Building Back Better with A Green Renovation Wave Roundtable, April 22, 2020 (unedited transcript)

HOST-Diana Fox Carney: Good morning everyone and welcome to this series from Corporate Knights: The Canada we want - Planning for a green recovery. I'm Diana Fox Carney, I'm really delighted to be hosting this series of conversations we'll be having over the coming weeks. This is obviously the first one and the aim of these conversations is to bring together people with the ideas and the power to explore how Canada can use a renewed climate-based approach to build a stronger and more sustainable economy as we think of how to come out of the corona crisis. We'll be hearing from a large number of people today.

I'm delighted to welcome the Honorable Jonathan Wilkinson, the Minister of Environment and Climate Change at the very start but as you see here we've got a really large group of experts and panelists so a couple of things about that - one is I'm going to keep it high-level. We're going to keep the interventions short / panelists may hear me come in if they're overstaying their welcome simply so we can hear from everyone. We are going to have a Q&A session at the end it won't be very long but we'd love to have your Q&A throughout the event, you can click at the bottom in the Q&A window of zoom and put your questions there. We also think about addressing those after the event, we'll be sending out a recording and analysis in a follow up note to this event today. So welcome everyone, as I said, delighted to have you here and first of all I'm going to pass you over now to Toby Heaps to welcome us to the series as well.

TOBY HEAPS: Thanks Diana and welcome everybody. I just have three brief points to make - the first one is I think it doesn't escape any of us that we're still at this moment in the middle of a health crisis and so now is certainly not the time to be pushing agendas, but at the same time as planning for the recovery gets underway, we want to be extremely careful not to sleepwalk into something in the medium term that we're not going to be happy with. That's point number one.

Point number two is we're living in extraordinary times right now and the Overton Window of what is politically viable has shifted quite a bit just in the last couple months. Think back two months ago, the federal government was planning on spending somewhere in the neighbourhood of seventy billion dollars to address the climate crisis over the next decade - in the next three months now to respond to the [COVID-19] crisis the wage subsidies alone will be 71 billion dollars so we're gonna to spend more money in the next three months on wage subsidies than we were gonna spend in the next decade addressing the climate crisis and that just sort of gives a bit of an insight into how much things are shifting. I think when things are shifting this much the things that become apparent, you know, what was not possible yesterday or was unthinkable yesterday can now be firmly on the table.

The third point is that in these unprecedented times we're living in right now where change is going to be happening from a public investment perspective at a faster scale and at a larger scale than at any point in most of our lifetimes, the new thinking is going to be really important. If we want to keep up with the pace of change we're gonna really need new thinking. So just in closing I want to thank from the bottom of my heart everybody here and the panelist for making time, all of the attendees, all the participants because if we're gonna get through this we're gonna need everybody paddling on their end so I really want to thank you all for jumping in the canoe and a happy happy Earth Day. Back to Diana now.

HOST-Diana Fox Carney: Thank you thank you so much that's a really great introduction anyway of thinking about how we deal with this discontinuity and make the most of this crisis so I'll pass you over now- Jonathan Wilkinson the Minister of Environment and Climate Change to kick off this speaker series.

The Hon. JONATHAN WILKINSON: Certainly Earth Day is a little bit different this year - physical distancing is preventing us from doing a lot of things that we would normally do; park cleanups or planting trees, but this should not prevent us from reflecting on earth day and what we need to do to protect the environment and to fight climate change so that we can ensure that we leave a better planet a healthy planet to our kids and our grandkids. Today I know you're planning to have a conversation around the green recovery and how it can help us bounce back and that is an important topic.I would however be remiss if I didn't start by emphasizing that we remain some way from being through the present crisis and as a government and as a society our primary focus must continue to be on containing the virus and on supporting impacted Canadians. Now is certainly not the time to be thinking that we no longer need to be practicing the measures that have been able to progress that we have made to date but clearly once we are further along and we are contemplating the relaxation of specific measures it is important to be thinking about the type of recovery and the type of potential economic stimulus we should be focused on at this time.

We do not yet know the extent of the damage that will have been wrought in particular economic sectors by the end of the current fades and an assessment of this will obviously be important in terms of the scope and the scale of any recovery efforts. But I do think it is very fair to say that rebuilding our economy and making a resilient future while creating opportunities for Canadian workers and businesses will require big bold ideas rather than simply looking to rebuild our economy to the way it was before the pandemic. We need to question our assumptions about future sustainability and our physical and our economic security, we will need to draw lessons from this crisis and focus our efforts on both short and longer-term economic recovery that will ensure that we emerge from the pandemic a stronger and more resilient country, a country that will be well prepared for the challenges of today and tomorrow.

