're of great assistance. I don't think the planned government program to look at different commodities is a good thing, because commodities are on a cyclical basis. We'd like to see pure scientific and geological initiatives that look at the potential for all commodities in a region. It's of great assistance to us in generating geological models for exploration.

● (1600)

The last point I have is an incentive that is financial in nature. Right now in Canada, we have flow-through investment in the different provinces and territories. Some provinces have a super flow-through, which is more beneficial to the investor. I'd like to see something that is very beneficial to the territories where you have very high cost: a flow-through mechanism that gives the investors a very high incentive to put money into these territories. Access to capital helps to find mines. It's a very high-cost place to work.

Another good initiative would be a tax credit like you see in Quebec. For every dollar that's spent, the company gets a certain amount of that cash back, and then it can go into the next exploration program.

These are the types of things that really help to extend the dollar and help us to make discoveries.

Thanks for the opportunity to speak.

If you have any questions, I'd be happy to answer.

The Chair: Thank you, Mr. Kolebaba.

Now, I understand that Mr. Gingerich has a powerpoint presentation.

I also understand that the bells are going to start ringing fairly soon. They're 30-minute bells. We need unanimous consent to go into those bells at all, at least to hear from Mr. Gingerich. Do we have unanimous consent to do that?

● (1605)

Mr. David Anderson: To the end of his 10 minutes...?

The Chair: Yes, to the end of his 10-minute presentation.

I hear no objections.

Mr. Claude Gravelle: Would you repeat that? We want to do what...?

The Chair: We want to hear Mr. Gingerich's presentation even if the bells start. They are 30-minute bells.

Mr. Claude Gravelle: Okay.

The Chair: Mr. McGuinty.

Mr. David McGuinty (Ottawa South, Lib.): Mr. Chairman, very quickly, maybe this is not the appropriate time, but if we're going to have to interrupt these proceedings, maybe we should do it later. Is that perhaps your view, that we have a discussion quickly after the third presentation to decide how to bring these folks back, to bring them in by Skype or something? I certainly don't want to lose the opportunity to get a lot more information.

The Chair: We could have that discussion afterwards. As long as nobody disagrees, we can hear from Mr. Gingerich and then we can have a short discussion.

Some hon. members: Agreed.

The Chair: Great. Seeing consent, I'll ask you, Mr. Gingerich, to go ahead with your presentation, please.

Thank you very much for being here and doing this.

Mr. John Gingerich (President and Chief Executive Officer, Advanced Explorations Inc.): Thanks to all of you. I guess I'm going to have to move quickly through this.

To quickly touch on my background, I'm from a technology background. I chaired the OMET program of Ontario, which was actually the group that put the first funds into the Gedex program, so I'm familiar with it. I also was involved in some of the first hyperspectral mapping of Canada's north, and I brought that technology.... At that time, Noranda was a leader. Unfortunately, today we don't have a Noranda.

I'm going to quickly tell you a bit about who we are. Our company is the other iron ore company, the one you don't know about. We're located on the east coast of the Melville Peninsula. We are working to complete a feasibility study with our Chinese partner. I just came back from China, so excuse me if I'm a little punch-drunk from lack of sleep.

We bring together a very experienced team. People will know who Jim Excell is. He's the person from BHP who built and ran the Ekati mine. Robert Collette is also a very familiar name in here. We brought in various seasoned people from the political and the corporate side. Robert Telewiak, who actually spent his pre-retirement years with Falconbridge, was involved in permitting the Raglan Operation, as was Bernie Swarbrick, who is here with me today and is heading our feasibility program.

Quickly, I do want to talk about what is pressing us all, which is, why invest? We have to think of Canada's north as a jurisdictional environment. You're competing internationally for funds. Exploration dollars are going everywhere now.

I think I'm just going to summarize the motivating risks and decisions made by corporations and the jurisdictional risk.

Canada is obviously one of the best places in the world to invest. I think there's not much we have to worry about on that front. We have quality assets. Canada is a major mining country. We know that there's a lot of opportunity here, but in the far north, we lack a lot of detailed information. Comments were made earlier with respect to continued mapping. Mapping is the lifeblood of the exploration industry.

