

BRIEFING NOTE

Federal Engagement on Atlin Hydro Expansion Project Funding

KEY ISSUES

- The Atlin Hydro Expansion Project (the Project) has a funding shortfall of up to **\$76 million** (\$56 million per actual quotes plus up to \$20 million due to potential further price escalation).
- To maintain a commissioning date of October 2025, the entire capital structure must be committed by spring 2023 and an early non-repayable contribution of \$20 million must be secured by the same time to begin early construction activities by March 2023.

KEY PROJECT BENEFITS

- This is a ground-breaking project and is unique in Canada. It is a transboundary generation and transmission project that has the support of both affected First Nations and jurisdictions.
- The Project is entirely Indigenous-owned by Taku River Tlingit First Nation's (TRTFN) development corporation, which has successfully managed its existing hydro facility.
- The Project will supply clean winter electricity and add 6% of renewable capacity to Yukon's main grid. This reduces the use of fossil fuels when electricity demand is at its highest, increases energy security in the North, and keeps pace with increasing critical mining activity.
- The Project is a gateway to subsequent projects in Yukon Energy's 10-Year Renewable Electricity Plan, and is critical to Yukon reaching its climate goals and being net-zero by 2050.
- TRTFN's work with Carcross/Tagish First Nation (C/TFN) to gain their support has resulted in an agreed path for both First Nations to work towards the next project in Yukon Energy's plan – the Moon Lake Pumped Storage Project. These projects will get Yukon closer to having a 100% renewable electricity grid.
- The Project will have real benefits for TRTFN and C/TFN citizens and is a meaningful step towards economic reconciliation.

CONTEXT

- The Project's capital cost escalated due to supply chain issues, high gas prices, commodity price volatility, inflation, and a weak Canadian dollar. Due to 15- to 30-day contract price holds, the cost may increase again when the August contracts are refreshed.
- The entire capital structure must be committed before the Canada Infrastructure Bank (CIB) will lock in the interest rate. For every 1% increase in interest rate, the loan amount decreases and the grant requirement increases by \$15 million.
- The Project has a total of \$254.3 million in funding notionally committed (see table below).
- Up to an additional \$9 million in federal grants was potentially identified during the November 28-29 meetings in Ottawa.

- \$20 million in early non-repayable contributions have been identified by CIB, BC and Canada.

FUNDING STACK BREAKDOWN

Secured and Notional Funding:

Funder	Funding Source	Amount
Proponent (Equity)	Tlingit Homeland Energy LP (THELP) Equity Investment	\$3.2 million
Canada (Grants)	CanNor – IDEA North	\$6.0 million
	NRCAN – Clean Energy for Rural and Remote Communities (CERRC)	\$2.9 million
	NRCAN – Smart Renewables and Electrification Pathways Program (SREP)	\$50.0 million
	NRCAN / CIRNAC – Off-Diesel HUB	\$10.0 million
	ECCC – Low-Carbon Economy Fund (LCEF)	\$32.2 million
	Canada (Grants) Sub-Total	\$101.1 million
Canada Infrastructure Bank (Loan)	Low-Interest Loan	\$80.0 million
Yukon (Grant)		\$50.0 million
BC (Grant)		\$20.0 million
Total Secured and Notional Funding		\$254.3 million

Identified Early (Non-Repayable) Contributions:

Funder	Amount	Notes
Canada (Grant)	\$6.0 million	CIRNAC has signalled that it will approach the funding through the Hydro Feasibility and Planning Fund as contribution matching with Yukon government.
British Columbia (Grant)	\$10.0 million	The Proponent must meet the following milestones before the funding can be released (1) unconditional support from TRTFN is given and (2) BC permits are issued.
Canada Infrastructure Bank (Loan)	\$3.0 - \$5.0 million	This will be sourced through an Accelerator Fund, which is an early loan advance. Should the project not proceed, the loan will non-repayable.
Yukon	To be determined	
Total	\$19.0 - \$21.0 million	

BRIEFING NOTE
Event / Engagement
May xx, 2023

ISSUE: Critical Minerals

KEY ISSUES

- Critical minerals are vital to supporting Canada's economic security and the transition to a low-carbon economy.
- The Yukon is well positioned to contribute to the development of a critical minerals industry in Canada and to enhance critical mineral supplies through exploration, supply chain infrastructure development, and extraction.

CONTEXT

- The Yukon supports the development of our critical minerals to contribute to advancing Our Clean Future goals and support Canada's critical minerals strategy.
- Critical minerals are a driver for the Yukon's proposed priorities at the Regional Energy and Resource Table.

SPEAKING POINTS

- *Mining plays a central role in the transition to a green economy. Critical minerals are vital to low carbon technologies in batteries, wind turbines, solar panels and electric vehicles.*
- *Through our 2021 Yukon Critical Minerals Inventory, we know that the Yukon hosts a number of deposits containing critical minerals, including primary deposits of copper, zinc, molybdenum, tungsten, tin, nickel and platinum group elements.*
- *The Government of Yukon sees an opportunity to contribute to the transition to a low-carbon economy through our deposits of critical minerals.*
- *Our territory does not have smelting or processing facilities, nor the capacity to manufacture electric vehicles, wind turbines or solar panels,*
- *Expanding the scope of existing federal funding programs in recognition of the connection between current mining practices and our "green" future, which relies on critical minerals, would be helpful in meeting our shared priorities.*
- *In Our Clean Future, we have committed to reducing our greenhouse gas emission by 45 percent by 2030, as compared to 2010.*

PROVINCIAL/TERRITORIAL POSITIONS / YUKON FIRST NATIONS POSITIONS

- With heightened expectations towards public engagement and Indigenous governments' involvement in resource development decision-making process, local support is essential for successful mineral development.

BACKGROUND

Canada's Transition to Clean Energy

- Starting in the 2022-23 fiscal year, Canada is providing \$3.8 billion over eight years to implement its Critical Mineral Strategy, including \$1.5 billion for infrastructure, \$79.2 million for geoscience data, and a new tax credit for specified mineral exploration expenses.
- The 2022 federal budget commitments also included \$103.4 million to promote sustainable mining and extraction processing which targets benefit sharing with Indigenous groups. At least \$25 million of this amount will be dedicated to early engagement and capacity building.
- The Yukon's Our Clean Future sets ambitious goals for increasing our renewable energy resources. Critical minerals are essential for the successful implementation of Our Clean Future.
- Critical minerals supplies worldwide are vulnerable to disruption due to geopolitical events. Canada can be a sustainable source of strategic critical minerals for partners and allies.
- There is significant potential for the Yukon to contribute to the Canada-US Joint Action Plan on Critical Minerals.

Critical Minerals in the Yukon

- Mining is a significant contributor to the Yukon's economy, constituting 14.5 per cent of GDP in 2020.
- The Yukon has primary deposits for eight critical minerals: copper (electricity), zinc (anode in material batteries), tungsten (strengthening metals), nickel (metal coatings), cobalt (EV batteries), platinum group metals (catalytic agents), molybdenum (alloy steel), and tin (protective metal coatings).
- In 2022, the Yukon is seeing exploration activity for the following seven critical minerals: copper, zinc, tungsten, nickel, cobalt, platinum group metals, and rare earth elements.
- Federal funding to support emissions reduction initiatives, such as Yukon-British Columbia Grid Connect, would benefit mining companies that are trying to develop the Yukon's critical mineral resources while meeting greenhouse gas emissions targets.

Tidewater access

- Tidewater access for mineral exports remains a priority for the territory.

76(1)

BRIEFING NOTE
Event / Engagement
May XX, 2023

ISSUE: Regional Energy and Resource Tables

KEY ISSUES

- In July 2022, at the Energy and Mines Ministers Conference, the Government of Canada proposed a formal process to develop and implement place-based economic strategies that would enable Canada to realize a net-zero economy.
- 74(1)(a)
- 74(1)(a)

CONTEXT

- The Regional Energy and Resource Tables are a part of the Government of Canada's climate change strategy. Natural Resources Canada (NRCan) has initiated a dialogue with the Government of Yukon to identify priority themes related to NRCan's mandate that will lead to an agreement on priorities.
- The Regional Energy and Resource Tables are intended to identify, prioritize and pursue opportunities for sustainable job creation and economic growth for a low-carbon future in the energy, electricity, mining, forestry and clean technology sectors across Canada.
- The Regional Energy and Resource Tables utilized the following steps when working with provinces and territories:
 - identification of priorities;
 - development of action plans;
 - completion of Indigenous engagement; and
 - creation of place-based economic strategies.