As physical distancing measures begin to be relaxed governments will need to address the question of how best to get the economy moving and moving in a manner that addresses key lessons and key looming challenges to be effective a forward-looking economic strategy. We'll likely need to consider at least two kinds of initiatives - those which focus on the creation of near term employment given the scale of unemployment that is likely to consistent for some time and those initiatives that are focused on moving forward with building the economy we want and need for the future initiatives that take into account key lessons from the complete experience and that are focused on driving us to address the realities of the impending climate crisis as we collectively develop a plan for economic recovery. We will need to make investment decisions with the clear intention of ensuring affordability for all Canadians and building resiliency and sustainability so that we ensure our long-term economic and social security.

We will need a thoughtful and a clear-eyed plan that will create the kind of resilient and sustainable society that we want for the future in Canada. Clearly as a federal state we will need to be engaging the provinces and territories and certainly working with indigenous peoples and ideally working together in an integrated fashion through the recovery phase as we have over the course of the past number of weeks and we certainly look forward to the conversations that you will be having and the ideas that will come forward. Certainly look [forward] to receive the feedback and the ideas as part of us trying to put together something that will be a thoughtful and a comprehensive plan to ensure that we are moving forward with the society. So thank you and once again happy Earth Day.

HOST-Diana Fox Carney: Thank you so much minister I think that was a really good reminder of the complexity of what we face and also the opportunity we look forward to reporting back to your office and being of assistance as this recovery plan develops. Before we get on to the specifics of green retrofits I wanted to just call upon Stewart Elgie who runs Smart Prosperity and then Sean Mullin who is from the Brookfield Institute for Innovation and Entrepreneurship, welcome. [Both] of you have had significant experience of dealing with this kind of issue in the past with their words of wisdom [we] will start the event.

STEWART ELGIE: Thanks for and I apologize in advance if you hear any screaming seven-year-olds in the background.So happy Earth Day to everybody I'm gonna talk about what I would call the three key lessons for smart economic stimulus - the first is don't panic and Toby and the Minister of both referred to that which is right now we're in the middle of deliberately slowing the economy down so today isn't the time to talk about how we heat the economy up but that day will arise in a few weeks and the key is how do we build an economy today that prepares us for tomorrow. The second lesson I think the most important is act short-term but think long-term - government's in recession and we've been looking at previous responses tend to fall prey to short-term thinking because they're anxious to generate any kind of jobs and economic activity right away which is totally understandable if you look at the 2009 downturn.In 2010 global GHG emissions rose by six percent and rose almost as much the next turn so we actually spurred a brown economic recovery.

It's important to look ahead not just for environmental reasons but because we're not going to have the kind of fiscal capacity to make this massive investment the economy again probably for a decade or more - in effect we're spending tomorrow's money and so it's important that we build tomorrow's economy with that money that we'll look back on in a decade and that means obviously we're going to talk about today constructing smart energy efficient buildings of tomorrow but it means the same thing for our transportation systems, energy systems and really all of Canada's industrial sectors. The money has to go to long-term investments - not just that will help the environment and help meet climate targets [but] that will actually strengthen our industry's competitiveness in a global economy that's moving towards being more innovative low-carbon and resource efficient one of the important lessons is that we can't just roll out the same environment and clean growth agenda that people were pushing four months ago. It's really important to recognize governments are gonna have to invest in stuff that generates jobs and growth right away so for example if you've got a great idea for a new long-term energy transmission line that has permitting, that's gonna have to wait.

So it's really important that for buildings for example if we define green buildings, do we have standards right now that investors can use to construct that. Anyway the best lesson for me is looking at the U.S. response - in 2009 Barack Obama bailed out the auto industry but he also condemned massive increases in fuel efficiency through tighter CAFE standards and those actually had the effect of improving the industry's competitiveness - stronger standards built stronger competitiveness. Trump is of course trying to do the opposite, taking a race to the bottom view of competitiveness by weakening standards and that's exactly what we don't want to do so let's take those lessons and get to work today building the economy of tomorrow.

HOST-Diana Fox Carney: Thanks fantastic that's a great recommendation for us, we'll pass on to Sean now please.

SEAN MULLIN: Thanks Diana and thanks everyone for the opportunity again - I'm gonna make three points two of them are more general about fiscal policy and the times of economic crisis and then the third one I think is hopefully how to link it to the topic of today and how to think about a green recovery and connecting to two goals in terms of reducing the impact of climate change. The first is just to keep in mind one of the major mistakes that happened across almost all Western economies after 2008-2009 was a too quick pivot to restraint the withdrawal of fiscal stimulus (happened too quickly in 2010 and 2011) and it's pretty much a consensus now that the recovery could have happened faster and that there could have been less economic damage had governments of the day been less worried about debt and reducing their deficits and I think that's an important lesson here.

