

HANSARD

NOVA SCOTIA HOUSE OF ASSEMBLY

**COMMITTEE ON
NATURAL RESOURCES AND
ECONOMIC DEVELOPMENT**

Tuesday, May 25, 2021

Video Conference

How Nova Scotia is Preparing for Climate Change

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**NATURAL RESOURCES AND
ECONOMIC DEVELOPMENT COMMITTEE**

Hon. Gordon Wilson (Chair)
Rafah DiCostanzo (Vice-Chair)
Hon. Leo Glavine
Hon. Ben Jessome
Bill Horne
Hon. Pat Dunn
Tory Rushton
Claudia Chender
Lisa Roberts

[Tory Rushton was replaced by Brad Johns.]

In Attendance:

Heather Hoddinott
Legislative Committee Clerk

Gordon Hebb
Chief Legislative Counsel

WITNESSES

Department of Environment and Climate Change

Jason Hollett,
Associate Deputy Minister

Kyla Milne,
Manager of Climate Adaptation Programs

Satya Ramen,
Senior Policy Analyst



House of Assembly
Nova Scotia

HALIFAX, TUESDAY, MAY 25, 2021

**STANDING COMMITTEE ON
NATURAL RESOURCES AND ECONOMIC DEVELOPMENT**

1:00 P.M.

CHAIR

Hon. Gordon Wilson

VICE-CHAIR

Rafah DiCostanzo

THE CHAIR: Order. Today we have the Committee on Natural Resources and Economic Development. I am Gordon Wilson, MLA for Clare-Digby, and I will be your Chair today.

Before we start, I just want to remind everybody, which I am sure everybody has heard many times, witnesses please keep your video on during the meeting, if you can. We should ensure that we have quorum. This helps an awful lot.

Keep your microphones muted unless you are speaking and if you could wait, I will do my best to keep my eye on the screen and make sure that anybody who wants to be recognized to speak that I will certainly bring you in. If you could just do that also by simply putting your hand up if you want to. You can use your electronic one if you want.

Keep your phones on vibrate, throw them in the sink and leave them there if you want while we are going through this.

At this point in time I'd ask everybody to introduce themselves starting with the New Democratic Party today. Ms. Roberts.

[The committee members introduced themselves.]

THE CHAIR: Thank you, everybody. Mr. Jessome is rebooting his computer and will be joining us shortly.

So without any further ado, on today's agenda we have officials from the Department of Environment and Climate Change to discuss Nova Scotia's preparation for climate change. Welcome to Associate Deputy Minister Jason Hollett: I will ask him to introduce the members he has from the department and to begin with some opening remarks.

JASON HOLLETT: Thank you, Mr. Chair. I hope everybody can hear me okay. Excellent. I want to begin by acknowledging that we are in Mi'kma'ki, the traditional territory of the Mi'kmaw people.

As the Chair has informed you, my name is Jason Hollett, the Associate Deputy Minister of Department of Environment and Climate Change and I am very pleased to join you this afternoon. Here today with me virtually are Kyla Milne, Manager of Climate Change Adaptation Programs, and Satya Ramen, Senior Policy Analyst with our team.

I've been the department's lead on climate change since about 2010 and during this time, I have witnessed some extraordinary work by our team here at Environment and Climate Change and their commitment in helping to fight climate change. This is also true for our colleagues across the provincial government, from our businesses in Nova Scotia, from our not-for-profits, and especially from our citizens. It is the work of so many people that has helped to make Nova Scotia a leader on climate change and I would like to acknowledge and thank them for that.

We are happy to answer your questions as fully as possible but before this, I'd like to explain the work of our Climate Change Division. Climate change is affecting every corner of the world, including Nova Scotia. It affects every area of our province, every sector of our economy, and every citizen so we need to keep it in mind as we make decisions related to virtually everything that we do - the standards that we use to design and build our roads, bridges, and homes, how we prepare for impacts to our natural resources, how we think about emergency planning, and how we support our communities.

The Climate Change Division works in a coordinating role to help decision-makers in the public and private sectors be prepared for climate change that includes things like raising awareness of the risks and opportunities; coordinating strategic response planning; taking action, including creating new policies, practices, legislation, grants for funding where needed; partnership building; education and outreach; assisting the work of our colleagues and at the departments and agencies; and evaluating how effective our actions have been over time and adjusting as needed.

I'd now like to give a brief overview of some of the ways our climate is changing and what that means to Nova Scotia. Since 1948, average annual temperatures in Atlantic

Canada have increased by about 0.7 degrees Celsius. We're experiencing warmer Summers and Autumns, more heat waves in the Summer, and less snow in the Winters. Rainfall patterns are also changing. Since 1948, the average amount of rain and snow we see in a year has risen by over 11 per cent, with the highest increases in the Summer and in the Fall.

When it rains, it's coming less often in light, frequent bursts, and now it's more intense, heavy downpours after longer dry spells. This puts Nova Scotia at enhanced risk of both flash flooding and other flood risks, as well as more droughts. We have stronger, more frequent storms. That's another effect that we're seeing. Nova Scotia gets a high number of storms right now because of our proximity to the Gulf Stream. Warming ocean waters offer more energy for storm systems, including greater storm surge.

Nova Scotia will also become windier, which will impact our forests and our trees, our power and telecommunications connections, as well as our homes and our public infrastructure. As many of you know, our sea level is rising. We expect to see between one and 1.5 metres of rising sea levels in Nova Scotia by the end of this century. In combination with winds and storms, this can worsen coastal erosion and coastal flooding, and lead to permanent submergence of land.

Lastly, the Atlantic Ocean is becoming more acidic and ocean temperatures are increasing. All of this means changes to species on land and water, and natural resources and resource-based sectors like tourism, aquaculture, fishing, and forestry that depend on a stable climate condition. It means new and enhanced risk to public health and food production, to economic and community development, to recreation and leisure and overall quality of life.

We also know that group space and systemic inequalities as a result of race, gender, accessibility, age, and income level are more vulnerable to the impacts of climate change. Government can't address climate change alone. We need to work with communities, industry, business, and other partners all around the province. Reducing greenhouse gas emissions is critical, but the climate changes we're seeing now are from human activity over the past several decades. Greenhouse gas emission reductions now will make their impact felt by the end of the century, so we both need to respond now and to prepare for the future.

In 2019, we passed the Sustainable Development Goals Act, which committed us to produce a Climate Change Plan for Clean Growth. We were about to begin public consultation beginning in March 2020 when the pandemic hit, so for obvious reasons we had to delay those activities. I'm hopeful that we'll be able to begin virtual public engagement very soon on this very important piece of work. We're looking forward to hearing Nova Scotian's thoughts, priorities, and concerns.

Environment and Climate Change is also currently leading three ambitious climate change adaptation initiatives that I wanted to highlight: we're working on an updated

provincial climate change risk assessment; a new regional climate change services centre; and our Climate Adaptation Leadership Program.

Last year, we began work on an updated risk assessment. This will allow the Province to update and evaluate risks to our environment, our economy, our infrastructure, and to the well-being of Nova Scotians. It will help us to better inform our climate adaptation efforts. The results can help start conversations in new ways of working together. We'll be publishing the results of this work as they become available and the final report will be ready in 2022.

To properly assess risk, we need good science and data. Nova Scotia is partnering with Environment and Climate Change Canada and the other Atlantic provinces to open a new regional climate change services centre. The centre will give decision makers and researchers better access to climate projection data and help them interpret and use it in policy, program, investment, and infrastructure decision-making.

We also have a very successful Climate Adaptation Leadership Program. Departments and sectors need to be able to develop their own adaptation plans based on their expertise and priorities. Through this program, we guide departments and sectors in the development of their climate adaptation plans and offer support, expertise, and training to the teams who are creating and making them.

The Department of Agriculture, for example, is implementing its own plan that it developed through the support of the program, and is now working with beef, sheep, Christmas tree, and horticulture industries to design and eventually implement an industry-specific adaptation strategy. We're also now working with colleagues at the Department of Energy and Mines and the Department of Communities, Culture and Heritage, the Department of Lands and Forestry, and the Department of Environment and Climate Change, and department partners in the water resource, coastal park, electricity, and archaeology sectors.

