Senator Patterson: I wonder if you could give us a bit more information about the biomass project with Kwadacha First Nation, how many people were involved and what the biomass source was. Also, now or later, if you could tell us what success you've had in reducing power costs by investing in better insulation, I think as you've described it, in other communities.

See attached public filing with the BC Utilities Commission with regards to further information on the Kwadacha Nation Electricity Purchase Agreement. Section 3 speaks to community and project details and Section 4 speaks to benefits.

With regards to success in reducing power costs by investing in better insulation:

Between 2009 – 2011, BC Hydro offered Power Smart for Non-Integrated Areas (NIA). This program focused on residential and commercial direct install activities (e.g., energy savings kits for homes, lighting upgrades in commercial buildings) with communities in the 14 NIAs in our service territory.

In 2011-12, BC Hydro supported home energy retrofits with Kwadacha First Nation (Fort Ware). More recently, we provided some support for the development of a video to tell that story and hopefully encourage other First Nations and remote communities to consider energy efficiency opportunities in their communities.

The video is now online and being shared by Kwadacha First Nation and the Fraser Basin Council: [https://youtu.be/3sEHF9k5xfw](https://youtu.be/3sEHF9k5xfw).

We’re currently working with the community to plan and implement additional home energy retrofits and to provide support for a local Energy Champion to work with community members on managing energy at home, work and school.

A First Nations Energy Efficient Buildings Policy Pilot ran from 2012 – 2016 where BC Hydro worked with First Nations and remote communities to develop, adopt and implement energy efficiency standards and requirements into their Housing Policies in order to improve energy performance in new and existing homes. Off-grid communities participating in the pilot included Kwadacha First Nation (Fort Ware) and the Skidegate Band (Haida Gwaii).

The Skidegate Band on Haida Gwaii has installed ductless heat pumps in roughly 350 homes in the community. The Band worked closely with our Home Energy Rebate Offer (HERO) Program Manager to ensure that the HPs would be eligible for HERO incentives. We’re now working with the Band on a plan to deliver home energy upgrades (e.g., air sealing, weatherization, etc.) in the community through a combination of HERO incentives and our Energy Conservation Assistance Program. As part of this work, we’re also exploring opportunities to train local tradespeople and build local capacity around home energy management. The Band has produced a video to tell the story of their Heat Pump Project: [https://youtu.be/f23JmolkhD4](https://youtu.be/f23JmolkhD4)
We’re currently conducting a demand side management pilot with First Nations and remote communities that incorporates lessons learned from previous pilots and looks to provide a more comprehensive offer to these communities in order to: (1) build energy literacy, (2) improve access to conservation opportunities, and; (3) develop local capacity to sustain energy management efforts over the long term. Pilot activities to date, specifically with off-grid communities, include:

Supporting a Community Energy Manager for the Coastal First Nations-Great Bear Initiative over the next 3 years. This person is working with several NIA communities (and other off-grid communities not served by BC Hydro) to provide education/training around energy management, advance home energy upgrades, and implement energy efficient housing policy.

Working in partnership with Fortis BC to support an Energy Specialist with the First Nations Energy and Mining Council. This position will act as an ‘energy coach’ for First Nation communities throughout BC (both on and off-grid).

Working with Kwadacha First Nation and Tsay Keh Dene to develop multi-year plans around how we will work together to build energy literacy, improve home energy performance and help residents manage their energy and energy costs into the future.

Senator McCoy: Thank you very much. First to BC Hydro, you mentioned reliability. What is your target for percentage of reliability?

BC Hydro a number of reliability indices, one of which is our Index of Reliability (IOR) or also known as ASAI - Average System Availability Index. It is defined as the percent of annual customer hours that service is available. For Fiscal 2015 our IOR was 99.9416% (actual) and 99.9651% (normalized for large weather events).

Senator McCoy: Both the federal and provincial government, what cost sharing arrangement do they have?

The funding breakdown for the initial 30 public fast charging stations was 47% federal and 25% provincial with the remaining funding from a combination of local government, BC Hydro and the private sector.

Senator McCoy: Thank you. Mr. Sandve, I'm not particularly familiar with Site C, but it did generate a fair amount of controversy on the environmental effects that its development caused. How many acres are going to be flooded as a result of developing Site C?

Senator McCoy: Thank you for forwarding the information. I'm also curious to know how many birds and animal species have been displaced and whether any human settlements have been displaced. I'll be curious to compare the statistics with the James Bay project, which I think might have been bigger than Site C. Both may in fact occupy territory, have a footprint that is bigger than all the oil sands developments put together.
All major infrastructure projects have environmental impacts and the Site C project is no different. BC Hydro recognizes that the project will have effects, most of which can largely be mitigated through careful project planning, comprehensive mitigation programs, and ongoing monitoring during construction and operations.

In providing environmental approvals, the provincial and federal governments concluded that the impacts of the project are justified by the benefits the project provides. These approvals come with conditions that BC Hydro must meet to build and operate the project.

BC Hydro studied the effects of Site C on wildlife during a cooperative federal-provincial environmental assessment process. BC Hydro’s studies concluded that the primary effect of the project on wildlife will be habitat alteration and fragmentation.

Throughout project construction, BC Hydro will take steps to avoid impacts on wildlife wherever feasible. For example, BC Hydro is taking great care to avoid or mitigate effects on active Bald Eagle nests during Site C construction, and will be erecting Bald Eagle nesting platforms along the reservoir shoreline. BC Hydro has also taken steps to collect and relocate amphibians found during construction work, such as toad, frog and salamander species.

The 83-kilometre-long reservoir will be, on average, two-to-three times the width of the current river, with a total reservoir surface area of approximately 9,330 hectares, including approximately 5,550 hectares of flooded land.

Once built, Site C will be a source of clean, renewable and cost-effective electricity in B.C. for more than 100 years.

But the challenge that we have, and this is where the second bullet, clean capacity resources, comes in, longer term is that within probably 10 years after we build the Site C Clean Energy Project and build out some of our existing hydroelectric assets, our key question is where does the next kind of tranche of firm reliable clean power come from. It's unlikely that we'll be building anymore large dams in British Columbia after Site C, so that requires looking at other sources, such as pumped storage, or geothermal or, in cases where it's required for regional reliability and so forth, we probably have to look at natural gas.

To clarify my remarks, I meant to say “within 10 years from today, after we build the Site C Clean Energy Project and build out some of our existing hydroelectric assets”