SPEAKING POINTS

- *The Yukon's energy landscape is rapidly transforming and our demand for renewable electricity is expected to surpass what we can supply within our own borders in the coming years.*
- *The Government of Yukon is working to achieve 97 per cent renewable electricity on the main grid. Short-term renewable energy projects such as the Atlin Hydro Expansion Project*

and the Moon Lake Pumped Storage Project are key to meeting our renewable energy and climate change commitments.

- *Over the long-term, the Yukon – British Columbia Grid Connect Project would be a key support in achieving and maintaining the 97 per cent renewable electricity standard.*
- *Increasing the Yukon's renewable electricity supply supports our ambitious electrification goals to reduce greenhouse gas emissions from the two largest emission sources: transportation and heating.*
- *We have a growing mining industry, and as demand for critical minerals increases, so does the need for mining operations to produce efficiently.*
- *A skilled workforce is a key aspect of meeting our goal of achieving and maintaining net-zero emissions by 2050.*
- *The Government of Yukon is working on the delineation of its priority areas in advance of returning to the Regional Table to begin work with the parties.*
- *We would like to acknowledge that in a small jurisdiction, resourcing a process such as the Regional Energy and Resource Table, is a substantive commitment.*
- *As such, we would welcome an opportunity to discuss how to focus these discussions on projects that are at a scale that will warrant substantive effort and to understand how funding will be allocated to projects that are actioned through these processes.*
- *We look forward to working with Canada and First Nations governments to advance our shared priorities.*

PROVINCIAL/TERRITORIAL POSITIONS / YUKON FIRST NATIONS POSITIONS

- Proposals advanced to the Regional Table are an opportunity to align Canada, Yukon, and Yukon First Nation climate change and critical minerals priorities.

BACKGROUND

- The Government of Canada initiated phase one tables in June 2022 with British Columbia, Newfoundland and Labrador, and Manitoba.
- Phase Two was announced in October 2022, and will include New Brunswick, Nova Scotia, Prince Edward Island, the Northwest Territories, and the Yukon.
- Energy, Mines and Resources' Energy Branch is leading the development of a list of priority areas and projects. Items under consideration include:
 - Energy security and enabling infrastructure through British Columbia – Yukon Grid Connect Project.
 - Supporting critical minerals through regulatory reform consisting of streamlined class assessments, terms and conditions management, new minerals legislation and a reduction of redundancies within mine licensing processes (e.g., Waters Act).

- Land management certainty through regional land use planning. This priority is linked to development of both energy and critical minerals initiatives.
- The Government of Canada has indicated a desire to work on the timelines and processes suggested by the Yukon. The entire process is likely to continue for several years.

Key Priorities for Consideration:

Priority area	Overview	Potential projects
Renewable electricity supply and storage	Increasing renewable generation on Yukon's grid to address the winter peak and expected demand increases from electrification and mining.	<ul style="list-style-type: none"> ● Exploring a transmission link to B.C. ● Moon Lake pumped storage project ● Southern Lakes enhancement ● Grid infrastructure and smart grid upgrades
Critical minerals	Future energy security depends on a reliable supply of critical minerals, such as copper and silver.	<ul style="list-style-type: none"> ● Exploration for critical minerals development ● Environmental stewardship programs for quartz mining operations ● Developing critical minerals recycling programs
Energy needs for mining	As demand for critical minerals increases, it is important that mining activities be energy efficient.	<ul style="list-style-type: none"> ● Pilots for heavy duty electric equipment and electric vehicles ● Renewable fuels pilots for generation or transportation ● Grid infrastructure upgrades for grid-connected mines
Energy retrofits and growing the green economy	Through <i>Our Clean Future</i> , Yukon committed to completing 2000 residential, commercial, and institutional building retrofits by 2030. Retrofits are currently not easily	<ul style="list-style-type: none"> ● Support for professional development efforts for skilled trades ● Improving access to affordable retrofits for First Nation owned housing ● Establishing a resilient supply chain for building materials ● Ensuring equitable access for all genders and First Nations people to

Priority area	Overview	Potential projects
	accessible due to cost and labour market issues, such as a lack of availability of the necessary skills.	benefit from opportunities in the green economy

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Information Note

YG Energy Interests in C/TFN Traditional Territory

Executive Council office
Yukon Development
Corporation

Issue

- The Premier will meet with the Haa Shaa du Hen of the Carcross/Tagish First Nation (C/TFN), Maria Benoit on August 3, 2023 and it is anticipated that energy projects will form part of the agenda.

Context

- C/TFN has informally requested mediation with Yukon government (YG) on a number of diverse issues, including the Atlin Hydroelectric Expansion Project.
- On February 14, 2023, Yukon Development Corporation (YDC) was requested by the then Deputy Minister of Executive Council Office (ECO) to prepare a “C/TFN Energy Mandate”. Given the mediation request and the approval of a mandate for the relicensing of the WRGS, whether this request still stands is unclear.
- C/TFN has expressed a strong interest in resolving – or at least securing a commitment to resolve – many complex and inter-related issues prior to developing clear positions of support (or non-opposition) on individual projects.
- Both Atlin and Whitehorse Rapids Generating Station relicensing are near term and many of the concerns C/TFN require longer term processes, to be resolved collaboratively, through the government-to-government relationship.
- The resolution of broader issues also requires C/TFN to take actions that they have not been able to fulfill to date in which YG has a limited or no role (e.g. advancing or removing the litigation related to Ten Mile/land use planning, nation-rebuilding activities, or significant process towards resolution of their claim in British Columbia (BC)).

Background

- Starting in March 2022, Aboriginal Relations (AR) began to engage with C/TFN on a number of C/TFN interests, which were brought up in the context of energy projects in the Southern Lakes.
 - Atlin Hydro Expansion Project
 - C/TFN has written to both YG and Canada to express their view that consultation on the Project has been insufficient to date.
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Information Note

YG Energy Interests in C/TFN Traditional Territory

Executive Council office
Yukon Development
Corporation

- Land Management Branch is the Decision Body for YG and Canada is considering whether they are a Decision Body, because they are providing funding for the Project.
- Throughout the summer of 2022, AR has convened a mediation process between the Proponent and C/TFN, guided by an external energy expert, to facilitate the negotiation of a Project Agreement between the Proponent and C/TFN directly.
- A jointly developed document was created and agreed to in the fall of 2022.
- YDC has confirmed with THELP that the labour force requirements do not trigger the Project Agreement provisions of Chapter 22, Schedule A. However, C/TFN maintains the view that other Chapter 22 requirements are triggered, but have expressed some willingness to agree that they have been addressed through the mediation process with THELP.
- A Decision Document was issued for the Project on July 7, 2023. Consultation has been initiated on the Land Use Permit and Licence of Occupation. A Highway Right of Way permit will also be required.
- Canada has not concluded consultation on the federal Decision Document, which will be issued separately. No federal permits or authorizations are required in the Yukon. Canada is a Decision Body by nature of being a funder of the Project.
- Natural Resources Canada has indicated that they will not require a letter of support from C/TFN to fund the Project.
- Whitehorse Rapids Generating Station Relicensing
 - A Framework Agreement to guide negotiations related to the WRGS was executed in December 2022.
 - C/TFN is particularly concerned about the impact of the relicensing and the need to address historical impacts on salmon.
 - C/TFN, alongside KDFN and TKC, is lobbying Canada to address historical impacts of the WRGS, consistent with the *Northern Canada Power Transfer Agreement* from 1985.

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Information Note

YG Energy Interests in C/TFN Traditional Territory

Executive Council office
Yukon Development
Corporation

- Council of Yukon First Nations Energy Conference
 - The Council of Yukon First Nations has received funding to host an energy conference in fall 2023.
 - YDC will participate in the Steering Committee to assist in organizing the conference. C/TFN, to date, has not joined the committee.
 - It is anticipated that YDC will assist, alongside ATCO, in organizing a session on First Nation equity ownership in utilities, which has been a key interest brought forward by C/TFN in several energy conversations, including through the WRGS relicensing.
- Carcross Solar Project
 - Carcross Tagish Management Corporation has applied to YDC's Arctic Energy Fund to support the construction of its proposed solar project.
 - YDC has indicated that it will not be able to fund the Project as Arctic Energy Fund requires on-grid projects to start by September 30, 2023.
 - \$200,000 in Innovative Renewable Energy Initiative funding is available for the Project next fiscal year (2023-2024).
- Future Projects
 - C/TFN has expressed concerns about the level of engagement by YEC in planning and identifying future projects.
 - YEC is initiating an Integrated Resource Planning process in fall 2023 and it is unclear at this time whether projects, such as Skagway and Moon Lake, will continue to be part of the plan.
 - Skagway Port Redevelopment and Grid Interconnection
 - The Skagway Port Redevelopment of the Ore Peninsula has completed 60 per cent design. There are elements in the design to include electrifying the births with a future view to have shore power available to cruise vessels.