As for skilled labour, Canada has the best miners in the world, but there is a significant issue with respect to our northern communities. Much more training has to be done, actually, to bring more of our indigenous peoples, the Inuit, into the workforce so that there is more participation and the wealth generation that comes from mining.

I will talk a little about the regulatory framework. We have issues with respect to the permitting processes in the north, obviously, which are not aligned with the logic of the exploration processes, as was stated earlier. We have a four-month season, and often if we come up with a target, it takes over four months to get a permit to put a drill on the site. That adds to our costs. Time delays are a serious impediment. That's an area in which the government can make changes.

In terms of being cost competitive, what I really want to talk about at the end of this—and I'm probably going to jump quickly to the end—is the fact that you can't change where you are located. There is a lack of infrastructure and the power costs are high. At the end, I'm going to talk a little bit about a solution to high power costs.

Again, I mentioned jurisdictional risk. Everything here is generally pretty good, so be careful when you are changing policy. Canada is a premier investment place, but we see also, as mentioned earlier, that the federal government does not have jurisdiction over the mineral resources in the north; it's a right of the provinces. The provinces add another layer of incentives to help the industry.

We need to review policy from government, which will level the playing field. As we said earlier, there are incentive programs in Quebec. The reason it's the number one jurisdiction in the world is that they have additional incentives to ensure that they have a healthy mining industry. We lack that in the north and, given the much higher operating costs to be there, you're going to need to look at how you can attract investment when we go through cycles in the economy. This will be the first place people walk away from.

This is to illustrate the fact that Canada is the major source of exploration dollars, but most of what you will see will actually probably end up in the lower provinces. Quebec and Ontario are the two number one attractions for most of that money. Nunavut has seen a fair amount of increase of late, but we're forgetting that their operating costs are four to ten times higher, so the effectiveness of that dollar is much reduced.

Again, as I said, mapping programs are essential. We need to keep investing in our mapping programs and ensure that we have continued investment in the north.

I've mentioned skilled labour.

On the regulatory framework, yes, we do have problems. As I said, we're finding more and more delays. Our permitting is very convoluted, a lot of because we have a lack of capacity in the north. Again, in Nunavut, people are catching up to the south. There are just not the numbers of skilled people. Money needs to be invested to help them and to bring them up, because that's really slowing down our process. That problem is exacerbated when you get to a mature project and you're looking at the permitting issues.

● (1610)

One of the things that we also see in the regulatory framework is that we have to look at shipping issues. Right now, we're seeing that ArcelorMittal, in its Baffinland project, is dealing with this issue head on, but every project is going to be eventually addressing the same problem.

What we're seeing is that every ship is looked at as an incremental issue on an environmental basis, where that just becomes a bottleneck and fails to address, really, a larger vision. The government is going to need to stand back and come up with a national strategy as to how it's going to allow and deal with shipping in the north. If you're going to look at increased development, there will be increased shipping.

Right now, the burden is falling on individual companies to tackle each project literally a ship at a time, and that's going to shut development down very quickly. If the industry sees that this is going to be a barrier, again, it will be a barrier to future investment.

On cost competitiveness, we can't change the fact that there are issues, but don't let the framework make it more expensive. They're already streamlining the permit process and hopefully we don't have any additional barriers currently as to location.

One thing I'd like to bring up is that we're seeing that on the power issue. It is a huge impediment. I'd like to point out how we're seeing the high costs being generated in power. It's not just the industry that's facing it. So are the communities themselves.

I have a slide here with me that lists all the diesel plants that are sitting in Nunavut. It's hard to see it on the slide, but in your handout you'll see that it's a very aging infrastructure. Based on the report from QEC, they estimate the capital replacements at about $15 million per station. You'll see that they're all 30 years old or more, though some are younger. It has cost them over $100 million a year to operate. Also, you can look at the kilowatt rates that are being charged in the communities. Compare that to what people are howling about in Ontario. Essentially, these are tremendous deterrents to investment.

We need to have a solution. We can't keep investing. There was at one point a discussion that we might go nuclear, but I think the reality is that it's not practical, given the scale and the size of the number of smaller communities. So we've been looking at an opportunity for government and industry to collaborate on the LNG solution. There are power barges existing today, of various scopes and size, and most of them are larger than what would be required by the communities. The technology is in place. What is not in place are the delivery and storage facilities for small-scale operations.

