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TENSIONS AND OPPORTUNITY IN ARCTIC DEVELOPMENT AND STEWARDSHIP

MR. STEPHEN PETRAS: Welcome back everyone. We will now start our formal afternoon panel session of our conference. Our next panel will delve into tensions and opportunity in Arctic development and stewardship. Our moderator is Professor Jonathan Adler. Jonathan is the Johan Verheij Memorial Professor of Law here at Case Western Reserve University, School of Law, and the Director of the Coleman P. Center for Environmental Law here at our law school. That center by the way is a community partner with us in this conference. He teaches courses in environmental, administrative and constitutional law. Professor Adler is the author and editor of seven books and over dozens of book chapters. His articles have appeared in publications ranging from the Harvard Environmental Law Review, the Yale Law Journal on Regulation to the Wall Street Journal and USA Today. He has testified before Congress dozens of times and his work has been cited in the U.S. Supreme Court. You may have heard Jonathan on the PBS News Hour with Jim Lauer, on NPR's Talk of the Nation, on the Fox News channel or on Entertainment Tonight. He has received numerous awards and recognitions from such institutions as the Cato Institute, the Environmental Law Institute and the American Law Institute. Here at Case Law School in 2007 he received the Distinguished Teacher Award. Jonathan, over to you.

PROFESSOR JONATHAN ADLER: Great, thank you. It's a pleasure to be here. On behalf of myself on behalf of the Coleman P. Burke Center for Environmental Law, it's a pleasure to be part of this program today and I look forward to what is going to be an interesting and provocative discussion. I'm going to be incredibly brief because I know all of you aren't here to listen to me but rather to the folks we've put together on this panel to talk about tensions and opportunity in Arctic development and stewardship. The full bios of all of our participants are on the program website and so I will refer you to that. I am going to give very brief biographies so we can leave the maximum amount of time possible for our discussion. We will first on our panel hear from Professor Charles Doran who is the Andrew W. Mellon Professor of International Relations and Director of Canadian Studies at the Johns Hopkins University School of Advanced International Studies. After Professor Doran, we will hear from Professor McCarney, or I should say Ambassador McCarney who is Senior Fellow in Foreign Defense Policy at Massey College and the inaugural Pearson-Sabia Distinguished Visiting Professor in International Relations at Trinity College at the University of Toronto and among many other things was the former Canadian Ambassador and Permanent Representative to the United Nations. We will then hear from Martha Hall Findlay who is the Chief Sustainability Officer at Suncor Energy and is a member of the Canadian Minister of International Trades' Trade Expert Advisory Council as well as a former member of Canadian Parliament.

Fourth, we will hear from Hugh Short who is Chairman and CEO of Pt Capital, was former Chairman of the Alaska Industrial Development Authority and former Mayor of Bethel, Alaska. So again, since you're not here to listen to me, I'm going to turn things over to Professor Doran for the first set of remarks. Welcome Professor Doran. I'm glad you were able to join us.

PROFESSOR CHARLES DORAN: Well, thank you very much. I hope the technology on my side holds up. I would say first of all Canada-U.S. relations is a wonderful thing to be part of because you get to meet so many wonderful people. I see this in the strength of this incredible program here. I've heard a lot about CUSLI. I can see why now because the quality of the work here is really outstanding. I want to thank Jim Blanchard for his association over the years. What an incredible background he has both in terms of domestic politics and Canada-U.S. relations and I guess people know that he wrote a book on Canadians relations that's filled with insight. Roy Norton, congratulations on a great award. You and I have been friends and associates for a very long time and finally the comment that Peter MacKay made about eating the raw flesh of a whale reminds me of exactly the same situation. I was in a social situation like that. I couldn't say "no." I ate some whale blubber and as I recall, it was very chewy and salty, but it wasn't bad. So, it's a delight to be here with all of you.

Now, what I'm going to try to do is this answer this question: what in U.S.-Canada terms are the most pressing problems as I see it regarding the Arctic? I'm going to start off with just two quick observations because the first panel was just superb. I couldn't equal that. Two observations about global warming in the Arctic. The Arctic is a price taker when it comes to the environment; there's not much you can do about changing the environment, improving things and it is going to be the target of so much of an impact. They're just two things that stand out from me. First of all, the rate of increase of impact on the Arctic and indeed worldwide is much greater than linear. That means if you just put up a ruler and you put it up that would be fast change, but non-linear change is far faster than that and that is what we are contending with. So, all of these negative effects are going to happen far sooner than people anticipate. Secondly, as was mentioned already the Arctic of course is placed where the change is at least twice as fast maybe more than twice as fast as elsewhere as the sun for example pushes back the snow and ice and you have a dark permafrost that absorbs the sun and releases methane and the whole cycle continues even more rapidly. So, the Arctic is unfortunately the real target of environmental change, including very negative environmental change.

Now, I will try to address three things. The impact as I just have done, the security challenges that I think are very imminent involving the Russian and Chinese buildups and I think it's fair to say these are military buildups – have no doubts about that. Thirdly, the question of transiting in the Arctic and what that means particularly in Canada-U.S. terms. Now, Canada and the United States recognize in terms of security challenges that neither country can deal with these security problems alone. We have to do it jointly and we have this incredible institution called NORAD in which there's coordination and cooperation to just an incredible degree, great respect on both sides in terms of the officers who serve,

and it's been going on for a long time. There's not another institution like this in the world. It couldn't be a more important thing because I think the security challenges are really immense and increasing, so what I would say here is that it's the case that Russia is building up its effort for defensive purposes because it sees that now it's more vulnerable but unfortunately at the same time is developed missile systems which are offensive and which are targeted at us – Chicago, Detroit, Toronto, Montreal – we're all really clearly direct targets now particularly of the new cruise missiles. So, we have to deal with that and what we can do is first of all to try to improve the monitoring capability – we have a lot of things in mind jointly. I don't know how rapidly that's going. As far as I'm concerned as an analyst, it's not going fast enough. This is a serious problem increasing vulnerability. I don't think any Americans really understand this and they should and maybe the fault lies with people like myself who haven't publicized this sufficiently but the new vulnerabilities I think are immense. In fact, more challenging than vulnerabilities that we have in a lot of other places. So, that it seems to me is something we really must jointly give attention to, and we can't do it separately, we have to do it together. The effort is vulnerable to administration changes on both sides and so on, but we have to coordinate this now and be very serious about it because this is a threat which is genuine and it is at our doorstep.