Mr. Chair, I have outlined some of the key measures we are taking to help Nova Scotia respond to climate change. Other departments across government are working on adaptation-related initiatives, as well. For example, the Department of Agriculture with Infrastructure Canada is funding the upgrade of 60 kilometres of dikes and five control structures along the Bay of Fundy over the next several years. Fisheries and Aquaculture is collecting data to help understand how the ocean is changing and to help the aquaculture industry adapt. They are also studying the vulnerability of coastal communities that depend on seafood exports.

Municipal Affairs is developing flood risk mapping and municipal planning guidelines to help communities. Transportation and Active Transit has partnered with Transport Canada and the Province of New Brunswick to study the risks and adaptation

options for sea level rise, storm surge, and coastal flooding for the transportation quarter within the Chignecto Isthmus.

In closing, I would like to express my thanks and appreciation to our team and all the others working to prepare our province for a changing climate. This work will be continued virtually from our living rooms and dining room tables for quite a bit longer as we continue to respond to the pandemic, but we are all very dedicated to this work and we are making good strides and we will be happy to take any questions that you have. Thank you for the time.

THE CHAIR: Thank you very much, Mr. Hollett, and to your team that you have here with you. We are going to begin opening questions with the Progressive Conservative Party.

Mr. Dunn, the floor is yours. You are allowed 20 minutes for questions and I will give you a little heads up around the one minute mark. Go ahead, sir.

HON. PAT DUNN: Thank you, Jason and your team who are present today and all the great work that you've been doing over the past number of years and, again, very important work.

I've been around long enough that I was with my former colleague, the Honourable Mark Parent, when he introduced the Environmental Goals and Sustainable Prosperity Act - and when I look across the screen, I think my good friend from Kings West was also present at that particular time - and how that particular Act played in positioning Nova Scotia to be able to adapt to a changing climate in Nova Scotia. Again, at that particular time, there was unanimous support in the Legislature.

Since protecting our environment is so very, very important, why are we still waiting on regulations in the replacement for the Sustainable Development Goals Act?

JASON HOLLETT: With the passage of the Sustainable Development Goals Act back in October of 2019, the department began work on regulations under the Act and work on the commitment to create a climate change plan for clean growth immediately following that. A key piece of that work is to make sure that we talk to Nova Scotians - our businesses, our not-for-profits, our citizens, and people around the province - to make sure that we understand their priorities, the opportunities, and the challenges that this represents.

We were prepared to actually launch that public engagement on the same day that the province shut down because of the public health concerns associated with the pandemic. So that was an unfortunate turn of events, but absolutely appropriate given the public health risks that we had seen at the time. Obviously, the Province had to focus on the priorities that were presented from COVID-19 to make sure that Nova Scotians were safe.

I am pleased to report that we hadn't dropped our tools at that time. We continued to do work on the legislation and the climate plan internally with our colleagues across the province in our departments. We've kept an open door policy with anyone who is able to talk to us or wants to talk to us. We have met with between 25 to 30 groups and individuals over that intervening time to talk to them about the work and hear where they think their priorities are and where they would like us to focus on our work.

We've had to be careful because the pandemic has created a lot of challenges for many different Nova Scotians, and we want to make sure that we are fair in our approach and not creating opportunities for some but not for others. It is our hope that we will be launching into public engagement very soon, obviously in a way that respects Public Health protocols, so it will primarily be virtual meetings, but hopefully in a way that's interactive and comprehensive and reaches out to as many Nova Scotians as possible.

[1:15 p.m.]

That feedback that we get from Nova Scotians through that public engagement, along with the internal analysis that we're doing and what we're hearing from others, will feed into what will be the final regulations in the Climate Change Plan for Clean Growth, which we hope will come out this year.

PAT DUNN: There's a lot of literature out there and the experts talking about limiting the use of fossil fuels such as oil, carbon, and natural gas and so on. My question would be to any member of the team: What is the single most important thing our province, or Canadians for that matter, can do in the coming years to mitigate climate change?

JASON HOLLETT: It's a very important question. If we're talking about as an individual Nova Scotian, I would suggest the most important thing that any of us can do is become more educated on the topic. We all each have individual priorities. We all have different kinds of lifestyles and different things that we do, and understanding what it is that you do on an individual basis can help lead you to understand the best thing that you can do to help mitigate your impact to climate change. It can help make you an informed citizen in the province.

I think that's really important, especially as we enter into this public engagement process on our Sustainable Development Goals Act and our climate change. We really need to talk to Nova Scotians where they're at. We need to understand their situation and what works for them when we're developing our policies and programs.

From a higher level, I would say some of the most important things that we can do from a provincial level is to make sure that we are reducing carbon emissions associated with our electricity sector. As you're probably aware, we're really transitioning to a low-carbon economy that is built on a lot of the opportunities that are afforded by our electricity sector. This includes things like wind energy, solar energy, electric vehicles, heat pumps,

which we are seeing a larger uptake on all of these technologies in the province as the technologies become more widely available and cheaper for people to access.

From a personal level, it's become more engaged, more educated on the topic. From a provincial level, it's decarbonizing our electricity sector and to transition to a lower-carbon economy.

PAT DUNN: Has the Province looked at a bigger system, like a bigger system-wide basis? For example, revamping our subsidy system for energy and food industries, which continue to use fossil fuels, or setting new rules or incentives for sectors like farming, et cetera?

JASON HOLLETT: I think those are very important considerations for the Province as we do our work on the Sustainable Development Goals Act and the Climate Change Plan for Clean Growth. One example in particular is the new rebate for electric vehicles in the province, so as of last month, there's a \$3,000 rebate on the purchase of new electric vehicles, \$2,000 for used vehicles, and a \$500 rebate for the purchase of electric bikes.

That's an example of a financial incentive that can help change the market for lower-carbon vehicles in the province, and we're seeing anecdotally some of those impacts happening right now. A lot of the bike shops across the province are selling out of e-bikes because of interest in uptake on those types of things.

Another example I can give is our cap-and-trade program. You may be aware that Nova Scotia has an internal cap-and-trade program here in the province. It's a form of carbon pricing and while it was developed to minimize cost impacts to the consumer, it does send a price signal to anyone who consumes fossil fuels that the consumption of these fuels is more expensive than the consumption of cleaner fuels and can lead to changing of behaviour.

The other thing that that internal cap-and-trade program has allowed us to do is to create our Green Fund. The Green Fund is populated from revenues that we gain as a province from the cap-and-trade program. Last year was our first year in gaining some revenues through that program and we were able to gain about \$28 million.

Using those funds, we were able to support some great programs across the province that includes things like extending our Solar Homes program which supported the installation of solar PVs on homes across the province, bolstering the amount of money that we have in our home warming program and that's a program that is available to Nova Scotian homeowners who are experiencing low incomes. It sends folks into their home to do an assessment and then provides free of charge upgrades. Those programs are vital in the fact that they address our climate change concerns by reducing green house gas emissions, but also reduce energy costs for the people who live in those homes.

Similarly, we've also invested in a like program for people who live in apartment buildings. So people who don't necessarily own the home that they live in, apartment building owners can access a program which sees them able to do similar types of retrofits in the apartment building and, again, the renters will see benefits from that program.

Those are a couple of examples that are out there right now. There are lots more that are happening both across the province and nationally and internationally and it is very important for us to consider those as we continue to do the work on our climate plan.

PAT DUNN: Thank you. Mr. Chair, I am going to pass further questioning on to my colleague from Sackville-Beaver Bank.

THE CHAIR: Mr. Johns.

BRAD JOHNS: Thank you, Mr. Chair. Mr. Hollett, I was very happy to see the department rename this year to include climate change and highlight the importance of climate change and the challenges around that. Can you clarify for me exactly what the breakdown is that that department deals with? I know that it is also responsible for restaurants and health food inspections. Can you give me a specific breakdown of the percentages that the department is responsible for, please?

JASON HOLLETT: I don't have exact figures in front of me, Mr. Johns, but we can get back to you on the exact breakdown of the department. We do have a wide mandate, as you mentioned. We have divisions that focus not only on climate change but also on inspection, compliance, and enforcement. We have a Policy Division and we also have our Programs Division that focus on a wide variety of things, as you mentioned.

