

July 15, 2021

RESS & EMAIL

Ontario Energy Board
P.O. Box 2319
27th Floor, 2300 Yonge Street
Toronto, ON M4P 1E4

Attention: Brian Hewson, Vice President, Consumer Protection & Industry Performance

Dear Mr. Hewson:

**Re: Wataynikaneyap Power LP
Semi-Annual Report on CWIP Account and Backup Supply Arrangements
Board File No.: EB-2018-0190**

Wataynikaneyap Power LP ("WPLP") filed a *Semi-Annual Report on CWIP Account and Backup Supply Arrangements for the Wataynikaneyap Transmission Project* on April 15, 2021. The Semi-Annual Report was filed pursuant to the conditions of approval in the Ontario Energy Board's ("OEB") April 1, 2019 Decision and Order in EB-2018-0190. By letter dated May 17, 2021, the OEB requested that WPLP file a copy of its finalized backup power plan. The OEB also requested that WPLP provide opinions on the sufficiency of the backup power plan from Hydro One Remote Communities Inc. ("HORCI") and the Independent Electricity System Operator ("IESO"). The final *Backup Power Plan for the Connecting Communities of the Wataynikaneyap Transmission Project* (the "Plan"), as well as the opinions from HORCI and the IESO, are attached as appendices hereto.

The OEB's letter further requested explanations as to (a) why the Plan provides for backup supply coverage only of critical assets in three communities, and (b) the plans for funding the long-term costs associated with the supply of back-up power to the connecting communities. These aspects are discussed, as follows.

WPLP notes that, while it is responsible for facilitating the arrangement of backup supply, the Plan was developed not by WPLP but rather by the Backup Power Working Group (BPWG). Based on its review of the Plan, WPLP confirms that the recommendation for three of the communities to have backup supply only for Indigenous Services Canada (ISC) funded critical assets is consistent with the IESO's October 13, 2016 *Recommended Scope for the New Line to Pickle Lake and Supported Scope for the Remotes Connection Project*¹, which identified that the backup supply resources should, at a minimum, maintain supply to essential loads within critical buildings within each community. As described in the Plan, the decision to achieve broader backup supply coverage in the other 13 communities is a result of being able to cost-

¹ See Exh. B, Tab 4, Sched. 1, Appendix D, p. 4 of WPLP's pre-filed evidence in EB-2018-0190.

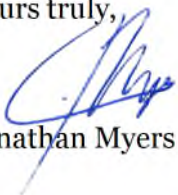
effectively re-purpose existing Diesel Generation Systems (“DGSs”) in those communities. Section 10 of the Plan provides additional context related to the three communities where re-purposing DGS assets was not cost-effective. In considering this aspect of the Plan, WPLP notes that First Nations protocols, principles and autonomy must be respected. As such, as described in the sections 4.2, 9.2 and 9.3 of the Plan, it is up to the Chief and Council of each individual First Nation to decide whether to support the backup power solution that has been recommended by the BPWG for their community, which would be demonstrated through issuance of a Band Council Resolution.

Regarding the funding required for the long-term costs associated with the supply of backup power to the connecting communities, WPLP notes that section 9 of the Plan describes the expected cost responsibilities of the relevant parties. In summary, the expectation is that, for the 13 communities where DGSs can be re-purposed for backup power, the long-term operating and maintenance costs, as well as any like for like replacement capital costs for the re-purposed DGSs, will be the responsibility of HORCI so long as the conditions described in section 9.4 of the Plan are met and subject to HORCI receiving approval, in its 2023 rate filing, for a licence amendment and for cost recovery under RRRP in relation to the provision of backup service. For the 3 communities that will have backup service only to ISC-funded critical assets, the Plan identifies that ISC would provide the applicable capital, operating and maintenance funding.

Finally, WPLP wishes to address two aspects of the IESO’s opinion letter in relation to the Plan. In the IESO’s letter (attached hereto as Appendix ‘C’), the IESO recommends that WPLP provide confirmation (a) that the Plan, including planned fuel reserves, meets the intent of a particular recommendation from the 2014 OPA Remote Connection Plan, taking into consideration the revised transmission outage durations in the BBA Backup Power Report and other factors, as appropriate, and (b) that backup supply will be available to the critical loads identified in each community’s Emergency Preparedness Plan. WPLP reiterates that while it is responsible for facilitating the arrangement of backup supply, the Plan was developed not by WPLP but rather by the BPWG, the members of which are Opiikapawiin Services LP and Canada as represented by ISC, with HORCI and the Ontario Ministry of Energy, Northern Development & Mines participating in meetings. Accordingly, WPLP is not in a position to provide the confirmations recommended by the IESO. However, WPLP would be pleased to facilitate a request to the BPWG for those confirmations if it would be helpful to the OEB.

Please let me know if the OEB requires further information in connection with the Plan or the materials herein provided.

Yours truly,



Jonathan Myers

Enclosures

cc: Ms. Margaret Kenequanash, WPLP
Mr. Duane Fecteau, Watay PM
Mr. Michael Price, OEB
Mr. Charles Keizer, Torys LLP

Appendix A

Finalized Backup Power Plan

Backup Power Plan for the Connecting Communities of the Wataynikaneyap Transmission Project

Prepared by the:

Backup Power Working Group

Table of Contents

1. EXECUTIVE SUMMARY	3
2. BACKGROUND.....	5
3. PURPOSE.....	10
4. ENGAGEMENT PROCESS.....	10
4.1. ENGAGEMENT WITH PROJECT STAKEHOLDERS	10
4.2. ENGAGEMENT WITH THE CONNECTING COMMUNITIES	11
5. PRELIMINARY OPTIONS ANALYSIS	13
6. BACKUP POWER OPTIONS CONSIDERED BY THE BPWG	13
6.1. RE-PURPOSING EXISTING DIESEL GENERATORS.....	16
6.2. CONTAINERIZED DIESEL GENERATORS ALTERNATIVE	19
6.3. ISC-CRITICAL ASSET BACKUP ONLY ALTERNATIVE	20
7.1. IMPLEMENTATION REQUIREMENTS FOR THE OPTIONS.....	22
7.1.1. <i>Legal</i>	22
7.1.2. <i>Environmental</i>	22
7.1.3. <i>Proponent & Funding Process for Transitional Capital Costs</i>	23
7.1.4. <i>Regulatory</i>	24
7.1.5. <i>Estimated Implementation Costs for the Options</i>	25
7.2. DGS OPERATIONS & MAINTENANCE COSTS TO 2030	26
7.3. CRITICAL ASSET BACKUP ONLY	27
8. SUMMARY OF OPTIONS FOR EACH CONNECTING COMMUNITY	28
8.1. COST COMPARISON.....	28
9. FUNDING & SUPPORT	30
9.1. BACKUP POWER AND RELIABILITY UNDER ONTARIO ENERGY REGULATION	30
9.2. FIRST NATIONS SUPPORT	30
9.3. ISC CONSIDERATIONS FOR SUPPORTING BACKUP POWER	30
9.4. REMOTES SUPPORT.....	31
10. PROPOSED OPTION FOR EACH CONNECTING COMMUNITY BASED ON FUNDING SUPPORT	33
11. IMPLEMENTATION STEPS.....	35
12. RISKS & MITIGATION STRATEGIES.....	37
13. NEXT STEPS, POST-IMPLEMENTATION MONITORING, AND PLAN BEYOND 2030	38
APPENDIX A – CONNECTING COMMUNITY SUMMARIES	39
APPENDIX B – BBA BACKUP POWER REPORT	72
APPENDIX C – HYDRO ONE REMOTE COMMUNITIES INC. BACKUP POWER REPORT (DEC 2018)	73
APPENDIX D – HYDRO ONE REMOTES CONTAINERIZED DGS OPTION ANNEX (NOV 2019).....	74
APPENDIX E – FIRST NATIONS LP SHAREHOLDERS RESOLUTION (DECEMBER 2018)	75
APPENDIX F – LETTERS FROM INDIGENOUS SERVICES CANADA TO THE CONNECTING COMMUNITIES (DECEMBER 2018 / NOVEMBER 2019):	76
APPENDIX G – BACKUP POWER WORKING GROUP – TERMS OF REFERENCE	77
APPENDIX H – SUMMARY OF BPWG ENGAGEMENT WITH CONNECTING COMMUNITIES.....	78
APPENDIX J – HYDRO ONE REMOTE COMMUNITIES INC. LETTER	80

APPENDIX K – BACKUP POWER PRECEDENTS IN ONTARIO 81

APPENDIX L – CONNECTING COMMUNITIES DRAFT BCRS..... 83

1. Executive Summary

This Backup Power Plan (the Plan) has been prepared to support the 16 First Nation communities (“Connecting Communities”) being connected to the provincial transmission grid through the Wataynikaneyap Transmission Project. Previous studies have shown that without adequate backup power supply, the majority of the Connecting Communities would experience an increase in the frequency and duration of outages than they do currently. In addition, due to the remoteness and length of the transmission line, there is an increased risk of prolonged outages due to weather or forest fire. During engagement, the Connecting Communities have outlined the impacts of power outages, including: health & safety risks, food spoilage, damage to infrastructure, and overall community well-being.

This Plan is meant to act as a guiding document for identifying and implementing backup power in each Connecting Community prior to grid connection. This includes:

- The process and considerations for recommending a proposed option for each Connecting Community;
- The estimated costs and anticipated funding source(s);
- The expected implementation steps, timelines, and risks of the recommended option;
- The conditions for support from Indigenous Services Canada;
- The conditions for support from Hydro One Remote Communities Inc. (“Remotes”) as the operator; and
- The supporting Band Council Resolutions from the Connecting Communities

Table 1 below outlines the recommended option for each community:

Table 1. Recommended Option for Each Community								
First Nation	Current LDC	Recommended Option	Initial Capital Costs ²	IPA Compliance/ Industry Standard ⁴	Implementation Costs	ISC Health & Safety Critical Assets Backup Gaps	O&M and Fuel Costs to 2030	Total Costs
Bearskin Lake	Remotes	Re-purpose DGS	\$118,000	N/A	\$20,000	\$122,400	\$1,767,108	\$2,027,508
Deer Lake	Remotes	Re-purpose DGS	\$118,000	N/A	\$20,000	\$391,200	\$2,321,055	\$2,850,255
Kasabonika Lake	Remotes	Re-purpose DGS	\$118,000	N/A	\$20,000	\$150,400	\$1,888,203	\$2,176,603
Kingfisher Lake	Remotes	Re-purpose DGS	\$118,000	N/A	\$20,000	\$150,400	\$2,202,541	\$2,490,941
Kitchenuhmaykoosib Inninuwug	Remotes	Re-purpose DGS	\$118,000	N/A	\$20,000	\$234,400	\$2,375,161	\$2,747,561
North Caribou Lake ³	Remotes	Critical Asset Only	N/A	N/A	\$100,000	\$1,147,200	N/A	\$1,247,200
Pikangikum ³	Remotes	Critical Asset Only	N/A	N/A	\$12,500	\$122,400	N/A	\$134,900
Sachigo Lake	Remotes	Re-purpose DGS	\$118,000	N/A	\$20,000	\$178,400	\$1,781,469	\$2,097,869
Sandy Lake	Remotes	Re-purpose DGS	\$118,000	N/A	\$20,000	\$150,400	\$2,412,953	\$2,701,353
Wapekeka	Remotes	Re-purpose DGS	\$118,000	N/A	\$20,000	\$150,400	\$1,741,026	\$2,029,426
Keewaywin ⁵	IPA	Re-purpose DGS	\$684,000	\$300,000	\$680,000	\$122,400	1,677,424	\$3,463,824
Muskrat Dam ⁵	IPA	Re-purpose DGS	\$199,000	\$300,000	\$680,000	\$178,400	1,704,496	\$3,061,896
North Spirit Lake ⁵	IPA	Re-purpose DGS	\$209,000	\$300,000	\$680,000	\$335,200	1,649,790	\$3,173,990
Poplar Hill ⁵	IPA	Re-purpose DGS	\$199,000	\$300,000	\$680,000	\$279,200	1,860,872	\$3,319,072
Wawakapewin ^{3,5}	IPA	Critical Asset Only	N/A	N/A	\$0	\$0	N/A	\$0
Wunnumin Lake ⁵	IPA	Re-purpose DGS	\$209,000	\$300,000	\$680,000	\$150,400	2,006,226	\$3,345,626
Sub-totals			\$2,444,000	\$1,500,000	\$3,672,500	\$3,863,200	\$25,388,324	\$36,868,024
Notes:								
1. Cost estimates are in 2019\$.								
2. Hydro One Remote Communities Inc. December 2018 report entitled “Feasibility of Using Existing Diesel Generating Stations for Backup Power in Remote Grid-Connected Communities” and Hydro One Remote Communities Inc. November 2019 report entitled “Containerized DGS Option Annex”.								
3. Critical Assets Backup Gaps include all assets within ISC’s LOSS; Implementation costs reflect CFMP policies.								
4. IPA DGS must be in good operating condition and be in compliance with all applicable industry standards and legal regulations; estimated cost.								
5. Operator Training for IPA Communities has been captured within O&M and Fuel Costs to 2030 costs.								

The recommended option for most Connecting Communities is to re-purpose the existing diesel generating station (DGS) until 2030, at a minimum. Repurposing an existing DGS is expected to require minimal capital investment and provide community-wide backup power.