We will talk about how to link the composition of a recovery to two green priorities but the size and scale of fiscals investment and how long it lasts is incredibly important and transcends just this topic area and so everyone needs to be able to essentially give our leaders the license and the advice to not quickly pivot after this year to reducing the deficit back to, say, levels before this crisis. They obviously need to go down from a two hundred billion dollar deficit but we have the fiscal capacity to do this slowly and more carefully and so there's more of an opportunity there than I think people realize. The second in terms of fiscal stimulus timing is everything - Stewart talked a bit about this already - be absolutely ruthless, if your policy doesn't get into the hands on, and stimulate the economy in a six month-twelve month time frame then it's not stimulus. Put it into a different bucket - doesn't mean you can't advocate for it but you really need to put those and think about how money is going to impact the pockets of workers or businesses or people making investment decisions.

That's what fiscal policy analysts will be looking for when they evaluate these things before they get to the green or environmental implications and then the final thing I would say is combating climate change is an existential crisis but not on the timeframe as the same timeframe obviously as fighting a pandemic but that doesn't mean it shouldn't merit a similar type of investment and so I think an opportunity here is to use a recovery package to bridge to a long-term fiscal investment in combating climate change. There's no reason Canada couldn't devote another 1% of GDP each and every year for the next ten years to combating climate change - we have the fiscal capacity to do that even with all the borrowing we're doing right now and as Toby mentioned the Overton Window [has] been widening and so this is the opportunity to help make that argument. We don't have to be constrained by the fiscal anchors or the mindsets of the kind of the pre-crisis environment.

HOST-Diana Fox Carney: Thank you so much Sean what we're gonna run a quick poll now which is coming up on your screen just to see how people feel about and whether it's okay to run the kind of deficit that Sean’s been talking about. So if you can just do that that would be fantastic. We're then going to move swiftly on to Ralph Torrie. Can I just say again at this point that we're delighted if you pose questions at any point during this event and we'll be asking them at the end so please do use the chat window at the bottom. Ralph Torrie has done the analysis behind what we're going to see now. He is a Senior Associate at Sustainability Solutions Group and a partner at Torrie Smith Associates and he's one of the most brilliant energy and environment experts in the country, so I'll post right over to him to show us what he thinks can be done on building retrofits.

RALPH TORRIE: We're looking today at the resource as I like to think of it that exists within our residential and commercial buildings. We've known for a long time that this is a supergiant, to use the oil industry's lexicon, it's enormous and it's hiding in plain sight so in terms of its suitability as a target for the postcode recovery it has a number of attributes. first of all the investments will occur wherever there are buildings, so it's about as distributed as a recovery investment program could possibly be. In that regard another attribute that strikes me about targeting this area in the very period is that the planning phase for doing what would need to be done to both get the economic stimulus that we would be looking for and achieve the greenhouse gas benefits that it can deliver can begin while we are still sheltering in space. There is a tremendous component of preparation and training that will be required to carry this out effectively when the time comes and there's no reason why that couldn't start tomorrow.So that's the reason I think why we wanted to start this series with the focus on buildings it's a supergiant yes but it has what, again to borrow from the oil industry, what geologists would call complex geology - the resources locked up in tiny cells that we call buildings so the sense we have to learn how to frack for efficiency and the innovations that we need to do that have more to do with business strategies and policy innovations than technology, because we have the technologies to take a very deep dive into the efficiency resources that exists in our buildings and we outline that in the infographic that you're looking at.

There's a paper I think that's being made available that goes into a little bit more detail on that the investment that is required - it mounts into the hundreds of billions eventually but it needs to be put into the context of how much Canadians already invest in the residential sector - it's seven percent of GDP year after year. About half of that, a little more than half of that, it might surprise you to know it's for renovation of buildings. I'm only talking about the residential sector here. Ee spend over sixty billion dollars every year renovating our homes and so yes we're suggesting a sea change in the level that's being devoted to improving the efficiency, but it's in the context of what is already a very large component of economic activity in Canada and in the context of a population that is used to investing in their buildings.

The benefits are laid out there - you may be surprised to know one. I'll just make this one additional nerdy point because there's a widespread understanding in the climate change community that to get the deep reductions we need we have to improve efficiency, we have to electrify and we have to decarbonize the grid. There is a myth out there that that means that demand for electricity will go through the roof making the job of decarbonizing the grid difficult but what we found in this analysis is that when you really go deep on the efficiency and employ heat pump technology throughout the building population, the absolute demand for electricity goes down and we're finding this over and over again now in our research. It goes down so much that the savings that we outline in the program that we've summarized here will be sufficient to power a nationwide fleet of 13 million electric vehicles.