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Information Note

YG Energy Interests in C/TFN Traditional Territory

Executive Council office
Yukon Development
Corporation

While the Municipality of Skagway has expressed interest in having shore power available, the current generation capacity won't allow for it.

- 74(1)(a)
- 74(1)(a)

○ Moon Lake Pumped Storage Project

- The Moon Lake Pumped Storage Project is the second project in Yukon Energy's 10-year plan and would provide dependable winter capacity on the main grid.
- The project is stalled due to lack of clarity on the ownership model between affected First Nations and Yukon Energy.
- C/TFN has expressed that they do not believe that Moon Lake is the most appropriate location for a pumped storage facility within their Traditional Territory and have expressed an interest for incorporating energy planning within their Indigenous Land and Water Planning Process. YEC has written to C/TFN to commit to participating.

○ Yukon-BC Grid Interconnection

- C/TFN is anticipated to be an affected First Nation by the proposed routing of the transmission line to connect the British Columbia and Yukon grids.

Session Briefing Note 2023

Spring

Diesel Replacement Project

Yukon Energy
Corporation

Recommended response

- Yukon Energy is replacing its diesel generators that have either already retired, or are expected to reach end-of-life in the next five years in Faro, Dawson and Whitehorse.
- No additional diesel capacity is being added to the grid that hasn't already existed.
- The replacement diesel generators in Faro are expected to be in service in late 2023. The new generators in Whitehorse and Dawson are expected to be in service in the summer of 2024.
- When the diesel replacement project is complete, two fewer rental diesels will be needed each winter to meet peak demands for power.

Additional response

About cost and rental displacement

- At this time, the project to replace end-of-life diesel generators in Whitehorse, Dawson and Faro is expected to cost about 49 million dollars.
- The project's budget has increased by about 4 million since last year – due primarily to inflationary increases seen in industries across Canada.

Session Briefing Note 2023

Spring

Diesel Replacement Project

Yukon Energy
Corporation

- However, the project still remains within the last year's cost estimate range of minus 30 per cent to plus 50 per cent.

About the need to replace end-of-life diesel units

- Diesel plays a small but important role in Yukon's electricity mix.
- Available at the flip of a switch, diesel helps keep Yukoners' lights on when demand for electricity is high, and during hydro and transmission line maintenance.
- Diesel also helps Yukon Energy restore power outages quickly for Yukoners.

About engagement

- Last fall, residents in Dawson City were informed about Yukon Energy's plans to replace two end-of-life diesel generators at the downtown power plant with one new diesel engine at the Callison substation.
- Information about the Faro and Whitehorse diesel replacements will be shared with area residents as the projects advance.

Session Briefing Note 2023

Spring

Diesel Replacement Project

Yukon Energy
Corporation

- Like all other new energy projects, YESAA proposals will be submitted for this project. Yukoners can share their views about this project as part of that process.

Context—this may be an issue because:

The Opposition may ask why Yukon Energy is installing more diesel.

Background

- The 10-Year Renewable Electricity Plan included the replacement of 12.5 MW of retiring diesel units.

Location	Diesel capacity retired/retiring	Diesel capacity being installed	Forecast in-service date
Faro	5.1 MW (upcoming retirement)	5 MW	Q4 2023
Whitehorse Rapids Diesel Plant	5 MW (previously retired)	5 MW	Late Q2 or early Q3 2024
Dawson City	2.5 MW (upcoming retirement)	2.5 MW (relocated to Callison substation)	Q2 2024

- The dependable capacity from these projects helps to address the existing and forecast capacity shortfall under the N-1 planning criterion.
- Yukon Energy conducted a feasibility study for the option to replace end-of-life diesel generators in Whitehorse with natural gas engines, however, the study found that the capital costs of the natural gas engines were higher than the diesel engine solution.

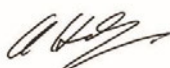
Session Briefing Note 2023

Spring

Diesel Replacement Project

Yukon Energy
Corporation

Approved by:



January 20, 2023

President and CEO, Yukon Energy

Date approved

Session Briefing Note

TAB E_2 Fall 2023

Integrated Resource Planning

Yukon Energy Corp

Recommended response

- Yukon Energy is working towards a cleaner energy future while ensuring Yukoners have access to reliable and affordable energy.
- As more Yukoners make the shift to electric heat and transportation, Yukon's electricity system needs to get bigger, cleaner and smarter.
- Investments in all aspects of the Yukon's electricity system – generation, transmission, distribution and end-use – will be critical to ensuring Yukoners have the power they need when and where they need it.
- Knowing this, Yukon Energy will be updating its 10-Year Renewable Electricity Plan next year to identify the projects, investments and strategic partnerships needed to build Yukon's sustainable energy future.
- The update will consider multiple resource options, including resources we currently use and others that are new to the Yukon.
- The process will include discussions with First Nations rightsholders, governments and Yukoners more broadly.

Additional response

- The update will be informed by extensive modelling and analysis of a range of potential future scenarios, which will be driven by stakeholder input.
- It will consider how existing and potential government actions at all levels are impacting the energy landscape.
- It will also consider connection to the BC grid as a potential, long-term option.
- Yukon Energy expects the updated plan to be ready in late 2024.

Context—this may be an issue because:

- The role thermal resources will play in the Integrated Resource Plan.

Session Briefing Note

TAB E_2
Fall 2023

Integrated Resource Planning

Yukon Energy Corp

Background:

- Yukon Energy started its Integrated Resource Planning with a workshop facilitated by E3 in May 2023.

Approved by:

Deputy Minister, Department

[Date approved]

Session Briefing Note

TAB B_2.1**Fall 2023**

Thermal replacement project

Yukon Energy Corp

Recommended response

- Diesel plays a small but important role in Yukon's electricity mix, helping to keep Yukoners' homes and businesses warm and the lights on when there isn't enough hydro power available.
- As part of its thermal replacement project, Yukon Energy is replacing diesel generators in Faro, Dawson and Whitehorse that have either already retired, or are expected to reach end-of-life in the next five years.

Additional response

- Yukon Energy's Whitehorse Thermal Permitting Project and Thermal Replacement Project are two different projects. One is about permits, the other about diesel engines.
- The permitting project is about renewing Yukon Energy's current air emissions permit in Whitehorse. This permit allows the Corporation to use both LNG and diesel to generate electricity at their facility in Whitehorse.
- The Thermal Replacement Project in Whitehorse is about replacing two previously retired diesel engines with two new diesel units.
- The Callison Generation Permitting Project in Dawson City is related to the Thermal Replacement Project in Dawson.
- Before Yukon Energy can retire and relocate the two diesel engines that have reached end-of-life in downtown Dawson to the Callison substation, it first needs to do a YESAB assessment and get an air emissions permit for the Callison site.
- Next winter, Yukon Energy will be installing 6.5 megawatts of diesel at the Callison substation to make sure there is enough back-up diesel power in Dawson City to keep power flowing in the community in case of an emergency.
- Assessing the affects of 15.5 megawatts of diesel power at Callison now allows Yukon Energy to plan for future growth, asset retirement and

Session Briefing Note

TAB B_2.1

Fall 2023

Thermal replacement project

Yukon Energy Corp

relocation, and the integration of more renewables in the future more effectively.

Context—this may be an issue because:

- Yukon Energy previously stated it would not be adding more diesel generators; however it will now be adding more diesel capacity in Dawson.

Background

- The 10-Year Renewable Electricity Plan included the replacement of 12.5 MW of retiring diesel units.

Location	Diesel capacity retired/retiring	Diesel capacity being installed	Forecast in-service date
Faro	5.1 MW (upcoming retirement)	5 MW	Q3 2024
Whitehorse Rapids Diesel Plant	5 MW (previously retired)	5 MW	Q1 2025
Dawson City	2.5 MW (upcoming retirement)	6.5 MW (relocated to Callison substation) 15.5 MW being permitted	Q4 2024

- Yukon Energy conducted a feasibility study for the option to replace end-of-life diesel generators in Whitehorse with natural gas engines, however, the study found that the capital costs of the natural gas engines were higher than the diesel engine solution.