However, as indicated in Table 1, backup power for ISC-funded critical assets is the recommended option for Pikangikum First Nation, as their DGS has reached its end-of-life and is being decommissioned, and for both Wawakapewin and North Caribou Lake First Nations as Remotes has indicated that each DGS cannot be re-purposed and operated by Remotes for community-wide backup. ISC is committed to ensuring there is backup power at ISC-funded critical assets.

ISC and Remotes have provided their conditions for re-purposing an existing DGS for community-wide backup power until 2030, at a minimum. Where the conditions are met, First Nations can apply to ISC for funding to support the transitional capital costs (includes Initial Capital Costs, IPA Compliance/Industry Standard Costs and Implementation costs) related to re-purposing a DGS and Remotes would be responsible for operations, maintenance, and any like for like replacement capital costs (O&M and Fuel costs to 2030). Even with community-wide backup, ISC is committed to ensure there is additional backup power for health and safety critical infrastructure (water and wastewater treatment facilities, lift stations, nursing station, and nurse residence), however, community-wide backup would replace the need for additional backup at a community gathering spot (e.g. schools) and fire hall.

This Plan provides a high-level overview of the requirements for each First Nation to implement their option prior to grid connection under ISC's Capital Facilities and Maintenance Program (CFMP). For IPA communities, there will be Operating Agreements with Remotes, which will also address responsibility for environmental contamination. For the Remotes-serviced communities, existing Electrification Agreements with Remotes will need to be amended or replaced. Once a community confirms their support for the recommended option, the implementation phase will begin and ISC officials will work with them to develop funding support applications.

Remotes has indicated that most DGS assets would be sufficient to provide backup power beyond 2030. Prior to 2030, ISC and Remotes have confirmed their willingness to work with the Connecting Communities to assess the need, costs, and benefit of ongoing backup power beyond 2030.

2. Background

Wataynikaneyap Transmission Project & Initial Assessment of Need for Backup Power:

Sixteen First Nation communities (“Connecting Communities”) located in remote, northwestern Ontario will be connected to the Ontario transmission grid by the end of 2023 through the Wataynikaneyap Transmission Project. In 2014, Ontario’s Independent Electricity System Operator (“IESO”) completed a feasibility assessment for connecting these communities to the transmission grid. Due to the radial nature and remoteness of the lines, IESO estimated that communities would experience planned (for maintenance) and unplanned (e.g. due to weather) outages ranging from 0.81% to 2.09% per year (which equates to 70 to 183 hours per year). The expected duration of outages was not explored, but IESO did note that backup power should be required 5% of the time. IESO suggested that a combination of transmission and a backup power supply may result in similar or better reliability for Connecting Communities than the continued use of diesel generation only. As a result, IESO’s 2016 Recommended Scope for the Wataynikaneyap Transmission Project called on Wataynikaneyap to facilitate the arrangement of backup power in the Connecting Communities as part of project planning, noting that it should – at a minimum – maintain power to critical buildings in the communities.

IESO’s 2014 Remote Community Connection Plan can be accessed by visiting: <http://www.ieso.ca/en/Get-Involved/Regional-Planning/Northwest-Ontario/Remote-Community-Connection-Plan>.

IESO’s 2016 Recommended Scope for the Wataynikaneyap Transmission Project Report is available at: https://www.oeb.ca/oeb/Documents/Documents/IESO_Report_Pickle_Lake_and_Remotes_Scope_20161013.pdf.

BBA Backup Power Report (May 2018):

In response to IESO’s findings and recommended scope, in 2016, Wataynikaneyap launched a process to facilitate backup power planning by identifying and communicating options and requirements for backup power to the Connecting Communities.

This included retaining the engineering firm BBA to assess backup power requirements, options and costs for the Connecting Communities (“BBA Report”). Similar to findings of IESO, BBA estimated that some communities would see a decrease in outages (within the Independent Power Authority (“IPA”) serviced communities); however, the majority of communities would see an increase in outages (within the Remotes-serviced communities). BBA evaluated the common causes of interruptions and based on Wataynikaneyap’s proposed design for the transmission line and the experiences in other jurisdictions, provided a refined transmission outage estimate of between 0.75% and 1.65% per year per community (which equates to 65 to 144 hours per year). The BBA Report also stated that the probability of outages will vary over time, with more outages occurring initially as design/construction issues are identified and addressed, which would be followed by a period of relative stability.

BBA analyzed various technological options for backup power (e.g. renewable energy, diesel generators), ultimately recommending that the existing diesel generation systems (“DGS”) in the Connecting Communities be re-purposed to provide backup power for the near to medium term. The BBA Report also included recommendations for the design, construction and operations & maintenance of the transmission line to improve reliability. The BBA Report stated that, “outages requiring the backup power system can be reduced by 50% by

implementing the good practices.” During Wataynikaneyap’s Leave to Construct process (more information below), Wataynikaneyap summarized how various controls recommended in the BBA Report have been incorporated into the Project’s design, including:

- A robust design (e.g. cross-arms and braces that are galvanized structural steel);
- The adjustment of routing to avoid permafrost and wetlands areas to the extent possible; and
- The implementation of redundant configuration in substation design by ensuring each substation supplying a Connecting Community contains two transformers, either of which is capable of supplying the entire load of the community.¹

As a result of these design changes incorporated by Wataynikaneyap, it is possible that the Connecting Communities may in fact experience fewer outages than originally estimated by BBA.

The BBA Report contained information gaps including costs and operating requirements to convert and use the existing generators for backup power. In addition, community engagements and site visits were not undertaken as part of the development of the report. The BBA Report is provided in Appendix B. Due to these information gaps, further study was recommended by the First Nations.

Hydro One Remote Communities Inc. Backup Power Report (December 2018 / November 2019) and Correspondence:

Hydro One Remote Communities Inc. (“Remotes”) currently owns/operates diesel generating stations and local distribution systems in 10 of the 16 Connecting Communities and will become the owner/operator of local distribution systems for the remaining six communities in a grid-connected environment. As such, Remotes was identified as a potential operator of backup power in the Connecting Communities. In 2018, Opiikapawiin Services LP (“Opiikapawiin”) retained Remotes to determine the suitability of the existing DGS assets for backup power and costs associated with conversion from prime power to backup power. The “Feasibility of Using Existing Diesel Generating Stations for Backup Power in Remote Grid-Connected Communities” report (“Remotes Report-2018”), dated December 2018, determined that, in most cases, the existing DGS assets can be easily re-purposed to provide communal backup power with minimal initial capital investment.

The Remotes Report-2018 contained information gaps, including requirements for Remotes to own or operate DGS assets in the six IPA communities (e.g. related to environmental considerations) and steps to implement recommended backup power solutions. In November 2019, Remotes prepared a Containerized DGS Option Annex (“Remotes Report-Annex”), which provided costing related to Remotes owning and operating backup generating facilities in some communities by constructing new assets on greenfield sites. The Remotes Report-2018 is provided in Appendix C and the Remotes Report-Annex is provided in Appendix D.

¹ Wataynikaneyap Power LP. “[Responses to Supplemental Interrogatories of Board Staff](#).” OEB Case Number: EB-2018-0190. 21-Jan-2019.

First Nations LP Shareholders Resolution (December 2018):

In December 2018, the 22 Shareholders (Chiefs), now 24, of First Nation LP (“FNLP”) passed a resolution that Opiikapawiin represent the Connecting Communities in backup power planning discussions. All of the Connecting Communities invariably took the same position and passed a resolution in support of full communal backup power. The planning window for which backup power would be supported was set to 2030. During this time, the need, effectiveness, and costs associated with backup power could be better understood and justified. The need and costs for implementation of backup power beyond 2030 will be further studied during this planning window with the goal of a seamless continuation of backup power service. The Plan and commitments will need to address environmental responsibility and concerns, on a community-by-community basis, including all past and present grievances relating to historical environmental contaminations at the DGS sites. The Connecting Communities are shareholders of FNLP. The FNLP Shareholders Resolution related to backup power is provided in Appendix E.

Wataynikaneyap Leave to Construct Application & Approval (April 2019):

In order to build the Wataynikaneyap Transmission Project, Wataynikaneyap required approval from the Ontario Energy Board (“OEB”). During the Leave to Construct proceeding (EB-2018-0190), OEB staff, Wataynikaneyap, and Remotes discussed system reliability and backup power.

Both Remotes and OEB staff commented in their submissions that, without adequate backup power supply, the majority of the Connecting Communities would experience an increase in the frequency and duration of outages than they do currently.

Wataynikaneyap noted that outage frequency and duration are not the only ways to measure transmission system reliability. For example, the Transmission System Code (TSC) defines “reliability” in relation to electricity service as meaning, “the ability to deliver electricity in accordance with all applicable reliability standards and in the amount desired.” IESO’s Market Rules build on the TSC’s definition, stating that “reliability” is “the ability to deliver electricity within reliability standards and in the amount desired and means, in respect of ... a transmission system, the ability of ... that transmission system to operate within reliability standards in an adequate and secure manner”. Wataynikaneyap stated that the Remote Connection Line components of the project are designed to contribute most significantly to those aspects of reliability that relate to the ability to operate in an “adequate and secure manner” and to deliver electricity “in the amount desired.” Wataynikaneyap also noted on several occasions that, while they can play a supporting role, securing supply of backup power is out of their control as the transmitter.

In its Decision and Order, the OEB stated that all parties agreed during the proceeding that backup power is an essential component for the Project’s success, that there are multiple actors and diffuse responsibilities and authorities involved in the provision of backup power supply, and that IESO’s 2016 Scope Document calls for Wataynikaneyap to facilitate the arrangement of the backup solutions. The OEB also noted that both Remotes and OEB staff expressed concerns about the risk that backup supply might not be secured: (a) on time (by the time communities are being grid connected); (b) in sufficient and appropriate quantities; and (c) for all Connected Communities, including current IPAs.

In the end, the OEB’s approval of Wataynikaneyap’s Leave to Construct application included a condition that Wataynikaneyap provide semi-annual reporting to the OEB on the progress of backup power supply arrangements for the Connecting Communities. These reports are submitted every April and October.

Commitments for Backup Power Under the Wataynikaneyap Power Project Funding Framework (July 2019):

In the Parallel Process Agreement, executed by Canada, Ontario, Wataynikaneyap and FNLP in July 2019, the parties acknowledged that the following two reports were prepared in relation to backup power and the Connecting Communities: BBA Report (May 2018) and Remotes Report (December 2018).

Canada and FNLP agreed that they would continue to work together and with the Connecting Communities as well as involve other interested parties as appropriate (including Ontario, Wataynikaneyap, the IESO, and Remotes) to develop a backup power implementation plan and commitments for the Connecting Communities. This work would include consideration to appropriate reliability and service standards as well as to the utilization of existing DGS assets that are in a condition to be safely operated for such purposes in accordance with good utility practice.

Letters from Indigenous Services Canada to the Connecting Communities (December 2018 / November 2019):

In a letter to the Connecting Communities dated December 14, 2018, Indigenous Services Canada (“ISC”) Ontario Regional Director General, Anne Scotton, stated that ISC is committed to provide backup power for the following ISC funded critical assets: water treatment plants, wastewater treatment plants & related lift stations, schools, nursing stations & nurse residences, and fire halls. Backup power to these critical assets would meet ISC’s Level of Service Standard (LOSS) for Electric Power Supply and Distribution Systems, as well as IESO’s requirement for Wataynikaneyap to facilitate the arrangement of backup power resources that would be available, at a minimum, to maintain supply to essential loads within critical buildings.

The letter also stated that the existing diesel generating equipment may provide a useful source of backup power once communities are connected to the provincial transmission grid and that the Department would work with communities, Ontario’s Ministry of Energy, Northern Development and Mines, and Remotes, to define the process to establish a backup power implementation plan and finalize an implementation plan in calendar year 2019.

In November 2019, ISC sent a subsequent letter to the Connecting Communities advising that due to the complexity of developing sustainable and reliable backup power options, a revised completion date of March 2020 had been identified by the Backup Power Working Group as achievable to finalize an implementation plan. These letters are included as Appendix F.

Formation of Backup Power Working Group (January 2019 to present):

In order to develop the implementation plan, ISC and Opiikapawiin (as mandated by FNLP) formed a Backup Power Working Group (“BPWG”) with the objective of drafting a Backup Power Implementation Plan during the 2019 calendar year (subsequently updated to March 2020), for presentation to the Connecting Communities. The BPWG Terms of Reference is included as Appendix G.

While ISC’s LOSS includes a guideline to provide backup power for ISC-funded critical assets when reliability concerns are demonstrated, ISC agreed to consider community-wide backup power for the Connecting Communities. Community-wide backup would respond to transmission system outages; Remotes has indicated that their local distribution service is on average 99.92% reliable, and that outages are typically short, and only affect a portion of the community. As such, community-wide backup power would replace the need for critical infrastructure backup at a community gathering spot (e.g. schools), as well as fire hall. Critical infrastructure

backup power would still be required for critical assets which include: water & wastewater treatment facilities, lift stations, nursing stations, and nurse residence(s).

