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STANDING COMMITTEE ON
NATURAL RESOURCES AND ECONOMIC DEVELOPMENT

Tuesday, January 26, 2021

VIDEO CONFERENCE

Solar Electricity for Community Buildings Pilot Program

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NATURAL RESOURCES AND
ECONOMIC DEVELOPMENT COMMITTEE

Keith Irving (Chair)
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Ben Jessome
Bill Horne
Hon. Pat Dunn
Tory Rushton
Claudia Chender
Lisa Roberts

[Keith Irving was replaced by Hon. Tony Ince.]
[Brendan Maguire was replaced by Hon. Suzanne Lohnes-Croft.]

In Attendance:

Judy Kavanagh
Legislative Committee Clerk

Gordon Hebb
Chief Legislative Counsel

WITNESSES

Department of Energy and Mines

Simon d'Entremont,
Deputy Minister

Peter Craig,
Manager - Electricity Policy and Programs

Alternative Resource Energy Authority (AREA)

Aaron Long,
Director of Business Services

House of Assembly
Nova Scotia

HALIFAX, TUESDAY, JANUARY 26, 2021

STANDING COMMITTEE ON
NATURAL RESOURCES AND ECONOMIC DEVELOPMENT

2:00 P.M.

CHAIR
Rafah DiCostanzo

THE CHAIR: Good afternoon, everyone. I'm Rafah DiCostanzo, the MLA for Clayton Park West, and I'm the Chair of this committee. This is the Standing Committee on Natural Resources and Economic Development, and I am just checking my notes to make sure I don't miss anything.

Today, we will hear from the Department of Energy and Mines and the Alternative Resource Energy Authority regarding the Solar Electricity for Community Buildings Pilot Program. We're holding this meeting, of course, by video conference, and I have the members. Do I have every member here? Almost. The members, the witnesses, and the Committee Clerks, and the Legislative Counsel. I would like everyone to keep their microphone on mute unless I call your name to speak or to introduce.

All of the staff should have their audio and video turned off, please. If you have your phone, please turn that on silent as well, and I will check mine at the same time. For the members, please don't leave your seat unless it's absolutely necessary. That way, we know if you are present if a vote is called for.

If I need to confer privately with the Clerk or the Legislative Counsel, or if members wish to confer before a vote, you may call for a short recess. If any members are having technical problems, as we had today, please phone or text the clerk, Judy Kavanagh.

We're going to start with the members introducing themselves. I will start with Mr. Ben Jessome.

[The committee members introduced themselves.]

THE CHAIR: I just got a text that Suzanne Lohnes-Croft is still having some technical issues and will be reaching out to Judy Kavanagh. For Hansard purposes, please wait for me to call your name before you answer questions or speak.

I want to welcome our witnesses, Deputy Minister Simon d'Entremont; Peter Craig, Manager of Electricity, Policy and Programs; and Mr. Aaron Long, the Director of Business Services at the Alternative Resource Energy Authority. Mr. d'Entremont, I should have asked you to introduce them - I apologize. You can start with your opening remarks or introduce your guests as well.

SIMON D'ENTREMONT: Thank you, Madam Chair. I think you've already introduced my guests. Peter Craig works with us at the Department of Energy and Mines. Aaron Long is a recipient of the program and he works for AREA.

Good afternoon, everyone. Good to see you all here today. Thank you for the opportunity to speak to you today about the Solar Electricity for Community Buildings Program. Today I've got good news to share with you about solar energy and our progress in the fight against climate change.

Nova Scotia is a national leader in fighting climate change by reducing emissions. We have met a national target for reducing greenhouse gas emissions nearly 13 years early. We have one of the most ambitious plans in North America. We will cut our greenhouse gas emissions by 53 per cent below 2005 levels by 2030 and reach net zero emissions by 2050.

We are investing nearly $120 million in programs that reduce emissions and fight climate change. These investments support thousands of people working in jobs that are growing Nova Scotia's green economy. Renewable energy use has more than tripled over the last decade.

One of the best ways to add more energy that's renewable to our grid is through our Solar Electricity for Community Buildings Program. We announced the program as a three-year pilot in 2017 and are pleased to say we have had a healthy response. There were 71 organizations approved under the program over its three years. That means 71 organizations in communities across the province that were able to add solar energy to the mix and help the province move towards its ambitious goals for reducing greenhouse gas emissions.

The program approved 3.8 megawatts of generation at an average cost of 25 cents per kilowatt hour. We were able to use an independent procurement administrator to run the application process, delivering renewable energy at a competitive price for Nova Scotia. The lessons we have learned from this program are impacting how we approach our work to scale up renewable use.

We've also used an independent procurement administrator for tidal power, wind power and recently announced a similar approach for our Green Choice program that will allow large institutional users like the federal government to purchase renewable energy.

We know it's an approach that has the potential to deliver great benefits for Nova Scotia at a good price. The Solar Electricity for Community Buildings Pilot Program has had benefits for communities across the province, like the Cape Breton Regional Municipality, where Munro Academy was one of the successful applicants with a plan to install 75 kilowatts of solar energy.

The Solar Electricity for Community Buildings Pilot Program gives organizations like Munro Academy the ability to benefit from a cleaner energy future. They're able to sell the clean renewable energy they generate to their local utility and reduce emissions for all of us. Over the past three years, more than 70 community organizations have been approved under the program. This has added to the 300 per cent increase in solar electricity use across the province in the last few years.

In fact, as of May 1, 2020, Nova Scotia was still ranked best province for solar in the country by independent organization energyhub.org. That means jobs are growing the economy and everyone benefits. Today there are more than 50 businesses involved in solar energy in Nova Scotia. That represents hundreds of jobs and it adds to the remarkable uptake in renewable energy in Nova Scotia, where a couple of hundred businesses and more than a thousand employees are contributing to our clean energy future.

In every community, people are doing their part in the fight against climate change. They're adding solar panels, adding heat pumps, and becoming more energy-efficient. Nova Scotians have done hard work to make our province a national leader in reducing emissions, and they should be proud of the results. But there's plenty of work ahead of us.

I want to thank staff in the department who are working very hard to ensure Nova Scotia is taking advantage of the opportunities that renewal energy offers us and the community. They're supported by our minister, who's passionate about the potential of our province to be a leader in renewable energy.

We've been lucky to partner with community organizations under the Solar Electricity for Community Buildings Pilot Program, as well as partnering with municipalities through low-carbon communities and Connect2 programs, and to partner

with tidal companies as we develop Nova Scotia's tidal energy potential. We can be optimistic about our renewable energy future.

Thank you again for inviting us to speak with you today, and I look forward to your questions.

THE CHAIR: Thank you, Deputy Minister d'Entremont, We will start with the questions. I will keep a list. Mr. Dunn will be first, Ms. Roberts second, Ms. Chender after, and then we will take more - I'll just look for the hands after. So we can start actually with Mr. Dunn.

HON. PAT DUNN: Thank you for your introductory comments about our great success in the province. In 2007, Nova Scotia proclaimed legislation that was intended to make our province one of the cleanest and most sustainable environments in the world by 2020. This legislation, the Environmental Goals and Sustainable Prosperity Act, was introduced by my former colleague, the Honourable Mark Parent. It included annual reporting requirements for the minister on the Province's progress towards certain goals identified in the Act.

[1:15 p.m.]

This legislation has now expired. Will similar reporting requirements exist in the new legislation the government someday hopes to consult on? And has the minister been in compliance with the reporting requirements in recent years?

SIMON D'ENTREMONT: Thanks for that question. We would have to ask those questions of the Department of Environment, who are responsible for rolling out the original EGSPA legalisation and are also the lead department within the Province to roll out its replacement or subsequent legislation in the Sustainable Development Goals Act. That's a piece of information we can get back to you.

We can consult with our colleague department if you like, and after the fact we can send that information to Judy Kavanagh, for example, but I don't have the answer to those questions there because they're under the purview of the Department of Environment.

PAT DUNN: Solar appears to be one of the fastest growing markets in the world, and it appears that some companies that wish to have their fair share of the market have developed aggressive sales tactics. My question is, what options or avenues does the consumer have to at least take some control over pricing and available installers?