Approved by:

Deputy Minister, Department

[Date approved]

Session Briefing Note

TAB #20

Fall 2023

Integrated Resource Planning

Yukon Energy Corp

Recommended response

- Yukon Energy is working towards a cleaner energy future while ensuring Yukoners have access to reliable and affordable energy.
- As more Yukoners make the shift to electric heat and transportation, Yukon's electricity system needs to get bigger, cleaner and smarter.
- Investments in all aspects of the Yukon's electricity system – generation, transmission, distribution and end-use – will be critical to ensuring Yukoners have the power they need when and where they need it.
- Knowing this, Yukon Energy will be updating its 10-Year Renewable Electricity Plan next year to identify the projects, investments and strategic partnerships needed to build Yukon's sustainable energy future.
- The update will consider multiple resource options, including resources we currently use and others that are new to the Yukon.
- The process will include discussions with First Nation and public governments, as well as Yukoners more broadly.

Additional response

- The update to the Resource Plan will be informed by extensive modelling and analysis of a range of potential future scenarios, which will be driven by stakeholder input.
- It will consider how existing and potential government actions at all levels are impacting the energy landscape.
- It will also consider connection to the British Columbia grid as a potential, long-term option.
- Yukon Energy expects the updated plan to be ready in late 2024.

Session Briefing Note**TAB #20****Fall 2023****Integrated Resource Planning**

Yukon Energy Corp

Context—this may be an issue because:

- The Opposition has raised questions about whether Yukon Energy is able to complete the projects in the 2016 Integrated Resource Plan.

Background:

74(1)(a)

Approved by:_____
President and CEO, Yukon Energy_____
Date approved

Session Briefing Note

TAB #20

Fall 2023

Integrated Resource Planning

Yukon Energy Corp

Session Briefing Note

TAB #B-9**Fall 2023**

Atlin Hydro Expansion Project

Yukon Development
CorporationYukon Energy
Corporation

Recommended response:

- Supporting the implementation of the Atlin Hydro Expansion Project is a priority for Yukon government and a key component of Yukon Energy's 10-Year Renewable Electricity Plan.
- To date, our government has committed \$50 million to the construction of the Atlin Project.
- This Indigenous-owned project is expected to deliver 34 gigawatt hours of clean winter power each year and displace our need to rent four diesel generators.
- Increasing dependable capacity on our main electrical grid by 8.75 megawatts, the Atlin Project will reduce greenhouse gas emissions while ensuring rates remain low for Yukoners.

Additional response:

- While the Atlin Project has received significant grant funding, inflation and supply chain disruptions have increased costs, resulting in a funding gap.
- The funding gap has also resulted in delays to the Project. It is now anticipated to come online in 2026 or 2027.
- Assisting the Proponent, Taku Homeland Energy Limited Partnership, to close the funding gap has led to intensive intergovernmental collaboration with the governments of Canada and British Columbia.

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TAB #B-9

Fall 2023

Atlin Hydro Expansion Project

Yukon Development
Corporation
Yukon Energy
Corporation

- Through this project, our government can advance economic reconciliation with the Taku River Tlingit First Nation.
- As the largest Indigenous proponent-led energy project that the Yukon has been involved with to date, it is also teaching us many lessons that will be applied as additional projects are advanced to fill the widening renewable energy gap.
- As the project continues through the development phase, there is continual due diligence being doing to ensure that the Project will bring the expected benefits to Yukoners in a manner that advances climate change goals, and is also affordable and reliable.

Context—this may be an issue because:

- The funding gap and delays to the Project have received a lot of attention in the media and from the Opposition.
- Permits for the Project in Yukon are anticipated to be issued during Session.

Background:

- The Proponent (THELP) plans to expand the existing Atlin hydro facility by leveraging the water storage capability of Surprise Lake and connect to the Yukon grid with a 69 kV transmission line from the power plant in Atlin, BC to Jakes Corner in the Yukon. The line will follow the Atlin Highway right-of-way for the majority of the route.
- The total project cost is estimated to be up to \$360 million, which includes:
 - \$76 million in identified funding need;
 - \$20 million contingency for price increases when contractor and supplier quotes are refreshed; and

Session Briefing Note

TAB #B-9

Fall 2023

Atlin Hydro Expansion Project

Yukon Development
Corporation
Yukon Energy
Corporation

- \$30 million to account for up to an interest rate increase in their Canada Infrastructure Bank loan.
- Current notional and secured grant and loan break down is:
 - Government of Canada: \$101.1 million (grant)
 - Government of Yukon: \$50 million (grant)
 - Government of British Columbia: \$20 million (grant)
 - Canada Infrastructure Bank: \$80 million (loan)
- While the funding stack was completed for this project in the summer of 2022, due to inflation, delays and other cost increases, the funding gap is estimated at up to \$106 million.
- The Commissioning Date is currently projected for fall 2026 or 2027 and is dependent on when the full funding stack is complete.
- The interest rate for the \$80 million Canadian Infrastructure Bank loan is unknown at this time.
- The project will:
 - Add 8.7 megawatts of dependable capacity, primarily in winter when peak electricity occurs;
 - Generate about 34 gigawatt hours of electricity each year; Eliminate the need for four rental diesels;
 - Reduce nine million litres of diesel per year;
 - Reduce greenhouse gas emissions by a projected 27,500 tonnes per year; and
 - Create 176 full-time employment positions during the construction phase of the Project and six to eight positions during operation.
- The project is reviewable under the BC Clean Energy Project Development Plan process, which is expected to be completed in early 2024.
- A Decision Document has been issued by Yukon government for the Yukon-portion of the Project. Consultation with Carcross/Tagish First Nation and Taku River Tlingit First Nations is ongoing for the required permits.

Session Briefing Note

TAB #B-9

Fall 2023

Atlin Hydro Expansion Project

Yukon Development
Corporation

Yukon Energy
Corporation

- Canada has not completed consultation on the federal Decision Documents and timeline for completion are unknown.
- The Energy Purchase Agreement between the Proponent and Yukon Energy Corporation was reviewed by the Yukon Utilities Board (YUB), who concluded that the project was necessary to meet climate change goals.

Approved by:



August 31, 2023

President, Yukon Development Corporation

Date approved

President, Yukon Energy Corporation

Date approved

Session Briefing Note

TAB #E-20**Fall 2023**

Integrated Resource Planning

Yukon Energy Corp

Recommended response:

- Yukon Energy is working towards a cleaner energy future while ensuring Yukoners have access to reliable and affordable energy.
- As more Yukoners make the shift to electric heat and transportation, Yukon's electricity system needs to get bigger, cleaner and smarter.
- Investments in all aspects of the Yukon's electricity system – generation, transmission, distribution and end-use – will be critical to ensuring Yukoners have the power they need when and where they need it.
- Knowing this, Yukon Energy will be updating its 10-Year Renewable Electricity Plan next year to identify the projects, investments and strategic partnerships needed to build Yukon's sustainable energy future.
- The update will consider multiple resource options, including resources we currently use and others that are new to the Yukon.
- The process will include discussions with First Nation and public governments, as well as Yukoners more broadly.

Additional response:

- The update to the Resource Plan will be informed by extensive modelling and analysis of a range of potential future scenarios, which will be driven by stakeholder input.
- It will consider how existing and potential government actions at all levels are impacting the energy landscape.
- It will also consider connection to the British Columbia grid as a potential, long-term option.

Session Briefing Note

TAB #E-20**Fall 2023**

Integrated Resource Planning

Yukon Energy Corp

Context—this may be an issue because:

- The Opposition has raised questions about whether Yukon Energy is able to complete the projects in the 2016 Integrated Resource Plan.

Background:

- Yukon Energy started its Integrated Resource Planning with a workshop with Yukon government facilitated by an external consultant E3 in May 2023.
- Next steps will include engagement with First Nation and public governments, as well as Yukoners.
- Yukon Energy expects the update to the Resource Plan will be ready by spring 2024.