Finally, let me say something about this issue of transiting the Arctic. Americans and Canadians show I think typical North American maturity – I'm originally from Minnesota so the Americans say Minnesotans are the next best thing here to Canadians – we have shared some similar characteristics notwithstanding all the recent publicity that has happened there. There's a kind of a typical maturity about Canada-U.S. relations looking at something like the issue of the Northwest Passage and whether it's an international waterway. As a specialist on international relations, I would just like to say that I think that both governments have handled this very maturely. What we do is we continue to agree to disagree, and I guess that's what's called diplomacy, which is really important here. The problem for the United States is that there's so much at stake at this point worldwide in this matter of how waterways are being used that the Northwest Passage is always going to be an example. I think an example of what it means is that Russia would like to declare the so-called "Northern Route" Russian waters, not the high seas, but as international law recognizes as the high seas but rather, they want to treat them as internal waters. I think Putin would actually like to charge a fee for the use of these waters I'm not sure that would be too successful but that's a measure of the way in which they like to constrain the movement and flow. There's some justifications for it. Port facilities will have to be used and the shipping going up and down and so on would benefit from that but I think this idea of closing it off in international legal terms is very problematic but the much greater dispute much more important dispute is of course in the south and east China seas where China would like to declare all of these waters internal and shut off passage to foreign navies and even to some foreign maritime fleets. The problem is that the Northwest Passage then becomes a kind of example that they'd like to use. The Chinese are very flexible so on the one side they have said that the Northwest Passage exists and is an international passage and Canada should

acknowledge that but in terms of their own waters they want to close this off as internal waters. That of course would affect more than half of the movement of shipping worldwide so that is a serious problem. So, how do we how do we deal with this? Well, let me just give you a little insight. I know that our government representatives are constrained a bit here on this, but I would say as an academic I can be more responsible. I think I won't be fired, I'm not sure. There's a dirty little secret and that is that the United States basically agrees with Canada that all of those areas north of what can be described as the Northwest Passage are Canadian, but we can't say that because there's so much at stake on this issue internationally. In addition to this, it seems to me that we must be very careful how we handle this issue of movement in this area. I'm not sure there's going to be any significant transits.

What's much more significant is that there will be movement in and out from mines and from oil fields and so on. There'll be a lot of that activity maybe much more so than the other and indeed as people have said again and again travel in the Arctic certainly now and into the world of the future is not going to be a breeze, it's not going to be easy. There are sand bars, there are currents, there's devilish weather and it's going to be very difficult to navigate these areas and so even though on the map it might mean that it's a short distance for China to go from Europe to China and back and forth is an extension of its Belt and Road Initiative, in reality it's a lot slower probably to navigate these areas. Yet, this is going to come up and in the lifetimes of people who are in this audience, this is an institute that is at a place that emphasizes law and international law in a premier way and so this kind of question is going to have to be dealt with I hope in the same kind of responsible fashion that both Canada and the United States have done so at this point. So, with that I will take questions when that's appropriate.

Prof. ADLER: Great. Well thank you very much and now we will hear from Ambassador McCarney.

AMBASSADOR ROSEMARY MCCARNEY: Thank you very much and thank you everyone. I've been listening in most of the day and it's been a fabulous conference. I feel like I'm a little bit like at a summer camp for grownups because I see so many familiar faces and old friends which is wonderful. I probably have one of the longest associations with the Canada-U.S. Law Institute because I first came under its magic when I was about 21. I was the first student to do an exchange program from Western Law School to Case Western Reserve way back in the day and then I became the first Canada-U.S. Director of CUSLI with Sidney Picker and Henry King. So, I feel like I grew up professionally at CUSLI when I was in my early 20s under some remarkable faculty at both Western and at Case Western, so it is a bit like homecoming. I also got and I was struck by Peter MacKay earlier also in law school I got one of the best summer jobs imaginable. I lived in Yellowknife and I traveled to every single Arctic community across the north to east, east to west, north to south with the court circuit which was airborne on twin otters and well anything that would get into the air bush planes etc. So, many times I've gone back. I've done the whole Canadian and I say that quite purposefully. I've done the whole Canadian Northwest Passage from Resolute Bay to Greenland and with lots of stops up to 89 degrees, so it's been a lot of fun today listening and

when our panel is to speak to tensions and opportunities in Arctic development and stewardship. I kind of underscore tensions and opportunities because I think one of the things as a Canadian so I'm now living in Canada again is that you know I think someone earlier said it's 40% of our territory of the Canadian territories in the polar circle but only about a hundred thousand people live there of which half are Indigenous. I'm going to come back to why that's important and sometimes I think we think too little about the north and sometimes I think we think too much about it, but I often think how we think about it is quite clouded because when we think about it at all and it kind of goes and fits and starts. I'm looking at some of the political leadership; we get all excited when a ship goes through, or boat goes through or something happens and then we all you know kind of forget about it again. So, I think there's this aspect of some people think about it in terms of its mythical beauty, which is true, some people only think about polar bears other people are thinking very strategically about oil and gas and ice and snow, nuclear submarines under the ice, our northern neighbor Russia, the Inuit and Indigenous traditions and knowledge often get thought about enough.

We are nowadays thinking with the melting of what about high seas fishing rights in the Arctic Ocean and the center of the Arctic Ocean is high seas. We're also thinking a lot about rare mineral deposits which are quite prevalent in the north and then you know a lot of today has been discussions about a military theater and where you know we have two nuclear armed military powers as our two closest neighbors so when we think about the Arctic, it seems to me that we conflate a lot of these things and instead of thinking about them a little bit more strategically and smartly and I love the way this panel got framed in terms of Arctic development and stewardship. There was a map that Rebecca Pincus put up earlier that I thought also was really important is that when we're talking about the Arctic which Arctic are we talking about? Are we talking about the Eastern Arctic where there's no U.S. presence or the European Arctic. Are we talking about the Western Arctic the Pacific Arctic? Are you talking about the Coastal Arctic? There's the Northwest Passage, there's the Northern Sea Route, there's a transpolar passage. Again, we kind of mix them all up. We think about you know Greenland, yes, but Iceland, no, maybe. We haven't talked about the Southern Arctic where there's major concerns in this country around the forest and the risks the forests are facing with climate warming and massive forest fires. We think about things like when you think about the military lens on the Arctic it's often more of a telescope than a landscape perspective.

So, what I'd like to talk about just a couple of minutes is a little bit about Arctic governance from the point of view of both the tensions and the stewardship because it's often there's multi layers that are often poorly understood or ignored to be quite honest. So, let me let me just mention that. So, someone said you know yes there's eight Arctic states. Five of them are coastal three of them are Arctic zone states. There's multiple Indigenous organizations that have legal identity and rights and attributes. There's several international treaties many of them have been touched on through the day like the UNCLOS, the law of the sea. There's multiple legal regional agreements like the agreement to prevent unregulated high seas fisheries in the central arctic ocean. There's several international bodies like the

U.N. Framework Convention on Climate Change which has a significant Arctic aspect as well as others have said the International Maritime Organization and there are three, one of the other speakers mentioned, three legally binding agreements of the Arctic Council. In addition, and this is always underestimated since 1971, Canada has signed 20 treaties with the Indigenous people in the Canadian Arctic. These are legally binding, and they are expressions of both sovereignty and security and so you layer on that and then on top of all of it you layer on the Canadian constitution which is significantly – I did teach comparative constitutional law at Case Western a long time ago – significantly different than the U.S. Constitution and that it protects individuals and groups. So, English and French but also Indigenous and religious etc. So, Russians and Americans in my experience keep failing to understand this that when they think that they're talking to the Canadian government about the Arctic and they're only talking to Ottawa, it's a failure to understand the multi-jurisdictional complexity of Canada's land and water Arctic and this will become an increasingly significant area of how to go about policy formation on stewardship and tensions in the Arctic.