SIMON D'ENTREMONT: I'll start that and maybe ask my colleague Peter Craig to add a few points after, if he has any to add.

We're lucky in Nova Scotia to have Efficiency Nova Scotia, which develops a broad range of pre-qualified installers for a lot of the programs that are delivered in the province. They have a very strong network of organizations. That is one way that people can get in touch with organizations they have confidence in that have good experience in delivering.

Of course, it's wise in any consumer-facing business to talk to many different companies, find out what they can deliver and make sure that they're delivering the products and the commitments that they say they will - I think a lot of the regular consumer protections. There are also consumer advocate organizations out there that will take complaints about businesses whose practices are not up to our business standards. Those organizations, like the Better Business Bureau - consumers can check in with those as well. Peter, do you have anything to add?

THE CHAIR: Mr. Craig.

PETER CRAIG: Yes. As the deputy alluded to in the introductory comments, there are right now more than 50 companies registered through Efficiency Nova Scotia to do business in rooftop solar, residential solar serving Nova Scotians. All of those businesses, before they register, are subject to finding an agreement with Efficiency Nova Scotia that ensures that they'll meet some basic requirements around consumer protection in order to effectively participate in that program and make use of the solar homes incentive that is delivered on behalf of Environment and Climate Change Canada through Efficiency Nova Scotia.

One of those criteria is best practices consumer protection. In fact, some enforcement activity has taken place in that space, seeing companies either sanctioned or, in fact, removed from the program if they have not met their customer needs as deemed appropriate by the program administrator, which is Efficiency Nova Scotia. In addition, by virtue of the fact that Efficiency Nova Scotia is there, we are able to work with them to ensure that consumer protection practices and best advice is put in place for participants of that program.

The SolarHomes Program, which I think is the most relevant to the example to what you're referring to, is a pre-authorization program, so people must seek authorization from Efficiency Nova Scotia before they participate. In so doing, Efficiency Nova Scotia is able to examine the information they provide and make sure that the information that they obtained from their commercial business partner - the solar installer - is accurate and within the realm of normal expectation, and they're able to advise the customer if this is an appropriate and cost-effective solution.

On top of this, the Province has worked with a number of non-profit organizations to fund information sessions held around the province to help advise residents who are

considering this modification to their homes on what avenues are available to them and what some of the expectations they ought to enter into that path would be.

We've also worked to fund some manuals or guides that are available on the internet or on paper copies, again, from some non-profit organizations with an interest in this space that are designed to help people move through the process in the best possible way and advise them on a number of those considerations that the deputy alluded to - making sure you arrange for multiple quotes, understanding licensing bonding, the division of work and warranty requirements. This works for considerations that would be normal in any modification - this is a fairly substantial modification to a home that people would consider.

Of course, both the Department of Energy and Mines and Efficiency Nova Scotia keep an eye on this space as required. We're always looking for ways to better educate the people of the province and work with the businesses involved to ensure that they have the training, the knowledge, the access to employees and skills that they need to best perform the business in the best way they can to serve the needs of Nova Scotians.

THE CHAIR: Before I move on to Ms. Roberts, I'm just going to introduce - we have both our members. Suzanne, if you could just introduce yourself so we make sure that we can hear you.

HON. SUZANNE LOHNES-CROFT: Hi, MLA Suzanne Lohnes-Croft, Lunenburg.

THE CHAIR: Thank you, Suzanne. I also want to introduce Bill Horne. Go ahead, Bill. Let's make sure your microphone works well.

BILL HORNE: Good afternoon. I'm Bill Horne, member of the Legislature for Waverley-Fall River-Beaver Bank.

THE CHAIR: Thank you Bill and Suzanne. Go ahead with your question, Ms. Roberts.

LISA ROBERTS: Thanks for the introductory remarks. I'd like to hear what the department learned from those who did and those who didn't participate in the Solar Electricity for Community Buildings Pilot Program.

Looking at the list of projects, I don't see many not-for-profit organizations. I see that the great preponderance of projects were undertaken by municipalities, by in some cases NSCC campuses, and by First Nations, which makes me think that perhaps entering into this sort of work might have been intimidating or testing of the expertise of volunteer board members and organizations who don't normally work in this area.

Can we start with that? What have we learned, and how are we going to apply that to expand the use of renewables?

THE CHAIR: Mr. d'Entremont.

SIMON D'ENTREMONT: Thanks for that great question. Understanding what we learned through delivering different programs and pilots - we call them pilots for a reason, because you're looking to learn the best practices before you scale up any opportunity, and the ability to learn every time you're rolling out new programs. This is a new space, we're learning how to put renewables on the system, it's something we can't go back in the history books 20 or 30 years and find out how other jurisdictions did it.

In terms of lessons learned, some of the things we've learned, number one, contractor training and training the people in the space about how to deliver the programs is important. As was mentioned, and Peter Craig mentioned this as well, helping our clients understand how to fill out the forms, understand the means of putting together a project as well.

Understanding in this space as well, it was important to learn who does what in the business. There are different parts of the business that need to come together, including installing, there's the connections to Nova Scotia Power, the meters, and just understanding the division of labour amongst the sector to know who's doing what pieces and knowing that's clear, it needs to be developed as well.

There's learning to work with partners like Nova Scotia Community College, in terms of training and understanding how to build a workforce in this area, which we've done very successfully, I have to say. Over the last few years we've gone from 17 solar installer companies to 50 to 60 that we have now. We've really been able to grow this space, but we've been working with the solar sector as well as an organization, having sessions with them as a sector. We've learned as well about the benefits that a program like this delivers. We know that we've been able to help not-for-profits and other organizations in their financial sustainability, lowering their energy costs, which is of course important.

We understood and learned how it's not always about the money as well. Organizations and individuals have climate change ambition, and they want to find a path to be able to contribute to that. We're able to give a path for those types of organizations who are interested in applying.

We've also learned how to build a sector, as I mentioned. We've had sessions with the solar sector and tried to do the business development, because maximizing every green job and business development opportunity while we do this transition continues to be an important priority for us.

We also learned that the price got more competitive later in the process. The later solar was better and cheaper. As the companies get better, get the economies of scale and get more competitive, we actually learned along the way. Now we're actually recognized as one of the jurisdictions in North America that has the most cost competitive solar, which is a great attribute to the work that has been done.

In terms of the applicants, we had different criteria and different applicant types. Municipalities, educational institutions, not-for-profits and so on were allowed to apply. We also had a regional distribution mechanism as well to make sure that we were able to provide some assistance in different parts of the province.

There is also a cost competitiveness issue in that there was a competitive bid mechanism whereby organizations were asked to come up with a bid for the cost of the electricity to make sure that we could limit the impact of the program to 0.1 per cent of electricity rates. That's one-tenth of 1 per cent. The way that works out is there was around a $1 million impact. The total rate base of Nova Scotia Power's rate base is about $1.3 billion - so one-tenth of 1 per cent would be a little bit less than 0.1 per cent.

In terms of who got the funding, we had a mechanism whereby organizations in a certain class like municipalities or educational institutions competed against each other and not across classes, so there was a means to make sure that we had a reasonable allocation in all of the four eligibility groups.

That's a quick rundown. I'll ask Peter Craig if he's got any other extra points to add.

PETER CRAIG: I'm sure Ms. Roberts is referring to some feedback that she herself provided early on in the development of the program. I want to say that we did do extensive consultation in the development of the pilot, Solar Electricity for Community Buildings. That included reaching out to a number of organizations that represented each category.

Early on, we certainly did have a deep and real consternation around the capacity of the not-for-profit sector. That showed up very early on in the consultation process just because it's much more difficult. The department doesn't have the same level of reach and contact with this sector as we do with the other affected groups. That hasn't been an area that we've run a lot of programming in at that time in the past.

We've since expanded significantly into the space to try to deliver those programs. We wanted to be very respectful of that and appreciating the time commitment that this kind of engagement makes necessary out of a fair assertion that it is largely volunteer boards, often volunteer-run associations and their employees are paid to deliver their services, not paid to deliver solar commitment.