LNG has 40% less CO_2 emissions and almost 1,000 times less in noxious gases, so this is a relatively clean solution to our energy requirements in the north. There is a surplus in the emerging technology of natural gas, so we will have a lower-cost power supply to the north.

Also, there's an opportunity to partner. We know that Iqaluit is facing its own brownouts and challenges to meet its power needs. We will be looking at the same issues. There's an opportunity for public-private partnership in dealing with an LNG solution for the north and looking not only at how to solve the immediate problems, but at how to micro-scale these operations to solve it.

These are coastal communities, so barging and these types of solutions could be out of what we call our beta sites and would lead to solutions that not only could be applied to Canada's north, but would lead to a business that could be sold around the world. We actually did our white paper on this and realized that there was a group looking at Indonesia that had 78 barge-based power plant opportunities at 50 megawatts apiece. That's about an $8-billion business.

Look around the world, at the Philippines and all these communities and Canada's north and its coastal communities, and you can see this is not only a real opportunity to help reduce the barrier of high power costs to the north, but a business opportunity in itself to place Canadians and Canadian industry on the map of delivering power solutions to remote communities.

Lastly, as I went through the list of what I said you saw on the first slide, I think Canada can reach this kind of scoreboard. We can improve our training, obviously, for our aboriginal communities, in making sure we have a local workforce. We can streamline the regulatory process. We can keep investing in our quality assets and mapping. We can solve the shipping issue; literally, it's a political issue.

● (1615)

Again, we can't necessarily change the fact that it's the Arctic. We can't change the fact that there's ice there and it's remote, but there is an opportunity to deal with the power issue. It could be a game changer for all of us, not just the communities, and it could help lower the costs, that current barrier, for resource development in the north, not just for mining but for oil and gas as well. It has a green component that comes with it as well.

As I said, we currently are seeing barriers rise with respect to skilled labour and with respect to the regulatory framework, which are making it an even greater impediment to invest in the north, and money will flow to where it can recoup returns. We can't have eight- and ten-year permitting processes for a mine. That's what we're headed, given the bottlenecks that currently are forming.

The Chair: I'm sorry, but we do have to get going to the vote.

Mr. John Gingerich: Thank you. I was at my last line.

The Chair: Thank you very much for your presentation.

Mr. Anderson.

Mr. David Anderson: I was just going to ask members if it would be okay if we come back here. How about if we make an agreement that there are no motions made or discussed today in any fashion. The people who want to come back can come back and deal with the witnesses until 5:30 p.m. Does that sound fine?

The Chair: Is that agreed?

Mr. David Anderson: And if others chose not to, we have half an hour more.

The Chair: We can hear from witnesses. Of course, there can be no motions dealt with or anything like that, but we can hear from witnesses with three people, as long as have one from opposition and one from government.

I hope that most of us can make it back, until 5:30, because we have to end the meeting on time. Everybody has other things on their schedule after that, but we will suspend the meeting until we have enough people back here to start it again.

The meeting is suspended.

● (1615)

(Pause)

● (1700)

The Chair: We'll reconvene the meeting. With these accolades flying across the floor, maybe I shouldn't have. They were pretty positive.

We've heard all of the presentations and we appreciate them. We'll get directly to the questions and comments.

We're going to do a five-minute round, starting with Mr. Allison.

Go ahead, please.

Mr. Dean Allison (Niagara West—Glanbrook, CPC): Thank you, Mr. Chair.

I want to thank all the guests for being here today. I hope we can bring them back again, because I don't think we can get enough information in five minutes or from your 10-minute presentation.

I'm going to direct my questions mostly to Mr. Morrison, just because of the time factor here.

I want to talk a bit about your company in terms of some of the founders, not underestimating the success of what some of the founders have done in the past. You mentioned that a couple of the founders were involved with developing IMAX theatres?

Mr. Keith Morrison: That's correct.

Mr. Dean Allison: Then Sciex...? Just quickly, the company was bought out by MDS...?

Mr. Keith Morrison: That's right.

Mr. Dean Allison: That technology is the software that drives a lot of the CT scans.

Mr. Keith Morrison: Absolutely.