So there's lots to be excited and positive up here about and the place to start is at home, in our buildings. We think that a twenty billion dollar residential program - and I was at six billion I believe for commercial and institutional buildings - would give us the kickstart that we need to get the renovation industry out of it's what I call its pre Model T period and into a modernized efficient industry and if we do that of course, all of the costs that we've been outlining here will drop probably by more than 50%.That's what the experiments in this area are showing when you really go after retrofits like you mean it and like you want to get that GHG reduction benefit. So I think I've used my time and more but thank you for your indulgence.

HOST-Diana Fox Carney: Thank you yes we're sorry risk skipping through this so quickly but you're part of it now to Sean. Back to the President of Analytica Advisors and experts on sustainable advisors just sustainable finance apologies, Céline.

CELINE BAK: Thanks very much Diana. I'm going to build on the really important work that Ralph has just described. Just to give you a sense of who would be doing what in the Build Back Better homes and workplaces program. Fundamentally we would start with a major pool of capital from the federal government that might be administered by a crown corporation like the CMHC and that entity would provide guarantees and program funding for the Build Back Better homes and workplaces program that would result in a guarantee that banks would be able to extend to homeowners as well as workplace owners who would hire and pay for the contractors and engineering firms who would undertake the upgrades that are contemplated under this program.

Once that work is completed and obviously this is based on existing relationships that Ralph just described a moment ago, energy auditors would be asked to come in and verify the benefits that have been achieved and they would also collect economic information for us to understand how the market is evolving so what was spent in terms of labor as well as equipment. At that point the home or workplace owner would provide proof of those benefits to the bank or the credit union that had extended the credit which was based on the guarantees provided by the federal investment and then upon receipt of that proof the bank would then communicate that this project has been completed and the benefits have been achieved and when therefore receive the go-ahead to pay off the debt that either the homeowner or the property owner has taken o.

This obviously results in many many other benefits which I won't go into in detail but they do really build on Ralph's analogy of the Model T moment where Ford went from producing thousands of numbers of cars to well almost to a million in the course of a ten-year period. [...] that contractors or the builders got more and more efficient, manufacturers were making more and more of the equipment required in this case, heat pumps some of other things, people who are looking for work would find more and more opportunities and banks would find that the the underwriting that they're undertaking to make this program work would find places in capital markets so that they could release the lending weight on their balance sheet and make even more room for lending. So a virtuous circle would then be created.

TOBY HEAPS: Thanks very much Diana, fantastic, thank you everyone who's put questions up already one of them was what study was Ralph referring to. That is the study that he's done which will cover all the sectors of the possible recovery and we will be sharing that online with participants afterwards.
HOST-Diana Fox Carney: Thank you, now I think after that introduction to the possibilities we're going to turn to Gord Hicks who heads up BGIS, Canada's largest real estate management services firm, and is the founder of the Building Energy Innovators Council. What's the industry view, your view personally, what do you think industry would think of this.

GORD HICKS: Well first of all I'd like to say that been in the industry myself for over 25 years and been with BGIS for 22 of that and ultimately we have been operating in this facility management property management services area which encompasses building performance optimization consulting and so we've seen a great deal of a shift in technology and so on that exists to be able to drive these types of energy efficiencies and the implementation of renewable technologies within the built environment very cost-effectively. In fact we've seen that cost-effectiveness can drive a significant demand for the implementation of these services particularly over the last five years so when we look at Ralph's study and we look at the opportunity to drive, you know, a conservative 50% reduction in energy consumption, we very much see that as as a viable objective and a viable goal. We work across a number of sectors ourselves so we in the colleges sector media cloud enterprise financial services so we work across a number of types of assets and I would say that there's a varying degree of opportunity depending on the asset and the date in which that asset was was built, but on the whole given the technologies in the rate at which technologies are advancing we see opportunities in virtually every building that exists today and some obviously have not taken advantage of the technologies and not implemented some of the solutions that are available to them - others are a little bit more progressive.Yhat said I would say that the modeling also as part of Ralph's study talks about the multiplier effect and and the impact on GDP and so on and I would say that that is probably conservative in the sense that we think the multiplier effect is significant on GDP for every dollar spent in energy efficiency given the intensity of labor that goes into energy retrofits there should be a five times multiplier on GDP. I just like to close by saying that there are significant benefits, we look at the implementation of energy efficiency and certainly in the commercial sector but across all built environments. Firstly significant energy reductions driving operating cost efficiencies, obviously emission reductions, and then the opportunity to create some capacity within the building and ultimately on the grid to accommodate the electrification of the transportation sector which is also a pretty significant emission emitter sector and and that all drives a lot of opportunity for our Canadian economy.