We have colleagues working on air quality, protected areas, water and waste water, industrial approvals, environmental assessments, restaurants, animal welfare, and conservation officers are also housed in the department. So climate change is a piece of what it is that we focus on in the department.

I would mention that there are interconnections between a lot of that work and the work that we do within our climate change team. The ties to water quality and water use in climate change are very clear. The same thing with the benefits that you see from protected areas and ecosystems and wetlands in carbon storage and in providing protection against climate impacts are very important, as well.

BRAD JOHNS: I would say for the record, Mr. Hollett - you and I haven't had an opportunity to work together very often or talk much, but you are highly recognized in the environmental community. People seem to have a lot of faith in you and like you, and I think that speaks highly of who you are. I don't hear that from everybody, but I do hear that about you.

I guess where my concern is as we were talking earlier in regard to some of the programs around wind, solar, EV rebates - all those things don't fall under the responsibility of Environment and Climate Change. I recognize there is that interworking relationship between departments, but it seems to me that I really have a problem with the department being called Environment and Climate Change. I think it should be, and I think that all those things that fall under that mandate should be under that department, but I have a problem when I look at the breakdown of what the department is.

It almost seems like 70 per cent of the mandate is actually non-environmental issues like animal welfare and health restaurant inspections. I have an issue with that. I certainly hope at some point in time there will be a realignment there that aligns everything into one department, given the fact that it's supposed to be so important.

You did mention the cap-and-trade program last year bringing in \$20 million. What's the estimated amount that's going to be raised in revenue this year?

JASON HOLLETT: Very briefly on your concerns on the mandate of the department - we work very closely with the other departments across the province on the issues that you touched on, especially our colleagues at the Department of Energy and Mines when we're working on things like energy and electricity policy. As we worked through this in the years, I think that's one of the things that's really been striking for us.

One of the reasons that we've taken the approach that we have with climate adaptation is that we have so many dedicated and passionate people working in our department and across the province on these issues, and the expertise is really spread around so many of the different departments.

It's really important for us to work with, for example, engineers at the Department of Infrastructure and Housing or the Department of Transportation and Active Transit to make sure that they're including climate change consideration in the work that they're doing. It's important to work with our colleagues at Energy and Mines to make sure that we're meeting the multiple objectives that we can see from addressing climate change, but also reducing energy costs, increasing equity and job creation as well.

With respect to the cap-and-trade program and the revenues that we expect, as I mentioned last year, we received about \$28 million in revenue from that program. It's difficult to project with accuracy what we'll see this year, but we would expect to see somewhere around the same amount, between \$25 million to \$30 million. It depends on demand from the covered entities.

We have somewhere around 25 to 28 businesses that are captured in our cap-and-trade program, and they make their own decisions and develop their own strategy on how they purchase those allowances from the auction, so we can't say for certain, but I think it's safe to say somewhere in that same range of \$25 million to \$30 million this year.

BRAD JOHNS: I think we're probably getting close to the time, so I'll make a quick one. During the budget debates, I did ask this. I want to clarify this, though, again: In the Department Environment and Climate Change, the budget in 2021 is basically the exact same budget that existed the previous year, is that correct? There's no additional funding for new programs?

[1:30 p.m.]

THE CHAIR: There are three minutes still left. Mr. Hollett.

JASON HOLLETT: To my understanding, that is correct, yes.

BRAD JOHNS: That was the quickest answer in the whole world. You could have at least went for another two and a half minutes. (Laughter)

I know that a number of businesses have had a lot of impact due to the pandemic. I'm sure that with some of the new climate and environmental restrictions and goals that are being in place, that's going to add additional burdens to many Nova Scotia businesses. Are there going to be any types of funds or grants, bursaries that are going to help small business particularly be able to adapt to the current environment challenges that are coming?

JASON HOLLETT: We do have several programs that are available for small businesses right now, primarily through Efficiency Nova Scotia. As a matter of fact, back in February, while using revenues from the Green Fund, we did create a new small business and not-for-profit support program with our colleagues at the Department of Energy and Mines through Efficiency Nova Scotia. That is in addition to the existing programs that Efficiency Nova Scotia currently runs.

I would encourage small businesses from around the province to visit EfficiencyOne's website or to get in contact with them directly. It is fairly easy to navigate that if you are a small business or a business owner. You can go to their website and they will actually list what the rebates are and what programs are available to them and they also have expertise that you can access if you have questions on what is the most appropriate thing to be doing, whether it's installation of a heat pump, changing your windows and doors, or anything else that you can do to lower your energy prices and reduce your operational costs.

Always keep in mind that those types of retrofits provide benefits for years to come. You don't just see them right away but you see those reductions in energy costs last for years and years.

BRAD JOHNS: Thank you very much, Mr. Hollett.

THE CHAIR: We will now move on to the NDP with Ms. Chender. You have 20 minutes.

CLAUDIA CHENDER: Thank you, Mr. Hollett, for being here today. We are glad to have the opportunity to ask some questions in this area. I will pick up a little bit on some of the conversation you were having with my colleague around the Green Fund to start.

Mr. Hollett just mentioned that - not wedding you to anything but that potentially we will see about the same amount of revenue from the cap-and-trade program this year as we did last year. We know that that goes into the Green Fund. We know that there is a legislative scheme for what that money can be spent on. But beyond that, when we look at how those funds are dispersed via the Green Fund, from our perspective, there is a bit of an issue around transparency and timing.

The Green Fund existed in legislation but then we sort of never heard about it. We raised the issue in late January and were pleasantly surprised to see a very quick announcement come forward. So either our timing was good or it was useful, I don't know which, but we were happy to see that the announcement of some funds going forward but we are really sort of left to the next press release to find out how the funds are being spent and when they are being spent.

Under the regulations, I believe, Mr. Hollett, those decisions rest with you and so I guess I was wondering if there is a regular timeline for how those funds get dispersed or if there is a plan to create one - we acknowledge this is a new program - or is it just ministerial discretion, really, about how that gets spent?

JASON HOLLETT: A couple of different things on the Green Fund. Last year was the first year where we actually had revenues in the Green Fund from the cap-and-trade program. It was a bit of a new process for us to put together. We've never had that much money to spend in the department on climate change initiatives. We did go through a process of working through our colleagues at other departments and agencies across the province to identify priority funding areas. Some of those were determined by projects whose funding was in danger of expiring and we wanted to make sure that those programs could continue.

We do develop options and talk to our minister and make recommendations to him and they do need to go to the Treasury and Policy Board for approval. We report annually on the expenditures from the Green Fund and we table those reports annually, usually by the first of July.

In terms of how Nova Scotians can provide input or how we can provide some input into creating priorities for the Green Fund and, quite frankly, not just spending on the Green Fund but government's work generally on climate change. I think the engagement that we

hope to kick off soon on the Climate Change Plan for Clean Growth can really help for that.

As we had mentioned before, we had really hoped to be out last year doing consultation on the Green Fund and hearing from Nova Scotians on where their priority was, and that was meant to help shape our decisions on where we would be investing the Green Fund. That obviously didn't happen, so we had to proceed to allocate those funds in the meantime.

I'm looking forward to hearing from Nova Scotians on what their priorities are and that will absolutely help to guide going forward where we can invest those funds, both from the Green Fund, but I think also across government and help us prioritize our actions.

CLAUDIA CHENDER: I guess I'll still keep pushing on the idea that there would be some framework around at least timing. Again I acknowledge this is new and we're getting our feet under us, but that's a significant amount of funding, although maybe not really, given the scale of the challenge. We're obviously paying really close attention to how and when those funds are distributed.

To that end, and you touched on this a little bit, and I appreciate that in terms of the consultation that hopefully will begin very soon, but I wonder in the meantime, for what's gone out the door already, maybe if Mr. Hollett or any of the staff could talk a little bit about the analyses used to determine how those funds are spent.

I think we heard a little bit that there were programs at risk of being cut off and engaging with other agencies, but are there specific gender-based or income-based analyses that we'd heard a little bit about making sure that vulnerable Nova Scotians aren't doubly penalized by the climate challenges that we face? Also, any measurement around GHG reductions related to spending from the funds? That's sort of a Part A and Part B.