Mr. Dean Allison: So these are major developments, really, in terms of Canadian technological history and developments.

● (1705)

Mr. Keith Morrison: Yes, absolutely. They're icons.

Mr. Dean Allison: That's excellent.

You went through the technology fairly quickly, but just to keep it simple for all of us who may not be geophysicists, you fly this technology over the terrain. What does it do to the terrain in terms of what you're able to determine, to see, or what you're able to come up with?

Mr. Keith Morrison: In itself, it doesn't do anything to the terrain. It doesn't emit any signals. There's no impact. It's a passive system, so it's measuring natural fields that are occurring. Essentially, it will very accurately and quickly calculate how the masses of geology are changing beneath the surface.

From subsurface down to depths of about 10 kilometres, it will map. in very high resolution. the primary geology, what rock types are there, the structures, how the rocks have been broken and moved, their alteration and how fluid has moved through the rocks, and ultimately the mineralization, in terms of how ore bodies or petroleum resources are formed and stored.

Mr. Dean Allison: As you fly the technology over the Arctic or wherever you're flying, what you're saying is that you can pretty much determine what minerals and resources are under the surface up to a depth of 10 kilometres.

Mr. Keith Morrison: That would be a big simplification. I think we can produce the most meaningful data to help resource companies determine that. It's not a silver bullet on its own. It's better than anything that's out there today, but it actually integrates very well with best practices.

You would work with this data along with existing magnetic data or drilling data or seismic data. It will provide very rapid data for these companies to know where to focus. It will provide information as to where not to go, where clearly there's no prospectivity.

It will also provide information where there is a high probability of prospectivity, but will not provide a definitive NI 43-101 resource that the companies can move forward with. You still need to go on the ground and do physical sampling and drilling. What it does is reduce the number of sites you would actually test. You would move more rapidly to big events that are probably going to be economic, on the scale that the infrastructure and the cost challenges we've heard about require in the Arctic.

So you're going to avoid getting tied up in little things and quickly identify where the big prospecting potential is.

Mr. Dean Allison: My question is, in terms of what's going on in Ontario in the Ring of Fire, do you think this technology would be helpful in identifying what has already been going on there in terms of research? How would this fit in with an area like that?

Mr. Keith Morrison: The system will be I think definitive in finally evaluating the prospectivity of the Ring of Fire. Again, the challenge in the Ring of Fire today is that you have two existing ore bodies and the challenge of bringing in infrastructure north from Nakina, whether by rail line or road—and power. If you could rapidly assess that area and determine that there were two more ore bodies, then the number of shoulders that the cost of infrastructure can be shared across increases, and actually, the net value of all the deposits increases, because it becomes more feasible to bring infrastructure in.

So at this time in the Ring of Fire development, a technology like this could be instrumental in determining final prospectivity and allowing more logical land use and infrastructure decisions to be made.

Mr. Dean Allison: How much is this a game-changing technology? This has obviously been looked at and has been subject to attempts to develop it over the last 10 years.

Ten years ago, this technology really didn't exist. What kind of game-changing technology really is this for the exploration field?

Mr. Keith Morrison: You don't want to toot your own horn too much. It's brand new data that has never been available before, with this cost basis and speed, so it's extremely significant.

As for the strategic partners and the amount of time and continuity that have gone into the technology, I think that echoes with the industry's recognition of the significance of the measurement. This company and its predecessors have been funded for almost 25 years, through thick and thin and market volatility, and enormous amounts of money are being pushed into this technology because of the size of the prize.

The benefit of low-cost, high-resolution, and high-quality geological information in these remote environments is game-changing. If you can reduce the cost of these environments and attract better capital at a better risk point, that's what's fundamental to changing development.

● (1710)

The Chair: Thank you, Mr. Allison.

Thank you, Mr. Morrison, for your answer.

Mr. Stewart, you have up to five minutes.

Mr. Kennedy Stewart (Burnaby—Douglas, NDP): Thank you, Mr. Chair.

I have two questions. I'll start with Mr. Kolebaba.

I'd like you to elaborate on how the lack of treaties in NWT has slowed down your company's explorations.