Expected Community Connection Dates

Listed in Table 2 below are the expected grid connection dates for the Connecting Communities, according to the Wataynikaneyap Transmission Project energization schedule from October 2019:

Table 2 - Wataynikaneyap Transmission Project's Expected Date for Grid Connection			
	First Nation	Remotes-Serviced or Independent Power Authority (IPA)	Expected Date for Energization
1	Pikangikum	Remotes-Serviced	Connected December 2018
2	Kingfisher Lake	Remotes-Serviced	September 2021
3	North Caribou Lake	Remotes-Serviced	January 2022
4	Poplar Hill	IPA	April 2022
5	Deer Lake	Remotes-Serviced	May 2022
6	Wunnumin Lake	IPA	July 2022
7	Sandy Lake	Remotes-Serviced	August 2022
8	Wawakapewin	IPA	September 2022
9	Bearskin Lake	Remotes-Serviced	September 2022
10	Muskrat Dam	IPA	September 2022
11	North Spirit Lake	IPA	October 2022
12	Kasabonika Lake	Remotes-Serviced	May 2023
13	Kitchenuhmaykoosib Inninuwug	Remotes-Serviced	May 2023
14	Sachigo Lake	Remotes-Serviced	May 2023
15	Wapekeka	Remotes-Serviced	May 2023
16	Keewaywin	IPA	May 2023
Source: Wataynikaneyap (February 10, 2020)			

It will be important to align backup power activities and objectives with the expected connection dates, to the greatest extent possible.

1st Year Power Outage Statistics Following Pikangikum First Nation Grid Connection in December 2018

Wataynikaneyap provided outage statistics from Pikangikum First Nation's first year of being connected to the provincial transmission grid. During 2019, Pikangikum First Nation experienced approximately 45 hours (cumulatively) of outages in the community. The total outage time for the first year of grid-connection is lower than the estimates from both the IESO and BBA. The majority of outages and outage hours were not directly attributed to Wataynikaneyap, but rather resulted from adjoining electrical transmission system infrastructure in Red Lake as well as faults on the local distribution system caused by small animals. The transmission outages related to local distribution faults may be due to interconnection issues and are expected to be reduced in subsequent years.

During the year, a large forest fire crossed Wataynikaneyap's transmission line and came in close proximity to the substation. The impact to Pikangikum's power supply was minimal; however, it could have been much worse.

3. Purpose

The purpose of the Backup Power Plan (“the Plan”) is to identify and evaluate backup power options, identify project partners, and describe the implementation steps to facilitate backup power in each Connecting Community prior to grid connection. The Plan outlines the:

- Process and outcome of selecting a proposed option for each Connecting Community;
- Estimated costs and funding source(s); and
- Expected implementation steps, timelines, and risks of the recommended option.

The Plan is meant to act as a guiding document for implementing unique backup power solutions in each Connecting Community.

4. Engagement Process

4.1. Engagement with Project Stakeholders

Table 3 – Summary of Project Stakeholders		
	Name	Role / Participation
1.	<i>First Nation LP</i>	<ul style="list-style-type: none">• The Connecting Communities are shareholders in First Nation LP• Committed to working with Canada to develop a backup power implementation plan• Mandated its affiliate Opiikapawiin to undertake backup power planning• Received updates at Board and Shareholder meetings
2.	<i>Opiikapawiin Services LP</i>	<ul style="list-style-type: none">• Mandated by FNLP, including shareholders from the Connecting Communities, to facilitate backup power planning on behalf of FNLP• Member of the Backup Power Working Group• Co-author of the Plan
3.	<i>Tribal Councils</i>	<ul style="list-style-type: none">• Provided updates on OSLP’s bi-weekly planning calls• Provided a monthly update summary• Supports OSLP’s community engagement• Review of draft Plan
4.	<i>Canada</i> (Represented by ISC)	<ul style="list-style-type: none">• Committed to work with FNLP (through Opiikapawiin) to develop a backup power implementation plan• Member of the Backup Power Working Group• Co-author of the Plan

5.	<i>Wataynikaneyap Power</i>	<ul style="list-style-type: none"> • Proponent for the 1700km new transmission lines to the Connecting Communities • Required by the OEB to provide semi-annual reporting on the progress of backup power • Provided information to the Connecting Communities on the expected reliability of the transmission line as well as high level options and requirements for backup power • Provided information on transmission system outages to date in Pikangikum
6.	<i>Hydro One Remote Communities Inc.</i>	<ul style="list-style-type: none"> • Currently owns/operates diesel generation stations and/or local distribution systems in 10 of the Connecting Communities • Engaged in the transfer process with the six IPA Connecting Communities to takeover local distribution service upon grid connection • Assessed the options and requirements for re-purposing existing DGS assets in the Connecting Communities from prime power to backup power • Assessed the costs to own and operate backup generating facilities by constructing assets on greenfield sites • Participates in some Backup Power Working Group meetings
7.	<i>Ontario Ministry of Energy, Northern Development, & Mines</i>	<ul style="list-style-type: none"> • Participates in Backup Power Working Group meetings • Develops energy policy in Ontario, including legislation governing the Ontario Energy Board (OEB) • Develops and administers (including through its agencies and the OEB) programs and services related to energy in Ontario, including the Rural or Remote Rate Protection (RRRP) subsidy program, which would contribute funding to operational costs of backup power

4.2. *Engagement with the Connecting Communities*

Prior to the formation of the BPWG, Wataynikaneyap engaged the Connecting Communities to provide information on expected outages and potential backup power options, including BBA's recommendation to utilize existing DGS assets for backup power. To ensure the Connecting Communities remained informed of the latest developments and provided with opportunities to share feedback, Opiikapawiin planned two rounds of engagement with each Connecting Community.

The objectives of the first round of engagement (2019) were to:

- Provide an update on planning activities
- Gather what each community's expectations are
- Confirm whether the First Nation supports utilizing existing DGS assets for backup power
- Discuss next steps

The objectives of the second round of engagement (2020) were to:

- Present the proposed option for backup power in each Connecting Community based on discussions with funding partners
- Present summary of the draft Plan for review and feedback
- Obtain support for the draft Plan in the form of an executed Band Council Resolution ("BCR")

Summaries of both rounds of engagement with the Connecting Communities can be found in Appendix H. These summaries include dates of engagement, types of engagement, and outcomes from these engagements.

Note, due to scheduling challenges and community closures related to Covid-19 precautions, not all community engagement sessions were held in each of the Connecting Communities.

Throughout Opiikapawiin's engagement, the Connecting Communities have highlighted many of the hardships as a result of power outages and reinforced the need for full community backup power supply. The list below provides a summary of these challenges, the majority of which could be avoided with full community-wide backup power:

Impact	Description
<i>Health & Safety</i>	<ul style="list-style-type: none"> Extended outages during the winter increase the use of candles and lanterns for lighting which pose safety risks. There have been instances where houses have burnt down due to increased use of open flames during extended outages. Elderly and people with disabilities are more at risk of facing health issues from inadequate heating during extended outages in the winter months (e.g. pneumonia). Relocating to centralized gathering spot is difficult and disruptive. Extended outages pose significant health & safety risks to people reliant on medical equipment (e.g. home dialysis machines, sleep apnea machines, medical fluids that must be kept at constant temperature). Lack of available home and street lighting raises the risk of slip & fall injuries, vehicular accidents, general disorientation, etc.
<i>Food Spoilage</i>	<ul style="list-style-type: none"> Food spoilage during extended outages in summer months: <ul style="list-style-type: none"> Wild animals and berries are a significant food source in the Connecting Communities; Additional cost, time & effort required to replenish food inventory; First Nations' beliefs place high importance on not wasting a harvested animal; and Food costs are already extremely high.
<i>Damage to Infrastructure</i>	<ul style="list-style-type: none"> Infrastructure (e.g. water supply in houses) is at risk of freezing during outages that occur in cold winter months. This is extremely disruptive to community members, and costs associated with repairing or replacing infrastructure (e.g. water pipes) are high.
<i>Overall Community Well-Being</i>	<ul style="list-style-type: none"> Outages impact First Nations' ability to deliver programs, services, and projects, which leads to lost productivity and services for community members.
<i>Reliability of Critical Asset Backup</i>	<ul style="list-style-type: none"> There are operations and maintenance challenges of a non-centralized backup plan that requires ongoing operation and maintenance of the individual backup systems. Many individuals noted that critical asset backup often did not work.
<i>Evacuations</i>	<ul style="list-style-type: none"> In the event of an extended outage, community members may need to be evacuated for health & safety reasons. The monetary and economic costs of evacuations are high and extremely disruptive to communities, Tribal Councils, and supporting government departments. Outages disrupt an individual's ability to spend time on the land to carry out traditional practices (hunting, gathering, spirituality), as they may be evacuated for health & safety reasons.

5. Preliminary Options Analysis

In 2017, Wataynikaneyap retained the services of engineering firm BBA to assess backup power requirements for the Connecting Communities, options, advantages/disadvantages of each option, and a recommended option. The options assessed are summarized below:

Option	Comments from BBA Report
<i>Solar</i>	Solar energy is not always available. Could be combined with battery; however, batteries are costly, and may not perform as well in cold climates (although technologies are improving).
<i>Wind</i>	Wind energy not always available. Could be combined with battery; however, batteries are costly, and may not perform as well in cold climates (although technologies are improving).
<i>Biomass</i>	Slow response / start time, high upfront costs, high operations and maintenance costs.
<i>Hydroelectric</i>	Requires site with reservoir (storage). High initial cost with 5+ years to implement. Would need to be close to the transmission line or community.
<i>Transmission Looping</i>	Would require significant investment to build additional transmission line (e.g. connecting Keewaywin and Muskrat Dam). Due to the length of the line, the loop may not support all communities in the event of an outage.
<i>Battery</i>	Technology is considered immature and expensive, especially for remote areas. In addition, technology may not perform well in cold climates.
<i>Diesel Generators</i>	Lowest cost solution, best availability, can be implemented prior to grid connection. Primary drawback is environmental.

BBA concluded that re-purposing the existing diesel generators provides the best near- to medium-term solution based on cost, availability, implementation timeline, and operational requirements. Their study did indicate that the other options could be revisited in the medium- to long-term as technologies improve and costs decrease.

6. Backup Power Options Considered by the BPWG

Since the BBA report recommended utilizing the existing DGS assets in the Connecting Communities for backup power in the near- to medium-term, the BPWG focused on determining if the existing diesel generators could be re-purposed. In order to do so, the BPWG completed the following steps to assess the DGS backup power option for each community:

- 1) Determine if it is technically feasible to re-purpose the existing DGS assets in each Connecting Community for backup power, including any capital requirements for converting operation from prime to backup power;
- 2) Identify environmental or liability considerations that could prohibit utilizing the DGS assets for backup power;
- 3) Engage in discussions with Connecting Communities and funding partners; and
- 4) If the existing DGS assets cannot be re-purposed (based on 1 & 2 above), explore the following alternatives:
 - a) Critical asset backup only;
 - b) New containerized diesel generation unit on a new site; and/or,
 - c) Other alternative(s) based on each community requirements/input.

The BPWG also assessed options for potential ownership and/or operation of the DGS. Remotes was identified as the recommended operator for the following reasons:

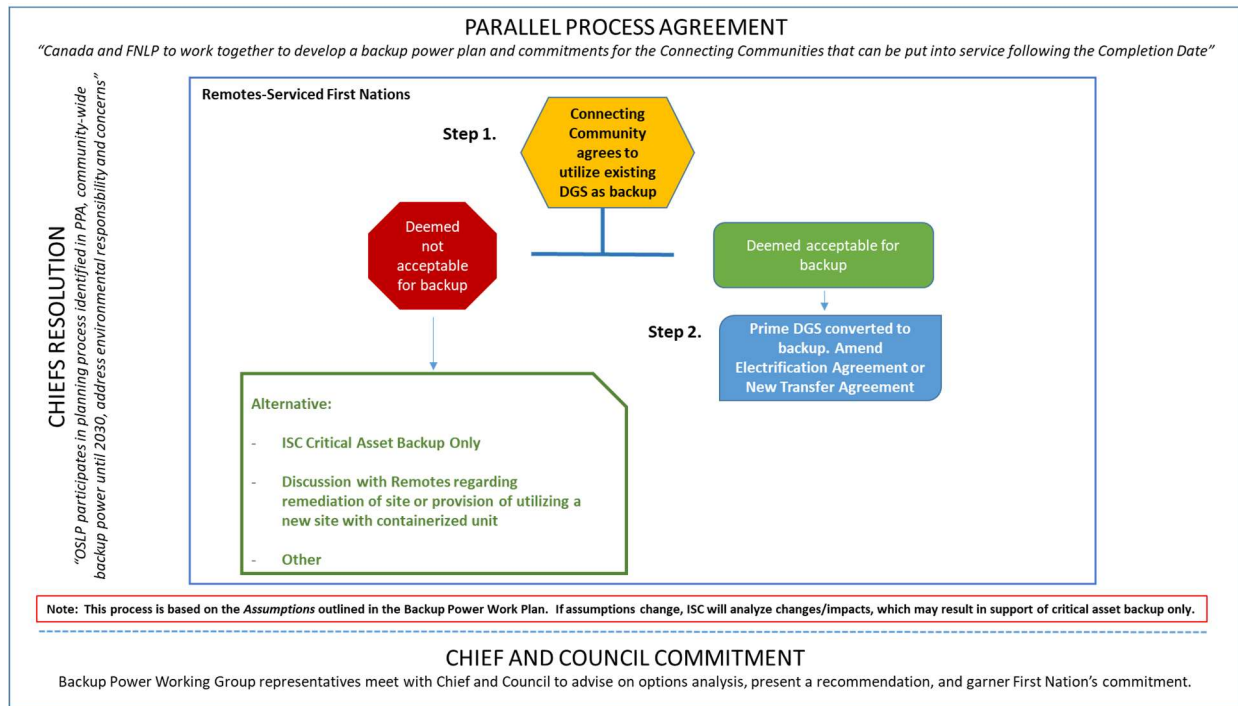
- Remotes currently owns/operates diesel generation stations and/or local distribution systems in 10 of the 16 Connecting Communities, and will own/operate the local distribution systems in the remaining six communities prior to grid connection;
- There are efficiencies and economies of scale of having a single operator for backup power in the Connecting Communities;
- Remotes is a provincially regulated utility with operating and performance standards;
- Remotes is best positioned to access provincial subsidies (e.g. Rural or Remote Electricity Rate Protection (RRRP) program) to support costs associated with providing backup power; and
- There are significant costs and requirements that need to be met prior to becoming a licensed generator/distributor in Ontario.