Approved by:

President and CEO, Yukon Energy

Date approved

Session Briefing Note**Fall 2023****Atlin Hydro Expansion Project**Yukon Development
CorporationYukon Energy
Corporation

Recommended response:

- Supporting the implementation of the Atlin Hydro Expansion Project is a priority for Yukon government and a key component of Yukon Energy's 10-Year Renewable Electricity Plan.
- To date, our government has committed \$50 million to the construction of the Atlin Project.
- This Indigenous-owned project is expected to deliver 34 gigawatt hours of clean winter power each year and displace our need to rent four diesel generators.
- Increasing dependable winter capacity on our main electrical grid by 8.75 megawatts, the Atlin Project will reduce greenhouse gas emissions while ensuring rates remain low for Yukoners.

74(1)(a)

Additional response:

- While the Atlin Project has received significant grant funding, inflation and supply chain disruptions have increased costs, resulting in a funding gap.
- The funding gap has also resulted in delays to the Project. It is now anticipated to come online in 2026 or 2027.

Session Briefing Note**Fall 2023****Atlin Hydro Expansion Project**Yukon Development
CorporationYukon Energy
Corporation

- Assisting the Proponent, Taku Homeland Energy Limited Partnership, to close the funding gap has led to intensive intergovernmental collaboration with the governments of Canada and British Columbia.
- Through this project, our government can advance economic reconciliation with the Taku River Tlingit First Nation.
- As the largest Indigenous proponent-led energy project that the Yukon has been involved with to date, it is also teaching us many lessons that will be applied as additional projects are advanced to fill the widening renewable energy gap.
- As the project continues through the development phase, there is continual due diligence being done to ensure that the Project will bring the expected benefits to Yukoners in a manner that advances climate change goals, and is also affordable and reliable.

Context—this may be an issue because:

- The funding gap and delays to the Project have received a lot of attention in the media and from the Opposition.
 - Permits for the Project in Yukon are anticipated to be issued during Session.
-

Background:

- The Proponent (THELP) plans to expand the existing Atlin hydro facility by leveraging the water storage capability of Surprise Lake and connect to the Yukon grid with a 69 kV transmission line from the power plant in Atlin, BC to Jakes Corner

Session Briefing Note**Fall 2023****Atlin Hydro Expansion Project**Yukon Development
CorporationYukon Energy
Corporation

in the Yukon. The line will follow the Atlin Highway right-of-way for the majority of the route.

- The total project cost is estimated to be up to \$360 million, which includes:
 - \$76 million in identified funding need;
 - \$20 million contingency for price increases when contractor and supplier quotes are refreshed; and
 - \$30 million to account for up to an interest rate increase in their Canada Infrastructure Bank loan.
- Current notional and secured grant and loan break down is:
 - Government of Canada: \$101.1 million (grant)
 - Government of Yukon: \$50 million (grant)
 - Government of British Columbia: \$20 million (grant)
 - Canada Infrastructure Bank: \$80 million (loan)
- While the funding stack was completed for this project in the summer of 2022, due to inflation, delays and other cost increases, the funding gap is estimated at up to \$106 million.
- The Commissioning Date is currently projected for fall 2026 or 2027 and is dependent on when the full funding stack is complete.
- The interest rate for the \$80 million Canadian Infrastructure Bank loan is unknown at this time.
- The project will:
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Session Briefing Note**Fall 2023****Atlin Hydro Expansion Project**Yukon Development
CorporationYukon Energy
Corporation

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- The Energy Purchase Agreement between the Proponent and Yukon Energy Corporation was reviewed by the Yukon Utilities Board (YUB), who concluded that the project was necessary to meet climate change goals.

Approved by:_____
President, Yukon Development Corporation_____
Date approved_____
President, Yukon Energy Corporation_____
Date approved

Session Briefing Note**Fall 2023****Atlin Hydro Expansion Project**Yukon Development
CorporationYukon Energy
Corporation

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Session Briefing Note**Fall 2023****Atlin Hydro Expansion Project**Yukon Development
CorporationYukon Energy
Corporation

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Context—this may be an issue because:

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Background:

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Session Briefing Note**Fall 2023****Atlin Hydro Expansion Project**Yukon Development
CorporationYukon Energy
Corporation

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Session Briefing Note**Fall 2023****Atlin Hydro Expansion Project**Yukon Development
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Approved by:

 President, Yukon Development Corporation

 Date approved

 President, Yukon Energy Corporation

 Date approved

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Information Note

**Minister-NDP Update
Meeting (September 20)**

Energy, Mines and Resources
Environment

74(1)(a)

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Information Note

**Minister-NDP Update
Meeting (September 20)**

Energy, Mines and Resources
Environment

74(1)(a)

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**Minister-NDP Update
Meeting (September 20)**

Energy, Mines and Resources
Environment

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**Minister-NDP Update
Meeting (September 20)**

Energy, Mines and Resources
Environment

74(1)(a)

Background:

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Information Note

Minister-NDP Update Meeting (September 20)

Energy, Mines and Resources
Environment

74(1)(a)

Approved by:

Deputy Minister
Department of Energy, Mines and Resources

Date approved

2023-05-24

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Information Note

**Minister-NDP Update
Meeting (September 20)**

Energy, Mines and Resources
Environment

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Information Note

Minister-NDP Update Meeting (September 20)

Energy, Mines and Resources
Environment

A/Deputy Minister

Department of Environment

Date approved

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Information Note

YG Energy Interests in C/TFN Traditional Territory

Yukon Development
Corporation

Issue

- Minister Streicker and Deputy Minister Berry will be meeting with Carcross/Tagish First Nation's (C/TFN) Development Corporation's new Chief Executive Officer, Stephen Mooney on Friday, September 29, 2023, at 11:30-12:00.
- C/TFN has expressed concerns about projects identified within their Traditional Territory in both Yukon and British Columbia within Yukon Energy Corporation's (YEC) *Ten Year Renewable Plan* and has indicated that several complex issues (such as overlaps with Taku River Tlingit First Nation (TRTFN), land use planning, and equity involvement in YEC) must be resolved before individual projects can advance.

Context

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Background

- Carcross Solar Project

75(1)(a)(ii)

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Information Note

YG Energy Interests in C/TFN Traditional Territory

Yukon Development
Corporation

75(1)(a)(ii)

- Atlin Hydro Expansion Project
 - The Proponent has relayed that \$374,000 in contracts have been secured by Metro Drilling, which is registered under the *Yukon First Nations Business Registry*, as affiliated with C/TFN.
 - A Decision Document was issued for the Project on July 7, 2023. Consultation has been initiated on the Land Use Permit and Licence of Occupation. A Highway Right of Way permit for the geotechnical investigations is being issued by Highways and Public Works.
 - Natural Resources Canada has indicated that they will not require a letter of support from C/TFN to fund the Project.
- Whitehorse Rapids Generating Station Relicensing
 - A Framework Agreement to guide negotiations related to the WRGS was executed by C/TFN, Kwanlin Dün First Nation (KDFN), Ta'an Kwäch'än Council (TKC), Yukon Energy Corporation, and YG in December 2022.
 - In the negotiations, C/TFN is raising concerns about the impact of the relicensing and the need to address compensation for historical impacts of the dam as well as impacts on salmon.
 - C/TFN, alongside KDFN and TKC, is lobbying Canada to address historical impacts of the WRGS, consistent with the *Northern Canada Power Transfer Agreement* from 1985. In the June 6th, 2023, WRGS Principals meeting, YG committed to approaching Canada jointly with the First Nations regarding historical reconciliation for impacts of the WRGS.

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Information Note

YG Energy Interests in C/TFN Traditional Territory

Yukon Development
Corporation

- YEC, through the negotiations, committed to no longer advancing the Southern Lakes Enhanced Storage Project and has indicated this commitment to the Yukon Utilities Board in their General Rate Application.
- Future Energy Projects
 - Starting in March 2022, Aboriginal Relations (AR) began to engage with C/TFN on a number of C/TFN interests, which were brought up in the context of energy projects in the Southern Lakes. Discussions ended in the Spring of 2023 following the decision by C/TFN Executive Council to not enter into a bilateral agreement signed off by AR and C/TFN negotiators.
 - YEC is initiating an Integrated Resource Planning process in fall 2023 and it is unclear at this time whether projects, such as Skagway and Moon Lake, will continue to be part of the plan.

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Information Note

**YG Energy Interests in C/TFN
Traditional Territory**

Yukon Development
Corporation

76(1)

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Information Note

Minister-NDP Update Meeting (September 29)

Energy, Mines and Resources
Environment

Issue:

- Minister Clarke and Minister Streicker will be meeting with the Yukon NDP on September 29, 2023, to discuss progress updates on Our Clean Future.
- The Yukon NDP requested responses to specific questions outlined below.
- The Implementation Committee last received an update on this file on May 24, 2023.