Mr. Mark Kolebaba: That's a good question. I'll start with Nunavut, where the land issue is settled. What happened there is that the different communities took ownership of certain parcels of land. The parcels of land have then been surveyed, and now we look at a map and know who owns what land. When we go to do an exploration, there is no opposition.

If you go to NWT, there are no boundaries drawn yet. There are many boundaries potentially to be drawn, but many of them overlap, so you have different communities saying that it's their land. We see it all as crown land. As soon as we set a foot out to do work, we have 18 communities all coming back at us saying that they own that land.

So it gets tied up. We have a number of projects that are essentially subject to *force majeure* because nobody can make a decision on what goes next.

Mr. Kennedy Stewart: I was wondering how that ties in with the cost for your company. You are operating in some of these areas with clouded title, and there is a duty to consult, I believe, as well. How does it work? Also, could you give us some idea of the cost it adds to your operations?

Mr. Mark Kolebaba: Yes, I'll give you a really good example. We used to do a lot of work on Victoria Island, where there is a boundary that came right through the middle of a project. On one side it was Nunavut, and on the other side was NWT. For the same permit, just to do some drilling of several targets—which is fairly low impact, with a small footprint—what took us, say, three months and about $5,000 took us 14 months on the other side and probably cost closer to $80,000 or $90,000, just to get the very same permit.

So it's a very significant difference.

Mr. Kennedy Stewart: Mr. Gingerich, you also mentioned working with first nations in the north. Is this something you have come across as well?

Mr. John Gingerich: Yes. We operate right now exclusively in Nunavut, where the land questions have been settled. There is a framework that is very effective. Our problems there come from the fact that, as we have empowered Nunavut and this transition has put more authority into it, it doesn't have the capacity. Now what we're seeing is that INAC—which is, again, the federal government—still has the jurisdiction, and we're now caught between the reality of what it is and what we'd like it to be. Unfortunately, this is causing us to basically watch our permitting process just go sideways.

It is impossible now to function as you would in the south. The way Keith and I would both start is basically that we would find a target. We would then drill it, we could permit it, and we would get it done within a month or two.

I can't get a permit for four months. My season is only four months long, so this forces me to lose a year in exploration. My investors, who are looking, of course, at a return on capital, need news. They need to see the upside if I am to go back to raise new capital. It's impossible to meet the investor requirements now, because another company will say, “Why don't you go south where you can operate more efficiently?”

It's a problem.

Mr. Kennedy Stewart: Am I right to guess that you're not going to NWT just because of the clouded title?

Mr. John Gingerich: I have worked internationally in many countries. I was with Noranda. Permitting issues and land issues are so fundamental. if you have jurisdictional risks or land tenure risks, no investors want you to go there. It's a huge impediment to investment.

Mr. Kennedy Stewart: Thinking of value added in the north, let's say that you've had some propositions in which you've said you would put some roads in and you have some additional tax incentives—those are the kinds of things you're asking for. We're talking about pure extraction here, but I'm wondering whether you can envision a time when we might have other industry located in the north that makes use of the products you're extracting.

I'll leave that open.

Mr. John Gingerich: I'll answer.

That goes to what I was saying before with power; you saw the cost of it in the north. You couldn't compete in Ontario if you were facing those energy costs.

The real reality of the north right now is that it will be born out of the growth in resources. You need big-value projects to carry the burden. But if you can lower the costs of operating and if you have coastal areas—because there are benefits in logistics—then you can create....

One of our plans is to actually put an industrial park in our development if we can get the power costs down. We're on the ocean and we're close to Hall Beach. But in order to get that industrial park, we still need to get low power costs. Without that, no projects and no new industry can effectively survive in that environment.

● (1715)

The Chair: Mr. Stewart, your time is up.

You can give a very short answer, please, Mr. Kolebaba.

Mr. Mark Kolebaba: The other benefit is to the community itself. There are communities up there that are fly-in, fly-out. If there was additional infrastructure, that would lower their burden. They would be a lot more self-sufficient. The government funds a lot of that transport.

The Chair: Mr. McGuinty, you have up to five minutes. Go ahead, please.

Mr. David McGuinty: Thanks, Chair, and thanks, gentlemen.