The BPWG engaged Remotes in the analysis of the technical and environmental considerations for re-purposing DGS assets for backup power. The following considerations were noted:

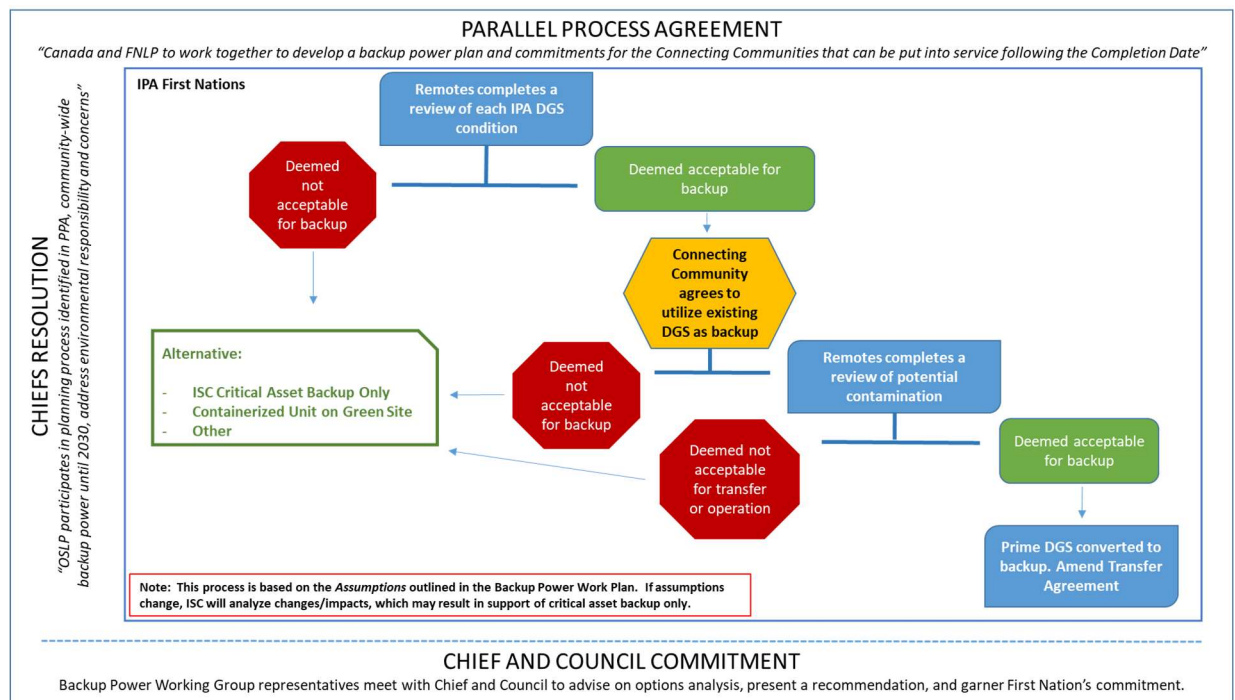
1. For communities where Remotes already owns and operates the DGS, the decision process was simplified since Remotes indicated that, in most instances, there are minimal changes required to convert its DGS from prime power to backup power.
2. For the IPA communities, Remotes would need to assess whether the DGS meets the technical and environmental requirements for re-purposing as backup power.
3. For all communities, the First Nation would need to agree to utilizing the existing DGS for backup power.

The following illustrations show the options analysis process according to whether a community's DGS is currently owned/operated by Remotes or an IPA:

REMOTES COMMUNITIES: Process for Determining Whether DGS can be Re-Purposed



IPA COMMUNITIES: Process for Determining Whether DGS can be Re-Purposed



6.1. Re-Purposing Existing Diesel Generators

Remotes Report-2018 indicated that, from a technical perspective, most of the 16 existing DGS facilities can be re-purposed for backup power, with the exception of Pikangikum First Nation and Wawakapewin First Nation. Prior to takeover of any IPA DGS, it must be in good operating condition and be in compliance with all applicable industry standards and regulations.

As the Remotes Report-2018 did not include environmental considerations, the BPWG provided environmental documentation on the IPA DGS sites to Remotes in order for them to identify any environmental concerns and requirements for takeover. Remotes indicated there are environmental concerns for all IPA First Nations, and that further environmental studies may be required. Remotes stated that they will not accept any liability for environmental contamination that occurred prior to their takeover of operations. As such, an agreement would need to be reached between Remotes, the First Nation and Canada to outline environmental responsibility for pre-existing contamination, as well as any new contaminations that may occur after Remotes takeover. Remotes also noted they would not accept transfer of ownership of the IPA assets due to the current backup term set to end in 2030; however, they are willing to operate the IPA DGS sites, assuming an agreement (“Operating Agreement”) on the terms and conditions can be reached among relevant parties.

In November 2019, Remotes prepared a Containerized DGS Option Annex (“Remotes Report-Annex”), which advised that North Caribou Lake First Nation’s diesel generating station is at end of life and the site has significant contamination that requires cleanup. Remotes stated that they will not operate on the existing site after grid connection; therefore, costing to build an asset on a new site within North Caribou Lake First Nation was included in their Containerized DGS Option Annex.

During Round 1 (2019) of community engagement sessions conducted by Opiikapawiin, Keewaywin First Nation indicated their concerns with utilizing their existing DGS assets for backup power due to its current location. North Caribou Lake First Nation indicated that they do not support utilizing their existing DGS assets for backup power due to the existing soil contamination.

Table 4 below shows a summary of the BPWG’s assessment on re-purposing the existing DGS in the Connecting Communities, based on the analysis completed by Remotes and community engagement:

Table 4 - Summary Table on Re-Purposing an Existing DGS				
First Nation	Current LDC	Technically Feasible to Remotes ¹	Environmentally Acceptable to Remotes	Re-purposing Acceptable to First Nation ²
Bearskin Lake	Remotes	Yes	Yes	Yes
Deer Lake	Remotes	Yes	Yes	Yes
Kasabonika Lake	Remotes	Yes	Yes	Yes
Kingfisher Lake	Remotes	Yes	Yes	Yes
Kitchenuhmaykoosib Inninuwug	Remotes	Yes	Yes	Yes
North Caribou Lake ³	Remotes	No ³	N/A	No
Pikangikum	Remotes	N/A, DGS is being decommissioned		
Sachigo Lake	Remotes	Yes	Yes	Yes
Sandy Lake	Remotes	Yes	Yes	Yes
Wapekeka	Remotes	Yes	Yes	Yes
Keewaywin	IPA	Yes	TBD ⁴	Unknown ⁵
Muskrat Dam	IPA	Yes	TBD ⁴	Yes
North Spirit Lake	IPA	Yes	TBD ⁴	Yes
Poplar Hill	IPA	Yes	TBD ⁴	Yes
Wawakapewin	IPA	No	N/A	N/A
Wunnumin Lake	IPA	Yes	TBD ⁴	Yes
Notes:				
1. Hydro One Remote Communities Inc. December 2018 report entitled "Feasibility of Using Existing Diesel Generating Stations for Backup Power in Remote Grid-Connected Communities".				
2. OSLP's Community Engagement Sessions - Round 1 & 2.				
3. As per Remotes letter, dated March 2020, North Caribou Lake First Nation's DGS is not technically feasible.				
4. Discussions underway between Remotes and ISC to finalize an agreement related to environmental responsibilities pending Environmental Site Assessments results.				
5. OSLP engagement with First Nation is on-going.				

Table 5 summarizes Remotes estimated costs to transition the existing DGS assets from prime to backup power service in Connecting Communities, as well as ISC's desktop analysis of the costs to ensure ISC-funded health and safety critical assets have dedicated standby backup power:

Table 5 - Estimated Capital Costs to Re-purpose an Existing DGS

First Nation	Transitional Capital Support ²	Existing Gaps in Health & Safety ISC-Critical Assets - Estimated Costs ⁴	Total Estimated Costs
Bearskin Lake	\$118,000	\$122,400	\$240,400
Deer Lake	\$118,000	\$391,200	\$509,200
Kasabonika Lake	\$118,000	\$150,400	\$268,400
Kingfisher Lake	\$118,000	\$150,400	\$268,400
Kitchenuhmaykoosib Inninuwug	\$118,000	\$234,400	\$352,400
Sachigo Lake	\$118,000	\$150,400	\$268,400
Sandy Lake	\$118,000	\$234,400	\$352,400
Wapekeka	\$118,000	\$178,400	\$296,400
Keewaywin ³	\$684,000	\$234,400	\$918,400
Muskrat Dam ³	\$199,000	\$178,400	\$377,400
North Spirit Lake ³	\$209,000	\$335,200	\$544,200
Poplar Hill ³	\$199,000	\$279,200	\$478,200
Wunnumin Lake ³	\$209,000	\$150,400	\$359,400
Totals	\$2,444,000	\$2,789,600	\$5,233,600

Notes:

1. Cost estimates are in 2019\$.

2. Hydro One Remote Communities Inc. December 2018 report entitled "Feasibility of Using Existing Diesel Generating Stations for Backup Power in Remote Grid-Connected Communities" and Hydro One Remote Communities Inc. November 2019 report entitled "Containerized DGS Option Annex".

3. Operator Training (\$43,000) has been removed from the above Transitional Capital Support costs and captured under O&M costs in Table 9.

4. ISC Desktop Analysis of Health & Safety ISC-Critical Assets (GCDocs#36929572).

Note: For the IPA communities identified as technically feasible for Remotes to operate in Table 4, further discussions by Remotes and ISC are underway to determine if an agreement related to environmental responsibilities can be reached. Any such agreement terms will be reflected in the Operating Agreement between Remotes, the IPA First Nation, and Canada (see Section 7.1.2 Environmental).

Advantages / Disadvantages of Re-Purposing DGS for Backup Power

Advantages	Disadvantages
<ul style="list-style-type: none"> • Lowest initial cost option (for most, but not all communities) • Utilizes an existing asset • Sufficient output capacity to provide full community backup to 2030 at a minimum • For Remotes communities, lowest implementation risk 	<ul style="list-style-type: none"> • Does not allow for full clean-up of contaminated DGS sites in the near term • May face implementation delays in IPA communities where ISC / FN / Remotes agreement required on environmental responsibility • Cost risk to ensure DGS meets industry standards and regulations • Remaining life of assets shorter than a new DGS

6.2. Containerized Diesel Generators Alternative

To deepen the backup power analysis, the BPWG (through Opiikapawiin) engaged Remotes to determine the cost and requirements for containerized diesel generation assets on new sites for the IPA Communities, Pikangikum First Nation and North Caribou Lake First Nation, since there are either technical and/or environmental challenges to re-purposing those diesel generating stations. At the request of the BPWG, gensets and fuel tanks were sized to be sufficient until at least 2030 (based on 4% annual growth). Remotes Report-Annex on the Containerized DGS Option can be found in Appendix D.

The Annex provides the following:

- Costs to install a new backup generating station on a new site in each of the IPA communities, North Caribou Lake First Nation, and Pikangikum First Nation;
- Nominal generator sizing and other requirements for major components of the generating stations; and
- Sample layout for a containerized backup power facility within a Remotes compound site.

For costing purposes, Remotes assumed that the containerized diesel generation facility would be located on the same site as the Remotes Compound². The capital cost estimates include permitting, contract management, project management, partial design, and a 10% contingency.

Table 6 provides the Remotes estimated capital costs for a new DGS, as well as ISC's desktop analysis of the costs to address current gaps that will ensure that ISC-funded health and safety critical assets have dedicated standby backup power:

Table 6 - Estimated Capital Costs for New Containerized DGS Alternative			
First Nation	Estimated Capital Cost for New Containerized Diesel Generator²	Existing Gaps in Health & Safety ISC-Critical Assets - Estimated Costs³	Total Estimated Costs
North Caribou Lake	\$3,903,900	\$206,400	\$4,110,300
Pikangikum	\$5,848,700	\$122,400	\$5,971,100
Keewaywin	\$3,568,400	\$122,400	\$3,690,800
Muskrat Dam	\$3,568,400	\$178,400	\$3,746,800
North Spirit Lake	\$3,568,400	\$335,200	\$3,903,600
Poplar Hill	\$3,568,400	\$279,200	\$3,847,600
Wawakapewin	\$2,901,800	\$0	\$2,901,800
Wunnumin Lake	\$4,299,900	\$150,400	\$4,450,300
Totals	\$31,227,900	\$1,394,400	\$32,622,300
Notes:			
1. Cost estimates are in 2019\$.			
2. Hydro One Remote Communities Inc. November 2019 report entitled "Containerized DGS Option Annex".			
3. ISC Desktop Analysis of Health & Safety ISC-Critical Assets (GCDocs#36929572).			