JASON HOLLETT: Absolutely. I think we always start with the legislation that provides the guidance for what it is that we can spend the funds on, and those are things like GHG mitigation or adaptation projects, clean tech innovation-type projects, knowledge and education, and helping to fund partnerships across the province. That creates the box under which we are able to spend the funds.

Last year, we prioritized those programs and projects that helped the most vulnerable Nova Scotians, so of the \$28 million last year, well over half actually went to support programs that helped Nova Scotians experiencing low income, and those are for home warning. That \$9.5 million that was invested in that program will help another 1,200 homes in Nova Scotia be retrofitted. In addition to that, we invested another \$4 million or \$5 million in our multiple-unit residential building or apartment building retrofit program as well, so that was extremely important for us.

Also, going forward, this year in our minister's mandate letter, there is a requirement to put an equity lens on the investments of the Green Fund, so to your point, on Gender-based Analysis Plus. I think that actually will give us some authority to go in and take a look at that and evaluate that. I actually think that's something important that we're keeping in mind for the development of our whole Climate Change Plan for Clean Growth. Thank you for raising that.

CLAUDIA CHENDER: I'm very glad to hear that and look forward to hopefully a year from now having another conversation about how that's been implemented and how those findings have made their way into the ways in which this money gets allocated and spent.

I want to move on and ask a couple of questions about the International Energy Association report that just came out a couple days ago which I'm sure you and your staff are familiar with. In a nutshell, that report stated that it was really clear that we need to really close the gap between the net zero rhetoric and the reality of the challenges we're facing, which I think in your opening you canvassed pretty clearly, particularly in our Nova Scotian context.

The report goes on to state that the global path to net zero is very narrow and that a really bad old part of that is no new oil and gas - so basically, leave it in the ground and, of course, to continue to make aggressive investments in renewables and research and development.

As we read that, it caused us to consider again the conversations that we had at Budget Estimates, where there was a focus on Goldboro LNG and support provincially for that project, opening up new bids for our offshore and from where we sit generally, but also in the context of climate science and in the context of that report, that seems very contrary to where we need to go.

It seems contrary, Mr. Hollett, to what you spoke of earlier about this path to a low-carbon economy and a rapid path to get there. Given the role that you described of being sort of in conversation with other departments, I wonder whether you are in conversation with the Department of Energy and Mines about the climate impacts of oil and gas extraction and what those conversations are like.

JASON HOLLETT: Thank you to the member for raising the IEA report. It was quite a groundbreaking report and it has really shifted the conversation over the past couple of weeks in the discussions around climate change and achieving that zero target, not just because of the path that they articulated but also because that organization has traditionally been focused on energy development and some of the more traditional oil and gas industries as well.

For Nova Scotia, I think we start with our legislated targets, which are amongst if not the most aggressive targets in the country - 53 per cent below 2005 levels by 2030 and net zero by 2050 and those targets come from the science. We adopted those targets from the Intergovernmental Panel on Climate Change and the report that they put out in 2018 that articulated what's the pathway that we need to be on to keep the global temperature increase between 1.5 to 2 degrees Celsius.

Those two targets would be Nova Scotia's contribution to achieve those and then we move into practical steps in order for us to achieve what these targets are. Those include things like our renewable energy targets, our cap-and-trade program, and the new commitment to close coal plants by 2030, which are all very important.

With respect to LNG, we are absolutely aware of the project and aware of the potential for greenhouse gas emissions. From our perspective at the Department of Environment and Climate Change, we are regulators who create the policy framework to achieve these reduction targets in the face of whatever pressures that may come up over time.

When we look at policies that we have in place right now or policies that we are developing in the future, we have to make sure that they are fair and flexible for whatever developments may be happening in the province. That 2030 target is legislated, so if we were to see a new industrial development, we would need to be able to develop an approach to make sure that we can still meet those targets in the face of that.

CLAUDIA CHENDER: I recognize, Mr. Hollett, that you have the challenge of being the face answering all of these questions which may not all be directly in your purview. But against the legislated targets being the baseline as you state, no matter how we crunch the numbers there is no way to get to that legislated target with Goldboro in full operation, based on its projected greenhouse gas emissions.

So maybe there is and science and technology are always changing, but I guess maybe to something that you could speak to - I think what we've heard as we have raised questions about this project are people saying with this 2030 off-coal target, which is very aggressive, we need a bridge fuel. Our position is we don't need a bridge fuel and that most progressive climate scientists who are actually trying to save our future also don't believe the time for a bridge fuel has passed.

Given that, we know that Goldboro has asked for a billion dollar investment to make this project go. My question to you is: Do you think that with a billion, we could make the investments in that low-carbon future, that low-carbon energy production like solar and wind, that could move us into that low-carbon economy and energy production by 2030?

JASON HOLLETT: It's a very interesting question. One billion dollars can go a long way when invested in clean technologies, absolutely. I think Nova Scotians have invested approximately \$5 billion in the transition of our electricity sector already to get us on that pathway. I can't really speak to the economics of either the LNG or the feasibility of the project. I would love to have \$1 billion to spend on clean technology, however. It would be a great problem to have, and it could have significant impacts in Nova Scotia.

[1:45 p.m.]

Again, it's related to the conversations that we're having around the Green Fund's provincial investment, provincial programs, and the real opportunity that cleaner technology creates for us. We're seeing rapid changes right now in the prices associated with electric vehicles or battery storage or solar EVs or winds that are making them cost-competitive with existing fossil fuel projects right now. Some of this is going to be driven by the market, and some of it needs to be government providing the signal to industry on here are our expectations.

I think that's part of the value of the climate targets that we have in the Sustainable Development Goals Act, where they know what our objectives are and where we want to go as a province, and that encourages investment in these clean technologies.

The only other thing that I would mention is that we feel that it's important to keep an equity lens on this. We need to make sure that we're investing in ways that create equity across the province and deals with some of the inequities that we have been feeling for quite some time. Dealing with historically marginalized communities and low-income Nova Scotians needs to be a significant focus for us.

CLAUDIA CHENDER: The legislation that governs cap and trade - which we talked a little bit about - permits carbon offsets, but we noted that regulations don't actually exist for that program. In the framework that was presented in 2019, there was a mention of consultation in reference to figuring out what other jurisdictions are doing, and I'm wondering if you could comment on where we are in terms of putting those regulations in place.

JASON HOLLETT: Yes, absolutely. In the legislation and the regulations we've put together to create the cap-and-trade program, it does reference the opportunity or the option for carbon offsets. At the time that we were crafting the program, we really had a very short runway in order to get it off the ground, so we weren't able to spend the amount of time on offsets that we would have liked to under normal circumstances.

After the cap-and-trade program launched, we did engage some consulting firms to examine the opportunities in the province. As part of their process, they did reach out to some of our stakeholders in the forestry and agriculture sector and across different industries as well to provide an assessment of what the offset opportunities are. We're still

in the process of analyzing that report. It's a discussion that's evolving worldwide, because while offsets do create opportunities, there are some issues that need to be resolved in them.

One of the major stumbling blocks here in Nova Scotia is the size of our province and the size of the opportunities, so a regulated carbon offset market can be relatively costly to put together, and I'm not talking about from a government's perspective. From a project developer's perspective, if you're going to sell offsets to a regulated market, there are pretty stringent requirements on how robust your work needs to be. It can add tens of thousands or hundreds of thousands of dollars of costs annually to a project, which can affect the economics of moving a project forward, especially when we're talking about, in some smaller plots of land, if we're talking about forestry projects or agriculture projects or the size of the industry that we have.

We're still working through the opportunities that are there. We want to be diligent and we want to make sure that we're doing something that actually does create opportunities here in the province and not just end up with a program to say that we have something set up.

I would say in the meantime, the federal government is also moving forward on an offset system as well for provinces that don't have their own internal offset system. That would also represent the potential opportunities for people who want to develop carbon offsets here in the province as well. We're happy to talk to anybody about what those potential opportunities would be.

CLAUDIA CHENDER: Just quickly, I wonder if you could comment on whether there is evidence that our cap-and-trade system is actually reducing greenhouse gas emissions. How are we measuring that and do we have evidence that it's working?