Let me just highlight a couple things and I'm watching the time and some emerging considerations or emerging issues on consideration for governance challenge if not gaps in the north. So, we have covered well today the climate change melting of the sea ice and the opening up of transit from the Atlantic and will it rival the Suez and Panama Canals? Not maybe this decade but we should always be thinking longer term, 50 years out, when you're thinking about massive infrastructure investments. The climate change risk to the Arctic Forest from both fires as I mentioned but also pestilence is massive in terms of economic impact. There's significant competition for the high seas portion of the Arctic Ocean by fishing industry states that are not the obvious ones we've talked about today but includes Japan, South Korea as well as China major fishing industry states. There's an outcome decision coming on the Continental Shelf conflict between among Denmark, Russia and Canada under the U.N. Convention on the Law of the Sea that Rebecca mentioned. There's the collapse climate change in the collapsing market for the fossil fuel-based resources in the north and a couple of people have already quantified those which is a particular concern for the Russian Federation who have banked heavily on the oil and gas economy and building their infrastructure ports in the north. There's the issue of demilitarization or denuclearization of the North and a lot of academic and public opinion in this country looks to that or the debate on enhanced militarization of the Arctic that Charles has laid out. So, there's always this debate about can we create a weapons mass destruction (WMD) free zone in the North. Is that is that horse left the barn? Certainly, it's an eclectic argument and discussion in Canada and then finally people talked a lot about China but I think one of the things we haven't talked about from the China perspective is that Canada, the U.S. and Russia are all going to have to manage China in the Arctic and so setting aside the military discussions that have been had today, China will have the money it'll have the finance and investment clout for the ports and the pipelines and the vessels and so on and so forth. So, you know it's a point of shared management that these three northern states will have to look to and cooperate on and then finally the issue of the

assertion of Indigenous communities to their historic claims and control in the North and the issue of human displacement in the face of climate change.

I've been doing some work on that in terms of you know the rising sea levels along the Arctic communities that are coastal as well as the melting tundra and what that's doing to existing infrastructure in the North. So, it seems to me what we're really thinking about is it's kind of time to reframe discussions of Arctic governance into a broader sense of development and stewardship that would include an integrated approach to true Arctic development and stewardship and that would include the environment and sustainability of all the options that we're taking, commercial, political, military. The military and security one and the need to avoid tension diplomacy in the Arctic and we've done it beautifully to date even when it plays out in other geographies and bilateral relationships, the need to keep tension diplomacy out of out of the North. The natural resources issue which will move from traditional oil and gas under the ice to the rare earth minerals and we haven't even begun to address the management of that and how do we deconflict the potential for tension around minerals. Who owns them? Who gets to exploit them? Which markets?

As someone mentioned earlier today the blocking of the acquisition of the gold mine in the North but you know there's there are more issues than that and the indigenous population has a major say in that. Then, the Indigenous people who have been there forever. The Arctic is an Indigenous homeland and that's how we conceive of it. In Canada, they have adapted and they pivoted constantly from settler arrivals to commercial exploitation in the fur trade and whalers and explorers etc. They're very resilient at pivots and adaptations but earlier speakers described the Arctic as a dark cold and dangerous place and I was sitting here thinking, I wonder what the Indigenous people would say about their homeland being described as dark, dangerous and cold and again it's that lens that we come at it a little bit differently. Then finally that you know the newest kind of this crisis emergence is the accelerating impact of climate change and so when we talk about non-traditional security issues, it's a good place to talk about it. Security means different things to different people and with the Arctic, when we talk about global governance we need to talk about human security and the food crisis that is going on in the North particularly with climate change, education, housing, strong communities, cultural sensitivity. Someone, I think it was Peter, mentioned Indigenous knowledge and ways of doing things, their homeland. The energy security shifts in the market in terms of carbon pricing and the major investment funds looking at intensive carbon industries, extraction industries differently. The economic security issues of sustainable fisheries and agriculture and forests and someone else mentioned that we can't just think of the Northwest Passage as a transit – it's also going to be a destinational pickup and go and that'll change the nature of shipping in the North as well. Not just a passage through but a way to come in and take things out in an export world. Then the whole issue of environmental security has upped the need for environmental regulation etc.

I'm always influenced by Tony Penikett who was the premier for many years of the Yukon and who always to me has the most wonderful way of expressing the essence of the North. He talks about it in three dimensions like we need to conceive

of it deeply – military, economic, human, environmental – we need to conceive of it in a wide lens of communities and villages and cities and regions across the North and we need to think about it in terms of a conception of coordination longitudinally across the chiefs, the traditional tribal leaders, the mayors, the legislatures, the Arctic Council and the international agreements. I'm not going to talk about the Arctic Council it was well discussed by James DeHart in the last session but just to say it is at 25 years of age it's probably the most important circumpolar institution we have. It's a living example of a rules-based international order that is working effectively in the North and yet it also has and gaps etc. Defense was carved out of it at its finding and that's that was a way of getting it off the ground. It's not an international organization that's based on a binding instrument. It's not a legal personality in international law. It's not a legislative body even though it has negotiated three legally binding agreements in just in this decade so it's a key institution, it's a moving and dynamic institution. It has more a role to play as a consensus-based organization where things can be worked out, but it is changing dramatically.

So, let me just conclude by saying we can't wish the military defense issues away because of the shortened distances etc. but we also need to think about how military buildups can be destabilizing and then they have to be countered by stabilizing actions and agreements like no snap exercise, no surprise deployments, confidence building measures, codes of conduct etc. The problem is in a governance perspective there's no forum to have those discussions on the Arctic. We've talked about NORAD, we've talked about NATO but the natural home would be something like an Arctic Council and so that's one of the gaps, but you can tell that in the last 24 months for example there's been new Arctic policies from Russia, the U.S., from Canada, from Norway. Everyone is starting to pay attention and what's good about the Canadian Arctic policy from September 2019 is it talks about a rules-based international order in the North, talks about defined borders but it talks about broader international engagement in the Arctic North with a human security focus and a climate change focus so it's interesting whereas if you think about the Russian one it was really about northern development the U.S. Navy one called the Blue Arctic it kind of caused people to pay attention because we always think about the Arctic as being this white dot on the map and so it was a provocative title for the U.S. Navy strategy that came out some months ago and then of course China's strategies around the Polar Silk Roads etc.