HOST-Diana Fox Carney: fantastic good thanks I'm glad that you're optimistic about the opportunities so I'm now gonna pass you over to Thomas Mueller, he runs the Canadian Green Building Council. How does this sound to you, does it sound doable?

THOMAS MUELLER: Yeah you know what it does sound like, Diana, it does sound doable. We've done a couple of studies on large building retrofits of those over 25,000 square feet and we see a lot of potential to reduce carbon emissions from that sector. The potential is up to 22 million tons can come from the retrofit sector really around for actions that are already well understood around you know building recommissioning, deep building retrofits, renewable energy as well as fuel switching so these are all the technologies and the practices are available.The question is always how do you put it in motion and how do you arrive at the right results and and I think I want anybody really to understand that we cannot get to our climate change targets without the taking really concerted action in the building sector and in the building sector when you look up to 2030 the action has to be really focused on building retrofit and the reason for that is because any new building [...] even if you build a zero carbon building to the materials that we used to manufacture it adds carbon so the net reduction between now and 2030 will come from existing buildings, particular large existing buildings and former large existing buildings.

I think it's really important that government plays that role to actually provide some let me call it seed funding to put this actually in motion because at the same time we also need a very healthy lending sector to support this.This has to be built on good economics and we found that buildings 25,000 square feet will attempt themselves that kind of an approach. Now in addition to that it's just not a matter of broadly applying this so we did the analysis based on building types and sizes and the different grids and fuel mixes and different provinces of Canada and it becomes really clear that in that picture we want to get to your goals and building retrofit.

Not everyone is equal so you have to really go to these provinces that [..] still have a fairly what we call it dirty fuel mix when it comes to carbon so actually many of the the the impacts and the results would be targeting Ontario and Alberta which of course in our model is we have to redistribute everything equally but the targets would really be a burden to Ontario to really target buildings over 25,000 speed for a retrofit at a kind of a massive scale, we talk about 50 to 60 thousand buildings need to be retrofitted between now and 2030 to reach a 30% reduction in carbon emission from a large building sector. It's a significant challenge but it's not an insurmountable challenge and my final point I wanted to make is that if we invest money - if you're a bank you miss the money - if the government gives you no taxpayers money to engage that sector is that we need to find a way of extreme measuring performance and actually measuring that they are getting their results. [...] there have to be standards in systems in place to actually measure performance and make sure we're getting the outcomes and that these outcomes are maintained over time, so if you invest in a building we want to have those benefits for the next 20-30 years year over year over year. So we need to also put standards in place which already exist but we need to build too many into any kind of landing on any kind of government funds that are giving to building on us to make these changes. I know time is short so I'll stop here.

HOST-Diana Fox Carney: Thank you Thomas. I mean it is a huge task but I'm glad to hear that it is also doable. Before we move on [...]I just wanted to tell you the results of the poll so 83% of you either agreed or strongly agreed that it was okay to run these larger deficits, 5% only disagreed or strongly disagreed and then the residual were kind of neutral in the middle so it seems like at least amongst this group there is permission to think about spending a bit more money. So now I'm going to talk about how this could be funded more on the private side, so I'm going to pass over to Jonathan Hackett he has a PhD in physics and he's Head of Sustainable Finance at BMO.

JONATHAN HACKETT: Hi, so I actually want to build on something that Thomas mentioned there which is the idea of using this as seed funding by having the government really drive that forgiveness during the early stage of the experience curve on these retrofits. We can push towards a point where by using subsidized fundings guarantees insurance elements we could probably get this at the point of really being economical in the longer term and so by using that initial push of debt forgiveness to give the bank's experience but the underwriting to give the opportunity for those retro fitters to get further along so that they can be delivered on a more cost-efficient basis. We can really push to the point where this becomes self-perpetuating or the debt you know with small subsidies rather than complete forgiveness could really drive forward and expand to cover the rest of this talk.

HOST-Diana Fox Carney: Thank you so much Jonathan thank you for keeping it brief. I'm gonna pass over now to Andy Chisholm who's a board member at RBC and used to head strategy for Goldman Sachs globally. He's also in the federal government panel on sustainable finance.

ANDY CHISHOLM: Thanks Diana, thanks for the opportunity Toby. Few points - first of all, theoretically there's a lot of capital that should be going in this direction but it's not happening and so therefore we cannot simply just try to put more money in the same directions. Number two we need solutions that can endure, that are not susceptible to a change in government and the change in political attitude and we need solutions that can go mainstream so that the notion of retrofit loans can in effect become its own asset class much like auto lending or consumer finance or mortgage lending and to build structures that become evergreen rather than extinguishing. That can be taken over ultimately by mainstream lenders and to there therefore try as much as possible to limit direct subsidies for individual transactions and more subsidizes structure that can stand on its own.