JASON HOLLETT: We do report annually on greenhouse gas emissions, both provincially and Environment and Climate Change Canada also produces reports. We require our regulated entities to send an annual report to us as well, so we do track emissions more directly from the source. The cap-and-trade program itself is set up as a four-year compliance period, so we are tracking those emissions over time.

The nature of the program requires the emission reductions to actually take place, so it creates a number of allowances that we either distribute or we auction and sell to those covered entities. There is a limited amount of allowances that are out there. At the end of the period, those regulated entities have to be able to demonstrate that they have the amount of allowances that they need commensurate to what their greenhouse gas emissions are. It provides some certainty in what those reductions will be over time.

THE CHAIR: Time has expired for the NDP. We'll now move on to the Liberal Party, and the honourable Leo Glavine.

HON. LEO GLAVINE: Thank you, Mr. Hollett and team, for being here today to address what really is the issue of the 21st century. I have three grandchildren who remind me of that from time to time.

Also, I appreciate Mr. Dunn's comment about being in the House when EGSPA came forward. Nova Scotia has been a leader, and we've continued as a government to demonstrate leadership in the country on carbon reduction and addressing climate change issues.

I've always believed that government should be a leader and point direction. One of the areas that I was wanting to comment on is with our public buildings, because the vast majority of our communities across the province have public buildings, and I'm wondering how we're doing with energy conversion and energy savings in those buildings.

JASON HOLLETT: I would defer to my colleagues at Infrastructure and Housing and Transportation and Active Transit for specific work that's being done and the results that we're seeing from there. However, I can say that as part of our recent work, we have committed to source our electricity from renewable sources by 2025 for all of our provincial government office buildings, which is really an important step for us. We're partnering with the federal government and other partners as well to make that happen. Government will be procuring directly from renewable energy suppliers to make sure that that happens.

LEO GLAVINE: I strongly believe that yes, all government departments do need to be involved with this work. In terms of education in particular, we saw how our students, our children, were in ways leaders with recycling and brought us to a place again to lead the nation. Does the department work on the science for education? How do you partner here to bring our children to be leaders in this movement, just as they have made recycling part of their everyday life?

JASON HOLLETT: It's absolutely essential that we work to raise critical thinkers in our public education system and in our communities. We work closely with our colleagues at the Department of Education and Early Childhood Development on the development of their curriculum as they put together and include considerations of things such as climate change.

I'd also highlight the work that the Clean Foundation based in Dartmouth does on engagement for our school-aged children. They have a great climate leaders program that provides internship and employment opportunities for young people across the province, hiring over 100 people this year alone. They also have an environmental education program that's built off of the work that they did as you mentioned on recycling and encouraging our school-aged children to learn about recycling and take that home to their families and encourage their families to do that as well.

They've branched out to provide the same sort of education programming to climate, air quality, and water as well. They see thousands of kids a year and provide support to teachers in schools in order to provide those engagements. There's also the Green Schools Program that's run through other entities as well that's meant to create that kind of grassroots capacity-building in the schools to make those changes, so whether it's incorporation of renewable energy or energy efficiency, turning off lights, increasing recycling, things like that. We've seen just fantastic engagement from youth across the province on those programs and others, from teachers and administrators as well, and that needs to be foundational to the work that we do going forward.

LEO GLAVINE: I know all of my colleagues here want to ask questions, so this will be my last one. You mentioned how all of us need to be part of the solution in dealing with climate change. In terms of our individual households, is it just by request to have an efficiency study done? Will there be a way that all households can have that kind of assessment to gradually work at improvements?

JASON HOLLETT: Currently, in order to access the majority of the energy efficiency programs that are available, a residence owner would want to get a home energy assessment audit done. What that does is bring somebody into the house to provide that assessment of what the real opportunities for energy use reduction are in the home - whether that be insulation, windows, doors, heat pumps, or renewable energy opportunities. Probably a recommended step, considering the amount of investment that it would take to make those changes to your home. You'd want to have a good sense of what the benefits of those things are.

There are a number of programs that are available as well where people will come in and do things like change out lightbulbs, put in power strips, make some of those more simple changes that maybe don't have the more significant impact that some of the bigger retrofits have, but definitely make a difference over time.

Technology is changing over time, and new options are becoming available to perform things like virtual audits, so having access to things like your energy consumption over a year can give people some great insight into where it is that you're using energy and how you can make improvements in that.

We are seeing this especially at the commercial and industrial scale right now but there is absolutely an opportunity to downscale that to the residential level and to make it a little bit less intrusive and maybe more accessible to folks to get a better idea on what the best investments are for them in their own homes.

LEO GLAVINE: Thank you.

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

RAFAH DICOSTANZO: This is very interesting information that we are receiving. My colleague started by saying how Nova Scotia has been a leader. I remember my niece's husband graduated as an environmental engineer and was working on the green bins 15 to 20 years ago, and they travelled to London. Literally, Nova Scotia was ahead of England and with the millions of people, they made a job for him because of the knowledge he had. We were so advanced compared to Europe when it came to recycling.

[2:00 p.m.]

Unfortunately, we have lost him to Europe. He hasn't come back, but it is the knowledge that we had here that got him speaking all over Europe about our recycling in Nova Scotia. We have always been leaders.

What is the Climate Adaptation Leadership Program? What is the investment there, if you could elaborate on that?

JASON HOLLETT: I am going to pass it to my colleague Kyla Milne to speak a little bit more, because she is the person who came up with this innovative approach and knows quite a bit more about it than I do and is working directly with our departments and partners. But just really quickly, at a high level, it was developed in response to a funding opportunity presented to us by Natural Resources Canada with respect to raising the capacity of industry stakeholders in our departments to deal with climate change adaptation issues.

I think, as I referenced in my opening remarks, we need to be very respectful that the expertise to deal with a lot of these subjects exist across the province, which also means that we need to be helping these people who are our engineers, our water quality technicians, our builders, our planners, our construction folks, our skilled tradespeople to help them understand how climate change will impact their work and how they can integrate those solutions.

Maybe Kyla, if you could provide a little bit more detail, that would be appreciated.

THE CHAIR: Ms. Milne.

KYLA MILNE: The Climate Adaptation Leadership Program is really a skills-development, capacity-building program designed to start getting all of the Public Service, all departments across government and their community, and industry stakeholders to become more aware of the risks as well as potential opportunities from climate change. To be able to develop strategic plans in response to what we currently know are the risks and the opportunities, to be able to have support in implementing those plans, monitoring and evaluating the effectiveness of those plans over time, and really, in the long term, sustaining action.

It was in recognition that we are trying to take a coordinated approach across government to dealing with climate change issues and when this federal funding opportunity came about, we really had an opportunity to pilot an approach that we thought might work. What we do is we use the federal and the matching provincial funding to hire adaptation specialists who are based within our Climate Change Division who get dedicated to working with a partner department and, by extension, their stakeholders.

We are working right now with four other departments in addition to our own, as Jason mentioned in his opening remarks, and by extension we are working with about seven sectors that are associated with those departments. What we are doing right now is building teams within those departments, making sure there is representation from across every unit in the department, and running a series of workshops with them over a period of time where we are starting to look at what all of the risks and opportunities are related to climate change, how it's going to impact their core functions and operations.

Then it's really trying to assess what the adaptation outcomes are that the department is after, what the factors are that they need to have in place in order to help them achieve those particular outcomes, and what the activities are to support them to achieve those outcomes.

We're doing that both with departments, and then simultaneously these adaptation specialists are also working with a chosen sector that the department wants to focus on and doing essentially the same process: bringing together a multi-stakeholder team from across every kind of component in that value chain or every node within that sector, looking at where the climate change impacts and risks are across the whole system, and how the sector can work together collectively to be able to respond to some of those risks and opportunities.

We're starting right now with a number of departments, mainly in the very beginning stages of raising awareness, starting to have discussions about what are the concerns. Really we hope that by the end of March 31, 2022, we will have department plans in place, climate change adaptation plans in place for each one of those departments, as well as their sectors that they're working with.

RAFAH DICOSTANZO: Is there a time limit for those programs? Do you have so many years and then you do a report? If you can elaborate on that as well.

KYLA MILNE: We received federal funding in late 2018 for three years, so the funding currently from the federal government ends on March 31, 2022. One of the things that we would be exploring as part of the new climate change plan is whether to continue on with an approach like this and expanding it to more departments and more sectors as we go on, or potentially rethinking a new approach.