So, let me let me just conclude. There are some gaps we've got in major layers of jurisdictional legal legislative treaty international etc. but there's some things that have to happen in the shipping side as we co-manage shipping corridors with it with Indigenous people who are counting on marine animals to be protected, who might be recommending different routes at different times of the year etc. so they need to be they need to be at those tables. We need to also think about whether the Arctic should be considered an international or a regional concern where non-Arctic actors are making claims on the environment or economic goods even if they don't have geography. For example, Singapore is asking for a voice, Estonia and Finland have applied for observer status in the Arctic Council, so the dynamics are changing, more players maybe not *at* those seats at the table but certainly

around the walls of that room and that'll make it increasingly challenged to get to that consensus basis. Canada needs to be very clear about the many and competing claims in the Arctic of which we are a major power by dint of geography. We need to be advocates for an Arctic governance system that's fit for a more contemporary world that has much deeper broader meanings of security and that takes Indigenous voices seriously at the table and that makes sure that future discussions about the Arctic are both broad and deep. So, I'll stop there. Thank you.

Jonathan ADLER: Great. Thank you for that. Just a real quick reminder for everybody if you have questions for our panelists, you can at any time go ahead and put them in the Q&A box. We will get to be getting to your questions shortly but feel free to go ahead and put those in the Q&A box when they come to you. Now we're going to turn it over to Ms. Findlay.

MS. MARTHA HALL FINDLAY: Thank you very much Jonathan and not that my history goes back as far as Rosemary's but there are a fair number of people on the screen that it would be lovely to just hug to say, "hey it's been so long." First off though it is a real honor to be a part of today's proceedings; unbelievable experience and expertise and I feel humbled. Just a shout out to a couple of House of Commons colleagues former colleagues, Peter MacKay and Joe Comartin, just to you know add we were each from a different party and in the House of Commons it seems increasingly that that's challenging but Joe and Peter and I think we can all say we managed to develop good friendships totally aside and above frankly partisanship and so it's nice to have both of them participating today as well.

I'm in a very awkward position in this conference and so I want to set up a bit of a context for this and I want to be clear that I'm going to end up with questions, more questions than any kind of answers I wouldn't presume. There are a few things though that are having me increasingly concerned and so where the awkwardness comes if you can bear with me for a minute. So first major issue facing the world and of course the Arctic [unknown] seven seas I thought that was brilliant and the first one being climate change. Professor I can seventh see that this is a really big challenge dealing with all of these things also very true, so I completely agree. For me personally, I have a background in international relations, international trade, yes, a lawyer too, some politics as an environmentalist. I mean I love every year that goes by I've passed 20 years of being a solar power user. We're quite proud of that. I had spent quite a number of years working on Great Lakes water issues for example.

I feel very strongly about environmental issues generally in addition to climate change, so the awkwardness is that a little over a year ago I took a job as the Chief Sustainability Officer for Canada's largest integrated energy company. We are an oil sands producer. If I could say we could there was a anything like a cocktail circuit, I could say how to start off a conversation is to say you're the Chief Sustainability Officer for an oil sands company. Just let that sink in for a minute. There are a couple of reasons why I took this job. One, because Suncor is an extraordinary company. We are integrated so yes, we are an oil sands company but we also refine, we upgrade, we refine we have operations globally. We offshore the east coast, offshore Norway, UK we also have the entire Petro Canada

retail distribution system and so one of the things that we're proud of having accomplished in 2019 was having built the Canada's electric highway so as of that having been built and it continues to be expanded but you could actually drive an electric vehicle from coast to coast, not coast to coast to coast, just driving coast to coast to coast is challenging enough but doing it in an electric vehicle not yet but certainly you can coast to coast by having enough fast charging stations close enough apart less than 250 kilometers to be able to go Halifax to Victoria. That's an important thing for a company like ours because we feel very strongly about our customers choices and I'm going to talk a little bit more about choice and demand in a few minutes but Suncor also you know it's interesting we're just vilified right? Oil sands companies, oil companies, oil and gas companies – we're just the meanies of the world right? We're terrible. People have sometimes said that this is the new tobacco and it's interesting because for the Canadians in particular it wasn't that long ago when people looked at people like Bill Davis and Peter Lougheed and political leaders who looked at the idea of actually extracting oil from sand and everybody said "that's ridiculous . . . you're not going to be able to do it" and it was done and it was done with incredible technology incredible innovation and it has been an incredible boon economically for years. No one set out to be awful. No one set out to harm the climate but good 20 years ago people started to realize there is an issue here, there's a big problem.

I would say Suncor 20 years ago started supporting a price on carbon. In 1990, started reducing significantly our own emissions to cutting by a third what an emission per barrel actually produces. Indigenous relations for 20 years this path to economic reconciliation from employment to procurement to full-on equity partnerships that we've been able to engage in. We're very proud of that. There's a long way to go for sure but as I said you know people say, "why did you why did you go into this business?" well one, because this particular company has a track record of really trying to affect change but we produce a lot of greenhouse gas emissions. Not going to lie. I mean, if you put it in the global context, Canada's emissions are less than 1.5% of the global emissions. Our emissions, in all whole of oil sands, are 11% of Canada's which means we're less than 0.15% of global missions. This doesn't matter; we're big emitters and it's a global and it's a global challenge and I just want to shout out because I've actually had to deek in and out of today's conference because on Monday, the Canadian federal government announced a budget that is going to really affect change and it was the first time that there was a real public acknowledgement of the importance of private sector government public collaboration in significantly reducing emissions so just a shout out. We're very excited but it's also— the real work is it has started now to really figure out how we can do that. Just for the nerds in the room a very, very big focus on carbon capture and storage. There will be more but anyway this was a big step Monday was a big step in this country for collaborative effort needed to reduce emissions.

As a Canadian and as a North American and someone who is concerned about both world climate and world geopolitics, there are a number of things that could use just a couple of point contextual factoids if you will. Again, I'm not trying to provide answers, but I just think context is really important. One, we're not going

to solve climate change by simply saying energy demand has to stop. It's not going to stop. In 1980, 80% percent of the world's energy demands were met by fossil fuels, last year – not last year because of COVID — but the year before and now already this coming year. What percentage of the global energy demands are being met by fossil fuels? 84%. People don't understand – “well how can that be?” – we've had massive increases in renewables, and they've become so much cheaper and we're so much more— yes, all of that is true but global energy demand has been going up. Population increases, developing countries requiring more energy so the world is going to continue to need a tremendous amount of energy so we're not going to change global demand. It will be a while before we're successful in changing global oil and gas demand. For anybody who hasn't read it yet, I would recommend Bill Gates' book on climate. One of the key themes in that is – it's a little bit arrogant I'm he doesn't use this word necessarily – but to say that in our efforts to deal with climate change, we can't forget the importance of energy for developing countries because poverty and the connection between energy and both economic and social prosperity are incredibly linked. So that's just a piece. I would also say that in terms of Canada and U.S. in the overall oil and gas demand world, Canada's fifth in oil that may sound big but actually it's less than 5% of world production. The U.S. is first in both oil and gas but even then, it's about 15% and 20% respectively. Canada in terms of natural gas is the sixth largest producer but again it's only about 5% of global production. That means that for the majority of oil and gas production which will continue to be produced for a significant amount of time because global demand is going to continue for a significant amount of time and by the way even if we have a tipping point in 2035 doesn't mean it stops in 2036. There's still going to be a lot of demand for a significant point. What this means though, just putting those contextual points, is the majority of oil and gas production which will continue for a significant amount of time, comes from countries and jurisdictions that are perhaps less concerned about environmental issues and I would argue significantly less concerned about the “S” and the “G” of ESG, so governance.