We did our best, I think, to try to accommodate that involvement by trying to make the process as streamlined as possible for enrolment. That meant communicating extensively with focus group-type participants to make sure that we were running those materials by them. The department hired some plain language editors to make sure that we were explaining the program, the process, and solar power renewable energy itself in a way that was consumable by the public - by people who weren't part of the industry.

[1:30 p.m.]

Again, this was very much a different style of program. That's why it was a pilot - to reach out at a smaller scale. This program really followed on the community feed-in tariff program that saw a number of wind, biomass, tidal projects put forward, but they were of a much larger scale with more capable organizations, usually with the involvement of consultants. There was just a lot more money and resources involved in that process.

We embarked on this to try to experiment with that level of program and fully expected to learn a lot of lessons from that phase. There were a lot of materials prepared to try to on-board people in the least painless way possible. In fact, over the three years of the program, the enrolment process changed substantially to try to address concerns raised by participants in each year and by the evaluator as we continued to learn by doing, as it were.

We did succeed in getting 21 out of the 71 applicants. Successful applicants that were not-for-profit organizations was about 30 per cent, which was within target, so the program was successful in that regard.

What I think that statistic occludes is that there was considerably more variation inside the non-profit sector in terms of the quality of applications received, the pricing, and their ability to follow through on those projects. I'm looking at some statistics on my screen here that would say that the price for municipalities was below the average for the program, but the price for the not-for-profit sector was above the average for the program. I think that speaks to the access to capital that the different types of organizations met with, their ability to leverage other sectors of business that were also involved in similar areas, and the general kind of capacity that they had on site to participate in a relatively complex program like this.

We saw quite a bit of variation, especially in the first year in terms of the pricing that was submitted. Regrettably, that saw a number of projects unsuccessful because they had that high pricing. Some organizations were able to sharpen their pencils, as it were, communicate with their suppliers, and come back for a second year and be more successful. Others, sadly, were discouraged by that and may not have applied in the second year or third year.

We did get applications for a not-for-profit in each of the years and they were awarded in each of the years as well. Some of them, of course, have since been withdrawn or not completed, but we've experienced that across all categories as well.

We did collect feedback. Obviously, not all of the projects that completed the program wrapped up in 2019. They had two years to complete the project, so there's still some time left on the clock, but we did some preliminary feedback collection, leading to the preparation of some reporting on this to gather that feedback, because it is essential in the development of our other programs. Since then, the department has embarked on a number of other programs, partly learning from these lessons, partly trying to extend outreach capacity.

One of the pieces of feedback that was very clearly heard is that capacity limitation, - even so far as the language, the terms, the concepts involved in the renewable energy space - aren't as familiar to some of the people who might be very adept at delivering the services that the organization requires, but they're just not prepared to move into the space.

The Low Carbon Communities program that the department also runs has been very successful at trying to build that community capacity in order to lay the groundwork, build up the framework inside of the communities in Nova Scotia so that they're more able to understand these programs as they become available, understand the nature of the opportunity and to better evaluate whether it's right for them. Then once they participated or not participated, to give them the language they need to communicate better with us and with the other parties involved so we can better understand their needs and tailor our programming to serve them in the future.

A couple of quick observations, because you asked a directed question here. Some of the feedback we heard was that this was a request for proposals process, which meant that it did have a fixed deadline. Some of the not-for-profit organizations found that to be challenging because they may only have board meetings once every three months. It was difficult for them in between that process to get things aligned and get the resources in place, and they felt that they would be better served by a continuous organization of intake rather than that once-per-year kind of process.

The other thing was that they didn't feel they had a good understand of who in the marketplace was available to do this. I'll point out that AREA, for instance, was instrumental in helping the municipal organizations participate, but there was no similar organization - an umbrella group inside the not-for-profit space which we had sort of hoped might materialize when we were developing the program. A number of candidate organizations existed, but that turned out not to be the case.

There's a lot of work to happen in terms of preparing the not-for-profit community for this, and in terms of educating the suppliers who may not be as prepared to do business with these types of organizations. That supplier community prior to this was really

accustomed to working with individual residences and didn't understand either the program structure or the nature of the not-for-profit sector that has a few different financial constraints. They don't have the same ability to walk into a bank and take out a home equity line of credit, for instance, which there's also been some concerns around things like insurance, access to capital through the banking sector, that have also been lessons we've learned and tried to accommodate and add to the program or add to future programs as we continue.

THE CHAIR: Thank you, Mr. Craig. That was a nice, long reply. Ms. Roberts, do you still have a follow-up?

LISA ROBERTS: I would like to take advantage of Mr. Long being here from the Alternative Resource Energy Authority to ask from his perspective, which would be the perspective of municipalities, what pathway forward do you see to be able to scale up rapidly?

I think it's great that we are learning these lessons but, to some extent, I'm feeling a sense of renewed regret that the COMFIT didn't continue. By resetting and trying a new approach, lessons that were learned through that process weren't put to best use, but now we do have AREA and we do have some regional energy authorities.

Mr. Long, what do you see as the path forward to scale to larger systems than 75-kilowatt hours? Maybe tapping the expertise that does exist in the municipal sector so that with virtual net metering, we could be placing installations maybe in non-profit owned buildings. Perhaps it's actually the municipality and the municipal energy authority that is taking on the work of proposing and actually running those projects.

I hope to hear from him maybe with not quite as long an answer so that my colleagues have a chance.

RAFAH DICOSTANZO: Your preamble was very long and then the computer took me out. Mr. Long, please go ahead.

AARON LONG: I think the answer to your question, fortunately, is succinct. My dad always liked yes or no answers - very short answers - so I'm delighted that I can provide such to you. It's about market access. You talk about the capacity and Mr. Craig and Mr. d'Entremont have talked about capacity buildings and learnings.

It's helpful to understand AREA's origination. We're owned by the towns of Antigonish, Mahone Bay and Berwick that have their own municipal electric utilities, and in 2013-14, created AREA to control their own energy destiny. When you talk about scaling up, these three towns of citizens - 12,000 people in aggregate - now own a $51 million wind energy facility in Ellershouse in rural Hants County, so that capacity has been

demonstrated and that capability has been demonstrated by municipalities. We picked up that playbook and then offered it to a number of our peer municipalities.

We want to be part of the government's decarbonization plan while also creating new economic opportunities for municipalities throughout Nova Scotia. This was a great program for us to demonstrate that. We did 21 projects from Argyle to Antigonish to Amherst. What that has shown is a committed interest from these municipalities throughout Nova Scotia to be part of this decarbonization plan. All they really need is more opportunities for bigger projects. That is a market-access conversation. Again, in our municipal electric utilities we can connect to the grid. If it makes economic sense for the community, provided it passes regulatory tests, we do those projects.

To answer your question directly, it's a policy question - is society best served by having large renewable energy projects? I think the groups that have submitted into this - Mr. Craig identified a number of them that have higher earnings expectations or get-out-of-bed hurdle rates. Municipalities have rock-bottom costs and if we can tap into these ownership groups with larger projects, larger market access, then we can deliver least cost decarbonization to Nova Scotians.

THE CHAIR: We'll move on now to Ms. Chender.

CLAUDIA CHENDER: I guess I want to follow along on this low-cost decarbonization conversation a little bit, deputy, acknowledging that this doesn't fall under your mandate. I do want to ask about investment and timelines for scaling, and I want to ask about that particularly in the context of the Green Fund.

Again, the Green Fund comes out of the cap-and-trade regulations that came in in 2019. As I'm sure you're aware, these are again all about that rapid decarbonization that we need. Probably everyone who has an iPhone just got the same news alert that the Arctic has lost 1.2 trillion tonnes of ice this year and that the UN Intergovernmental Panel on Climate Change is now saying the worst-case scenario is here and it's probably worse. I just think that's important context for this conversation. We don't have time. We don't have time.

Just to put a fine point on it, we are aware that the Green Fund, which is the proceeds of those cap-and-trade auctions, sits at, as far as we can tell, somewhere plus or minus $25 million. I guess my specific question to the deputy is, have you been in conversation with your colleagues about leveraging that money?

The regulations for how to spend that are all about projects like this one, similar projects that help us on that path, and it's a dedicated fund. While I understand it sits in the Department of Environment, I would imagine that accessing that might come through you, so any comments you could give on that would be helpful.