We're halfway through the implementation of this work currently, and we're doing a bit of a mid-term assessment to evaluate where we've been effective and where we can improve our effectiveness. We're going to be using that information to make adjustments to our program over the next year, and then also really strategically thinking about where we take this in the long term.

RAFAH DICOSTANZO: I may give it to another colleague, or I have one more question. If my colleagues would like to put their hands up if they have more urgent questions, that would be fine.

THE CHAIR: I'd say get your questions in now.

RAFAH DICOSTANZO: Can you also tell us more about the Sustainable Development Goals Act - the climate change and public engagement process? How are you working with that process and where are you?

JASON HOLLETT: The Sustainable Development Goals Act and the Climate Change Plans for Clean Growth are obviously two marquee pieces of work for the department since the act was passed back in October of 2019. We've been doing lots of work internally and engaging with our partner departments, as I mentioned earlier, and also speaking to anyone who is interested and able and wants to talk to us about where they think the priorities are.

The next big step for us on those two would be to initiate public engagement, to get feedback from Nova Scotians from all backgrounds, walks of life, and different representations. That's obviously been challenged by the pandemic and Public Health considerations. We've been working closely with the Clean Foundation, whom we've brought on to lead that public engagement to make sure that we're doing so in a way that reaches as many people as we can while respecting the Public Health guidelines that we're under right now, so it will absolutely be primarily virtual engagement with Nova Scotians.

We're looking at a variety of schools under which we could do that and would include things like virtual sessions - using more innovative online tools like one called Bang the Table, which allows for more interactive conversations, polls, submission of things like pictures or art or single comments. People will be able to submit written conversation to an email address in English or in French.

There's also a toll-free number that will be available to folks who just want to call and pass on their thoughts, also in English and French. We will specifically be putting some extra effort into reaching out to youth across the province. It becomes a little bit more challenging this time of year, now that school is finishing up, but it is definitely a priority for us.

Also, we want to put some extra effort into reaching out to those communities we don't traditionally hear from when we do these types of consultations. Underrepresented communities, people dealing with issues of low income, First Nations communities, people with disabilities or accessibility issues, the LGBTQ+ community, and as many others as we can get to, because it is very important for us to make sure that we have an equity lens of what it is that we are planning to do as part of this climate plan process.

RAFAH DICOSTANZO: I'm done with my questions. Maybe you can just fill me in if there are any other programs or ideas for the future. I know we have always been leaders. Are there things that you are working on that you can get us excited about? Something that Nova Scotia will be leading the world with?

JASON HOLLETT: We are quite a busy shop right now trying to make sure that we maintain the existing actions that we have, things like our cap-and-trade program, the three items that I had mentioned on adaptation, and really marshalling all of our effort on to articulating what our pathway needs to be to meet our 2030 and 2050 targets. Some of that is definitely related to the recent announcements around our new 80 per cent renewable electricity target, our commitment for coal closure, EV incentives, and some other policies that have been put out there, but there is lots of room to do more and to do better.

Again, we are really encouraged and looking forward to hearing from Nova Scotians to try to understand their priorities and where they see the opportunities to address some of these issues going forward.

THE CHAIR: Our time has elapsed and we are going to move on now. Thank you. You filled that minute perfectly. We will move on now to the Progressive Conservative Party for 11 minutes each, starting with - who do we have? Mr. Dunn.

PAT DUNN: I'll have a couple of questions and then I'll pass it over to my colleague from Sackville-Beaver Bank. My first question is around renewables like wind, solar, hydro-powered, geothermal, and so on. Have we reached the point where they are already cost-effective or are we close to it?

JASON HOLLETT: I think we are reaching the point, and I'm providing this from a non-technical expert's perspective, where we've seen changes over the past years that show us that wind energy especially is becoming very cost-effective when evaluated against traditional sources of electricity.

We have seen that in some of our provinces across the country, in places like Alberta that have issued competitive processes for renewable energy generation and technologies such as wind have come in below the cost of even natural gas or coal-fired electricity. For some of the other technologies, it really depends on the economics of the situation that you are in - so in the time horizon that you want to make, that you are evaluating that investment again.

I think, as I mentioned, batteries and solar PV costs have really cratered over the past few years as production scales up and the cost to produce those products is decreasing over time and the amount of energy that can be stored in batteries is also increasing over time. So depending on your personal circumstances, there could be a five- to ten-year payback period from those technologies.

Then there are things like heat pumps which may make sense right now. Heat pumps as a technology have been around for a while and we have seen fantastic uptake of that across the province. It is 300 per cent more efficient than electric resistance baseboards, so it definitely provides those benefits from an energy efficiency and a cost-savings perspective.

It's going to be very important for us to keep an eye on those costs over time because the cost feasibility and the technical feasibility of these types of technologies are changing over time and becoming more important as we adopt even smarter technologies. Some of the more recent work really focuses on the development of smart grid technologies, where we can get these devices to start to talk to each other to make sure that they're being used optimally in a way that benefits all system users, so hopefully results in lower cost to consumers and better grid stability as well.

PAT DUNN: Just a couple of things that you mentioned there triggered another question. Does your department and other departments, for example the Department of Business and so on - have you been involved in the potential of a battery storage facility at the former Trenton DSME site?

JASON HOLLETT: I believe there have been discussions around multiple battery storage projects around the province. We are aware of that project in particular as well. I think that there are a number of private sector companies that are interested in developing these types of projects and communities as well that have a number of benefits. We think that it can play a really important and key role in our electricity future in the way that it can offset some of the more intermittent renewable energy generations, store some of that electricity for times when it's better needed, to provide grid stability and reliability over time.

PAT DUNN: My last question before I pass it over to the member for Sackville-Beaver Bank. Just a quick question, and I think you may have mentioned something about this earlier, Mr. Hollett: Going forward, is the Province going to be pushing for solar farms as opposed to solar rooftops due to the fact that there's more potential to cover a larger area, capture more energy from the sun?

JASON HOLLETT: Our colleagues at Energy and Mines recently tabled and passed amendments to legislation that would enable growth in the solar PV industry. I think that whether that's rooftop solar or whether it would be larger solar arrays or solar farms, I think has yet to be determined, but referencing back to an earlier question on the cost and

feasibility of some of these projects, similar to wind energy where larger wind farms or wind projects create greater economies of scale, I suspect that would be the same case for larger solar PV projects as well.

That doesn't discount the benefit of having them in a more distributed way on rooftops around the province as well and what they can do help households produce their own renewable electricity and lower their own energy consumption costs.

THE CHAIR: Thank you, Mr. Dunn. We'll now move to Mr. Johns.

BRAD JOHNS: I know that you touched on it briefly, but I'm just curious in regard to the Coastal Protection Act, where that sits. I believe that's another Act that we were waiting on regulations for, and I'm just curious to know what an update on that Act is.

JASON HOLLETT: The Coastal Protection Act, as you're all aware, was passed in 2019 and is a very important piece of work for the department, but also a very complex piece of work when we're dealing with the thousands of kilometres of shoreline that we have in the province and the confluence of interest that we see from private landowners, from communities, from municipalities, and other regulatory bodies that are out there.

Work for regulations under the Coastal Protection Act continues, and some of that is consultation and discussions with stakeholders and bodies that are impacted by the Act and by the regulations. I believe the next step would be to do a more formal public engagement on regulations under the Act, and I expect that will be happening fairly soon. I cannot speak to the exact date when we could expect that.

BRAD JOHNS: Respectfully, just so I can recap here: we still are waiting for the regulations on the Coastal Protection Act and we are waiting for regulations on the Sustainable Development Goals Act. I notice that other departments have managed to hold consultations in the meantime, even over the pandemic. Just for my clarification, the Department of Environment and Climate Change have not held any consultations whatsoever during the pandemic on anything?

JASON HOLLETT: With respect to that question, I believe that is correct, that we haven't had any but I would have to make sure by going back through our records to see if there has been nothing at all that we've had consultation on.