Some of the social things that we take for granted in North America democracy, human rights, even though we're not perfect at this, there are a lot of jurisdictions— let me just say I'm happy to live in Canada. So, when we look at that and we recognize what's our role as North Americans in the global energy demand and that this is going to continue. A bunch of people on this call are wondering well what does that have to do with the Arctic. What it has to do with the Arctic is in just the last couple of years, the Russians have built a massive liquid natural gas project in the Yamal Peninsula. Sabetta, the port the northeast of the Yamal Peninsula, the first LNG cargo was just 2017 so we're just talking a few years ago and if I can I'm just going to read an excerpt from Dan Jurgen's most recent book “The New Map.” Anybody interested in the history of energy, I totally recommend Dan's books are incredibly well researched and he has an international relations background, so he has the geopolitics piece. [Excerpt] “That first cargo was sold on the spot market and ended up in a British terminal where it was bought by another company. From there, it became part of a cargo that was rushed to Boston to keep freezing new Englanders warm during unexpectedly cold weather.

The arrival of Russian molecules in Boston Harbour created consternation and outrage. One U.S. Senator declaimed that the landing of the molecules, even though no longer Russian owned and now intermixed with molecules from other countries, ‘undermined broader foreign policy goals regarding Russia’ but the local utility had no choice but to buy whatever cargo was available as the deep freeze threatened to leave the region short of heat. ‘During the cold snap’, said the utility, ‘LNG was absolutely vital in meeting customer needs.’” Dan adds after this that, “Massachusetts sits near vast volumes of inexpensive gas in the Marcellus Shale which would have enabled it to avoid Russian molecules but environmental activists and regional politicians have unwaveringly blocked construction of a new pipeline from Pennsylvania. By 2019, two years later, there were 15 LNG ice breaking tanker ships operating out of the Yamal peninsula, 15.

I’m trying very hard not to make a comment on the passions and the drivers for environmental activists. I totally get it. What I want to put on the table here is what are we doing and how to manage these challenging issues? Russia doesn’t care. Russia is going to meet LNG requirements and make a whack of money in the process. I’m less concerned about the fact that Russia’s making money, I am more concerned that there is a fleet of now 20 – I think there’s another one now 19 to be safe as of 2019 or rather 15 – very big, massive ice breaking capable ship tanker ships operating in yes, the Russians will say the Northern Sea Route. It’s okay we’re sticking to our— what other what other country, what other jurisdiction has that kind of naval capability operating in the Arctic and what does that mean for the future? What happens if— and Charles I you know talking about the military piece – I might be less concerned about cruise missiles but I’m pretty bloody concerned about the sovereignty issues associated with incredible commercial and naval buildup of capability in any part of the Arctic because if decisions get changed and different countries decide to do different things— we can talk all we want but we will not have an a have the opportunity to respond. So, I say all of that not to say you know we should be drilling for gas in the Arctic on the contrary, and Suncor isn’t even in it, we don’t even do gas. That’s not it. It is me in in in my new role having learned an awful lot more about the global energy ecosystem. How we’re having to deal with global climate change because it’s not a political jurisdiction thing, it is global as you all know, emissions don’t respect political borders but at the same time we have geopolitics associated with countries who aren’t actually maybe taking the same steps or as concerned as some of us are about what we need to do to reduce our emissions. What we need to do for instance at Suncor to change in terms of our transition to look at new clean energy sources for the future, which of course we are I mean we’re on our oil company but we’re looking at those alternatives of course because we see where the world is going.

If what I said earlier about global demand remains the case, we’re basically leaving an opportunity for jurisdictions that maybe don’t care as much and maybe don’t have the kind of geopolitical security or *our* geopolitical security in their hearts as we would like to have. I will finish just by making it clear I’m not advocating for more oil and gas drilling. I’m not advocating for anything other than – the more I’ve learned in my new role and the more I tack on my background in terms of international relations as I said and geopolitics – the more I really have

no idea how we're going to fit these concerns, deal with some of these activities because it's not going to work if we just turn if we turn a blind eye to this. So I thought I would raise it like this with the folks on this call because if there is a group of people who maybe can start thinking or already are thinking and maybe can help us as North Americans contribute to this because I firmly believe that there's an opportunity for North American collaboration and in how we can maybe deal with these kinds of things, combined with you know global energy demand and how we address global energy demand in a way that addresses net zero by 2050. So, I guess I'm finishing off with a bit of a challenge to some of the folks on this call to help us find the answers because there's some issues and some real concerns. So, there you go, Jonathan. Sorry, that wasn't the most positive but I'm looking forward to the discussion into questions.

Prof. ADLER: Great. Well thank you very much for that. Now adding cleanup on our panel, I'm going to turn it over to Hugh Short.

MR. HUGH SHORT: Hi, everyone, uh can you hear me okay? Good. Perfect. My name is Hugh Short. I am the CEO of Pt Capital. We are a private equity firm focused on the Arctic. I feel like I should start my story a little bit in the past. My father actually is from northern B.C. a little town called Burns Lake and in 1956 the Alaska highway opened up. This was three years before statehood and Alaska was the land of opportunity. They were poor ranchers and Hugh Short, Sr. jumped in a pickup, ended up in Fairbanks, Alaska and a couple years later met Mildred Katunga. She's a beautiful Inupiaq woman – my mother, I'm a little biased – born and raised in a small little village on the Seward Peninsula. This is in the Nome region of Alaska. The two of those folks met in a taxicab before statehood and ended up having three children of which— I just feel so blessed that the opportunities created from that young man leaving Canada looking for opportunity, young Inupiaq woman coming from a small village in Fairbanks, the big city, before statehood came together and created such an opportunity for me today. I think there was some talk about people eating *muktuk*. I mean I grew up in a house where that's kind of what we had for a lot of the year. I'll tell one funny story though. My mom used to keep her seal oil in an orange juice container, not transparent but just this container and he woke up one morning went to the fridge, I was eating my Lucky Charms, and just opened up this orange juice container and there was seal oil all over the kitchen and for about six months my mom could not bring her native foods into the kitchen. So, it was a big cultural battle in our house. Fast forward to 2012, at the time I was running a financial services firm for the largest Alaska native corporation in Alaska that's the Arctic Slope Regional Corporation and I ended up in a talk in Girdwood, Alaska with sort of the biggest luminaries in finance, David Rubenstein from the Carlyle Group, Scott Minerod from Guggenheim Partners, James Baker was in the room. It was a small group of 15 people sort of after the conference and I recall David Rubenstein asking a question to the group saying, "if I invested 500 million dollars in you and I needed to get 25% return per year for five years, could you deploy that capital in the Arctic and could you find projects to invest in?" At the time, I was managing about \$300 million maybe not getting to 25 but felt like I could if my box opened up I actually could and that was the first thought that I had that private equity in the Arctic was

something that was possible, left the comfort of a big corporate entity shortly thereafter, about six months later. Ended up raising about \$6 million dollars in a Series A round of funding to be able to start a private equity firm in Anchorage, Alaska. From there raised about \$125 million to invest into projects and today I've got a team of eight folks and I'm going to just share a quick screen here. I don't use Zoom so bear with me.