The third point financed on its own is going to be insufficient if there is not enough impetus to break the inertia and what I mean by that is there need accompanying regulations i.e. efficiency standards building codes, there needs to be disclosure and data around that and there need to be competent service providers which need training and accreditation so this has to work in the system's context and if it does not do that the finance is not going to make things happen on its own the next point even with those company conditions. I think a lender cannot be passive at this point, a lender needs to be of a mindset that they are breaking the market open, they are designing structure, standardizing contracts, vetting suppliers, putting turn key packages together, capturing data in other words they need to operate rather than just put a shingle out saying I got some money available and really actively build this market.

So picking up on what was just said by Jonathan. I think there's huge potential to use the the notions of blended finance which he described which can either go through existing or new regional entities which utilize government funds to crowd in private money by satisfactorily affecting the risk return so that it gets to market clearing kind of levels and encourages private actors to be part of this mainstream market by doing that. One last point which would be in doing that it can act as an aggregator so that then those pools of assets can be resold and the money recycled so therefore it has never green context to it.

HOST-Diana Fox Carney: Fantastic. Sorry for jumping in, Derek Ballantyne from CMHC, what's the view from there?

DEREK BALLANTYNE: So I mean it may be useful to know that this I mean prior to the point we're at today CMHC has been thinking about what how do we move the inventory of built housing to become more efficient and more effective and how to reduce carbon loads so there's sort of aligns with a set of thinking that's been underway instead of studies. I think you know if there were three sort of areas of interest clearly the key to doing this is not understanding technology, not understanding know-how although there are there are going to be some significant supply chain issues that have to be addressed in particular if you do this at scale and volume there is inevitably an impact on market and price - how do you blend, how do you move this more progressively and how do you make these kind of changes

But I think as Andy has pointed out and Jonathan the key is really what are the financials doctors into which you can effectively and efficiently use a government interest and leverage off government capital or government guarantees or other mechanisms and how do you create this as a way of assembling asset interest as opposed to a set of individual projects and trying to assess everything at a particular result and I think that finding the financial architecture for this and how to get it kick-started is going to be the key around any sort of model that's presented or any sort of federal involvement, whether it's CMHC or some other entity.

I would also say that there are some other policy instruments that could be aligned and we offline had a couple of conversations about this but you know through CMAC we also offer insurance products and products around multi-unit portfolios and so on and there some other incentives that could get built in that would help create a stack of financial advantages that could start attracting more private capital. This kind of investment will not get done on government capital alone and yes it could be the front end risk and it could be the seed capital but you know when we look at the scale and the size of what it has to be and the durability of this capital it has to be created in a way that creates a sustainable system in the long term.

HOST-Diana Fox Carney: Fantastic, thank you for those wise words. I'm now gonna pass over to Terri Lynn Morrison who's the director of strategic partnerships at Indigenous Clean Energy. What do we see the opportunities to invest in energy efficiency and indigenous communities?

TERRI LYNN MORRISON: Good morning or good afternoon. Indigenous communities across Canada are a powerful force for change as the country transitions into the clean energy future apart from crown and private utilities. Indigenous communities and enterprises are the largest single owner of clean energy assets, in sum there are a total of 2,000 indigenous clean energy projects encompassing power generation, electricity transmission, heat production, and energy efficiency across Canada that are fully complete and operational or in their final stages. It'd be fair to describe indigenous people as the country's strongest clean energy community and indigenous clean energy or ICE as Canada's national partnership hub for advancing First Nations Metis and Inuit clean energy projects. The next stage of the Canadian and global energy revolution will emphasize future renewable energy development, advanced energy systems, green energy infrastructure, and enhanced energy efficiency of homes, communities and facilities. These developments offer major economic development and climate action opportunities for indigenous communities - many communities and organizations are focusing their efforts on improving the quality and energy efficiency of their homes and facilities.

While there has been some success in this area it has been slower than community members need. At ICE we're ready to translate the success that we've had in renewable energy capacity building to energy efficiency efforts through our new program Bringing It Home. With Bringing It Home we want to understand the conditions needed to dramatically accelerate the development and implementation of community-wide energy efficiency initiatives. There is an immense opportunity to use energy efficiency to reduce costs, energy consumption and impact on the earth while creating jobs and improving the quality of life in indigenous communities.

The challenge of addressing the critical housing and facility issues faced by indigenous communities is inherently complex - ask nearly any community leader and they'll say that funding is a major barrier to improving the quality of homes. Therefore we need to look for new way for both new ways to finance these home improvements and to ensure that the local capacity exists to build and retrofit and maintain the homes and facilities.