SIMON D'ENTREMONT: That's a great question. As you mentioned, I can't talk about the deployment of the Green Fund in detail - that's over at Nova Scotia Environment. However Nova Scotia Environment and ourselves do work a lot together on harmonizing our policies around climate change and the environment. The reality is when you look at the sphere of where greenhouse gases come from in Nova Scotia, about 45 per cent come from the electricity sector, 45 per cent from heating oil and gasoline from cars, and 10 per cent for everything else.

There are both carrot and stick means to impact climate change, and the federal government's got carbon pricing - for example, we've got our own cap and trade system, but also investing in the right areas is obviously a key part of driving the agenda forward.

We do have some things that we've been doing under the federal infrastructure funding under the Investing in Canada Infrastructure Program or ICIP. We have an envelope for green funding, and we have been investing and will be investing over 10 years $171 million in green infrastructure that can help drive climate change ambition. It includes anywhere from First Nations energy efficiency all the way to - we've got some applications for solar and a lot of different types of investments that we can make.

I can address maybe Aaron Long's comment around taking municipal aspirations and scaling them up. We have a Green Choice Program that we're in the middle of designing right now where the federal government came to us and said, we have an aspiration by 2025 - and they've since moved it up - but 2025 to say, we want to be zero emissions in our electricity use.

So we designed a program, the Green Choice Program, whereby we're going to launch a request for proposals where proponents can come in and bid into that process, and we're going to build the incremental spend and renewables - probably in wind and solar - that will help the federal government say we are 100 per cent non-emitting sources of electricity. We're designing that process right now, so there will be a competitive process, and there will be means for people to bid into that.

As well, at the Integrated Resource Plan process at the Nova Scotia Utility and Review Board, which is a long-term planning process, clearly there's some room for more renewables on the system, and the evidence and work that's being done shows that that needs to be the case, so decarbonization needs to go along with electrification. We need to electrify, like vehicles, but also we need to make sure the electricity is clean. We need to continue to decarbonize and get off coal at the same time as electrification is a huge opportunity for us for electrifying transportation, for example.

There are great opportunities both to bend the climate curve and the carbon curve down, but also to create all kinds of jobs and economic prosperity as a result of that.

CLAUDIA CHENDER: Thanks for those comments. I'm glad to hear you mention the UARB because I do think there's some rethinking and modernization that might have to happen as we look at greening that grid and how we're able to do that.

I'm interested to hear about the $171 million federal envelope over 10 years, I think is what I heard you say. As a provincial representative, I'm still pushing for provincial investment and ways to leverage that money with our dollars. I wonder - to the deputy again and whoever else you'd like to direct that to - how much of that money has been spent this year, and what if any other spends have we seen this year, particularly related to the dialogue around stimulus?

What we've seen from the government, in terms of what we can find out, is that the vast majority of stimulus spending has been roads, infrastructure - not particularly low-carbon activities. Has there been other spending coming out of your department or those of your colleagues particularly directed at stimulating our economy at the moment, recovering our economy, moving to that low-carbon future?

SIMON D'ENTREMONT: I don't have with me the in-year amounts for the ICIP program. The projects are often multi-year. We make a commitment in one year and you have a cash stream over a few years, but you mentioned an interest in making sure the province is committing. We are providing matching dollars to some of those projects, depending on the class of project, so we don't get the $171 million for free; we need to commit to doing some things as well.

We've done well, for example, with the Low Carbon Economy Fund. We got $14 million from the federal government for our $3-million investment, so we're doing pretty well on the leverage fund. I mentioned a 10-year plan to do energy efficiency on every First Nations home in Nova Scotia, a project we're very proud of.

In terms of the federal infrastructure program, as I mentioned, we've probably got - it's dangerous to guess, out of the $170 million. The program's only a couple of years old, so we had kind of a plan to spend it over 10 years. We may be in the $30 - $40 million range of money that we've either gotten out the door or in the process of getting out the door.

In terms of stimulus, we are spending on a regular basis $10 - $12 million with Efficiency Nova Scotia on the HomeWarming program. That's the program that provides free electricity audits and upgrades to low-income Nova Scotians, and we've done a number of programs there.

As well, electricity ratepayers have been funding programs to install heat pumps and so on. Efficiency investment is a great way to get jobs on the ground fairly quickly. We've got over 1,400 jobs in Nova Scotia delivering efficiency programming, and we're

always looking around for opportunities to find new funding around doing more energy efficiency. It's a very effective way of tackling climate change.

As I mentioned earlier with what we've been doing with the Green Choice Program, this calendar year we'll be launching an RFP to put at least tens of millions - and maybe more - of new renewables on the system to satisfy the needs of the federal government. We've also got some other large industrial players who are coming to us with an interest in participating in the program again. This year, we'll be launching an RFP looking for tens and, if we're lucky, hundreds of millions of dollars' worth of new renewables on the system.

THE CHAIR: Mr. Jessome.

BEN JESSOME: I've got some questions related to the not-for-profit sector, just hearing some of the feedback related to some of the constraints for those types of organizations that should or could be addressed.

I'm wondering if one of our guests could comment on any adaptations that have been installed to the program to reflect some of the differing needs of the not-for-profit sector.

THE CHAIR: Mr. d'Entremont, do you want to start, or somebody else?

SIMON D'ENTREMONT: I'll start, but I'll be very brief, and I'll ask my colleague Peter Craig to maybe add a few comments.

As Peter mentioned earlier, we've been cognizant of the fact that the not-for-profit sector has some constraints in terms of going to the bank, borrowing the money, having sophistication. We've been very sensitive to that. I think for government, bringing the not-for-profit sector along for the ride in our energy future is a good move for us. We get not just economic benefit - we get social benefits having a strong not-for-profit sector with better economic viability because they have lower energy bills and giving them a path to fulfill their green energy aspirations as well. Then building up a kind of social structure of the province at the same time.

We definitely have an advantage of working with the not-for-profit sector and helping them be more competitive in these types of processes as well. Efficiency Nova Scotia has some experience dealing with small business and not-for-profits. I think through that experience you learn the extra questions you've got to ask, and the advice you can give on how to pull that together.

I'll ask Peter Craig to give a brief couple of examples of things that we may have done over the last little while - more opportunities for things we haven't done yet.

PETER CRAIG: I should clarify first that the program was a pilot program and it ran for three years - 2017, 2018 and 2019. It has since closed. There were changes made during the operation of that programming, including changes to some of the documentation that made it clearer to the not-for-profit sector what their roles and responsibilities are. We produced a couple of tools - worksheets and things like that - to help them on-board and participate in the process.

I think to get more at what I understand to be your question, I think that if we were to run this type of program again, we would probably think of a different approach with the not-for-profit sector. That has been demonstrated in some of our other programming. I'm thinking in particular of the Connect2 and Low Carbon Communities programs, which have a very different structure. This was a program that required a group to prepare an application and submit it blind to an evaluation where it was looked at once and either accepted or rejected based on its merits at the time. That just doesn't allow the sort of involvement that I think the not-for-profit sector needs and wants from government.

Taking the Low Carbon Communities program, for instance, we run a far more inclusive intake with that program, based largely on some of the feedback we got. Their participants are given some webinars, some information, they're given contact information directly with department staff who are working on that program. They're able to reach out to staff and communicate around their expectations and their understanding.

Staff are able to get a feel for whether the program is going to meet their expectations and communicate that early on so they're not wasting their time applying for something that they're not likely to be successful with. Staff are able to do a little bit of back-and-forth and suggest them before the application actually comes in, so we're getting better information. We're getting more involved participants. We're getting better results as a consequence.

In addition, because that process allows us more direct involvement, it lets us have a back-and-forth and communicate with some of the project proponents. The department stays more involved with them after they've received the award. The Solar Electricity for Community Buildings Program was modelled after renewable energy procurements, which is really a business process. It's wholly reasonable to expect a business to be able to go off and complete the work as is awarded, but with the not-for-profit sector, we find it's helpful to have regular check-ins to make sure that they're meeting their own expectations, meeting the expectations of the grant award, as would be the case with that program, and that we're able to make those changes as may be required to best work with that proponent.

The short answer is, we're taking a more hands-on and more responsive approach - maybe not related to this program, but in the future programs that we develop.