Today we manage a portfolio which I believe is the first Arctic-focused investment portfolio that's been created. If you look at our portfolio today, we've got six companies in Alaska, we also have two companies in Iceland and eleven time zones away from me, a hotel operating company in Finland based in Helsinki. Now if you look at this portfolio, we have everything from oil field services and support to alpine or Alaska which is for south Central Alaska the largest and busiest tourist-focused helicopter company to a steel recycling company which exports most of our steel from Alaska to the Pacific Northwest and then as you move over towards Iceland we manage the largest network in Iceland called Nova which is the telecommunications company, the best telecommunications company in Iceland, installing a 5g network deploying that across the country. In addition to that, we manage between Iceland and Finland, about 18 hotels with another five in development so if you look at this portfolio, the tension between conservation and economic development is significant. Just look at Ice Services which is focused on Prudhoe Bay it's actually focused on the National Petroleum Reserve Alaska our biggest partner in that is an Alaska native corporation, a small Alaska native corporation, has about 500 shareholders and they're smack dab in the middle of oil fields around them. This small community has made a deliberate decision to preserve their whaling culture, their culture around hunting and they've also made a deliberate decision to also invest into economic development and jobs for their residents and this isn't a black or white decision, this is a decision they've deliberately made over 40 years to provide the best opportunities for their youth, their elders, the people in the village.

As you sit in a location to talk existentially about the Arctic, there's people struggling with these "conservation versus job" decisions every day and it's not a situation where you can just say we're going to shut down this federally owned province of oil. In fact, you're not going to get the same voice in any village of 300, 500, 1000 people. Everyone has their opinion. I think from my perspective, how I approach this from a business perspective and as a shareholder and for Alaska native corporations, is you're constantly trying to define what are your wants and what are your needs and in so many places in this world, especially when you talk about the Arctic, I think there's a whole lot of anger where Alaska natives once owned 100% of Alaska. The Alaska Native Claims Settlement Act gave them 12% of Alaska. Of that 12%, now much of it is mining, oil, gas and there's folks saying "well you can't develop" and so not only did you go from I had a huge piece of land to a much smaller piece of land but then you can't develop that land because of a, b and c. I think that tension really brings outside looking into the Arctic it could be it could seem as sort of a black and white decision between carbon emissions and conservation but I can tell you that around the boardroom table that's it's really not the discussion.

I can also share with you, that from an investment standpoint, I will tell you if you ever want to do something incredibly challenging, go out and fly 600,000 miles across the world to China, Japan, all over Europe, all over the U.S., all over Canada and raise a private equity fund to invest into the Arctic, probably the most challenging thing you can do. I think the reason is the Arctic is not even on the radar of most investment firms and it's really just an insular market, it's fragmented, there's significant market inefficiencies, there's geographic challenges and people just don't understand how important the relationships are in these small communities. So as far as the future and the opportunities in the Arctic, the switch from primarily an oil market to oil-gas to a clean fuel, I think is a trend we're starting to see quite a bit across. We invest quite a bit to Iceland and Icelanders are now joint venturing with Alaskans to capture geothermal. There's all sorts of opportunities for the funding and the growth of these companies. Lithium other sorts of metals essential for the electric vehicle are found in Canada, are found in Alaska, the strategic geolocation, it was interesting to listen to the military discussion, we've made three investments in the last five years into companies primarily generating most of the revenue from the U.S. military and the buildup of the U.S. military in Alaska and this buildup in interior Alaska as the front line with North Korea has created a boom for jobs in the local community. There are contracting companies, there are folks that have built very solid companies based off of the build-up of the military in interior Alaska so as you sort of look at these issues and you look at it from a policy perspective and I appreciate where folks are coming from on this on this conference, I think as you get down into the actual investment decisions working with stakeholders and being able to navigate a very complex place, it is not a black or white situation. So, I think with that I really could dive into all sorts of specific space but I realize that this conference or at least our panel is running a bit long and I'd be happy to take any questions.

Prof. ADLER: All right. So, we have some questions in the queue. Just to start, I didn't know if any of our panelists had questions for each other or comments on each other's remarks. If so, happy to give any of you the first bit before going to questions that have been submitted by the audience.

Prof. DORAN: I could take up your invitation. Prof. ADLER: Sure.

Prof. DORAN: I've having spent a good share of my life talking about risks and oil and gas, I can really identify with the presentations that have been made about that but what would you think about this idea. This is a very dangerous idea. Suppose that Canada and the United States proposed a carbon tax that would start off very small but that would be graduated over maybe 10, 15 years and would be coordinated so it wouldn't create any sort of problems of flight of firms back and forth across the border and which at the same time would let companies decide what they wanted to do but more imaginative benefiting over the less imaginative in terms of moving down the road toward what we all recognize is going to happen and that is toward more use of non-fossil fuels. What would you think about that?

Prof. ADLER: Miss Findlay, you're up.

Prof. FINDLAY: Thank you, Charles. Well, Canada does have one of those and we have a government that recently announced an increase to ultimately \$170 a ton that's a significantly higher price on carbon than almost any jurisdiction in the world not all but very high. We have a Supreme Court that just finally decided that in fact it is the federal government's jurisdiction to be able to do that. So, we're proud of that fact that Canada has implemented a price on carbon that it has been supported legally now and we're a way to continuing on with those increases. As an oil company, we totally get that. As I said, Suncor supported carbon pricing 20 years ago and all the years in between by the way, and one of the biggest challenges that we have as an industry, and that's true for all of our industries, is the fact that for most jurisdictions in south of the 49th that creates a competitive disadvantage. It is a problem for us. We would love to have harmonization in terms of pricing on carbon. So, right back at you.

Prof. DORAN: Okay, so I would say this. Just have your Prime Minister make a phone call to our President who's very interested in environmental matters and get this thing going. Get it moving. I think anybody, everybody could benefit from it and then make sure that companies have the opportunity to know that it's a 10- or 15-year horizon so they can plan and make the right adjustments. I think we might move down the road to environmental protection and helping out Alaska in a very positive way with this.