Our Clean Future Progress Updates

1. When can we expect the 2022 annual OCF report?

74(1)(a)

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Information Note

Minister-NDP Update Meeting (September 29)

Energy, Mines and Resources
Environment

2. Atlin Hydro update - Any word on funding? Are new options being explored for funding?

74(1)(a)

3. Whitehorse battery storage update and ETA

74(1)(a)

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Information Note

Minister-NDP Update Meeting (September 29)

Energy, Mines and Resources
Environment

74(1)(a)

4. Short term energy projects – are there any new plans in the works for projects to replace rented diesels?

74(1)(a)

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Minister-NDP Update Meeting (September 29)

Energy, Mines and Resources
Environment

74(1)(a)

5. Changes to YUB – shifting support staff to BC Hydro

74(1)(a)

6. Uptake numbers on Better Buildings Program

74(1)(a)

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Information Note

Minister-NDP Update Meeting (September 29)

Energy, Mines and Resources
Environment

74(1)(a)

7. T25 – climate change vulnerability study of road network – due in 2023 – is it complete? On track?

74(1)(a)

8. P11 – Expand monitoring of particulate matter – does every community now have an air monitoring station?

74(1)(a)

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Information Note

Minister-NDP Update Meeting (September 29)

Energy, Mines and Resources
Environment

74(1)(a)

9. L4 – Incorporate greenhouse gas emissions into identifying and prioritizing building retrofits – what buildings have been prioritized for retrofit?

74(1)(a)

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Information Note

Minister-NDP Update Meeting (September 29)

Energy, Mines and Resources
Environment

74(1)(a)

10. Update on H11 – Assess options for financial support for actions to improve the climate resiliency of homes and buildings by 2023 – what does this look like and when will it be delivered?

74(1)(a)

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Minister-NDP Update Meeting (September 29)

Energy, Mines and Resources
Environment

74(1)(a)

11. Moon Lake – Please provide an update on the proposed storage hydro project. We heard it is not going ahead.

74(1)(a)

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Minister-NDP Update Meeting (September 29)

Energy, Mines and Resources
Environment

Potential Additional Topics

12. How is the Yukon government integrating recommendations from the Yukon Climate Leadership Council and the Youth Panel on Climate Change?

74(1)(a)

13. When will the government legislate the renewable electricity generation target under the Clean Energy Act (OCF – E1)

- The Government of Yukon continues to work with the public utility on determining a path forward for generating a minimum of 93 per

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Information Note

Minister-NDP Update Meeting (September 29)

Energy, Mines and Resources
Environment

cent renewable electricity on average on the Yukon's main grid by 2030.

- The Government of Yukon is working with the public utilities on a balanced strategy for achieving our climate goals. This includes integrating renewable energy into the Yukon's main grid and into the micro-grids in rural communities.
- When ready, the Government of Yukon will table an amendment to the Clean Energy Act in the Legislative Assembly.

Background:

- Our Clean Future: Yukon's Strategy for climate change, energy and a green economy was released in September 2020 and is a 10-year strategy.
- Our Clean Future currently contains 136 actions to reduce GHG emissions by 2030 and supports the Yukon to be highly resilient to the impacts of climate change.
- Through the strategy, the Government of Yukon has committed to the overarching targets to reduce greenhouse gas emissions by 45 per cent by 2030, below 2010 levels and to be highly resilient to the impacts of climate change by 2030. In 2022, the *Clean Energy Act* received royal assent, legislating the Yukon's greenhouse gas emissions target to be 45 per cent below 2010 emissions by 2030 and net-zero by 2050. The same year, the Yukon Climate Leadership Council provided advice on how to reach this target.
- In 2022, the Assessing Climate Change Risk and Resilience in the Yukon report was released. It highlighted priority areas for reducing climate risks and building resilience to climate impacts.
- The latest modelling work completed in fall 2022 by Navius Research Inc., identified the most cost-effective technologies and actions that will help achieve our greenhouse gas emissions target.

Session Briefing Note

TAB #E-20**Fall 2023**

Integrated Resource Planning

Yukon Energy Corp

Recommended response:

- Yukon Energy is working towards a cleaner energy future while ensuring Yukoners have access to reliable and affordable energy.
- As more Yukoners make the shift to electric heat and transportation, Yukon's electricity system needs to get bigger, cleaner and smarter.
- Investments in all aspects of the Yukon's electricity system – generation, transmission, distribution and end-use – will be critical to ensuring Yukoners have the power they need when and where they need it.
- Knowing this, Yukon Energy will be updating its 10-Year Renewable Electricity Plan next year to identify ^{74(1)(a)} investments and strategic partnerships needed to build Yukon's sustainable energy future.
- The update will consider multiple resource options, including resources we currently use and others that are new to the Yukon.
- The process will include discussions with First Nation and public governments, as well as Yukoners more broadly.

Additional response:

- The update to the Resource Plan will be informed by extensive modelling and analysis of a range of potential future scenarios, which will be driven by stakeholder input.
- It will consider how existing and potential government actions at all levels are impacting the energy landscape.
- It will also consider connection to the British Columbia grid as a potential, long-term option.

Session Briefing Note

TAB #E-20**Fall 2023**

Integrated Resource Planning

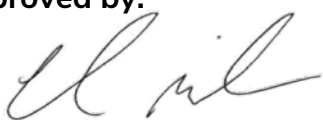
Yukon Energy Corp

Context—this may be an issue because:

- The Opposition has raised questions about whether Yukon Energy is able to complete the projects in the 2016 Integrated Resource Plan.

Background:

74(1)(a)

Approved by:September 5, 2023_____
President and CEO, Yukon Energy_____
Date approved

Session Briefing Note**Fall 2023****Atlin Hydro Expansion Project**Yukon Development
CorporationYukon Energy
Corporation

Recommended response:

- Supporting the implementation of the Atlin Hydro Expansion Project is a priority for Yukon government and a key component of Yukon Energy's 10-Year Renewable Electricity Plan.
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- Increasing dependable winter capacity on our main electrical grid by 8.75 megawatts, the Atlin Project will reduce greenhouse gas emissions while ensuring rates remain low for Yukoners.

Additional response:

- While the Atlin Project has received significant grant funding, inflation and supply chain disruptions have increased costs, resulting in a funding gap.
- The funding gap has also resulted in delays to the Project. It is now anticipated to come online in 2026 or 2027.
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Session Briefing Note

Fall 2023

Atlin Hydro Expansion Project

Yukon Development
Corporation

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- As the project continues through the development phase, there is continual due diligence being done to ensure that the Project will bring the expected benefits to Yukoners in a manner that advances climate change goals, and is also affordable and reliable.

Context—this may be an issue because:

- The funding gap and delays to the Project have received a lot of attention in the media and from the Opposition.
 - Permits for the Project in Yukon are anticipated to be issued during Session.
-

Background:

- The Proponent (THELP) plans to expand the existing Atlin hydro facility by leveraging the water storage capability of Surprise Lake and connect to the Yukon grid with a 69 kV transmission line from the power plant in Atlin, BC to Jakes Corner in the Yukon. The line will follow the Atlin Highway right-of-way for the majority of the route.
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Session Briefing Note**Fall 2023****Atlin Hydro Expansion Project**Yukon Development
CorporationYukon Energy
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Session Briefing Note**Fall 2023****Atlin Hydro Expansion Project**Yukon Development
CorporationYukon Energy
Corporation

- A Decision Document has been issued by Yukon government for the Yukon-portion of the Project. Consultation with Carcross/Tagish First Nation and Taku River Tlingit First Nations is ongoing for the required permits.
- Canada has not completed consultation on the federal Decision Documents and timeline for completion are unknown.
- The Energy Purchase Agreement between the Proponent and Yukon Energy Corporation was reviewed by the Yukon Utilities Board (YUB), who concluded that the project was necessary to meet climate change goals.

Approved by:

President, Yukon Development Corporation

Date approved

President, Yukon Energy Corporation

Date approved

Session Briefing Note

TAB #B-11b**Fall 2023**

Thermal Replacement Project

Yukon Energy Corp

Recommended response:

- Diesel plays a proportionally small but important role in Yukon's electricity mix, helping to keep Yukoners' homes and businesses warm and the lights on when there isn't enough hydro power available.
- Diesel also plays a role in helping to integrate renewable energy onto Yukon's integrated grid.
- As part of its thermal replacement project, Yukon Energy is replacing diesel generators in Faro, Dawson and Whitehorse that have either already retired, or are expected to reach end-of-life in the next five years with cleaner, more efficient models.