HOST-Diana Fox Carney: Thanks, fantastic, thank you. Now we're kind of running a little behind schedule so what I'm gonna do now is first of all ask Julia Langer out from the Atmospheric Fund who's actually been working in this space for a long time just to give her views and then I'm going to come back to some of the questions and some of the speakers who've not yet spoken.

JULIA LANGER: thank you happy Earth Day everybody. so there's been a lot of great conversation about the scope and scale of the opportunity, the benefit of this opportunity of retrofitting all of our buildings across the country and some great thoughts about the financial structures and mechanisms. At the Atmospheric Fund as an investor we've been investing in retrofits for decades and it's not really - nobody's arguing whether efficiency should be part of our stimulus and recovery agenda. I think we need to move the conversation from if and to how it is complex - there are many players involved, there's the owners themselves, there's the suppliers, there's the utilities, there's the banks and other investors, there's going to be the government, different programs. The only sort of contribution that I think is worth making in this short moment is that our concept now is really for a concierge type service in addition to the funding so some of the public capital matching up with the private capital. We need on the ground mechanisms to bring projects together with capital, to bring projects together with suppliers so that they can be optimized and providing that local, as I say a concierge type service. We certainly are starting that in the context of the multi-unit residential space which is kind of our natural area but it's replicable to other submarkets whether they're institutions or schools or municipalities to other regions. Our work is in the Greater Toronto Hamilton area so I would really just urge everybody - it's a coalescing of thinking, don't forget about that intermediation that doesn't exist in the country at a scale necessary to move the kind of dollars that we're thinking into play in retrofits at the ground.

HOST-Diana Fox Carney: Fantastic Julia, great that you have that experience and wisdom. We've had a couple of questions about the human side of this, the human capital. I'd like to turn to Angella [MacEwen] and Steven who are both in the space. Angella's the Senior Economist at CUPE and Steven Tobin is the Executive Director of the Labor Market Information Council. Can you tell us how we build up the workforce capacity to deliver these deep retrofits in a reasonably short timeframe? We'll start perhaps with Angella, if that's okay.

ANGELA MACEWEN: All right thank you. So I think you have to work with the building trades unions, they provide a lot of training to their members and there's an example of the insulators Union in BC that has actually already added green training to their normal apprenticeship process and they found that when they show workers the result when they take a heat map to a building that was built with good standards in a building and that was built with not great standards that the workers really have a sense of pride and they [have] an understanding of the difference that that their work can make if they do it well. I think one of the other big pieces that is missing here is the equity piece in terms of workers that can't afford energy, so who should we be subsidizing and how should we be doing this? As an economist ask, what's the market failure here? The market failure is, a) there aren't the green rags in place that we already know we should have and b) there's a big upfront cost, so higher income people can afford it but because as we saw in the analysis from Ralph Torrie, the savings are equal to the investment - almost right but there's just this barrier in terms of the big upfront costs. So Manitoba actually has an excellent project called pay as you save where the crown corporation lends money and then the user pays it back as they save and then the user has that additional incentive to make sure that the standards are in place, that they will be saving the maximum, which actually reduces the oversight required from the government organization. So yeah I would definitely not be a fan of blended finance, I don't think this is the time for us to be making new investment instruments for people to profit off of a green transition, we need to be thinking about a just transition about equity and how that plays out and that includes helping train workers using public retrofits as training sites for workers and stuff like that. I think it is really important.

HOST-Diana Fox Carney: Fantastic. Now Steven you have your finger on the pulse of the Canadian labor market, what are your thoughts on that?

STEVEN TOBIN: I mean I think for us it's really if workers are kind of going to seize these new opportunities and if we're going to position training providers to give them the support they need to either up skill or rescale. I mean simply put we need better information on the steel requirements of these new opportunities. I mean that may sound sort of obvious and straightforward but the reality is we still kind of confuse educational skills and we don't yet have that kind of common language with which to sort of talk about skills and that kind of leaves the training providers and workers looking to seize those opportunities kind of leave a gap. I think we've got to change that if we really want to help Canadians take advantage of these green opportunities or other opportunities that might be fantastic. We haven't discussed but we've raised the issue of the standards quarry diamond heads of efficiency Canada and what exists out there in terms of standards against which might one might draw down finance that can be measured and you know aggregated up. I think a policy framework that prioritizes deep deep retrofits is what is required - someone earlier mentioned that we need to sustain this over times of the benefits last much longer than the initial stimulus and if we're thinking of the kinds of policy structures that are in place at the residential level you have things like the inner guide system which allows somebody to understand how their home is performing now. You could then take the measures that some people have talked about and then essentially get a post audit and understand what your improvements are and potentially then the financing and things like that could be tied to your improvement rate. Now going back to what Julia said all this stuff has to be wrapped up in extensively advanced logistics supply chains, train workforces, marketing and lead generation - what I call kind of hand-holding or Julia calls a concierge service to get the customer right at the front of this and all that. The financing kind of adds into what we need is a policy framework and advanced logistics marketing together as a system.