² Except Pikangikum First Nation, where a new or expanded Remotes site would be required

Advantages / Disadvantages of New Containerized DGS Alternative

Advantages	Disadvantages
<ul style="list-style-type: none">• Provides full community backup to 2030 at a minimum• Allows for decommissioning and full clean-up of contaminated DGS sites• Major components include a manufacturer's warranty• Longer asset life expected compared to re-purposing a DGS	<ul style="list-style-type: none">• Highest cost option for the term to 2030• Requires a new or expanded site (in most cases), which may add to construction timelines due to site selection and environmental assessment requirements• More implementation risks, including lead times, winter road availability, and permitting requirements

6.3. ISC-Critical Asset Backup Only Alternative

ISC's LOSS for Electric Power Supply and Distribution Systems supports backup power for the following ISC-funded critical assets when reliability concerns are demonstrated and funding is available:

1. Water treatment plants;
2. Wastewater treatment plants & related lift stations;
3. Schools;
4. Nursing stations & nurse residences; and
5. Fire halls.

Under the scenario where full community backup is available, additional capital for backup at the school and fire hall would be avoided since Remotes' historical local distribution reliability has been 99.92%. In 2019, ISC conducted a desktop analysis to determine where additional capital would be required to fulfill its LOSS, based on existing community assets.

Table 7 provides ISC's estimated costs, as well as the avoidable portion under the scenario where full community backup is available:

Table 7 - Estimated Costs for Backup Power Gaps in ISC-Funded Critical Assets Alternative								
First Nation	Health & Safety ISC-Critical Assets				Estimated Cost to Fill Gaps	Other ISC-Funded Assets		Total Estimated Cost to Fill Critical Asset Gaps
	Water Treatment	Sewage Treatment	Sewage Lift Stations	Nursing Station/Residence		School	Fire Hall	
Bearskin Lake	No Gap	No Gap	\$122,400	No Gap	\$122,400	\$784,000	\$156,800	\$1,063,200
Deer Lake	No Gap	\$156,800	\$234,400	No Gap	\$391,200	No Gap	No Asset	\$391,200
Kasabonika Lake	No Gap	No Gap	\$150,400	No Gap	\$150,400	\$784,000	No Asset	\$934,400
Kingfisher	No Gap	No Gap	\$150,400	No Gap	\$150,400	\$784,000	\$156,800	\$1,091,200
Kitchenuhmaykoosib Inninuwug	No Gap	No Gap	\$234,400	No Gap	\$234,400	No Gap	No Asset	\$234,400
North Caribou Lake	No Gap	No Gap	\$206,400	No Gap	\$206,400	\$784,000	\$156,800	\$1,147,200
Pikangikum	No Gap	No Gap	\$122,400	No Gap	\$122,400	No Gap	No Asset	\$122,400
Sachigo Lake	No Gap	No Gap	\$178,400	No Gap	\$178,400	\$784,000	\$156,800	\$1,119,200
Sandy Lake	No Gap	No Gap	\$150,400	No Gap	\$150,400	No Gap	\$156,800	\$307,200
Wapekeka	No Gap	No Gap	\$150,400	No Gap	\$150,400	\$784,000	No Asset	\$934,400
Keewaywin	No Gap	No Gap	\$122,400	No Gap	\$122,400	\$784,000	\$156,800	\$1,063,200
Muskrat Dam	No Gap	No Gap	\$178,400	No Gap	\$178,400	\$784,000	\$156,800	\$1,119,200
North Spirit Lake	No Gap	\$156,800	\$178,400	No Gap	\$335,200	\$784,000	No Asset	\$1,119,200
Poplar Hill	No Gap	\$156,800	\$122,400	No Gap	\$279,200	\$784,000	No Asset	\$1,063,200
Wawakapewin	No Gap	No Asset	No Asset	No Gap	\$0	No Asset	No Asset	\$0
Wunnumin Lake	No Gap	No Gap	\$150,400	No Gap	\$150,400	\$784,000	No Asset	\$934,400
Totals	\$0	\$470,400	\$2,452,000	\$0		\$8,624,000	\$1,097,600	
ISC Critical Asset Gap								\$12,644,000
Avoidable Capital if Full Community Backup Available (School & Fire Hall)								\$9,721,600

Source: ISC Desktop Analysis of ISC-Critical Assets (GCDocs#36929572).

Advantages / Disadvantages of ISC-Funded Critical Asset Backup Alternative

Advantages	Disadvantages
<ul style="list-style-type: none"> Allows for decommissioning and full clean-up of contaminated DGS sites May be quickest option to implement 	<ul style="list-style-type: none"> Does not meet FNLP Resolution position calling for full community backup to 2030 at a minimum

7.1. Implementation Requirements for the Options

Each of the backup power options being considered have different implementation requirements, described in the table below. These requirements add varying costs, as well as implementation risks (discussed later in the Plan).

7.1.1. Legal

Agreement	Applicable Option(s)	Description / Comments
Electrification Agreement or Operating Agreement	<ul style="list-style-type: none"> • Re-purposing an IPA DGS • Re-purposing a Remotes DGS • New Containerized DGS 	<ul style="list-style-type: none"> • Electrification/Operating Agreements will be between the First Nation, Remotes and Canada, and will set out the terms and conditions (including funding and environmental responsibility) for the provision of backup power on reserve
Section 28(2) Permit and/or Land Use Permit	<ul style="list-style-type: none"> • All except ISC-Funded Critical Asset Backup Alternative 	<ul style="list-style-type: none"> • Remotes will need access to reserve land for the provision of backup power; therefore, a Section 28(2) permit will need to be issued by Canada • Even with existing Remotes sites, a Section 28(2) permit may not currently be in place • If the DGS is located off reserve, then a Land Use Permit issued by Ontario's Ministry of Natural Resources and Forestry (MNRF) will be required (and land users may be impacted, which may require consideration) • Both permits require a survey and an environmental review • The permits will outline environmental responsibilities of the permittee
Band Council Resolution (BCR)	<ul style="list-style-type: none"> • All 	<ul style="list-style-type: none"> • For the agreements and permits identified above, an executed Band Council Resolution will be required

7.1.2. Environmental

Activity	Applicable Option(s)	Description / Comments
Phase II Environmental Site Assessment (ESA)	<ul style="list-style-type: none"> • Re-purposing an IPA DGS • New Containerized DGS 	<ul style="list-style-type: none"> • Identify the extent of contamination and provide a baseline that could be used in order to determine environmental responsibility pre- and post-transfer of ownership/operations to Remotes • ESA report will include recommendations on how to address and/or mitigate impacts • A Phase III ESA may be required in certain communities depending on the recommendations from the Phase II ESA
Confirming Environmental Responsibility	<ul style="list-style-type: none"> • Re-purposing an IPA DGS • New Containerized DGS 	<ul style="list-style-type: none"> • Remotes will not accept responsibility for contaminations that occurred prior to their takeover of

and/or Site Remediation		<p>DGS operations. Based on the ESAs, Operating Agreements may reflect one or more of the following:</p> <ol style="list-style-type: none"> 1. Actions to address the contamination (e.g. clean up, capping, etc.); 2. Remotes being released from any liabilities associated with contaminations that occurred prior to Remotes takeover; and 3. Agreement on responsibility should contaminations occur after Remotes takeover. <ul style="list-style-type: none"> • If there is extensive contamination at an IPA DGS site, it may be difficult to complete full remediation prior to the grid connection date
Decommissioning DGS and Site Remediation	<ul style="list-style-type: none"> • End of life of asset 	<ul style="list-style-type: none"> • If a DGS site is re-purposed, the DGS will be decommissioned and the site remediated when backup power is no longer required. • If a new site is used, the existing DGS site will be decommissioned and remediated; the new containerized unit will be decommissioned, and the site remediated when backup power is no longer required.

7.1.3. Proponent & Funding Process for Transitional Capital Costs

Process	Applicable Option(s)	Description / Comments
Upgrades by Remotes	<ul style="list-style-type: none"> • Re-purposing a Remotes DGS 	<ul style="list-style-type: none"> • Remotes has provided the scope of required upgrades in order for an existing Remotes DGS to be re-purposed for backup power • Remotes would complete the required upgrades under a funding agreement with the First Nation • The First Nation would apply for this funding under ISC's Capital Facilities and Maintenance Program (CFMP)
Upgrades through a First Nation Capital Project	<ul style="list-style-type: none"> • Re-purposing an IPA DGS • New Containerized DGS 	<ul style="list-style-type: none"> • With IPA DGS sites, the project proponent would be the First Nation and the project would be managed under ISC's Capital Facilities and Maintenance Program (CFMP). • Note for New Containerized DGS: if objective is to locate it at the proposed Remotes Compound site being constructed through the IPA Upgrades project that is currently underway, then the First Nation will need to consider the synergies of coordinating or combining the backup power project with the IPA local distribution upgrades and transfer process • Remotes would be engaged throughout the project, as needed
Upgrades through a First Nation Capital Project	<ul style="list-style-type: none"> • Critical Asset Backup 	<ul style="list-style-type: none"> • In both IPA and Remotes-serviced communities, the First Nation would be the project proponent for any funding provided for dedicated standby generators at ISC-funded critical assets

		<ul style="list-style-type: none"> • The project would be managed under ISC's Capital Facilities and Maintenance Program (CFMP)
--	--	--

7.1.4. Regulatory

Activity	Applicable Option(s)	Description / Comments
Provincial Regulatory Approval	<ul style="list-style-type: none"> • Re-purposing an IPA DGS • Re-purposing a Remotes DGS • New Containerized DGS 	<ul style="list-style-type: none"> • Remotes' license will need to be amended by the OEB to add the IPA community names to its service territory to allow for the generation and distribution of diesel for backup power purposes • Remotes will apply to the provincial regulator, the OEB, to recover any costs for the provision of backup service (through the Rural or Remote Rate Electricity Rate Protection (RRRP) program) on their next rate filing, which is in 2023 <ul style="list-style-type: none"> ○ Reliability, customer-defined need, First Nation/community impact, re-use of assets, ISC funding vs. costs/ratepayer impact will be considered by the OEB ○ Appendix J of the Plan provides examples of backup power investments that have been accepted in the past by the OEB; however, it is important to note that each example is situation-specific and they do not bind the OEB's future rulings with regard to backup power

7.1.5. Estimated Implementation Costs for the Options

In addition to the capital costs for each option, it is important to assess the required implementation costs for each option. Based on the implementation requirements described above, Table 8 provides the estimated implementation costs (based on a review of other ISC-funded projects) for each option:

Table 8 - Estimated Implementation Costs				
	Remotes Community (Re-purpose DGS)	IPA Community (Re-purpose DGS)	(Containerized DGS)	Critical Asset Backup Only
Legal				
Asset Transfer Agreement (Understanding and Conveyance Agreement) or Electrification Agreement	\$10,000	N/A	\$20,000	N/A
Operating Agreement	N/A	\$20,000	N/A	N/A
Section 28(2) or Land Use Permit	\$10,000	\$10,000	\$10,000	N/A
Environmental				
Environmental Site Assessment (Phase I, II, III) ¹	N/A	\$300,000	\$60,000	N/A
Allowance for Implementation of ESA Recommendations (Phase II, III) ²	N/A	\$300,000	\$0	N/A
Proponent & Funding Process				
Capital Project Soft Costs (Project Mgt, Eng) ^{3,4,5}	N/A	\$50,000	\$300,000	\$100,000
Regulatory				
Remotes to include in 2023 rate filing	\$0	\$0	\$0	N/A
Total Implementation Cost (per community)	\$20,000	\$680,000	\$390,000	\$100,000
Notes:				
1. Assumes 50/50 cost sharing with IPA transfer project for containerized DGS.				
2. Final results of the Environmental Site Assessment (Phase II, III) will identify recommendations; \$300,000 cost estimate for planning purposes only.				
3. \$50,000: Approximately 20% of average capital cost (engineering, project management, First Nation coordination (1.0%-1.5%), tender & contract administration, technical support).				
4. \$300,000: Approximately 10% of average capital cost for First Nation Coordination (1.0%-1.5%), Project Management, financial management, final engineering, tender & contract administration, technical support, and site selection costs (some engineering covered under the Remotes cost estimate).				
5. Actual cost based on competitively procuring a Professional Project Manager and Engineering; \$100,000 cost estimate for planning purposes only. Note, Pikangikum First Nation's cost estimate reduced to \$12,500 based on estimated cost of filling backup power gap.				