BEN JESSOME: Mr. Craig, can you repeat or be specific about what the department would observe as their most credible intake stream for prospective proponents?

PETER CRAIG: I'll be careful here. The Solar Electricity for Community Buildings program was meant for solar electricity. Most of the other programs that we operate out of the department are not directly dedicated to solar electricity, although that may be a function in some cases. The Low Carbon Communities program that I spoke of has an intake process. It's application-based, but it's far more text-based; there's an opportunity for participants to explain their project, and they enroll to that program, and then they're able to communicate with staff through that.

The unfortunate thing is that capital funding for construction projects like solar is not part of that program, so we're at the stage now where isn't a direct follow-on to solar electricity for community buildings at the moment. If there's a not-for-profit sector participant who wishes to install solar, they would instead be directed to the commercial sector and to Efficiency Nova Scotia for kind of a more generic process.

THE CHAIR: We move on now to Minister Ince.

HON. TONY INCE: Nova Scotia has set ambitious targets for reducing greenhouse gas emissions. What can you tell us about the role that solar energy will play in meeting those targets?

THE CHAIR: Mr. d'Entremont, you're on mute.

SIMON D'ENTREMONT: I was trying to get off mute; my keyboard press didn't work anymore. Thank you for that question.

Clearly, adapting to climate change and addressing climate change will require a lot of heavy lifting, a lot of different pieces. As I mentioned earlier, 45 per cent of our greenhouse gases are coming from the electricity sector, which is made up of coal, petcoke, oil, natural gas, and right now sits above 50 per cent, but when Muskrat Falls comes on stream sometime this year, we'll be able to get that under 40 per cent and get our renewables maybe up over 50 per cent.

Adding renewables is going to be an important part of that. Of those renewables, wind and solar, hydro can all play a role. Solar may not play as large a role here as in western Australia or in California, but clearly there's a role for solar. People have a high level of ambition to be able to participate in the climate change economy and be able to move those markers, so solar at the resident level has an opportunity to play a role.

We've talked about public buildings, community buildings. We've got a real policy interest in trying to find a way for solar on multi-residential buildings, to be able to find a home. Right now, most of the paths for adopting solar mean being a homeowner and putting it on your own roof. We have a real policy interest in trying to find innovative ways to put solar on low-income multi-residential buildings and, for example, tie those to means to keep rents down and power bills down to renters, so we need to find mechanisms. It's

more complicated. We have to find a way for those benefits to trickle down to renters, for example.

The other two areas where solar can play a role is at the grid scale level, where some jurisdictions do large solar farms. Community solar is another area where we have a high level of policy interest. For example, let's say you've got a landfill in your neighbourhood - you've cleaned it up, but you don't want to put a swing set on it. You don't want to build homes on it, but you've got an empty, flat piece of land without a lot of other uses. Why not put a solar farm on it, and maybe doing something innovative at the community level like an arrangement whereby you'd have a local co-op or something. Local community owners could, by some virtual mechanism, own a share of the solar farm and maybe even be a renter, as an alternative to putting solar on your own home.

[2:00 p.m.]

We've got an opportunity to take advantage of abandoned sites that maybe aren't attractive for other things and offer the benefits that solar can provide to non-homeowners. This is an area where we're doing some policy thinking and we may be able to design some tools in the future that can get us going in that direction.

HON. TONY INCE: With that, and you're having those discussions, are there discussions in making any changes to your approach to solar because of what you've learned from this program?

SIMON D'ENTREMONT: That's a great question. We've touched a bit on these. For example, as Peter Craig mentioned earlier, the mechanisms for not-for-profits to apply in a competitive process, where it's a very business-y process and you're competing for dollars. It's a process maybe that for not-for-profits isn't really suiting their mandates or their business strength or their ability to raise funding and so on.

There are processes like net metering, for example, where you can sell your excess energy back to the utility might be an alternative to that, where you just call and hook yourself up rather than having to go through a competitive process. There's these types of things that we've got to find ways to make the processes not so painful for not-for-profits and applicants. We've got to find ways to de-technicalize the lingo that we use.

Also, as Peter mentioned, we've got some other programs like Connect2 and Low Carbon Communities where, rather than putting in an application and a close process with a procurement administrator and a competitive process where the lowest bids win, some of our programs now are just pick up the phone and call us and say, this is our ambition, we'd like to put a walking path in our community to connect up, or a biking path between these two roads to make people use their bikes more and their cars less and do some good for the environment.

Those types of programs where you just pick up the phone and call are maybe more suited for not-for-profits than competitive processes, but we've got a lot of other learnings, and these pilots are super helpful for designing the next program. There's always a few learnings, and the programs will get better and better. As I mentioned earlier, we don't have a lot of templates on how to advance community and not-for-profit ownership of renewables, because we're doing it for the first time.

You take it in baby steps and you test the water in a few areas and then you take all the best practices, and as we scale up bigger and bigger, we'll do it with better practices, with more experienced private sector installers and with better policies.

THE CHAIR: Next on the list, we have Mr. Horne.

BILL HORNE: Good afternoon. I'm glad to hear you talking a lot about solar. I had a solar system from the province back in the late 70s - early 80s. Obviously, it's not working now, but you know what? It wasn't too bad. The maintenance was the big thing.

I'm just wondering how the Solar Energy for Commercial Buildings Program influences other programs in the Green Choice Program.

SIMON D'ENTREMONT: You mentioned commercial buildings in particular. There is a keen interest among commercial building owners to try to advance their own climate ambition. Not just commercial buildings, but the whole private sector.

We're getting a lot of phone calls from companies these days who are saying, my headquarters is in the U.S.A. or Germany or wherever it is, and my board has made a commitment that our company will be net zero by 2030 or 100 per cent green electricity by 2025. We're getting phone calls from companies as we got from the federal government saying, we have climate ambition and we need a path to deliver it. That's why the Green Choice Program is particularly designed. It was designed for large users of electricity like a federal government, and like I said, we're getting some other phone calls.

Another interesting business element to solar and renewables is companies in the supply chain of other companies that are not only saying they're going to be green, but they're also saying any company that they sell products to or we buy products from needs to be green too. We're getting companies who are in the middle of a supply chain - they buy the products from somewhere else, they sell them to someone else - and both companies at both ends of their business lines are saying, we want anyone we do business with to be green.

We're getting a lot of companies coming forward to us and looking for means to achieve their solar ambitions. They don't always have the means to put a wind turbine on their roof, so we're looking at innovative ways to allow companies to take credit for being

100 per cent green without putting something necessarily on their own roof. I know for solar, we have large industrial companies coming forward, looking for means.

We're looking at both the opportunity for infrastructure investment and to create the regulatory paths for companies to achieve these ambitions. It's going to be good for them. It's going to be good for the planet. Also, it's going to be good for our business development here in the province because if these companies can't tell the companies they're supplying products to that they're 100 per cent green, they may lose their business. It's really important for us, too.

I've started having conversations with the NSBIs of the world and so on to make sure that companies they're dealing with know that we have the Green Choice Program and we have a means for them to fulfill their green ambitions.

THE CHAIR: Mr. Horne, do you have a follow-up?

BILL HORNE: A quick one. Maybe you might have an estimate of the number of jobs that solar industry has created over the years - and maybe how much you see that in the future.

SIMON D'ENTREMONT: Energy efficiency, I know, has a broader sphere - has 1,400 jobs in Nova Scotia. With solar, I think we've got about 50 companies creating around 200 jobs right now - this is a growth area - spread around the province, which is very good in terms of rural economic development.

I should clear up a misnomer that's often believed. A lot of people believe that solar is not good economic development because most of the money is going to China for - choose to buy the solar panels. The reality is only 20 per cent of a solar install is the cost of the panels themselves. Most of it is installation and so on, so it's just plain old labour and parts from local suppliers, so continuing to grow the solar sector is really good economic development. It's spread out around the province.

We've been working with groups, for example, with the NSCC and First Nations communities. I mentioned energy efficiency work in First Nations homes. We've been working with First Nations to train up the workforce of First Nations individuals themselves to do their own work in their own communities, helping to build up new entrepreneurs and the workforce needed for the green economy of the future.