Mr. Morrison and Mr. Gingerich, in both of your presentations you used the expression “use it or lose it”. Since that statement was uttered by the Prime Minister, a lot of people have come to me and said, “Yes, use it or lose it—or potentially abuse it”.

Mr. Morrison, I'm trying to get a sense of your technology and your experience. In the case of Gedex, it's fabulous technology, by the sounds of it. In your presentation, the only applications I heard about related to use in “petroleum, mineral and sovereignty purposes”. Interesting.

And Mr. Gingerich, you said in here, “'Use it or lose it'; you must first know what it is in order to use”.

I want to get your sense of whether we really know what it is and what's going on. Both of your presentations have been corralled to traditional natural resource discussion and debate, right? It's stuff we're going to dig up, stuff we're going to drill for, stuff we're going to convert perhaps, and stuff we're going to sell. But I want to get a sense of....

For example, in your case, Mr. Morrison, with your technology, you say here, “A gravity gradiometer can map through rock, ice and under water to depths exceeding 10 km.” That's incredible.

Can your technology track the beluga whale? Can it monitor the activity of straddling stocks in the Arctic Ocean? Can it take snapshots about the effects of drilling, for example, on shorelines? Can it examine and help us understand the state of play of the tundra? For example, how many boreholes are there? What is the overall carrying capacity? How many have been backfilled with concrete? How many cutlines have been cut throughout the Northwest Territories in the north? What are the overall effects of those activities on carrying capacity?

Perhaps you could just give some thought to that, and then you could come back to me on it.

To Mr. Gingerich, in terms of knowing what it is, isn't it important for us to know, as a country, more than simply mineral potential and fossil fuel potential? What about biodiversity? What about species at risk? What about flora and fauna?

We continue to corral the debate here in this old Canadian hewer of wood and drawer of water context. In Costa Rica now, they're negotiating with the top three pharmaceutical firms for bioprospecting. They know that the future is going to be about the DNA—who has it, who doesn't have it, and what we can do with that DNA in terms of bioprospecting.

I don't hear any talk on that from major technology and investment players. I'm not saying you should be in this business, but I want to get a sense from both of you, if I could now, on how you see this application of technology and potential beyond minerals and oil and gas.

The Chair: You have about 45 seconds each to answer.

Go ahead, please, Mr. Morrison.

Mr. Keith Morrison: I don't believe I used a “use it or lose it” quote, but I'll try to answer the question anyway.

Within a ten-minute context we have to focus our message, and our message is the benefits of this technology in this application. Our technology will focus exploration efforts in areas where it should be focused, and minimize environmental impact and activities in areas where it should never be in the first place.

That's a huge win-win for everyone. It stops wasteful expenditure. It moves companies very quickly to true answers in terms of prospectivity. They can also give governments, both local and national, guidance on options as to how to develop the north.

So our technology is information-rich. As to what you do with that information, it's up to all the stakeholders to determine, but—

● (1720)

Mr. David McGuinty: Can you track a straddling stock of fish in the Arctic Ocean?

Mr. Keith Morrison: No.

Mr. David McGuinty: Can you track the belugas?

Mr. Keith Morrison: No. That's not the application.

Mr. David McGuinty: Can it be made to apply to use for that kind of research and data? No?

Mr. Keith Morrison: No, it can't.

Mr. David McGuinty: Okay.

Mr. Gingerich.

Mr. John Gingerich: Actually in a previous life, as I said, I did head a research project with NRCan, which was to build a satellite to help map the north. To use it or lose it, you have to know what you have.

The purpose of mapping has land use planning considerations. I'm actually involved with the first nations in the Ring of Fire. I have a first nations company. In Ontario, we know they're in this segregated...a certain per cent of the land has to be set aside through a land use planning process. The problem is that people are making decisions on what land will be good for exploration or good for biodiversity without having the database.

So the mapping.... When we go mapping, although we map the rocks, you do gather all the information.... So yes, maybe we don't do the whales and the fish, but from the surface biodiversity—because we are sight-limited types of technologies—we do provide that information, which can be used both for setting aside parks and deciding which areas are amenable to mineral exploration, or oil and gas, or biodiversity habitats.

The Chair: Thank you, Mr. McGuinty. Your time is up.

Mr. Anderson, go ahead up to five minutes, please.