7.2. DGS Operations & Maintenance Costs to 2030

In addition to capital and implementation costs, it is important to assess the expected operations & maintenance (O&M) costs for each option. Remotes provided estimates for O&M costs of providing backup power. The BPWG used 2030 as the period for assessing these costs as it aligns with the FNLP Shareholders Resolution that calls for community-wide backup power until 2030 at a minimum. This timeline will also allow for sufficient time to assess the real-life outages in a grid-connected environment. However, the Remotes Report-2018 indicated that most assets would be sufficient to provide backup power beyond 2030.

Remotes' estimates for annual non-fuel O&M costs reflect the following considerations:

- The stations could be run remotely, but some operational aspects would still require the on-site presence and expertise of a local operator
- Thorough yearly inspection and maintenance (two weeks every year per station) would be required
- All gensets and auxiliary equipment would be run unloaded for approximately 1.5 hours every month
- Regular operator training would be required

In their Remotes Report-2018, Remotes identified the DGS Backup Power Operator position, approximately 20 hours per week, as an opportunity for local employment associated with a backup station.

Remotes estimated the fuel requirements for each community, accounting for testing fuel, fuel for transmission outages (based on an average load equal to 70% of the community peak demand), and contingency fuel for a 5-day outage in January (based on an average load equal to 85% of the community peak demand).

Table 9 provides a summary of Remotes estimated O&M costs to re-purpose a DGS to provide backup power until 2030:

Table 9 - Estimated O&M Costs to Re-Purpose DGS, when Technically Feasible, until 2030			
First Nation	Non-Fuel O&M to 2030	Fuel to 2030	Total O&M/Fuel to 2030
Bearskin Lake	\$1,575,000	\$192,108	\$1,767,108
Deer Lake	\$2,025,000	\$296,055	\$2,321,055
Kasabonika Lake	\$1,575,000	\$313,203	\$1,888,203
Kingfisher Lake	\$2,025,000	\$177,541	\$2,202,541
Kitchenuhmaykoosib Inninuwug	\$2,025,000	\$350,161	\$2,375,161
Sachigo Lake	\$1,575,000	\$206,469	\$1,781,469
Sandy Lake	\$1,800,000	\$612,953	\$2,412,953
Wapekeka	\$1,575,000	\$166,026	\$1,741,026
Keewaywin ²	\$1,501,000	\$176,424	\$1,677,424
Muskrat Dam ²	\$1,501,000	\$203,496	\$1,704,496
North Spirit Lake ²	\$1,501,000	\$148,790	\$1,649,790
Poplar Hill ²	\$1,684,000	\$176,872	\$1,860,872
Wunnumin Lake ²	\$1,684,000	\$322,226	\$2,006,226
Notes:			
1. Cost estimates are in 2019\$.			
2. Operator Training cost has been added to 'Non-Fuel O&M to 2030' amounts and removed from the 'Transitional Capital Support' amounts in Table 5.			
Source: Hydro One Remote Communities Inc. November 2019 report entitled "Containerized DGS Option Annex".			

Table 10 provides a summary of Remotes estimated O&M costs to operate a containerized DGS until 2030:

Table 10 - Estimated O&M Costs for Containerized Unit until 2030					
First Nation	Non-Fuel O&M to 2030	Fuel to 2030	Total O&M/Fuel to 2030	Operator Training	Total O&M Costs to 2030
North Caribou Lake	\$1,641,000	\$295,823	\$1,936,823	\$43,000	\$1,979,823
Pikangikum	\$1,641,000	\$353,863	\$1,994,863	\$43,000	\$2,037,863
Keewaywin	\$1,457,000	\$176,424	\$1,633,424	\$44,000	\$1,677,424
Muskrat Dam	\$1,457,000	\$203,496	\$1,660,496	\$44,000	\$1,704,496
North Spirit Lake	\$1,457,000	\$148,790	\$1,605,790	\$44,000	\$1,649,790
Poplar Hill	\$1,641,000	\$176,872	\$1,817,872	\$43,000	\$1,860,872
Wawakapewin	\$1,457,000	\$58,149	\$1,515,149	\$44,000	\$1,559,149
Wunnumin Lake	\$1,641,000	\$322,226	\$1,963,226	\$43,000	\$2,006,226
Notes:					
1. Cost estimates are in 2019\$.					
Source: Hydro One Remote Communities Inc. November 2019 report entitled "Containerized DGS Option Annex".					

Note: Cost difference between re-purposing an existing DGS and a new containerized unit is related to the addition of Operator Training costs within the Containerized Unit option

7.3. Critical Asset Backup Only

Backup power generators are considered to be a component of the existing asset (e.g., water treatment plant) and covered under ISC's formula generated O&M funding allocation for that particular asset. There would not be any incremental O&M support above the formula generated amount for assets that have backup power generators installed.

8. Summary of Options for Each Connecting Community

8.1. Cost Comparison

The following cost comparison shows a summary of all the expected costs for each option to 2030:

Re-Purpose Existing DGS for Backup Power within Remote-Serviced Communities					
Remotes-Serviced Connecting Communities	Initial Capital Costs	Implementation Costs	Existing Gaps in Health & Safety ISC-Critical Assets - Estimated Costs	O&M and Fuel Costs	Total Costs
Bearskin Lake	\$118,000	\$20,000	\$122,400	\$1,767,108	\$2,027,508
Deer Lake	\$118,000	\$20,000	\$391,200	\$2,321,055	\$2,850,255
Kasabonika Lake	\$118,000	\$20,000	\$150,400	\$1,888,203	\$2,176,603
Kingfisher Lake	\$118,000	\$20,000	\$150,400	\$2,202,541	\$2,490,941
Kitchenuhmaykoosib Inninuwig	\$118,000	\$20,000	\$234,400	\$2,375,161	\$2,747,561
Sachigo Lake	\$118,000	\$20,000	\$178,400	\$1,781,469	\$2,097,869
Sandy Lake	\$118,000	\$20,000	\$150,400	\$2,412,953	\$2,701,353
Wapekeka	\$118,000	\$20,000	\$150,400	\$1,741,026	\$2,029,426

North Caribou Lake First Nation					
Options	Initial Capital Costs	Implementation Costs	Existing Gaps in Health & Safety ISC-Critical Assets - Estimated Costs	O&M and Fuel Costs	Total Costs
Containerized DGS on Greenfield Site	\$3,903,900	\$390,000	\$206,400	\$1,979,823	\$6,480,123
ISC Critical Assets Backup Power Gap	N/A	\$100,000	1,147,200	N/A	\$1,247,200

Pikangikum First Nation					
Options	Initial Capital Costs	Implementation Costs	Existing Gaps in Health & Safety ISC-Critical Assets - Estimated Costs	O&M and Fuel Costs	Total Costs
Containerized DGS on Greenfield Site	\$5,848,700	\$390,000	\$122,400	\$2,037,863	\$8,398,963
ISC Critical Assets Backup Power Gap	N/A	\$12,500	\$122,400	N/A	\$134,900

Keewaywin First Nation

Options	Initial Capital Costs	IPA Compliance/ Industry Standard	Implementation Costs	Existing Gaps in Health & Safety ISC-Critical Assets - Estimated Costs	O&M and Fuel Costs	Total Costs
Re-Purpose Existing DGS for Backup Power	\$684,000	\$300,000	\$680,000	\$122,400	\$1,677,424	\$3,463,824
Containerized DGS on Greenfield Site	\$3,568,400	N/A	\$390,000	\$122,400	\$1,677,424	\$5,758,224
ISC Critical Assets Backup Power Gap	N/A	N/A	\$100,000	1,063,200	N/A	\$1,163,200

Muskrat Dam First Nation

Options	Initial Capital Costs	IPA Compliance/ Industry Standard	Implementation Costs	Existing Gaps in Health & Safety ISC-Critical Assets - Estimated Costs	O&M and Fuel Costs	Total Costs
Re-Purpose Existing DGS for Backup Power	\$199,000	\$300,000	\$680,000	\$178,400	\$1,704,496	\$3,061,896
Containerized DGS on Greenfield Site	\$3,568,400	N/A	\$390,000	\$178,400	\$1,704,496	\$5,841,296
ISC Critical Assets Backup Power Gap	N/A	N/A	\$100,000	1,119,200	N/A	\$1,219,200

North Spirit Lake First Nation

Options	Initial Capital Costs	IPA Compliance/ Industry Standard	Implementation Costs	Existing Gaps in Health & Safety ISC-Critical Assets - Estimated Costs	O&M and Fuel Costs	Total Costs
Re-Purpose Existing DGS for Backup Power	\$209,000	\$300,000	\$680,000	\$335,200	\$1,649,790	\$3,173,990
Containerized DGS on Greenfield Site	\$3,568,400	N/A	\$390,000	\$335,200	\$1,649,790	\$5,943,390
ISC Critical Assets Backup Power Gap	N/A	N/A	\$100,000	1,119,200	N/A	\$1,219,200

Poplar Hill First Nation

Options	Initial Capital Costs	IPA Compliance/ Industry Standard	Implementation Costs	Existing Gaps in Health & Safety ISC-Critical Assets - Estimated Costs	O&M and Fuel Costs	Total Costs
Re-Purpose Existing DGS for Backup Power	\$199,000	\$300,000	\$680,000	\$279,200	\$1,860,872	\$3,319,072
Containerized DGS on Greenfield Site	\$3,568,400	N/A	\$390,000	\$279,200	\$1,860,872	\$6,098,472
ISC Critical Assets Backup Power Gap	N/A	N/A	\$100,000	1,063,200	N/A	\$1,163,200

Wawakapewin First Nation

Options	Initial Capital Costs	IPA Compliance/ Industry Standard	Implementation Costs	Existing Gaps in Health & Safety ISC-Critical Assets - Estimated Costs	O&M and Fuel Costs	Total Costs
Containerized DGS on Greenfield Site	\$2,901,800	N/A	\$390,000	\$0	\$1,559,149	\$4,850,949
ISC Critical Assets Backup Power Gap	N/A	N/A	\$0	\$0	N/A	\$0

Wunnumin Lake First Nation

Options	Initial Capital Costs	IPA Compliance/ Industry Standard	Implementation Costs	Existing Gaps in Health & Safety ISC-Critical Assets - Estimated Costs	O&M and Fuel Costs	Total Costs
Re-Purpose Existing DGS for Backup Power	\$209,000	\$300,000	\$680,000	\$150,400	\$2,006,226	\$3,345,626
Containerized DGS on Greenfield Site	\$4,299,900	N/A	\$390,000	\$150,400	\$2,006,226	\$6,846,526
ISC Critical Assets Backup Power Gap	N/A	N/A	\$100,000	934,400	N/A	\$1,034,400

9. Funding & Support

9.1. Backup Power and Reliability Under Ontario Energy Regulation

The OEB and IESO work with electricity transmission, distribution and generation companies to support energy sustainability and reliability. There are a few recent precedents in Ontario where costs associated with improving transmission system reliability have been approved by the OEB, some of which include First Nation communities located in remote areas of the province:

- Five Nations Energy
- Anwaatin
- Pelee Island

In a grid-connected environment, the Connecting Communities will be able to advocate for improvements that result in increased reliability of service.

Additional information related to these situations can be found in Appendix J.

9.2. First Nations Support

The BPWG, working with OSLP's legal counsel (Ericksons LLP), Remotes, and respective Tribal Councils, has drafted a BCR, which can be used by Chief and Council to confirm support of repurposing their community's current generation assets to provide community-wide backup power until the end of 2030. A draft of each BCR, one for Remotes-serviced communities and one for IPA communities, can be found in Appendix K.

For Pikangikum, North Caribou Lake, and Wawakapewin First Nations, a BCR will be required during the implementation stage to indicate the First Nation's support of having a standby backup power source available at each ISC-funded critical asset.

9.3. ISC Considerations for Supporting Backup Power

Through discussions with communities and project partners, ISC has indicated the department is aware that the Connecting Communities are seeking community-wide backup power, until 2030 as a minimum. ISC has also learned that, due to varying situations and preferences, a community-by-community approach should be taken.

ISC has indicated the department is supportive of working collaboratively toward this vision based on the following considerations:

- Where technically feasible, and with no existing critical health, safety and environmental risks, the prime power DGS should be utilized for backup power purposes.
- If community-wide backup power is being provided, it is always operated by an OEB-licensed generator (e.g. Remotes).

- Each community provides an executed Band Council Resolution confirming their support for the backup power approach to be taken in their community.
- Where existing DGS equipment is utilized for backup power purposes, operations & maintenance and replacement capital costs, post-transfer, will be the full responsibility of the OEB-licensed generator.
- Any community-wide backup power arrangement is incorporated into the First Nation's Electrification Agreement/Operating Agreement with Remotes and is valid until at least December 31, 2030. Should a signatory to the agreement seek to terminate the agreement early, another provincially licensed and regulated local distribution company is selected to assume operations until the 2030 timeline is reached. All associated costs related to the termination and assuming of operations by another party will not be the responsibility of ISC.
- Communities agree that backup power for critical infrastructure, specifically school facilities (or other emergency gathering point(s)) and fire halls, will not be required or funded by ISC when centralized backup is in place. However, ISC is committed to ensuring that there is also critical asset backup power at water and wastewater facilities (including lift stations), the nursing station, and nursing residences.
- Where existing DGS equipment cannot be utilized for backup power purposes, at a minimum, ISC will work with the community to facilitate backup power for ISC-funded critical community assets (refer to Section 6.3).
- Any funds provided by ISC for backup power (critical asset only or community-wide) will be delivered through the Capital Facilities and Maintenance Program and be subject to its policies and directives, with the goal of having backup power in place at the time of the community's connection to the provincial grid.