THE CHAIR: Before I move to Ms. Lohnes-Croft, I just want to clarify something. I heard you say, wind turbine on the roof. Did you mean solar on the roof or are these smaller wind turbines? I'm just trying to imagine what they look like.

SIMON D'ENTREMONT: Actually, I was making a bit of a joke. That's why you're having difficulty imagining it. I was suggesting that it's difficult to put a wind turbine on your roof.

THE CHAIR: Okay, sorry.

SIMON D'ENTREMONT: That's all right. We're working to design means where a wind turbine can go up somewhere in Nova Scotia and you can take credit for it.

THE CHAIR: Thank you. Ms. Lohnes-Croft.

SUZANNE LOHNES-CROFT: Thank you. It's nice to be able to ask questions instead of chair the meeting - for me. Anyway, I was glad to hear you mention the towns of Berwick, Antigonish and Mahone Bay, and their partnership. I live in Mahone Bay. We have really enjoyed watching the development of the wind farms that they invested in. Now we're looking into the solar gardens.

I was just hoping, though - for people watching and other members here at the committee - can you explain the concept behind the solar garden and how it will benefit this partnership and the people? We have our own utility, by the way. We do not get our power sources from Nova Scotia Power. We own our own utilities, so this is how this partnership was developed. There is power in numbers, so we joined forces with these other towns so that we could make better investments.

SIMON D'ENTREMONT: I don't have a lot of details on the solar garden project, although solar gardens are a similar version to what I responded to Mr. Ince's question earlier when we talked about community solar and the opportunity to roll out solar with some community ownership or community benefits. There are a lot of different ways of doing that. I don't know whether or not you have some information, Aaron or Peter.

THE CHAIR: Just let me know, a show of hands and I can call your name Mr. Long.

AARON LONG: I was hoping Peter would go first, but maybe he wants to go last. Peter and Deputy Minister d'Entremont, please feel free to fill in any blanks that I leave on this, but Minister Lohnes-Croft's topic here of how do we do energy in a more democratized manner here - rooftop solar is traditionally an aspect that's adversarial with its local electric utility. Through these solar gardens, by coming together and carving out ownership opportunities for our citizens, we end up in a better position as towns, as municipalities - and I believe as a province - as we attempt to de-carbonize and remain globally competitive.

The way that these solar gardens are structured, they enable citizens to participate in the benefits that those projects create so that they're not just flowing to investor-owned

electric utilities. It's something born out of the fabric of these towns that collectively they own their electricity delivery systems, and now they're moving into the joint ownership on behalf of citizens for the generation part of the supply chain.

THE CHAIR: Thank you, Mr. Long. Mr. Craig, go ahead please.

PETER CRAIG: I probably should have released Aaron earlier on to say that the department has been communicating with AREA and the three municipalities involved regarding some community-based solar projects. Unfortunately, it's a conversation that's still under way and there's nothing more I can say there, but we have been having that conversation and looking forward to more progress in that space.

THE CHAIR: Just before I ask Ms. Suzanne Lohnes-Croft for her follow-up, I just want to tell you that I have a list of three people: Mr. Rushton, Ms. Roberts and Mr. Dunn. I hope I didn't miss anybody.

Ms. Lohnes-Croft, do you have a follow-up?

SUZANNE LOHNES-CROFT: I do. I've heard people who are trying to do some transitioning to solar energy in their private homes say that the waiting list to get the work done is quite extensive. Is there any kind of training program at NSCC to train them to be technicians or whatever you would call the installers of solar energy components for homes?

SIMON D'ENTREMONT: I'll ask my colleague Peter Craig to comment.

PETER CRAIG: When we did the early consultation to run the solar homes program, one of the things raised was that industry capacity at the time was limited, and the program had a target at the time of 2,500 homes across the program lifetime, and that clearly wouldn't have been possible. Before the program was deployed, we entered into an arrangement with Nova Scotia Community College to develop curriculum for a training program.

Even prior to that, I can say we did some arranging with the Department of Labour and Advanced Education and the Nova Scotia Apprenticeship Agency to try to make sure we had a good understanding of exactly what is required to do a solar install, which trades are involved, who's going to be on the roof, and what safety training is required for what people on which teams. Having set all that up, we entered into an arrangement with NSCC to develop and subsequently deliver that education in order to make sure that there was a base of skilled persons with the necessary training to go forth and do that.

I do believe, I don't have the statistics from NSCC in front of me, they did complete that with the delivery of six different offerings of the course around the province. As the

deputy alluded to, a lot of this development takes place in rural Nova Scotia. We were able to leverage NSCC's space to get that in the communities where it was necessary.

[2:15 p.m.]

I do believe everyone who participated is now working in the sector, but you're right that that hasn't eliminated the waiting list by any stretch. There is quite a backlog. It is kind of seasonally based, so they'll catch up depending on what time of year it is and how much work they're able to get done on the roof and then they'll fall behind again when bad weather comes, things like that.

We've definitely been working through some issues on all sorts of different parts of the supply chain. COVID-19, in particular, has really stressed some of that. We've had panel shortages. Equipment has just not been available because of supply chain disruptions. A lot of the equipment comes from overseas or other parts of Canada and the U.S. That has also contributed. So we've got not just the skilled labour shortage, but the equipment shortage. We've got all sorts of problems up and down there.

We're certainly still keeping an ear to the ground here, trying to make sure that we're developing the right sets of training programs and working with industry. It's a sector that changes enormously quickly. The technology that's available now is far more capable than what was available when we launched the Solar Electricity for Community Buildings Program. Just trying to keep people up to date on that is problematic. We're now even working with the producers in the industry to make sure that the people on the ground have the skills necessary to work with their particular brand of equipment.

In fact - and I think this is all public somewhere - the industry has been contemplating working with the trades associations across the country on whether they should, in fact, become a trade or whether they should look at higher skilled labour for the industry. That's a very early set of discussions that the industry is taking on, but there are a lot of jobs across Canada, across North America, showing up in this space. It's kind of exciting times as they work through those issues. We work to support them as they advance.

THE CHAIR: Next on the list is Mr. Rushton.

TORY RUSHTON: Deputy minister, I want to go back to a report your department released a few years back. The report was *Nova Scotia's Electricity Future: A Plan for 2015 - 2040*. In that report, your department referenced that by 2018, more than 40 per cent of our power would be from renewable energy. You may have spoken about it and I may have missed it through the discussion today. Have we achieved that target as a province yet?

SIMON D'ENTREMONT: The 40 per cent renewable energy standard that we set, we were very well on track to deliver on it by 2020, but the delays at Muskrat Falls dashed

our ambition a little bit. We still had a chance to meet it, actually, until COVID-19 happened. The pandemic delayed quite significantly the commissioning activities of Muskrat Falls in Labrador. Even though our end of the bargain - building the Maritime Link between Nova Scotia and Newfoundland, which was our contribution to the project - was done on time, on schedule, and on budget, the parts that had to be delivered and the commissioning work in Newfoundland and Labrador is not yet delivered.

As such, we have made some modifications to the renewable energy standard that Nova Scotia Power can use the average of the next three years to hit 40 per cent, and in doing so with that modification will be hitting 40 per cent, and then surpassing the 40 per cent goal. We did hit Canada's goal of 30 per cent reduction from 2005 levels 13 years ago.

TORY RUSHTON: It's not often that you hear government say that it was on time, on budget and so on. It is nice to hear about that. I came from the electrical field before I was elected and had many friends who actually worked on that link. It was a success in our own province and something that we really should be bragging about.

Because of different reasons, I do understand Muskrat Falls hasn't come online. Today's topic is sort of spearheaded around solar, but when you look at the graph on Nova Scotia Power's web page any given day, it will give you the percentage of what the renewables are and such.

Maybe for the benefit of anybody watching or listening today, what are our percentage of renewables that we are using? What is the percentage of the different renewables and what are those renewable energy sources that we are using in the province? Should there be any focus on something other than wind and solar? I live in Cumberland South, where we're very actively looking, and have been for many years, at geothermal. Where can that fit into our programs within the province as well?

SIMON D'ENTREMONT: Right now, Nova Scotia Power - combined wind and hydro is about 23 per cent. There's more wind in that than hydro, maybe 18.5 per cent or something like that. If Peter's got more detailed stats, he can raise his hand.