Mr. David Anderson: Thank you, Mr. Chair.

I want to thank you gentlemen for being here today. It's a great day, and you've given some very interesting testimony.

Mr. Morrison, I'm wondering how the machine is powered. How do you power it?

Mr. Keith Morrison: It doesn't require a lot of power. Really, almost nine-volt batteries is all it requires.

Mr. David Anderson: And it will do that kind of work with a small amount of power like that? It sounds incredible actually.

Mr. Kolebaba, you talked about infrastructure and the need for viable infrastructure. Have you done any work on or given any consideration to whether a type of a P3 project would actually work in an area like that? I think there has been some discussion in Saskatchewan about opening up the north there as well and perhaps having private and government involvement in that. Have you talked about that or is that part of your presentation?

Mr. Mark Kolebaba: When you say P3, you're talking—

Mr. David Anderson: Private-public partnerships. You bring it—

Mr. Mark Kolebaba: Yes. I'll put it this way. There are a number of deposits across the north that are not economical based on one company building a single road. But if you have enough of these deposits along a path, then it starts to become economical if the companies kick in a portion of that road, and if, say, the government pulls in the part that—even if there are no deposits—is needed to get you to that port or to the railhead.

Mr. David Anderson: So overlapping claims and jurisdictions would come into play, I guess, to some extent, wouldn't they?

Mr. Mark Kolebaba: Yes, for sure.

Mr. David Anderson: Mr. Gingerich, you were talking about LNG being a good option. The reality is, with bringing in greenhouse gas emissions regulations and that kind of thing, that clearly the cost of our electricity will be going up, whether it's coal-generated or LNG. Have you given consideration to that?

The second part of the question is this: have you given any consideration at all to talking about small nuclear plants? We've had some presentations here about them as well, in the last Parliament.

Then I'll pass this off to Mr. Trost. I think he has a couple of questions too.

Mr. John Gingerich: Clearly, I think small nuclear has potential. I worked for Eldorado Nuclear at one time in my career. Obviously it can suffer a setback, given the issues that happened in Japan. It is a long-term solution. I don't think it's near-term enough. With LNG obviously we're seeing a vast supply and it doesn't have the same environmental risks. It has some improvements. Any combustible fuel will have an environmental impact.

The thing I learned a long time ago in my career is there is no such thing as a free lunch, whether we go nuclear, go with LNG, or stick with diesel. There is an environmental price to be paid, and there is a potential other downstream risk whichever path you take.

The Chair: Thank you very much.

Mr. Trost, you have about two and a half minutes.

Mr. Brad Trost (Saskatoon—Humboldt, CPC): Thank you, Mr. Chair.

I guess my question is more about regulatory aspects. We had a witness the other day who talked about his experiences with Greenland and Newfoundland, where they had single individuals in charge for the entire regulatory process to speed things through and to help people navigate through the system.

Have any of you gentlemen worked with or experienced a system similar to that? If you have, do you have any comments? If you haven't, what do you think are the things that could be done, other than some of the land claim issues, which have been addressed, to speed up the regulations in the north so that people can get in and out in the rather sunlight- and weather-limited exploration seasons?

Mr. Mark Kolebaba: I can answer part of that. In places like Newfoundland, it might be one person, but there is a series of criteria that have to be met.

● (1725)

Mr. Brad Trost: Newfoundland is going to this system, apparently. They aren't quite there yet.

Mr. Mark Kolebaba: If you can meet these certain criteria, then it's a very easy decision for somebody to make at the end, whereas what we have in the territories is that every project is looked at in its own light. A lot of the information is quite repetitive; that can be the streamlined part of it.

Mr. John Gingerich: Yes. There's actually a program in place called CanNor, which is trying to set up a similar process for the north, and it really is important. No one is saying to go and cut corners, but it is a nightmare of coordinating and logistics for people to actually get their jobs done. The water test.... We do numerous studies.

So it's a streamlining of the process to help navigate the problem. As it is now, you can essentially get dragged into multiple, multiple years in just simply the inefficiency of the system, not because there's necessarily an impediment or somebody opposing it. It's just a problem.

Mr. Brad Trost: Do you think we should wait for the CanNor process to work its way out because it seems to be in the way...? Or do you recommend other changes or just an acceleration of the process?