ISC is also in agreement to meet with the First Nation, Remotes, and Ontario prior to 2030 to analyze the demonstrated need for backup power within each Connecting Community going forward.

9.4. Remotes Support

Remotes has been an active participant in the BPWG and recognizes that communal backup power will enhance reliability, mitigate health and safety concerns as well as protect community assets; therefore, Remotes supports the implementation of backup power until 2030.

At the request of OSLP, Remotes has provided two reports "Feasibility of Using Existing Diesel Generating Stations for Backup Power in Remote Grid-Connecting Communities" report ("Remotes Report-2018), dated December 2018, and the Containerized DGS Option Annex ("Remotes Report-Annex"), dated November 2019. Both reports provided insight and analysis into the potential backup power in connecting communities.

In their letter to OSLP, dated May 8, 2020, see Appendix I, Remotes indicated that for the existing Remotes served communities, with the exception of North Caribou, Remotes supports the re-use of existing Remotes generation facilities as backup power. The existing Remotes assets continue to have long-term importance in supporting power reliability to the communities.

For the Independent Power Authority communities of Poplar Hill, North Spirit Lake, Keewaywin, Wunnumin, and Muskrat Dam, Remotes has indicated support in re-purposing the existing generators and provide community backup power until 2030, provided the following conditions are met:

- Fixed-term Operating Agreement signed by Remotes, First Nation, and Indigenous Services Canada;
- IPA diesel generating stations be in sound operating condition and compliant with applicable law, regulations and standards;
- Remotes will not be responsible for all transitional costs to achieve sound operating condition and compliance related to re-purposing the DGS for backup power purposes;
- An Environmental Site Assessment will be conducted at or near takeover of the DGS to determine baseline condition of site;
- Remotes will not be responsible for contamination that occurred prior to takeover of DGS operations; and
- Remotes will not be responsible for any capital capacity increases at these sites.

Where conditions are met, Remotes will be responsible for operations, maintenance and any like for like replacement capital costs. Remotes will seek a license amendments from the OEB and through their 2023 rate filing, apply to have costs for the provision of backup service by the Rural or Remote Rate Electricity Protection (RRRP) program. Should the OEB not support the use of the RRRP for these costs, Remotes will be unable to provide backup services.

In situations where a DGS cannot be repurposed to provide backup power services (Pikangikum, North Caribou, and Wawakapewin), Remotes supports either the containerized DGS or the ISC-funded critical community assets only backup options.

After 5 years of full transmission operation, in 2028 or thereabouts, Remotes agrees to meet with the BPWG to review the efficacy of backup power and future funding commitment.

10. Proposed Option for Each Connecting Community Based on Funding Support

Table 11 provides the proposed backup power option for each Connecting Community based on support from both Remotes and ISC:

Table 11. Recommended Option for Each Community								
First Nation	Current LDC	Recommended Option	Initial Capital Costs²	IPA Compliance/ Industry Standard⁴	Implementation Costs	ISC Health & Safety Critical Assets Backup Gaps	O&M and Fuel Costs to 2030	Total Costs
Bearskin Lake	Remotes	Re-purpose DGS	\$118,000	N/A	\$20,000	\$122,400	\$1,767,108	\$2,027,508
Deer Lake	Remotes	Re-purpose DGS	\$118,000	N/A	\$20,000	\$391,200	\$2,321,055	\$2,850,255
Kasabonika Lake	Remotes	Re-purpose DGS	\$118,000	N/A	\$20,000	\$150,400	\$1,888,203	\$2,176,603
Kingfisher Lake	Remotes	Re-purpose DGS	\$118,000	N/A	\$20,000	\$150,400	\$2,202,541	\$2,490,941
Kitchenuhmaykoosib Inninuwug	Remotes	Re-purpose DGS	\$118,000	N/A	\$20,000	\$234,400	\$2,375,161	\$2,747,561
North Caribou Lake ³	Remotes	Critical Asset Only	N/A	N/A	\$100,000	\$1,147,200	N/A	\$1,247,200
Pikangikum ³	Remotes	Critical Asset Only	N/A	N/A	\$12,500	\$122,400	N/A	\$134,900
Sachigo Lake	Remotes	Re-purpose DGS	\$118,000	N/A	\$20,000	\$178,400	\$1,781,469	\$2,097,869
Sandy Lake	Remotes	Re-purpose DGS	\$118,000	N/A	\$20,000	\$150,400	\$2,412,953	\$2,701,353
Wapekeka	Remotes	Re-purpose DGS	\$118,000	N/A	\$20,000	\$150,400	\$1,741,026	\$2,029,426
Keewaywin ⁵	IPA	Re-purpose DGS	\$684,000	\$300,000	\$680,000	\$122,400	1,677,424	\$3,463,824
Muskrat Dam ⁵	IPA	Re-purpose DGS	\$199,000	\$300,000	\$680,000	\$178,400	1,704,496	\$3,061,896
North Spirit Lake ⁵	IPA	Re-purpose DGS	\$209,000	\$300,000	\$680,000	\$335,200	1,649,790	\$3,173,990
Poplar Hill ⁵	IPA	Re-purpose DGS	\$199,000	\$300,000	\$680,000	\$279,200	1,860,872	\$3,319,072
Wawakapewin ^{3,5}	IPA	Critical Asset Only	N/A	N/A	\$0	\$0	N/A	\$0
Wunnumin Lake ⁵	IPA	Re-purpose DGS	\$209,000	\$300,000	\$680,000	\$150,400	2,006,226	\$3,345,626
Sub-totals			\$2,444,000	\$1,500,000	\$3,672,500	\$3,863,200	\$25,388,324	\$36,868,024
Notes:								
1. Cost estimates are in 2019\$.								
2. Hydro One Remote Communities Inc. December 2018 report entitled "Feasibility of Using Existing Diesel Generating Stations for Backup Power in Remote Grid-Connected Communities" and and Hydro One Remote Communities Inc. November 2019 report entitled "Containerized DGS Option Annex".								
3. Critical Assets Backup Gaps include all assets within ISC's LOSS; Implementation costs reflect CFMP policies.								
4. IPA DGS must be in good operating condition and be in compliance with all applicable industry standards and legal regulations; estimated cost.								
5. Operator Training for IPA Communities has been captured within O&M and Fuel Costs to 2030 costs.								

Remotes Communities

The recommended option for most Remotes communities is to re-purpose the existing DGS for backup power, since it provides the best value based on the benefits of community-wide backup versus the incremental re-purposing cost.

Pikangikum First Nation no longer has a DGS, and as such, the two options are a new containerized DGS or critical asset backup. The cost for community-wide backup power (a new containerized DGS) is much higher than the critical asset backup option. Based on a cost-benefit analysis, dedicated backup power at ISC-funded critical assets is the recommended option. Compared to communities further north, the risk of outages is less for Pikangikum since it is closer to Red Lake and, therefore, the Ontario transmission network. Some impacts of outages could be reduced if an all-season road is built to Pikangikum.

With respect to North Caribou Lake First Nation, Remotes has indicated that post-grid connection, Remotes will not operate the current DGS as it is at end-of-life and the site has significant contamination that requires cleanup. As such, the two options are a new containerized DGS or critical asset backup. The cost for community-wide backup power (a new containerized DGS) is much higher than the critical asset backup option. Based on a cost-benefit analysis, dedicated backup power at ISC-funded critical assets is the recommended option. North Caribou Lake is a road-connected community, which allows for easier mobilization if a long-term outage occurs. This option will also facilitate Remotes remediating the contamination at the DGS site.

IPA Communities

The recommended option for most IPA communities is to re-purpose the existing DGS for backup power, since it provides the best value based on the benefits of community-wide backup versus the incremental re-purposing cost. In order to implement this option, the parties will need to enter into Operating Agreements and address responsibility for environmental contamination.

As noted in the Remotes Report-2018, from a technical perspective, the existing DGS in Wawakapewin First Nation cannot be re-purposed by Remotes for community-wide backup. The cost for community-wide backup power (a new containerized DGS) is much higher than the critical asset backup option. Based on a cost-benefit analysis, dedicated backup power at ISC-funded critical assets is the recommended option.

11. Implementation Steps

The list below provides the key activities to implement the recommended backup power options. Since the expected connection dates vary by community, a community specific timeline is provided in Appendix A.

For each Connecting Community, the project proponent will be the First Nation, supported by their Tribal Council / Technical Advisors, and, based on availability of funding, transitional capital funding (including Initial Capital Costs, IPA Compliance/Industry Standard Costs and Implementation costs) will be delivered under ISC's Capital Facilities and Maintenance Program (CFMP). The funding approval process will depend on whether the project is considered a minor capital project (<\$1.5 million) or major capital project (≥\$1.5 million). As part of the implementation stage, the First Nations may choose to coordinate projects as a group, which could provide efficiencies and economies of scale. Community-specific considerations will be reflected in the implementation plans (e.g., KI-Wapekeka Tie Line).

Remotes-Serviced Community – Repurposing DGS

1. Funding application to ISC
2. ISC funding approval
3. Legal agreements
 - a. Hire legal advisors
 - b. New First Nation / Remotes / ISC Electrification Agreement
 - c. Update or new Section 28(2) permit
4. Remotes completes transition upgrades to their DGS
 - a. Remotes and the First Nation enter into a funding agreement for Remotes to complete the required upgrades to their diesel generating stations
 - b. Remotes completes upgrades to their diesel generating stations

Through separate processes, Remotes to seek any necessary regulatory amendments/approvals required to recover costs related to fuel and O&M costs through the RRRP, and FN / ISC to address any ISC-funded critical asset backup power gaps. This does not include the replacement, upgrade or repair of existing generators already supporting critical ISC funded assets.

IPA Community – Repurposing DGS

1. Funding application to ISC
2. ISC funding approval
3. ESA / TSSA assess DGS to identify deficiencies to industry standards / regulations (backup)
4. Environmental Site Assessment completed to determine baseline and identify Health & Safety required remediation work
5. Legal agreements
 - a. Hire legal advisors
 - b. Remotes / First Nation / ISC Operating Agreement (including environmental responsibility)
 - c. Section 28(2) or Land Use Permit (if required)
6. Procure design consultant to design the upgrades based on ESA / TSSA assessments / Remotes requirements for backup power.
7. Design consultant to create Tender Packages and complete Tender Process.
8. Competitive tender awarded and repurposing of DGS completed

Through separate processes, Remotes to seek any necessary regulatory amendments/approvals and FN / ISC to address any ISC-funded critical asset backup power gaps. This does not include the replacement, upgrade or repair of existing generators already supporting critical ISC funded assets.

Exceptions: Pikangikum, North Caribou Lake, and Wawakapewin – Critical Asset Backup Only

1. Funding application to ISC
2. ISC funding approval
3. Competitive tender to supply and install required standby backup power generators at ISC-funded critical assets, based on identified gaps, including community gathering place (e.g., school) and fire hall. This does not include the replacement, upgrade or repair of existing generators already supporting critical ISC funded assets.

12. Risks & Mitigation Strategies

Risk Category	Risk	Mitigation
Project Funding Delays	<ul style="list-style-type: none"> – Funding delays will impact the timeline to complete the necessary backup power investments by grid connection dates 	<ul style="list-style-type: none"> – ISC securing adequate funding to support implementation of backup power plan – OSLP available to provide ongoing support to the Connecting Communities on funding applications and implementation – Open and continuous dialogue with ISC staff as well as key decision makers
Cost/Time Overruns	<ul style="list-style-type: none"> – Infrastructure projects in remote, northern Ontario often face cost and timeline risks – Costs provided by Remotes to date are estimates and could change – There could be more critical asset gaps than identified through ISC desktop analysis – Costs to address any industry standard or regulation deficiencies identified by Remotes at an existing IPA DGS 	<ul style="list-style-type: none"> – Hold Remotes accountable to their estimates for Remotes-serviced communities – Ensure well defined scope of services during procurement – Cost controls in place under ISC's Capital Facilities and Maintenance Program (CFMP), including a dedicated budget for contingencies at design and construction stages – Regular and open communication among project partners – Allowance in the budgetary estimates for addressing any industry standard or regulation deficiencies at an existing IPA DGS – Following further assessment, if additional substantial costs emerge In IPA communities that no longer make community-wide backup power financially feasible; at a minimum, ISC will work with the community to facilitate backup power for ISC-funded critical community assets (Refer to Section 6.3)
Parties Unable to Reach an Operating Agreement	<ul style="list-style-type: none"> – ISC, First Nation and Remotes unable to reach an agreement related to environmental responsibility – Other issues raised by signatories cannot be agreed upon – 	<ul style="list-style-type: none"> – Regular engagement with ISC and Remotes Environmental Teams – Regular engagement with leadership and First Nation representatives regarding alternative options – Regular engagement with leadership and First Nation representatives regarding any other issues raised
OEB Denies Remotes Costs for Backup Power	<ul style="list-style-type: none"> – Any backup power costs denied by the OEB would result in Remotes being unable to recover the cost, and would impact the company's willingness to operate backup power assets going forward – 	<ul style="list-style-type: none"> – Remotes letter confirming commitment to backup power until 2030, at a minimum – Demonstrated backup power precedents under provincial energy regulation – Ministry of Energy, Northern Development & Mines participation and input into the Plan and BPWG – Open and continuous dialogue with provincial staff as well as key decision makers

		<ul style="list-style-type: none"> – ISC-funded critical assets will have dedicated standby generators
Overall Coordination of Implementation by the 16 Connecting Communities	<ul style="list-style-type: none"> – Opportunities for efficiencies and economies of scale may be missed – Lack of coordination and/or information sharing among communities may result in repeated mistakes 	<ul style="list-style-type: none"> – Include realistic budget for implementation costs – OSLP available to provide support
First Nation Support/Capacity for Project	<ul style="list-style-type: none"> – Change in support from a Connecting Community or limited capacity to implement in a timely manner – Leadership and/or representative changes during the project 	<ul style="list-style-type: none"> – Regular engagement with leadership and First Nation representatives (e.g. Tribal Council) by project partners – OSLP available to develop communications materials and provide support

13. Next Steps, Post-Implementation Monitoring, and Plan Beyond 2030

First Nation LP mandated OSLP to work with Canada, and project partners, to develop a Backup Power Plan for the 16 Connecting Communities. Through Article N of the Parallel Process Agreement, Canada committed to work with the project partners to develop and implement a backup power plan for the 16 connecting communities. This Plan, completed in April 2020, recommends repurposing the existing diesel generation stations in 13 of the 16 communities to provide community-wide backup power until the end of 2030. As it is not possible to repurpose the existing diesel generating stations in Pikangikum First Nation, North Caribou Lake First Nation, and Wawakapewin First Nation, the Plan recommends backup power be provided by dedicated standby generators for ISC-funded critical community assets.