Additional response:

Whitehorse

- Yukon Energy is seeking to renew its air emissions permit in Whitehorse. This permit allows the Corporation to use both LNG and diesel to generate electricity at their facility in Whitehorse.
- The Thermal Replacement Project in Whitehorse will replace two previously retired diesel engines with two new diesel units.

Dawson

- The Callison Generation Permitting Project in Dawson City is related to the Thermal Replacement Project in Dawson.
- Before Yukon Energy can retire and relocate the two diesel engines that have reached end-of-life in downtown Dawson to the Callison substation, it first needs to do a YESAB assessment and get an air emissions permit for the Callison site.

Session Briefing Note

TAB #B-11b

Fall 2023

Thermal Replacement Project

Yukon Energy Corp

- Next winter, Yukon Energy will be installing 6.5 megawatts of diesel at the Callison substation to make sure there is enough back-up diesel power in Dawson City to keep power flowing in the community in case of an emergency.
- Assessing the affects of 15.5 megawatts of diesel power at Callison now allows Yukon Energy to integrate of more renewables more effectively and plan for future growth.

Context—this may be an issue because:

- Yukon Energy previously stated it would not be adding more diesel generators.
- The opposition has raised questions about the reliance on diesel generation.

Background:

- The 10-Year Renewable Electricity Plan included the replacement of 12.5 MW of retiring diesel units.

Location	Diesel capacity retired/retiring	Diesel capacity being installed	Forecast in-service date
Faro	5.1 MW (upcoming retirement)	5 MW	Q3 2024
Whitehorse Rapids Diesel Plant	5 MW (previously retired)	5 MW	Q2 2025

Session Briefing Note

TAB #B-11b

Fall 2023

Thermal Replacement Project

Yukon Energy Corp

Dawson City	2.5 MW (upcoming retirement)	6.5 MW (relocated to Callison substation) 15.5 MW being permitted	Q4 2024
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- Yukon Energy conducted a feasibility study for the option to replace end-of-life diesel generators in Whitehorse with natural gas engines, however, the study found that the capital costs of the natural gas engines were higher than the diesel engine solution.

Approved by:

President and CEO, Yukon Energy

Date approved

Session Briefing Note

TAB #E-20**Fall 2023**

Integrated Resource Planning

Yukon Energy Corp

Recommended response:

- Yukon Energy is working towards a cleaner energy future while ensuring Yukoners have access to reliable and affordable energy.
- As more Yukoners make the shift to electric heat and transportation, Yukon's electricity system needs to get bigger, cleaner and smarter.
- Investments in all aspects of the Yukon's electricity system – generation, transmission, distribution and end-use – will be critical to ensuring Yukoners have the power they need when and where they need it.
- Knowing this, Yukon Energy will be updating its 10-Year Renewable Electricity Plan next year to identify the projects, investments and strategic partnerships needed to build Yukon's sustainable energy future.
- The update will consider multiple resource options, including resources we currently use and others that are new to the Yukon.
- The process will include discussions with First Nation and public governments, as well as Yukoners more broadly.

Additional response:

- The update to the Resource Plan will be informed by extensive modelling and analysis of a range of potential future scenarios, which will be driven by stakeholder input.
- It will consider how existing and potential government actions at all levels are impacting the energy landscape.
- It will also consider connection to the British Columbia grid as a potential, long-term option.

Session Briefing Note

TAB #E-20**Fall 2023**

Integrated Resource Planning

Yukon Energy Corp

Context—this may be an issue because:

- The Opposition has raised questions about whether Yukon Energy is able to complete the projects in the 2016 Integrated Resource Plan.

Background:

- Yukon Energy started its Integrated Resource Planning with a workshop with Yukon government facilitated by an external consultant E3 in May 2023.
- Next steps will include engagement with First Nation and public governments, as well as Yukoners.
- Yukon Energy expects the update to the Resource Plan will be ready by spring 2024.

Approved by:_____
President and CEO, Yukon Energy_____
Date approved

Session Briefing Note

TAB #11b**Fall 2023**

Thermal replacement project

Yukon Energy Corp

Recommended response

- Diesel plays a proportionately small but important role in Yukon's electricity mix, helping to keep Yukoners' homes and businesses warm and the lights on when there isn't enough hydro power available.
- Diesel also plays a role in helping to integrate renewable energy onto the Yukon's grid.
- As part of its thermal replacement project, Yukon Energy is replacing diesel generators in Faro, Dawson and Whitehorse that have either already retired, or are expected to reach end-of-life in the next five years with cleaner, more efficient models.

Additional response

Whitehorse

- Yukon Energy is seeking to renew its air emissions permit in Whitehorse. This permit allows the Corporation to use both LNG and diesel to generate electricity at their facility in Whitehorse.
- The Thermal Replacement Project in Whitehorse will replace two previously retired diesel engines with two new diesel units.

Dawson

- The Thermal Replacement Project will replace two diesel generators that have reached end-of-life in downtown Dawson with one, 3.25-megawatt unit at Callison.
- Yukon Energy is using a 3.25-megawatt unit rather than a 2.5-megawatt unit as that was all that was available at the time.
- Before Yukon Energy can retire and relocate the two diesel engines that have reached end-of-life in downtown Dawson to the Callison substation, it first needs to do a YESAB assessment and get an air emissions permit for the Callison site.

Session Briefing Note

TAB #11b

Fall 2023

Thermal replacement project

Yukon Energy Corp

- As part of the YESAB assessment, Yukon Energy is assessing up to 15.5 megawatts of diesel generation at the Callison site. This allows the Corporation to proactively plan for the future relocation of all downtown diesel units to Callison, integrate more renewables in the Dawson area and to meet growing demands for power during emergencies.
- Yukon Energy is currently developing its Project Description to submit to YESAB for this project.

Context—this may be an issue because:

- Yukon Energy previously stated it would not be adding more diesel generators; however it will now be adding more diesel capacity in Dawson.

Background

- The 10-Year Renewable Electricity Plan included the replacement of 12.5 MW of retiring diesel units.
- The cost of this project is still expected to be \$49 million, without the proposed additional diesel capacity at Yukon Energy's Callison site.

Location	Diesel capacity retired/retiring	Diesel capacity being installed	Forecast in-service date
Faro	5.1 MW (upcoming retirement)	5 MW	Q3 2024
Whitehorse Rapids Diesel Plant	5 MW (previously retired)	5 MW	Q1 2025
Dawson City	2.5 MW (upcoming retirement)	3.25 MW (relocated to Callison substation) *As a separate project, YEC is seeking to install another 3.25 MW of diesel at Callison	Q4 2024

Session Briefing Note

TAB #11b**Fall 2023**

Thermal replacement project

Yukon Energy Corp

- Yukon Energy conducted a feasibility study for the option to replace end-of-life diesel generators in Whitehorse with natural gas engines, however, the study found that the capital costs of the natural gas engines were higher than the diesel engine solution.

Approved by:**October 3, 2023**_____
President and CEO, Yukon Energy_____
[Date approved]

Session Briefing Note**Fall 2023****Atlin**

Yukon Development
Corporation
Yukon Energy
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Recommended response:

- Supporting the implementation of the Atlin Hydro Expansion Project is a priority for Yukon government and a key component of Yukon Energy's 10-Year Renewable Electricity Plan.
- To date, our government has committed \$50 million to the construction of the Atlin Project.
- This Indigenous-owned project is expected to deliver 34 gigawatt hours of clean winter power each year and displace our need to rent four diesel generators.
- Increasing dependable winter capacity on our main electrical grid by 8.75 megawatts, the Atlin Project will reduce greenhouse gas emissions while ensuring rates remain low for Yukoners.

Additional response:

- While the Atlin Project has received significant grant funding, inflation and supply chain disruptions have increased costs, resulting in a funding gap.
- The funding gap has also resulted in delays to the Project. It is now anticipated to come online in 2026 or 2027.
- Assisting the Proponent, Taku Homeland Energy Limited Partnership, to close the funding gap has led to intensive intergovernmental collaboration with the governments of Canada and British Columbia.