HOST-Diana Fox Carney: Sorry, fantastic, we've had an interesting comment in here about how this should go beyond green and think think about blue socially minded approaches and I think I'm sure you'd all agree that new or communities that are focused on doing this can become more pleasant places to live and there's a great collective sense of purpose and we heard about the building trades being more engaged when they're working with with good buildings. I think one question that's come up here is about the real estate market though - is there any value attributed in the market to such energy efficiency when you come to trade your house? Will anyone like to stick their hand up for that to answer that question maybe the finance side Jonathan or Andy?

Jonathan Hackett: Yeah I think it's certainly creating value and especially if you believe that if you're establishing regulations that are gonna drive this over time in the commercial sector, the the value that is achieved in achieving the new expectations will definitely be something that is unlocked and we're not talking about when you think about paybacks on this things that are so far out of economical that there's not a rational approach that can be done here where people will value that renovation because of the operating costs that it saves let alone the regulatory burden.

Andy Chisholm: From my view I think there absolutely will be value enhancements that will ensue but you really need to have adequate debt data capture around all of this and disclosure so that you can distinguish between better and worse situations and you've got the data to prove performance.

Julia Langer: I also think that we shouldn't be naive about the business case because in a current environment where natural gas which is one of the main carbon emission sources from buildings, it is so cheap this is a beautiful time to match up commercial financing which is looking for a five or six year kind of payback which you can achieve in with existing technology and to go deeper faster with the public funds. So if you stack all of that together then you get a value proposition that really works and it will actually go to the bottom line of commercial buildings in their cap rate etc so you can show value. But if we want to go fast and deep now this is the time to match up funding.

HOST-Diana Fox Carney: Fantastic. Ralph, quick clarification around the study - is there anything in that about flood protection measures and whether they should be bundled in?

RALPH TORRIE: Yes we did include a provision for flood protection in the residential analysis for every house. We didn't do a detailed analysis of what percentage of the housing stock really requires this. We just assumed I think it was an average of depending on the type of house around the range of 1,500 or 2,000 dollars per house. It's not a terrifically expensive thing to do and again on the kind of mass implementation scale that we are proposing and considering here those costs would certainly come down.

HOST-Diana Fox Carney: Fantastic, thank you. I'm as some of you may know I'm actually based in London at the moment for a few more months hopefully if I'm able to get out and one of the things that you notice here is how poor the building standards are obviously the building stock is poor. Thomas, do you think Canada has an opportunity to export its its expertise in this area to other countries particularly given the large real estate holdings of Canadian investor some pension plans?

THOMAS MUELLER: Good question there and I do think that Canada is a leader in green buildings already globally considered and I think we actually miss the tremendous opportunity to take advantage of that so far that in terms of you have to look at the retrofit the large-scale right here. No country has figured out yet how to do large-scale retrofit of buildings at the residential side as we talked about just now in commercial institutional sites. The Germans do it mainly on the residential side but nobody's figured it out so this whole model around scaling it up, finding a way to finance it, to execute, agree to who value chain we talked about this morning. That is something that many other countries would be very interested in, could benefit from that Canadian expertise and so I think there's a tremendous opportunity but we don't as a country.

HOST-Diana Fox Carney: Thank you well it's always always good to know. I think what's been interesting about this event today and it is our first in the series is that we've begun to see some of the connections obviously with green transportation and other things. We've got a long way to go to reduce GHGs to the levels that the government's targeting. I think all sectors have to be part of this as the minister reminded us and as Toby said, we are in the midst of a crisis now, we want to use our thinking to try and help shape a better future being very mindful of the real economic hardship that many people in the country are facing right now and understand we need to support them and have the kind of attitude that Stewart mentioned at the beginning. It's been really fantastic to have everyone here today. I think that we will be sending a study that Ralph mentioned that is ready to go. We have one more poll to go so I want to put that one up which is the fundamental question. Do you think this is going to help us? This is what we believe and this is why we're doing this series so perhaps if you could all answer that. Fantastic okay, just checking here if on my panelists, no I think we're good to go. Thank you for being with us today, I'd like to thank all the panelists, I'd like to thank the minister for introducing it and Toby for bringing this event together. I hope you'll all be consistent participants throughout this series of events and also send in your thoughts and help create a better future for the country. If we have a result on that poll, Toby you could perhaps share it with us now.

TOBY HEAPS: Sure so ninety percent agree or strongly agree and five percent strongly disagree or disagree I suspect we have a slightly biased sample of people here but nonetheless it's good to know that you're behind us. Thanks for being with us today everyone goodbye