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Nunavut Maligaliurvia
Legislative Assembly of Nunavut
Assemblée législative du Nunavut

Return to Written Question

Asked by: Adam Arreak Lightstone, MLA
Iqaluit-Manirajak

Asked of: *Hon.* David Joanasie, Minister, Community and Government Services

Number: *3-6(2)*

Date: March 14

Subject: *Arctic Energy Fund*

Question:

1. What projects were funded in Nunavut under the Arctic Energy Fund for the following fiscal years:

    a. 2018-2019;
    b. 2019-2020;
    c. 2020-2021;
    d. 2021-2022; and
    e. 2022-2023 (to date)?

2. What were the outcomes of each project listed in response to question #1?

3. To what extent did each project listed in response to question #1 “support the transfer, in whole or in part, from fossil fuel-based systems to renewables”?

4. What process is used to determine which projects to submit for approval under the Arctic Energy Fund?

Response:

1. The Arctic Energy Fund works off a claim/reimbursement type structure. The Qulliq Energy Corporation must first incur eligible project costs before a claim or a request for reimbursement can be submitted to the Government of Nunavut through the Department of Community and Government Services.

   To date, based on the claims received from Qulliq Energy Corporation, the following projects received funding from the Arctic Energy Fund:

   a. 2018-2019
      - No projects received funding.
   b. 2019-2020
      - 578001 Power Plant Infrastructure Upgrades to improve energy efficiency and reliability in Rankin Inlet, Coral Harbour, Chesterfield Inlet and Pond Inlet.
      - 578003 Power Plant Infrastructure Upgrades to improve energy efficiency and reliability in Pond Inlet, Clyde River, and Whale Cove.
      - 578004 Powerplant Replacement in Kugluktuk to Improve Energy Efficiency and Reliability - Plan and Design.
   c. 2020-2021
      - 578001 Power Plant Infrastructure Upgrades to improve energy efficiency and reliability in Rankin Inlet, Coral Harbour, Chesterfield Inlet and Pond Inlet.
      - 578002 Renewable Solar Energy and Storage System Installation in Kugluktuk.
      - 578003 Power Plant Infrastructure Upgrades to improve energy efficiency and reliability in Pond Inlet, Clyde River, and Whale Cove.
      - 578004 Powerplant Replacement in Kugluktuk to Improve Energy Efficiency and Reliability - Plan and Design.
   d. 2021-2022
      - 578002 Renewable Solar Energy and Storage System Installation in Kugluktuk.
      - 578003 Power Plant Infrastructure Upgrades to improve energy efficiency and reliability in Pond Inlet, Clyde River, and Whale Cove.
      - 578004 Powerplant Replacement in Kugluktuk to Improve Energy Efficiency and Reliability - Plan and Design.
   e. 2022-2023 (To date)
      - 578002 Renewable Solar Energy and Storage System Installation in Kugluktuk ***This project has recently been cancelled due to cost escalations.**
      - 578004 Powerplant Replacement in Kugluktuk to Improve Energy Efficiency and Reliability - Plan and Design.

2. As per the INVESTING IN CANADA INFRASTRUCTURE PROGRAM Agreement, projects eligible for Arctic Energy Fund contribution funding must meet the following outcome: **More efficient and/or reliable energy**.
      - 578001 – The project will replace four unreliable and/or inadequate diesel power generator sets with more energy efficient sets that are more reliable and can maintain the energy generation requirement of the community. The energy efficiency is expected to increase from 3.61 to 3.9 kilowatts per litre of fuel.

- 578002 – The project will help mitigate the effects of climate change by reducing the amount of fossil fuels consumed by the power plant in Kugluktuk (reduction in greenhouse gas emissions).***This project has recently been cancelled due to cost escalations.**
- 578003 – The project will replace three unreliable and/or inadequate diesel power generator sets with more energy efficient sets that are more reliable and can maintain the energy generation requirement of the community. The energy efficiency is expected to increase from 3.61 to 3.9 kilowatts per litre of fuel.
- 578004 – The project will install a more energy efficient 2.6 MW diesel powered plant and rebuild the structure including internal systems, pile foundation system, and distribution system to the community grid.

3. The sole aim of the Arctic Energy Fund is to enhance energy efficiency and reliability in the north. Under this major construction initiative, the focus is ensuring Nunavut maintained a reliable and affordable source of electricity - realizing the old, outdated technologies will be replaced with new more advanced and energy efficient technologies.

   Low customer densities and a harsh climate have a profound impact on Quilliq Energy Corporation's operations. The harsh climate requires a highly reliable and continuous power supply in Nunavut. This creates a large dependence on diesel generation as it is the only source of energy in Nunavut that is safe, reliable, and economical.

   Therefore, all projects with the exception of the solar project, listed in question number one (1) focused on replacing old, outdated, unreliable diesel generating infrastructure with more reliable, energy efficient, diesel generating infrastructure.

   For the Quilliq Energy Corporation to integrate renewable energy within Nunavut power systems, renewable energy has to be combined with the diesel generating power plant as a way to produce energy and reduce diesel consumption. Diesel powered energy provides guaranteed firm power at the level required by a community's power demand for any period of duration and any time of the year. However, wind and solar powered energy is more of a supplemental, intermittent power that is unpredictable, and changes based on weather and seasonal conditions. To responsibly incorporate renewable energy sources into the generation mix, Quilliq Energy Corporation must consider the financial implications. The cost of introducing renewable energy into Nunavut's communities must consider the Quilliq Energy Corporation's customers, who already pay the highest electricity rates across Canada.

   The Quilliq Energy Corporation is very interested in renewable energy and secured additional funding to install a solar component to the new power plant for Kugluktuk. Unfortunately, the tender bids for the Kugluktuk hybrid plant project escalated well beyond the funding limits and Quilliq Energy Corporation could not pass these costs on to its customers. Therefore, the renewable solar project had to be cancelled.

4. These projects are required to replace aging infrastructure and to ensure Quilliq Energy Corporation is able to meet the energy needs of Nunavut's communities. Quilliq Energy Corporation identified complete power plant rebuilds and generator set replacements across the territory in communities based on condition and reliability. Selections were

prioritized to replace infrastructure in communities that were at greatest risk of unstable energy supply.