Mr. John Gingerich: As I said, the one problem currently that we recognize is the capacity issue. There needs to be funding to support and train. I know that in places INAC has stepped in paces to try to help fill the gap. There are not enough experienced people to sit on all the boards and committees and to review all the projects. This is another bottleneck that's occurring and that's hurting projects. The CanNor process will streamline policy, but right now there's a system that can't be implemented, period, because of the lack of capacity in Nunavut within its current administration.

The Chair: Thank you, Mr. Trost.

Mr. Lizon.

Mr. Wladyslaw Lizon (Mississauga East—Cooksville, CPC): Thank you, Mr. Chair. Thank you, gentlemen, for your presentations.

The first question I have is to Mr. Morrison. You mentioned that you can map with this wonderful device down to 10 kilometres, correct?

Mr. Keith Morrison: That's correct.

Mr. Wladyslaw Lizon: I have a question. Just on the practical side of it, why would you...? Ten kilometres? Nobody would mine anything at all that is 10 kilometres down at the present time.

Mr. Keith Morrison: The deeper applications are in support of petroleum exploration and identifying gross characteristics of the sedimentary base and where the oil traps are contained. In many situations, basement structures that affect how the sediments are deposited have an important impact on where the traps are and the types of traps. That information is predominantly used by the petroleum industry.

Mining data would be from the surface down to probably a kilometre in terms of application, and groundwater would be obviously very near the surface.

Mr. Wladyslaw Lizon: After you are done with mapping the area and you've come up with the final product, which is the maps, how accurate are they on the actual geology that's in the area?

Mr. Keith Morrison: It's a great question. In areas where you have other geoscience information, where there's some historical drilling, say, or GSC mapping, you can calibrate your data versus known hard points of information and extrapolate it. In areas where you know absolutely nothing, certain types of interpretation will be extremely accurate. Certain details in the data won't be, and you'll need alternate information, but the information is always accurate and can always be continually updated and integrated as new information becomes available. As you learn more about the physics, the rocks in those areas, the more accurate your ability is to review the data and understand the geological significance of the measurements.

Mr. Wladyslaw Lizon: If someone wants to explore further and uses your data, do you have another device that they can use before they drill?

Mr. Keith Morrison: It depends on the application. In some situations—what we call direct detection—if you're looking for something that is very large and very heavy, like an iron ore deposit or coal deposits, a company may be comfortable going directly to drilling from the airborne data. In the situation of a petroleum company, where the cost of a well may be in the order of tens of millions of dollars, they're probably going to look to have additional information to mitigate the risk in that decision.

Our information will help them initially to understand the prospectivity, why they should look there, and the complexity of the geology. What other type of additional information would they want to have in order to make a risk decision on the deployment of that level of capital? Again, it depends on the application, but it's fundamentally a good geological measurement that's of utility both to mining companies and to petroleum companies.

● (1730)

Mr. Wladyslaw Lizon: My next question is for Mr. Kolebaba.

You use the geomapping data in your work. What other elements would you say are important in mineral exploration, especially in northern Canada?

Mr. Mark Kolebaba: A lot of the work that the Geological Survey of Canada would do would be physical mapping and using this kind of technology as well as other forms of geophysics to identify units and then essentially ground-truth them to understand what the lithology is.

A lot of geochemical surveys are useful for us: big regional stream sediment samples or lake bottom surveys that identify different elements like nickel and gold, and big broad regions that you can start targeting for further exploration, that kind of thing. Also, probably, modelling different areas, taking in all the different geological layers they have—geology, geochemistry, geophysics—and starting to develop models for different deposit types that might actually attract business to those areas.

The Chair: Thank you, Mr. Lizon, your time is up.

Our time for this meeting is up.

I would like to thank all of you for coming in and making your presentations. I apologize for the interruptions. That happens here sometimes.

Mr. Swarbrick, you didn't even get to answer any questions. Had we been here longer you probably would have.

Mr. Bernie Swarbrick (Vice-President, Capital Projects and Studies, Advanced Explorations Inc.): I was here for moral support, and if required.

The Chair: Thank you for coming too, though.

Thanks very much to all of you.

The meeting is adjourned.

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