Prof. FINDLAY: Well, I suspect that they may have had a bit of that conversation in the last couple days, the Prime Minister and the President, I will say Charles that the United States has a tax program known as the 45Q Program which provides significant incentive to building carbon capture and storage and carbon capture and use and storage (CCUS). This was when I mentioned the federal Canadian budget just on Monday, there's a significant effort to catch up in that regard so you guys could catch up on carbon pricing and we're in a place to catch up on some of the other incentives on some of the other efforts. So, frankly the more collaboration we can do in this regard the better.

Prof. ADLER: Hugh, did you want to get in on this?

Mr. SHORT: Yeah, so just a couple thoughts. I think there is a recognition. I think collectively there's over \$10 billion managed by 60,000-68,000 Alaska Native shareholders so it's a huge amount of money and I think there is a recognition that the carbon economy is moving by the wayside. There's a flight of capital, so there's less investment into the oil patch, more investment into companies that are either more industrial or government contracting or technology so there's been a huge flight of capital from that and I think my personal opinion is with the carbon tax without a carbon tax we're all headed in the same direction and I think the fact that over the course of the next 20 years you know from an investment standpoint, it would be pretty difficult for me to invest a substantial amount of money to a company right now that was in the oil industry doing something in Alaska. Whether it's a Democrat or Republican in our administration, there is this there's an acknowledgement in the United States that this is something that we're shifting and so how you position your investment dollars with the carbon tax without a carbon tax I think the largest oil lobbying group in the U.S. just came out with support for carbon tax. So, I think it's coming

down the way and I think there's just going to be a flight of capital to more renewable energy over the course of the next couple decades.

Prof. ADLER: Rosemary, any thoughts on this one? All right, we have a question from Aaron Gold who asks, "Ambassador McCartney noted that Canada's Arctic region is multi-jurisdictional, requiring cooperation between Ottawa and our Indigenous communities, how do our panelists picture that cooperation as it relates to a future bilateral or multilateral framework governing the environmental and or geopolitical challenges in the Arctic?" Whoever wants to have the first go at that one.

Amb. MCCARNEY: Well Martha could probably take—I'm sorry Martha to do that to you, Charles just did it now. I'm doing it but you might use some of the examples that you're involved in in the northern development.

Prof. FINDLAY: Well, the thing is, we're not really so we don't do Arctic drilling we're not in in gas at this point at all. I would almost turn it back to Hugh and say are there are alternatives that maybe aren't oil? I use the example of Russian LNG, there are an awful lot of people who see liquid natural gas as being a huge part of replacing dirty or coal-based emissions, particularly in Asia or providing relatively inexpensive energy to you know various parts of the continent of Africa. The north has that. I'm not saying we should, necessarily but other countries are, obviously Russia.

Mr. SHORT: You know Alaska's is sitting on an immense amount of natural gas. It is astounding how much gas is in the north of Alaska. Prior to 2016, I was the Vice Chairman for the state gas owned company the Alaska Gas Line Development Corporation and we actually inked a deal with China as the major investor so it was a China-Alaska deal somewhat ignored, not blessed by the federal government but there was a deal that was put in place. It was a \$40 billion investment and what happened was the Trump Administration essentially took a pretty hard position against China and a trade war occurred and the deal fell apart. I can tell you just from someone who has investors from Asia, that the existing trade war between the U.S. and China has put a huge chill on investment at my level. At the geopolitical level, I was on a call with the Norwegian foreign affairs group a few weeks ago, they were asking about China investment. Tactically, the Chinese and the Japanese and the Koreans are looking for the same thing that U.S. pension funds are looking for – return. They want to return on their capital and so it has really frozen relations and so I have to react to it. It's really changed the investment world so I don't have a great answer to that other than the landscape is continually changing.

Ms. FINDLAY: Jonathan, if I could, because of where Aaron went with this question, although we don't have operations in the Arctic as such we do as I mentioned have lots of engagement with significant numbers of Indigenous communities and overwhelmingly the message we hear from our Indigenous partners and the folks in their communities is "we really relish the opportunity to manage prosperity instead of poverty." It's not ultimately going to be legal frameworks, it's not ultimately going to be diplomacy, what we're seeing is that we're able to accomplish a great deal when you have like-minded people wanting to accomplish good social and economic prosperity results for people in

communities. I winced a little bit listening to Hugh talk about you know some of the opportunities that just won't show up because of others basically saying, "this is what thou shall and shall not do." We're finding, if you just, I hate to say it but get the politicians out of the way, let's just get things done and if it's being done by people who really see that community economic and social prosperity benefit and you are working together, we see terrific results. We think the opportunities are much larger.

Amb. MCCARNEY: If I could just jump in Jonathan too. I think one of the issues that both Hugh and Martha are raising is that it's by too much bimodal it's not economic or environment or Indigenous rights, there's a number of platforms where that all comes together and makes sense. Hugh's already shown a few of those but if you look at things like, for example in Nunavut like the Nunavut Planning Commission or the Nunavut Wildlife Management Board, they're setting the standards and the pace but they're also looking at these things as economic development but it's in a sustainable way so it's not kind of the catch and grab and then they're left with nothing 10 or 15 years from now. So, there's just really smart northern leadership at the local level that understands and embraces economic development and Martha's point about poverty, it also doesn't give you much independence but smart development and sustainable development so very expert voices among Indigenous communities there to answer the question that was in the Q&A.

Prof. DORAN: If I could just build on this, I understand completely the disappointment of the Alaskan people who recognize they weren't going to get to sell their natural gas. Natural gas is going to be around for a long time. Look at how much electricity is produced by coal which is at least twice as dirty as anything from natural gas is even more than that and China is just going forward and building coal plants faster than anybody else. Well, why shouldn't they build plants that use much cleaner natural gas from Alaska and Canada and places like that? Also, solar and wind are nice but they're very intermittent sources. What happens at night? What happens when the wind doesn't blow and you don't have a battery that is big enough to handle cities? You need natural gas basically so natural gas is going to be very important.

Ms. FINDLAY: That's why the Russians built their plant and that's why they have 15 massive icebreaker tankers plying the waters in the Arctic.

Prof. ADLER: On the subject of batteries, I should just note as many of you probably know some of our colleagues, I guess it's over that way on campus are hard at work on quite a few interesting battery technologies so keep an eye out for that some of our folks in the Case Western Engineering Department are really doing miraculous work in that regard.

Speaking of China, one of our participants asks: "how does the Canadian claim to the Northwest Passage as internal waters affect the legal and or geopolitical issues related to the South China Sea and Chinese claims there and Russian claims to waters in their Arctic sphere of influence"? As you all know in international law one claim becomes kind of a parallel precedent for other sorts of claims that countries may wish to press within their own sphere of influence. Any thoughts about how the Canadian claim to the Northwest Passage could have

broader effects for other countries claims, either in the context of the Arctic or perhaps more broadly?