I would say that while there is the formal public engagement process that takes place under these programs, policies, legislation, and regulations, I think, as I mentioned before, we do make sure to engage in stakeholders and community groups on whether it's sustainable development goals, adaptive climate plan, or the Coastal Protection Act. I know colleagues who are working on the Coastal Protection Act have been very busy engaging communities and municipalities and professionals across the province in the development of these as well.

We have made it a point to make sure that we are in constant communications with the folks around the province who are interested in talking to us about the climate change plan and the sustainable development goals. Actually, we've had meetings with groups like the Ecology Action Centre, East Coast Environmental Law, industry associations, the Federation of Agriculture, Forest Nova Scotia, as well as some of the large emitters across the province. So we are having discussions and meeting with folks on a regular basis.

We did have some consultations on protective areas a couple of months ago. So there were some public consultations that were led by the Department of Environment and Climate Change.

BRAD JOHNS: The Chignecto Isthmus dike land - Can you give me an update on that, please?

JASON HOLLETT: That study and that work is done under the leadership of the Province of New Brunswick and we are partners with that along with the federal government. We know that there has been a lot of work that's been done over that. We haven't seen a final report on that yet, but we expect that to be available very soon.

THE CHAIR: Thank you very much. The time has elapsed. Sorry, Mr. Johns. Next, we will move on to the NDP with Ms. Roberts, for 11 minutes.

LISA ROBERTS: I have lots of questions so forgive me if I ask them quickly. The story that we are told and that we've heard back in some of the preambles from some of the questions today, and this is a story that I've certainly heard in the Legislature from multiple Ministers of Environment and two Premiers, is that we are leaders on climate change here in Nova Scotia and yet for the entire time that I've been elected, we've been working on a 2009 climate change plan with goals for greenhouse gas emission reductions that were met in 2015, and this while the crisis of our time is proceeding apace.

According to Statistics Canada, Nova Scotia households are amongst the most polluting in Canada, emitting six tonnes per capita annually. For comparison, households in BC emit just over three tonnes, while in Europe households emit between 1 and 2.5 tonnes per capita. In the Auditor General's Report from 2017 that considered climate change emissions from both households and industry, Nova Scotia was categorized as being in the middle amongst Canadian provinces. While I recognize the need to celebrate where we have been successful, I am also very impatient with that story.

Given that Nova Scotia's energy demand comes in about 17 per cent from residential heating, and given that buildings built before 1996 represent about 75 per cent of our building stock, and that those buildings use almost twice as much energy as those built after 1996, what are the plans for scaling up our ambition and scaling out responses, including with deep energy retrofits that can actually have a significant impact both for adaptation by protecting people who live in those buildings from extreme heat and extreme

cold, but also for actually still having some ambition for mitigation, which is what I'm impatient for?

JASON HOLLETT: I think it's correct that our last climate change action plan was published back in 2009 and contained about 68 actions, most of which were largely fulfilled. We were very active on the climate change file with a number of initiatives, not under the guidance of an updated plan but very consequential in their impact. That includes the establishment of the 40 per cent renewable energy target by 2020. It included extending our GHG emission caps for the electricity sector out to 2030, the creation of our cap-and-trade program, and the ramping up of energy efficiency programming over time, all of which had very good impacts.

As a result, we've been able to reduce our GHG emissions by about 30 per cent below 2005 levels, amongst one of the highest decreases over time from our colleagues across other provinces and territories.

You're absolutely right, there's more to be done, and I think that speaks to some of the recent policy announcements on coal closure by 2030, 80 per cent renewable target, electric vehicle rebates, and the support programs we're putting in for low-income Nova Scotians.

To your point on household emissions, the data don't lie. It's correct. A lot of that relates back to our continued reliance on coal in our electricity sector, which drives up household emissions. We're hoping that our initiatives in the electricity sector can help abate that, and some of it is related to our heavy reliance on home heating oil here in the province, which I think is maybe more common in Atlantic Canada but not as common in some of the other provinces and territories across the country. Heating oil is a higher-emitting fuel than natural gas, which is a more common heating source in some of the other provinces and territories.

That does create pretty significant opportunities for us as we think about the actions that we need to include in our climate change plan around updated building codes to make sure that the buildings that we do build capitalize on those opportunities from amplified energy efficiency and renewable energy to make sure that going forward we're building in the right way and building in a way that our infrastructure is robust to the impacts of climate change, and also in recognition that we do have an older housing stock here in the province that we need to make sure that we're putting significant focus on.

We've started that work, to write energy efficiency programs. I think the annual report that Energy Efficiency Canada publishes consistently ranks Nova Scotia at the top in terms of the width and the breadth of the application of those programs, so we have something strong that we can build on and continue to improve on.

I would note again: We need to make sure that we're helping those Nova Scotians who need it the most. Energy cost and energy poverty is a very big issue here in the province. These are the tools that can meet multiple outcomes, including greenhouse gas emission reduction, energy consumption reduction, and energy bill reduction as well.

LISA ROBERTS: Thank you for that answer and for perhaps allowing me to vent just a little bit in the context of this committee.

Referring back to some of that work that happened in 2009, at the time that biomass for energy was first introduced in Nova Scotia, it was recognized that there were still questions around it, about its categorization as renewable. And as I understand from the renewable energy plan document that was developed by the NDP government, there was a plan to reassess or take a fresh look at biomass for energy in 2015 once we met the 2015 renewable energy target and reassess it going forward.

There's a big international conversation about the use of biomass, the actual emissions that are associated with it and the length of time that it might take for those emissions to be recaptured by freshly growing trees. Is there a plan or has there been a fresh assessment of biomass and its renewable status?

JASON HOLLETT: I think you're correct in saying that there's a larger conversation that's happening internationally on not just biomass, I think renewable energy opportunities or clean energy opportunities in general.

Biomass does provide some energy use in the province, everything from electricity generation to wood stoves in our individual homes. We take direction from the federal government, and the federal government takes direction from international work on the classification of renewable energy in terms of our regulations. There are multiple influencing factors on the use of biomass as a policy, so it's currently considered carbon neutral.

I think that there are some important questions around sustainability and harvesting that need to be considered as part of that, and we'll continue to follow that international work as it develops.

LISA ROBERTS: Somebody else can feel free to send over some of their time. I will ask more of my questions, but right now, I wanted to talk quickly about municipalities and climate adaptation funding.

There were municipal plans for climate change action plans that were developed with federal gas tax money, which was a good, positive initiative, and then those plans sat on the shelf for a number of years, waiting for funding, for implementation. We've proposed legislation called Local Action on Climate Change to compel provincial funding

for those plans. In fact, Mahone Bay is just now starting on a living shoreline project with federal funding that they've been able to secure.

I'm wondering if there is likely to be funding on an ongoing basis for municipal climate adaptation projects, and will that come from the Green Fund? When can we expect to have a first competition, and if there isn't a compelling reason to just fund those municipal plans, given again the urgency of the climate crisis as well as the urgent need to engage in adaptation work?

JASON HOLLETT: Our municipalities across the province have shown some pretty phenomenal leadership on the subject of climate change. We've seen some recent examples in Bridgewater, Halifax, Wolfville, and so many others. Some of that stems from the work on the Municipal Climate Change Action Plan, as you mentioned, and I want to recognize the work of our colleagues at the Department of Municipal Affairs that supported that to go along.

There was a bit of a study that was done last year that evaluated the impact of those MCCAPs that showed that while there were some pretty significant impacts from just having that work done, it's not always as obvious as some of the work that's been done, but the policies and some of the internal changes that municipalities have made as a result of them have really put Nova Scotia in a leadership position.

In terms of ongoing funding, we have a commitment in the Sustainable Development Goals Act to create a Sustainable Communities Challenge Fund that hopefully can fill some of that role. We're working on the details of that program right now. I imagine some of the feedback and some of the information that we need we'll also hear from as part of our public engagement process, as part of the climate change plan.

THE CHAIR: We'll now move on to the Liberal Party, and I believe Mr. Horne. We have about 10 minutes.

BILL HORNE: I'm going to change the subject just slightly. Still climate change, but I'm thinking about what you said earlier, working with your departments in Nova Scotia and coming up with a plan of what needs to be looked at. Have you done much work with having studies and research done by the universities locally or outside, and maybe with the federal Department of Environment and Climate Change?