COMFIT is bringing in five per cent, of which some of that are renewables including biomass, and biomass by itself is one per cent in terms of renewables. So we're at 30 per cent right now, but obviously when we bring in more energy from Muskrat Falls, we'll be going over 50 per cent in our renewables and bringing the percentage of our electricity created by petroleum sources down to below 40 per cent or something of the sort.

In terms of where things should be going in the future, where there are opportunities, clearly there are opportunities to maybe import hydro from other jurisdictions, as we're doing with the Maritime Link, but you mentioned geothermal. Tidal

obviously is one where we have some ambition. Tidal for us is also an economic development opportunity. The reality is right now, the price is not at a point where we're doing it in large scale because there's still a cost for us to do it, but we're getting great benefits in terms of innovation and investment, and we're spending money in Nova Scotia building wind turbines or adapting them, deploying them, and hiring people. There's some great work being done there.

Geothermal is something that we still have some interest in. My staff at Energy and Mines is actually partnering with the Department of Fisheries and Aquaculture on looking to see whether or not we can get geothermal heat for farming, for example. These are areas where we're always on the lookout.

There are new emerging areas like hydrogen, for example, and carbon capture and new technologies, so we're always on the lookout for new emerging technologies. Biodiesel from forest fibre, so there's a lot of different things that we keep our eye on, and some of them you have to wait for them to get at a scalable point, competitive price-wise, and understand the technology well before you invest. Often when you invest in energy infrastructure, you have to spend two or three or four decades paying it off, so you better make sure you make the right choice.

There's lots of great opportunities, and we should maximize the opportunity to create economic prosperity in the province by looking at them.

THE CHAIR: Next we have Ms. Roberts.

LISA ROBERTS: I would like please to go back to Mr. Long with the Alternative Resource Energy Authority, which is owned by a number of Nova Scotia municipalities. I wonder if you can be a bit more explicit about the challenges that you identified earlier around market access. What are those challenges, and what policy changes could the government, the provincial government in particular, make to resolve those barriers?

THE CHAIR: Mr. d'Entremont.

SIMON D'ENTREMONT: I believe that was for Mr. Long.

THE CHAIR: I'm sorry, Mr. Long. I apologize.

AARON LONG: I thought with your introduction of the deputy minister I'd dodged a bullet on that question, but I see it's a magnetic bullet.

To be explicit on that, all of these opportunities that AREA pursues exist because there's a power purchase agreement at the end of it. We go ahead and do the project development, we can secure the financing, but in order for that story to make sense, there has to be somebody committed to buying that power at a rate that's predictable and

profitable in the end. For our $51 million wind farm in Ellershouse, the towns are the owners and they have a power purchase agreement to guarantee that revenue stream as well. That's why it's suitable for municipal ownership.

When I talk about greater market access, it's particularly that these municipalities need to have, or any of these groups that would have qualified under the Solar Electricity for Community Buildings Pilot Program, more access to power purchase agreements that would enable these larger projects to move forward. I think the deputy minister talked about the Green Choice program. That is going to result in a number of awards for power purchase agreements, so I think that's a great mechanism that delivers least-cost renewables for all ratepayers, delivers all the economic benefits that he referenced on that.

There has been some interesting policy research globally on this. It's not my particular realm of expertise, but I think a number of different ways that result in contracts - power purchase agreements would be a great way to hedge our risk on decarbonization so that we're not reliant on single projects or single entities, unless we want to spread our risk so that we can tolerate some failures.

Having municipalities and not-for-profits and other private actors in this all working together, I think we're going to need every bright mind in this province to decarbonize on the time scale that some other MLAs have referenced on this. I hope that answers your question.

THE CHAIR: Ms. Roberts, you still have a follow-up and I'm just going to have Mr. Jessome relieve me for five minutes. Go ahead with your follow-up, Ms. Roberts.

LISA ROBERTS: Thank you for that answer. I appreciate that. For my follow-up, I guess I'd like to go back to what you said about the bright minds and needing all of them and all of our energy, creativity and dedication to decarbonize with ambition. I love that term that the deputy used, "climate ambition."

Frankly, I'm acutely aware that having a goal - I think the deputy referenced that we hit 13 years ago in terms of reduction of greenhouse gas emissions. For me, that's a sign of a lack of ambition because we hit a goal and we allowed ourselves to be content with that and to talk about it at every opportunity, instead of setting the next goal.

The fact is, in Nova Scotia, we started out with a particularly greenhouse-gas-intensive electricity sector, which is why we set those goals in the first place - because we burn relatively more coal than many other parts of Canada. We have to continue to be ambitious. Of course, we're sitting here right now with actually no legislated goals because the Environmental Goals and Sustainable Prosperity Act has run its course. There wasn't a new set of goals and now we haven't yet had the consultations on the new Sustainable Development Goals Act.

Related to trying to get ambitious again, one recommendation from the Canadian Solar Industries Association in their 2020 report, *Nova Scotia Solar Roadmap: Unlocking Nova Scotia's Solar Potential*, recommended that Nova Scotia set a goal in the Sustainable Development Goals Act for locally sourced renewable energy with a set-aside for solar.

With a very brief parenthesis that I know that efficiency is still often a really great place to start first because it's affordable and highly effective when we haven't gone as far as we can down that line, I'm wondering if the deputy would talk about whether the government is considering that recommendation.

SIMON D'ENTREMONT: I think everything is in the mix right now in terms of trying to figure out how to maximize the opportunity as we make a climate action plan, try to figure out how to lower the carbon curve. You mentioned efficiency - we're quite good at efficiency. We've done quite a bit. Certainly, we've got to add more renewables. We need to electrify transportation. There are a lot of different levers - we need to go there.

In terms of locally sourced solar, we've gone from 17 to 50 firms in the last few years so we're obviously putting that accelerator down. As was mentioned, there are still wait times and so on. Some sectors when you grow them, you can only grow them actually at a certain speed. After that, the sector can't keep up.

We also have high levels of energy poverty already in Nova Scotia. Just trying to make sure that we're not driving up rates as we're doing these types of things is always a balance for us. We have the highest levels in the country of energy poverty - that is the percentage of people who spend a high percentage of their income on electricity or their energy needs.

In terms of locally sourced as well, there can sometimes be some trade law entanglements. We signed free trade agreements giving us access to their markets and we need to guarantee in return we're not going to design systems whereby our own companies can have an advantage in our own market.

I don't want to put those out as excuses. I think we need to have a lot of ambition here to grow Nova Scotia jobs in emerging renewable areas and advance the benefits that we get out of local ownership, that we get out of local jobs, and that we get out of local activities. Definitely in the mix, and within the issues of making sure that it's price competitive against other forms of energy and so on, it's certainly an option to keep in our quiver.

THE CHAIR: We move now to Mr. Dunn. Go ahead, Mr. Dunn.

HON. PAT DUNN: Just with reference to the previous pilot program that you were talking about earlier and the 71 participants that were involved in it. Do you know the

average length of time it would take for participants to break even on the installation and the maintenance costs by selling back to the grid?

[2:30 p.m.]

SIMON D'ENTREMONT: I don't. If there's anyone in the room who does, it might be Peter, but we didn't ask him to come ready with that, so he may have it. We'll maybe ask him, Madam Chair.

THE CHAIR: My computer takes me out and brings me back in. I apologize. Go ahead please, Mr. Craig.

PETER CRAIG: Thanks for the highly technical, numerical questions there. I don't have - though I could probably grind through some numbers to get you an exact average on this.

What I'll say is that we provided some guidance for this and found that people more or less adhered to the guidance. For the most part, they were targeting a return that met with their organizational goals, so you'll find, broadly speaking, that some organizations were willing to wait longer until they broke even in order to make sure they met their climate ambitions. Others were less willing to make that wait, and some of those projects that were less willing did not make the cut. As a consequence, I think we've got a mix here that's usually in the eight-ish years range. Some are quite a bit above and some are below.

That's kind of the best I can do without grabbing a hold of the wheel of Excel here and trying to master my numbers. I would, if I'm able to defer to Aaron here, whose clients may have had a bit more of a distinct opinion on what their requirements were before they entered into that.