Prof. DORAN: Well, Jonathan I guess that's aimed at me because I was the one who brought up the point. I continue to believe that what happens in the so-called Northwest Passage is going to be very important for the thinking about passage both in the Northern Sea Route along the Russian coast and particularly in the South China Sea in the East China Sea. That's where the real incidence of example is going to be but I pointed out there's some irony. One irony is that China wants to close off the South China Sea and the North and the East China Sea to quite an extent, certainly to navies to some maritime fleets but it in fact believes that there is a Northwest Passage and Canada has no right to think about closing off its waters. So, that's I guess what lawyers love, those kinds of anomalies.

Amb. MCCARNEY: I also think it's why international law is so much fun because it makes for very strange bedfellows. So, you can be unlike-minded in certain areas, very like-minded in others and kind of situationally like-minded in others and if you want to be a bit mischievous in fact Russia, China and Canada all have kind of a common view on international waters and internal waters when you're we're talking about it you can see where that would get us. Also, the conversation, Charles was it whether you brought up the you know the agree to disagree agreement back in the 80s and what brilliant diplomacy it was like constructively ambiguous but then your Secretary of State Pompeo in 2018 said the Canadian position on the Northwest Passage was illegitimate and you can imagine how that was received here and among the Indigenous people because there was Inuit groups that went straight back to Pompeo not through Ottawa but straight to Pompeo around disagreement on that issue. Another one, the Germans in 2019 said they were watching for non-cooperative behavior on navigation of the Northwest Passage and so you ask yourself as an international lawyer well is an assertion of no innocent passage non-cooperative? You know like there's a lot of plays going on and so as long as we can hold on to agree to disagree it's really helpful that state of ambiguity as you say around the South China Sea and the Northern Passage but international law makes very strange bedfellows.

Prof. ADLER: Another question we have in the queue is: "at the regional and national level, are there examples of successes in development of resources that also have created sustainable opportunities for Indigenous communities and protected the environment? If so, why were they successful where others have not necessarily been so?" I guess I would broaden that question a little bit because certainly over the last year or so there has been an increased focus not just in the United States but more broadly on the historical treatment of Indigenous communities and communities of colour and I'm curious more broadly whether that is likely to affect the way certain questions within in the Arctic context and relations with Indigenous communities are addressed. Are there aspects of relationships and policies that have been long standing perhaps but that might be reconsidered now that there is increased attention to the interests and historical neglect of Indigenous communities?

Mr. SHORT: There's two projects that really show just a progression of time. The first is the stellar project of Indigenous cooperation with the State of Alaska,

the federal government in industry and it's a project called the "Red Dog Mine." Red Dog Mine in any given year is the largest or the third largest zinc mine in the world and it was put into production in the mid 90s. It took about 20 years to get to production. Today, they're still producing. An interesting side note, in Alaska we don't have reservations we have native corporations so we don't have sovereign land, we've got shares in corporations which has produced a significant amount of people focused on corporations as opposed to sovereign land. Different First Nations in Canada and lower 48 it's much different. There's revenue sharing where 70% of the revenue off of a mine like Red Dog goes to all of this native people in Alaska, 30% goes to the who owns the land 70% goes to everyone. So, everyone has a vested interest that this mine actually produces zinc, the zinc's worth something on the market, it gets to market. It's a substantial success story. It's provided millions and millions probably billions at this point of dividends to Alaska native shareholders.

The second project is something called Pebble Mine. Pebble Mine's on state land it's not on native land but the native land surrounds Pebble. It's purportedly the largest copper mine in the world. Copper is very valuable and the native corporation has been offered pretty much a royalty, they've been offered ownership they've been offered all of these financial incentives and they've turned them all down because this is also located where the largest natural wild salmon run and probably the world is at as well. So, you've got two renewable-non-renewable and this mine has not gone anywhere. It's had some periods of time where you thought it was going to go but for all intent and purpose I'd say it's probably dead now so you got a couple different models here where you had support from the Indigenous landowner, you had support from the state, you had a federal government that's supportive, Red Dogs even substantially owned by Chinese interests at this point in its ownership but it's highly supported. Perhaps that's the difference between 1990 and 2020 as well as just a location of a mine. I'd say Pebble could be located in the worst possible spot.

Prof. ADLER: Other thoughts on this issue?

Ms. FINDLAY: I would just say there are actually lots of them and one of the benefits of working with Indigenous communities is millennia of culture that would not harm the environment in their communities and so you get this built-in of course it's going to be sustainable, it's going to be environmentally sustainable, the goal of a business partner is to help make it economically sustainable but it makes for a really good partnership when you come to the table saying how do we do this together? There are big differences between 2020 and 1990. I think an awful lot of lessons have been learned but even governments, I'll give you an example one that was a real challenge with Northern Gateway Pipeline was to end on the north the northwest coast off of British Columbia. The federal government cancelled it and said that there hadn't been enough consultation and under Canada's constitution we have what's called section 35 and there's some very strong requirements to consult with Indigenous communities. What was very interesting when that project was cancelled was that there were at least 30 communities along the pipeline route that were furious. When it was canceled because they hadn't been consulted and they had actually worked arrangements

with the proponent to achieve exactly what we're talking about, that sort of combination of economic, social prosperity. So, good, passionate minds wanting to do the right things. I think we all have to allow ourselves the ability to learn from what was done in 1990, what was done in 2000, how we learn from mistakes that were made and how we even learn from mistakes that are being made now when there are some. There's an awful lot of goodwill out there and we're learning from the good examples, I hope.

Prof. DORAN: I would agree with those who say that the native communities have a lot of wisdom to offer the rest of us. Recently, we've heard in the press that they've been criticizing those companies mostly foreign companies I think that are attempting to harvest halibut offshore and are in fact cutting back on the population to the extent that the native communities really see the effect. I think they are exactly right and I think that as the Arctic melts, the last big fisheries in the world are going to be vulnerable like none other. I don't know if I should identify individual governments but they're three particularly led by one that has 27,000 boats at this point just waiting to move into that Arctic as it melts. If they don't if you don't get an international treaty among the interested Arctic countries that is really binding on constraining the harvesting of that fisheries, it's going to be gone in two decades. So, the native peoples have a lot to tell us about this.

Prof. ADLER: On that note, I think we are going to have to call this portion of the conference to a close. Please join me in giving a virtual round of applause for our panelists and for the insights they brought with us today. I believe at this point I am turning it back over to Steve who is going to tell us all what we do next.

Mr. PETRAS: Okay, thank you. Yes, thank you very much Jonathan, Charles, Martha, Hugh, Rosemary for your very insightful look at Arctic tensions and opportunities. There's a lot to consider here and each of you have opened the door to view these for us so we greatly appreciate that and this looks like the last question teed up our next panel very well. What we're going to do is we're going to take a short break now and then come back for our final panel. So, please be back here at 3:30 PM. We'll start again right at 3:30 PM. Thank you.