JASON HOLLETT: I'm going to defer to my colleague Kyla, but I can say that we work closely with local researchers, and there are some great ones out there that are doing some really important work across the province. Danica Van Proosdij at Saint Mary's University, Kate Sherren and others at Dalhousie, and Patricia Manuel have really been leading a lot of the work and the research that have been done, providing some great benefits to local Nova Scotia communities.

As I mentioned earlier, we're working in partnership with Environment and Climate Change Canada and our colleagues in the other Atlantic provinces to stand up what will be the Atlantic Climate Change Data Centre that will provide some of that base level data and information and research to those who need it in their decision-making process.

Mr. Chair, if I could ask Kyla to add more to that answer, I'd appreciate that.

KYLA MILNE: To build on what Jason has said, when we start out doing the work with departments and with the sectors, we really do a comprehensive review of what research work is out there that already establishes what some of the risks and the potential opportunities of climate change would be to that particular sector, to those areas that the department has a purview over.

It's a comprehensive literature review, really drawing from the research that we currently have in the province, but also internationally to try to assess what are some of the kinds of best practices that others are implementing. That gets woven into the conversations that we have when assessing risks and opportunities and when developing those strategies.

I'll also say that as we're now developing this new climate change risk assessment, that information is going to be really critical going forward for helping us to identify particularly sensitive or vulnerable departments and sectors that we might need to immediately prioritize and start working with next, and we're going to be absolutely utilizing the research and the data from that particular work as well as others when we're designing and implementing these plans.

I will just say we really try to bring in also researchers from the universities as part of team members who are designing these plans too, so we're not just including the research at the literature review stage and using it primarily as desktop research. We're actually making sure that those researchers with the hands-on expertise in those areas are present and part of the conversations with decision-makers.

BILL HORNE: Just to continue on with that, I read a report yesterday talking about the amount of arsenic and lead in the lake water bottoms that are now being dissolved because of the acidic water, resulting in a lot of those metals coming into the environment and passing down into wherever that runs off - right to the Bay of Fundy, I guess.

This is an arsenic study in Montague gold mines. It took me a little bit by surprise because I do live downstream, and I understand that we have a water system that's run by HRM that supplies us water. I assume that they are being able to filter out these contaminants of arsenic and lead, except they're still higher. I don't know what levels they can get to, but I'm just wondering if you're familiar with that study from Mount Allison University and the comments on it by Dr. Graham Dellaire at Dalhousie.

JASON HOLLETT: I am personally unfamiliar with that study so my apologies for that, but we will look to see it. I think it speaks to the complexity of the ecosystem that we operate in and the impacts that we see emerging from climate change. Some of them are known and some of them are unknown, and some of them really take a lot of work and additional examination, and involve multiple partners.

While the science is being done at the universities, as you say, a lot of this has impacts on our communities and municipalities and how we develop policies and programs in order to be able to change and adapt to this new information as it comes over time. All of that is to say the approach we're taking here primarily with our work on climate change adaptation is really about capacity building for the largest amount of people that are possible, so that as these new issues start to emerge, they are able to develop a solution and implement the solution.

BILL HORNE: I think the journal *Science of the Total Environment* was where the actual research work was done by Mount Allison, and then the comments from a Dalhousie researcher, because of the higher levels of arsenic and mercury in the water column, which was always protected by the sediment, except because of our warming water temperatures and the fact that we have more storms and more aggressive storms seem to turn up the sediment there, and that's re-immersing it back into the water column.

I don't know if there's any need to comment more on that at this point or not. Probably not, so maybe I'll pass it on to our next Liberal.

THE CHAIR: I believe next on the list is Mr. Jessome. First off, we missed him in the introduction. We did mention him, but if you'd like to just introduce yourself to start, sir.

HON. BEN JESSOME: MLA Ben Jessome for Hammonds Plains-Lucasville, and you haven't gotten rid of me yet.

I wanted to tie back into Mr. Johns' line of questioning related to the Coastal Protection Act. I have had a couple of constituents reach out in the recent past to request an update on that file. Perhaps, Mr. Hollett, you can provide some additional commentary. I understood that there is intended to be community consultation that takes place on this file, but is that to say that we're not quite ready to open that door? I understand through your comments that there's a lot of work being done in a targeted way, but can you just add some additional information for me and for my constituents?

JASON HOLLETT: Our colleagues have been working diligently on the regulations under the Coastal Protection Act. They've been engaging with specific groups and professional bodies from across the province to provide some input into what the regulations could look like, and we need to make sure that we're working very carefully on this. It can't be a one-size-fits-all approach.

The intention is definitely to consult more broadly with Nova Scotians on the details of the regulations, and we hope that will be taking place very soon.

[2:45 p.m.]

THE CHAIR: I believe we have about 10 seconds, if you just want to close some remarks.

BEN JESSOME: Well done, team. Thank you for your efforts at Environment and Climate Change, and good luck moving forward.

THE CHAIR: That concludes the time that we have allotted for questions. Also I'd like to thank and offer up an opportunity to have some closing remarks from Mr. Hollett or any of this team.

JASON HOLLETT: Thank you all for your questions and your engagement this afternoon. We are working on an issue that impacts the lives of Nova Scotians, businesses, our communities, and it's important that we're engaging and listening to all Nova Scotians and their elected members, so this was a great opportunity to hear that. I think that there is so much happening almost on a daily basis on the issue of climate change, things that we can feel encouraged about, whether we're talking about advancements in clean technology, renewable energy, and some of the community-based solutions that are coming up.

I think really we should feel very encouraged by the engagement of Nova Scotians. We've seen this over the past couple of years, whether it's young Nova Scotians or Nova Scotians of any age who have demonstrated that climate change and sustainability are really front of mind for the work that they do. It's that engagement and the engagement from my colleagues at Environment and Climate Change and other departments that really make me feel hopeful on what it is that we can accomplish here as a province and as a nation and globally to deal with this issue of climate change.

It feels like the discussion has really shifted in the past couple of years. We're hearing much more from industry, private sector, community groups, and individuals that want to see more aggressive action on climate change and do it in a way that addresses equity issues as well. I feel encouraged to continue to have those conversations and to be able to demonstrate how Nova Scotia can maintain our leadership position on the file.

THE CHAIR: Thank you, Mr. Hollett and your team, Satya and Kyla. I have to say this. On the opening remarks from Mr. Dunn and the comments we had from the NDP and our caucus, it's clear that conversations around the environment are not and should not be partisan in nature.

When we mention Mr. Parent and the work that they've done, we'd be remiss in not also mentioning the work that the previous NDP government did laying some

foundation on renewables, and that continuing work that we're seeing now with the current government on moving it along.

The one common thing that I will say - I appreciate the respectfulness in the comments and the questions that were asked by the group here. It certainly shows an understanding that work that we do around the environment should not revolve around politics - it should revolve around science and what's best for our communities. That's a clear message, I think, that I learned in my time spent in that department.

Thank you all very much. You can leave the meeting now. We have some committee business. I really appreciate the work that you've done throughout the whole department.

We'll move on now. We have a couple of items on committee business that we do have on the agenda. One is in regards to the clarification for the NDP witness on COVID-19 economic recovery. I believe there are two witnesses, and the suggestion is that they be separate - the CCPA and Dr. Karen Foster were submitted.

I don't see any concerns with that at all. Is there any discussion around that? Seeing no hands or no discussion, that one is okay.

Then just clarification on the topic of the Beaches Act. Obviously, we'll all be waiting for that. There were some questions here today on the coastal protection and restoration, so we're going to amend that. I believe originally they had the Department of Transportation and Active Transit there, but I believe Lands and Forestry - sorry, we're moving it from Lands and Forestry to the Department of Environment and Climate Change for that one. I don't think there are any concerns or any comments on that one? No.

Seeing both of those, our next meeting is going to be June 22nd, 1:00 p.m. to 3:00 p.m., and the topic will be Lobster Quality Research and Innovation with the Department of Fisheries and Aquaculture. We'll also have Geordie MacLachlan and Michelle Theriault from Université Sainte-Anne to talk to us on that.

Seeing no further business from anybody, thank you all very much and be safe out there. It's nice to see your faces again. Take care, and we'll now adjourn the meeting.

[The committee adjourned at 2:50 p.m.]