THE CHAIR: Mr. Dunn, do you have a follow-up?

PAT DUNN: I do, I thought we were going to someone else for a comment there. My last question would be, if the government were to make this previous program or a new program permanent, would you consider expanding eligibility to sites owned by private businesses or the general public?

SIMON D'ENTREMONT: I think we're always open minded. In this particular case, there is a program for individuals right now, there's a solar residential program, so they have another means of having access to solar. Through Efficiency Nova Scotia, there's also some programming available for business.

This particular one was around building capacity in our not-for-profits and so on, but different variants of this could be rolled out in the future and could allow business. We know, as I mentioned earlier, businesses are coming forward with a lot of climate change

ambition, and it's both an opportunity for us from a business development perspective to help them find a path for that, and it has also helped to make them more competitive by lowering their energy costs, and it creates an opportunity for bringing jobs for us.

I think we're very motivated to find that. We just need to figure out of all the different paths and of all the different tools in our Swiss army knife of climate change, which ones do we want to favour, but certainly that needs to be one of them on the list.

THE CHAIR: We move on now to Mr. Horne.

BILL HORNE: Did you analyze the program, the Solar Electricity for Community Buildings Pilot Program? If so, what did your analysis tell you? You may have spoken to this on a number of occasions today, so you might want to just tie it together to that one program. That's to the deputy minister or colleagues.

SIMON D'ENTREMONT: We did do an evaluation by calling some program participants, getting some feedback from them. As we discussed a bit earlier, getting some feedback from the not-for-profit sector. Sometimes a kind of straight, competitive process isn't the friendliest. You know, fill out an application form and send it to a third party who can see whether or not you won the price competition or not.

Having an opportunity to have more dialogue with them about what they're hoping to achieve and find out what tools we have in our quiver, for example, are things that are important. We did hear from them that improving their energy sustainability and their bills, for example, was very helpful as well.

Working with the private sector, contractor training, understanding in the private sector which parts of the private sector are responsible for what parts of an install are important as well. There are a lot of different pieces that if we were to roll out the program in the future, or variants of it, there are lots of lessons to be learned and we're always getting better. It's a new area, and it's not through looking through the history books that we're figuring out what we need to do.

When we do look at other jurisdictions, where we look at other utilities in other jurisdictions in states in the U.S.A., for example, who are doing neat things like putting batteries in people's basements and so on, battery storage is something we haven't talked about, but putting more renewables on the system. Storage is the big issue in the room, and something that a lot of more research needs to get done into.

BILL HORNE: You mentioned the word "sustainability." I'm wondering how far you've taken that out in a number of years to keep sustainability of the solar systems.

SIMON D'ENTREMONT: There are two aspects to sustainability. One is financial sustainability of the not-for-profits, for example, who get to lower their energy bills in

perpetuity, as long as you can keep it going. So if you can keep your electricity bill down by $10,000 a year and do that every year and keep your organization, a small not-for-profit, going every year because you don't have bigger electricity bills, then that's great.

There's also environmental sustainability in terms of not wanting to make a footprint on our GHGs - not want to make a contribution to climate change. I don't think there's a timeline to that. There are timelines in terms of provincial and federal goals, in terms of delivering on it, but in terms of organizations' own ambitions, they want to deliver and they want to deliver now. They're looking to contribute and to make a difference, and I think they're deservedly and appropriately in a hurry to get there.

We're always looking to find a path for those organizations to put their money where their mouth is, or to put their effort where their ambitions lie.

THE CHAIR: This is a perfect time I believe to have your closing remarks, if you have some to share with us.

SIMON D'ENTREMONT: Thank you for all the questions. I think it's a great opportunity to talk about the work we're doing in the Department of Energy and Mines. I like reminding people when I can that fighting climate change and reducing the impacts of the energy sector, both transportation and electricity, is a big part of the work that we do.

People think that because we're the Department of Energy and Mines that we're all about petroleum and mining, which is a big part of our work, undoubtedly. But the department got about a $60 million budget and fully half of that, $30 million, is invested in reducing the impacts the energy sector has on climate change.

We are investing a lot of money, rolling out renewables, building capacity in communities, doing energy efficiency. We like to say we play a big role in impacting climate change in the provincial government and within the province, and we're very proud of the role that we do there. We're creating green jobs at the same time. There's a lot of work left to be done, there's no doubt about it, as was pointed out. We started out in a tough position with 85 per cent of our electricity coming from coal-generated plants 10 years ago, and we've made a lot of progress and we still have a lot to do.

We're not resistant in doing this. We believe strongly that acting on climate change is important. We think it's a core mandate of our department and we're very happy to be working with the people in the community, our partners like Aaron Long and AREA. We have a lot of partners in the community.

This is something that has been raised earlier. The community is building a lot of climate change ambition. It's true that maybe the ambition is ahead of the capacity. We're learning this in community groups. They're saying we have climate change ambition but we're not quite sure what to do. So I think training, working with different groups, and

building that capacity will be a key part of being successful here and making sure that local groups, local companies, play a big role in Nova Scotia's climate revolution.

There's a lot of work to do. We're happy to be doing it. There's a great opportunity. I want to thank Peter Craig, who is one of my talented team and the staff at the Department of Energy and Mines who are just knocking themselves out all the time, working in this area. I'm very proud of the work that they do. I have a large number of people on the floor upstairs from me right here who come to work every day with a clear passion of making Nova Scotia a better place with a cleaner environment and a lower impact of climate change.

I want to thank Aaron Long from AREA for joining us as well. We've got some key partners in the community and we need all those partnerships. We don't think that we can just sit here and design it all ourselves. We need a lot of good advice. The feedback from the questions that you ask us and the feedback coming from your constituents is an important part of our feedback to us about what things we're doing well and what things we can continue to do better. Thank you very much.

THE CHAIR: Nova Scotia has an amazing reputation with our energy and to preserve our climate. Thank you again for the information today. You may leave. Take your time. We have some committee business to continue with. Thank you again, Mr. Craig, Mr. Long and Mr. d'Entremont.

Are we ready for the committee business? We have the prorogation of the House of Assembly. Are there any comments? We will continue meeting unless there are any changes. If the House is in session, then we will stop and just meet - no, this is not the HR Committee. My mind went on the HR Committee and I was going to say we just do ABCs. No, we don't meet when the House is in session. Are there any questions on that one? I see none.

We'll move on to the correspondence. We had a letter from the Department of Environment in response to the request for information made at the meeting of December 15, 2020. Did everybody receive that letter? Are there any questions? I see none.

We'll move on to the February meeting date. We have the date as February 25, 2021 at 10:00 a.m. to noon, pending committee approval. The topic will be Housing Affordability and Economic Development. The witnesses will be Dr. Ren Thomas from Dalhousie University, South Shore Housing Action Coalition, Welcome Housing and Support Services, and the Department of Municipal Affairs and Housing. It says that if the House is in session, then the meeting will be postponed, which I took care of.

Are there any questions? Ms. Kavanagh.

[2:45 p.m.]

JUDY KAVANAGH: One of the reasons this is on the agenda is because it's not this committee's usual meeting time. This committee normally meets on Tuesday afternoons, but because one of the witnesses is not available on Tuesdays this year, they were asking if we could have it on that Thursday morning instead, if that's convenient for the committee.

THE CHAIR: Can everybody check their schedules to see if there are any problems?

BEN JESSOME: What's the date again, excuse me?

THE CHAIR: Thursday, February 25th. I'm fine with that date. Ms. Roberts is fine. Just thumbs up if it's okay with you. We're all okay. Thank you.

Thumbs up if it's okay with you. Ms. Chender's okay, Mr. Rushton, Mr. Dunn, Mr. Horne, and whoever else. We're all okay. Thank you.

LISA ROBERTS: I'm sorry. Can you just repeat the start time? Would that be a 9:00 a.m. or a 10:00 a.m. start?

THE CHAIR: 10:00 a.m. to noon. From 10:00 a.m. to noon. We'll put it in our schedule.

Thank you, everybody. This concludes our meeting today. We are adjourned. Thanks for everybody's cooperation today.

[The committee adjourned at 2:46 p.m.]