Session Briefing Note

Fall 2023**Atlin**

Yukon Development
Corporation
Yukon Energy
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- Through this project, our government can advance economic reconciliation with the Taku River Tlingit First Nation.
- As the largest Indigenous proponent-led energy project that the Yukon has been involved with to date, it is also teaching us many lessons that will be applied as additional projects are advanced to fill the widening renewable energy gap.
- As the project continues through the development phase, there is continual due diligence being done to ensure that the Project will bring the expected benefits to Yukoners in a manner that advances climate change goals, and is also affordable and reliable.

Context—this may be an issue because:

- The funding gap and delays to the Project have received a lot of attention in the media and from the Opposition.
 - Permits for the Project in Yukon are anticipated to be issued during Session.
-

Background:

- The Proponent (THELP) plans to expand the existing Atlin hydro facility by leveraging the water storage capability of Surprise Lake and connect to the Yukon grid with a 69 kV transmission line from the power plant in Atlin, BC to Jakes Corner in the Yukon. The line will follow the Atlin Highway right-of-way for the majority of the route.
- The total project cost is estimated to be up to \$360 million, which includes:
 - \$76 million in identified funding need;

Session Briefing Note

Fall 2023**Atlin**

Yukon Development
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- \$20 million contingency for price increases when contractor and supplier quotes are refreshed; and
 - \$30 million to account for up to an interest rate increase in their Canada Infrastructure Bank loan.
- Current notional and secured grant and loan break down is:
 - Government of Canada: \$101.1 million (grant)
 - Government of Yukon: \$50 million (grant)
 - Government of British Columbia: \$20 million (grant)
 - Canada Infrastructure Bank: \$80 million (loan)
- While the funding stack was completed for this project in the summer of 2022, due to inflation, delays and other cost increases, the funding gap is estimated at up to \$106 million.
- The Commissioning Date is currently projected for fall 2026 or 2027 and is dependent on when the full funding stack is complete.
- The interest rate for the \$80 million Canadian Infrastructure Bank loan is unknown at this time.
- The project will:
 - Add 8.7 megawatts of dependable capacity, primarily in winter when peak electricity occurs;
 - Generate about 34 gigawatt hours of electricity each year; Eliminate the need for four rental diesels;
 - Reduce nine million litres of diesel per year;
 - Reduce greenhouse gas emissions by a projected 27,500 tonnes per year; and
 - Create 176 full-time employment positions during the construction phase of the Project and six to eight positions during operation.
- The project is reviewable under the BC Clean Energy Project Development Plan process, which is expected to be completed in early 2024.

Session Briefing Note

Fall 2023

Atlin

Yukon Development
Corporation

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- A Decision Document has been issued by Yukon government for the Yukon-portion of the Project. Consultation with Carcross/Tagish First Nation and Taku River Tlingit First Nations is ongoing for the required permits.
- Canada has not completed consultation on the federal Decision Documents and timeline for completion are unknown.
- The Energy Purchase Agreement between the Proponent and Yukon Energy Corporation was reviewed by the Yukon Utilities Board (YUB), who concluded that the project was necessary to meet climate change goals.

Approved by:



September 5, 2023

President, Yukon Development Corporation

Date approved



September 5, 2023

President, Yukon Energy Corporation

Date approved

Accomplishments - YDC

Yukon Development
Corporation

2023-2024

- Signed four projects under the Innovative Renewable Energy Initiatives.
- Worked with federal funding partners to fill the funding gap of the Kluane N'tsi Wind Project.
- Supported Demand Side Management Programs through Yukon Energy.
- Provided funding to Dena Nezziddi Development Corporation, Ross River First Nations' Development Corporation, to purchase portable renewable energy power boxes that can provide renewable energy to off-grid mining locations.
- Enabled Northern Vision Development to study biomass district heating systems.
- Continued to implement Yukon government's rebate programs aimed at making life more affordable for Yukoners: the Interim Electrical Rebate and the Inflation Relief Rebate.
- Supporting the Council of Yukon First Nation's energy summit in fall 2023 where we hope to contribute to meaningful discussions of how Yukon First Nations can participate in the energy economy.
- Continued to work with federal and provincial partners, as well as the Proponent, to advance the Atlin Hydroelectric Expansion Project.

2022-2023

- Brought in the new Inflation Relief Rebate over seven months with a total spend of around \$7.5 million.

Accomplishments - YDC

Yukon Development
Corporation

2021/22

- In partnership with the Proponent (Taku Homeland Energy Limited Partnership) Secured federal commitments towards the Atlin Hydroelectric Expansion Project.

Renewable Energy Projects Supported by Yukon Development Corporation (2018-Present)

Table 1: Arctic Energy Fund Projects

Project	Location	Funded
Haeckel Hill Wind Project	Whitehorse	\$13.07 million
Kluane N'tsi Wind Project	Burwash Landing	\$ 2 million
Dome Road Solar Project	Dawson	\$486,000

Table 2: Investing in Canada Infrastructure Program

Project	Location	Funded
Battery Energy Storage System	Whitehorse	\$16.5 million
Mayo-McQuesten Transmission Line Upgrade		\$ 22.7 million

Accomplishments - YDC

Yukon Development
Corporation

Table 3: Innovative Renewable Energy Program Projects

Project Stage	Proponent	Project	Project Location	Funded
Feasibility	Solstice Clean Energy Cooperative	Community owned Solar	Whitehorse	\$41,250
	Eavor Yukon	Geothermal Drilling	Across Yukon	\$500,000
	Northern Vision Development	District Heating Biomass	Whitehorse	\$37,500
	Kluane Lake Research Station	Hydrogen Energy Storage Project	Kluane Lake Research Station	\$150,000
Design	Carcross Tagish Management Corporation	Carcross Solar	Carcross	\$300,000
	ORO Enterprises	Run of River Hydro	Dawson City	\$500,000
Construction	Nacho Nyak Dun Development Corporation	Snowline gold Solar	Mayo	\$265,995
	Fellhawk Enterprises	Portable off-grid solar	Dawson Mining Area	\$210,000
	Sunergy	Solar	Whitehorse	\$150,000
	Takhini Power	Solar	Whitehorse	\$150,000
	Kluane First Nation	Kluane N'tsi Wind Energy Project	Destruction Bay / Burwash Landing	\$1,000,000

Session Briefing Note

TAB #30₀₈₁

Fall 2023

Accomplishments - YDC

Yukon Development
Corporation

	First Kaska	Watson Lake Solar	Watson Lake	\$295,900
	Klondike Development Corporation	Dome road Solar	Dawson City	\$83,200
	Nomad Electrical and Contracting Services	Mount Sima Solar	Whitehorse	\$272,800
	Vuntut Gwitchin First Nation	Old Crow Solar	Old Crow	\$500,000
	Teslin Tlingit Council	Biomass District Heating System	Teslin	\$400,000
	Chu Níkwän Development Corporation	Haeckel Hill Wind	Whitehorse	\$85,000
	Yukon Energy Corporation	Demand Side Management	Yukon	\$500,000
	Dena Nezziddi Development Corporation	Off Grid Power Box	Ross River	\$300,000
	Copper Niisüü LP	Solar	Beaver Creek	\$1,500,000

Approved by:



August 30, 2023

President, Yukon Development Corporation

Date approved

Recommended response:

- Yukon Energy is working towards a cleaner energy future while ensuring Yukoners have access to reliable and affordable energy.
- As more Yukoners make the shift to electric heat and transportation, Yukon's electricity system needs to get bigger, cleaner and smarter.
- Investments in all aspects of the Yukon's electricity system – generation, transmission, distribution and end-use – will be critical to ensuring Yukoners have the power they need when and where they need it.
- Knowing this, Yukon Energy will be updating its 10-Year Renewable Electricity Plan next year to identify the [resources](#), investments and strategic partnerships needed to build Yukon's sustainable energy future.
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Additional response:

- The update to the Resource Plan will be informed by extensive modelling and analysis of a range of potential future scenarios, which will be driven by stakeholder input.
- It will consider how existing and potential government actions at all levels are impacting the energy landscape.
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Session Briefing Note

TAB #42⁰⁸³
Fall 2023

Planning - Resource

Yukon Energy Corp

Context—this may be an issue because:

- The Opposition has raised questions about whether Yukon Energy is able to complete the projects in the 2016 Integrated Resource Plan.

Background:

- Yukon Energy expects the update to the Resource Plan will be ready by [mid 2025](#).

Approved by:



October 3, 2023

President and CEO, Yukon Energy

Date approved