Unfortunately, due to Covid-19 travel restrictions, only 4 of the 16 second round community engagement sessions could be completed. In order to advance backup power solutions in time with the grid connection schedule, the BPWG suggests shifting from planning to implementation of the recommended backup power solutions. Should there be any changes to the proposed Plan, those will be reflected through the implementation phase documents (e.g. funding support application, legal agreements).

Once grid connection has occurred and backup power solutions are in place, project partners will enter the monitoring phase. Wataynikaneyap and Remotes will respond to, and track, any outages that occur. Prior to 2030, ISC and Remotes have confirmed their willingness to work with the Connecting Communities to assess the need, costs, and benefit of ongoing backup power beyond 2030. Depending on community growth, Remotes has indicated that the diesel generating stations could provide full backup for years beyond 2030 without requiring any large capital investments. In addition, there may be options (e.g. load shedding) to extend the utility of the backup generators beyond 2030 with minimal capital investments.

Backup Power Plan Summary Sheet – Bearskin Lake First Nation

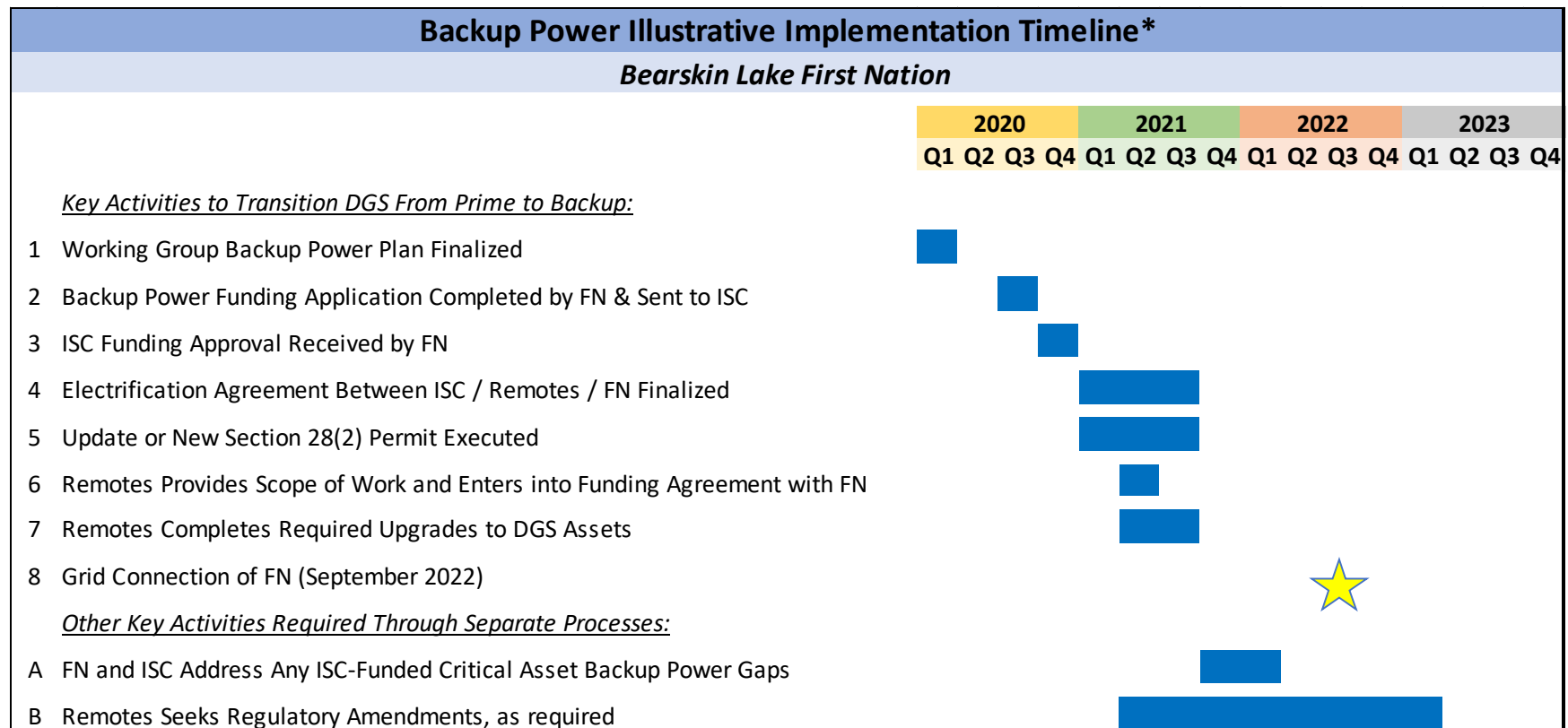
1. Summary

Estimated Connection Date:	September 2022
Current Local Distribution Company:	Hydro One Remote Communities Inc.
Recommended Option (<i>See details below</i>):	Re-purpose existing DGS for Backup
Recommended Operator:	Updated Electrification Agreement with Remotes until 2030, at a minimum
Recommended Funding Responsibility:	Transitional Capital Costs: ISC O&M and Replacement Capital Costs: Remotes
Implementation Requirements:	<ul style="list-style-type: none"> • Confirm funding commitments • Updated Electrification Agreement with Remotes • DGS upgrades to operate as backup power

Options	Estimated Initial / Transitional Costs	Estimated Implementation Costs	ISC Funded Health and Safety Critical Assets Gaps	Estimated O&M Costs to 2030	Total Estimated Costs to 2030	Considerations
Re-Purpose Existing DGS for Backup	\$118,000	\$20,000	\$122,400	\$1,767,108	\$2,027,508	<ul style="list-style-type: none"> • Will provide full community backup • Does not allow for near term clean-up of contaminated DGS site • Requires Operating Agreement with Remotes
ISC to ensure ISC-funded critical assets ¹ have backup power	N/A	\$100,000	\$1,063,200	N/A	\$1,163,200	<ul style="list-style-type: none"> • Does not provide full community backup • Allows for decommissioning and clean-up of any contamination at the DGS site

¹ - Critical Assets are: water treatment plants, wastewater treatment plants & related lift stations, schools, nursing stations & nurse residences, and fire halls

2. Implementation Timeline



*Timeline is estimated and is subject to change

Backup Power Plan Summary Sheet – Deer Lake First Nation

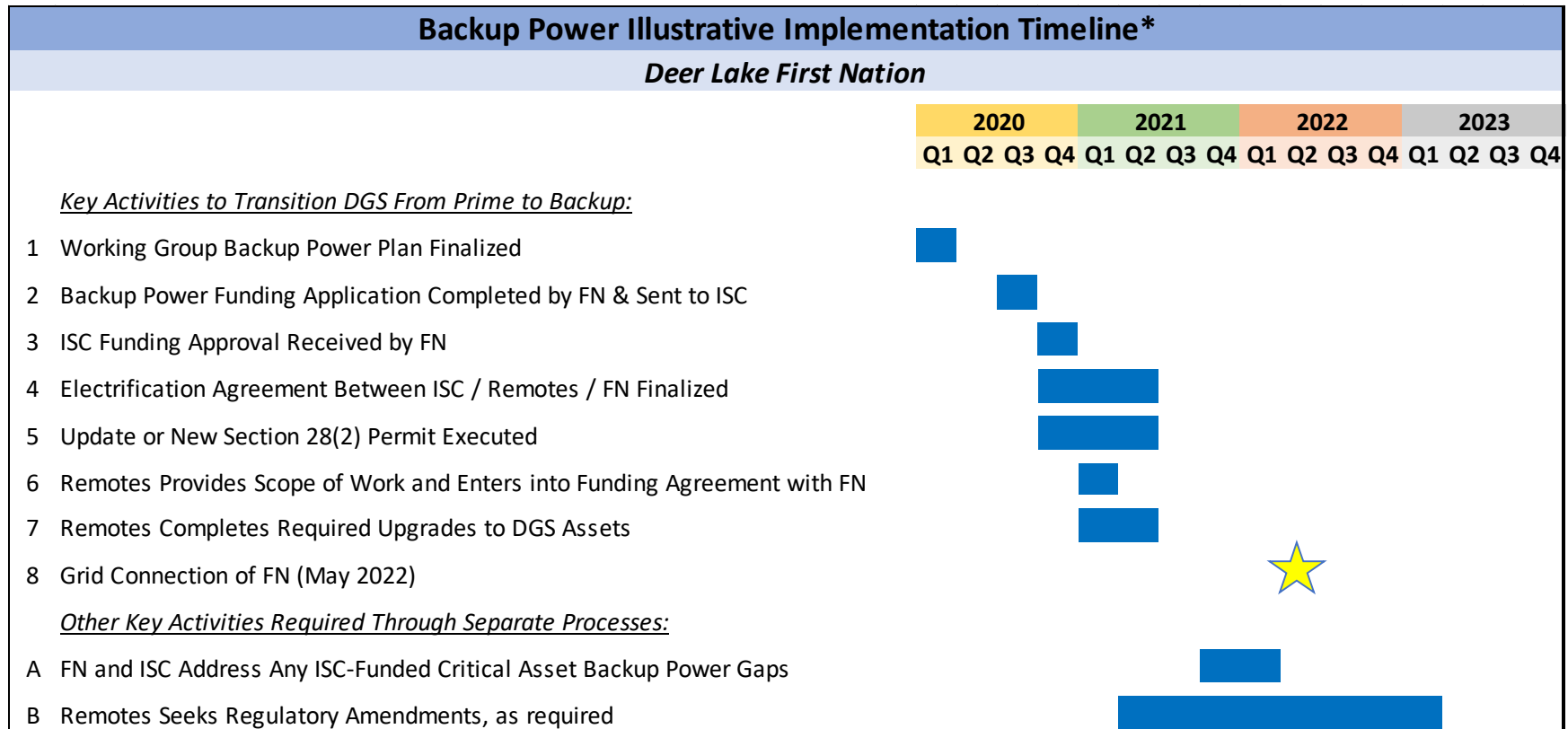
1. Summary

Estimated Connection Date:	May 2022
Current Local Distribution Company:	Hydro One Remote Communities Inc.
Recommended Option (<i>See details below</i>):	Re-purpose existing DGS for Backup
Recommended Operator:	Updated Electrification Agreement with Remotes until 2030, at a minimum
Recommended Funding Responsibility:	Transitional Capital Costs: ISC O&M and Replacement Capital Costs: Remotes
Implementation Requirements:	<ul style="list-style-type: none"> • Confirm funding commitments • Updated Electrification Agreement with Remotes • DGS upgrades to operate as backup power

Options	Estimated Initial / Transitional Costs	Estimated Implementation Costs	ISC Funded Health and Safety Critical Assets Gaps	Estimated O&M Costs to 2030	Total Estimated Costs to 2030	Considerations
Re-Purpose Existing DGS for Backup	\$118,000	\$20,000	\$391,200	\$2,321,055	\$2,850,255	<ul style="list-style-type: none"> • Will provide full community backup • Does not allow for near term clean-up of contaminated DGS site • Requires Operating Agreement with Remotes
ISC to ensure ISC-funded critical assets ¹ have backup power	N/A	\$100,000	\$391,200	N/A	\$491,200	<ul style="list-style-type: none"> • Does not provide full community backup • Allows for decommissioning and clean-up of any contamination at the DGS site

¹ - Critical Assets are: water treatment plants, wastewater treatment plants & related lift stations, schools, nursing stations & nurse residences, and fire halls

2. Implementation Timeline



*Timeline is estimated and is subject to change

Backup Power Plan Summary Sheet – Kasabonika Lake First Nation

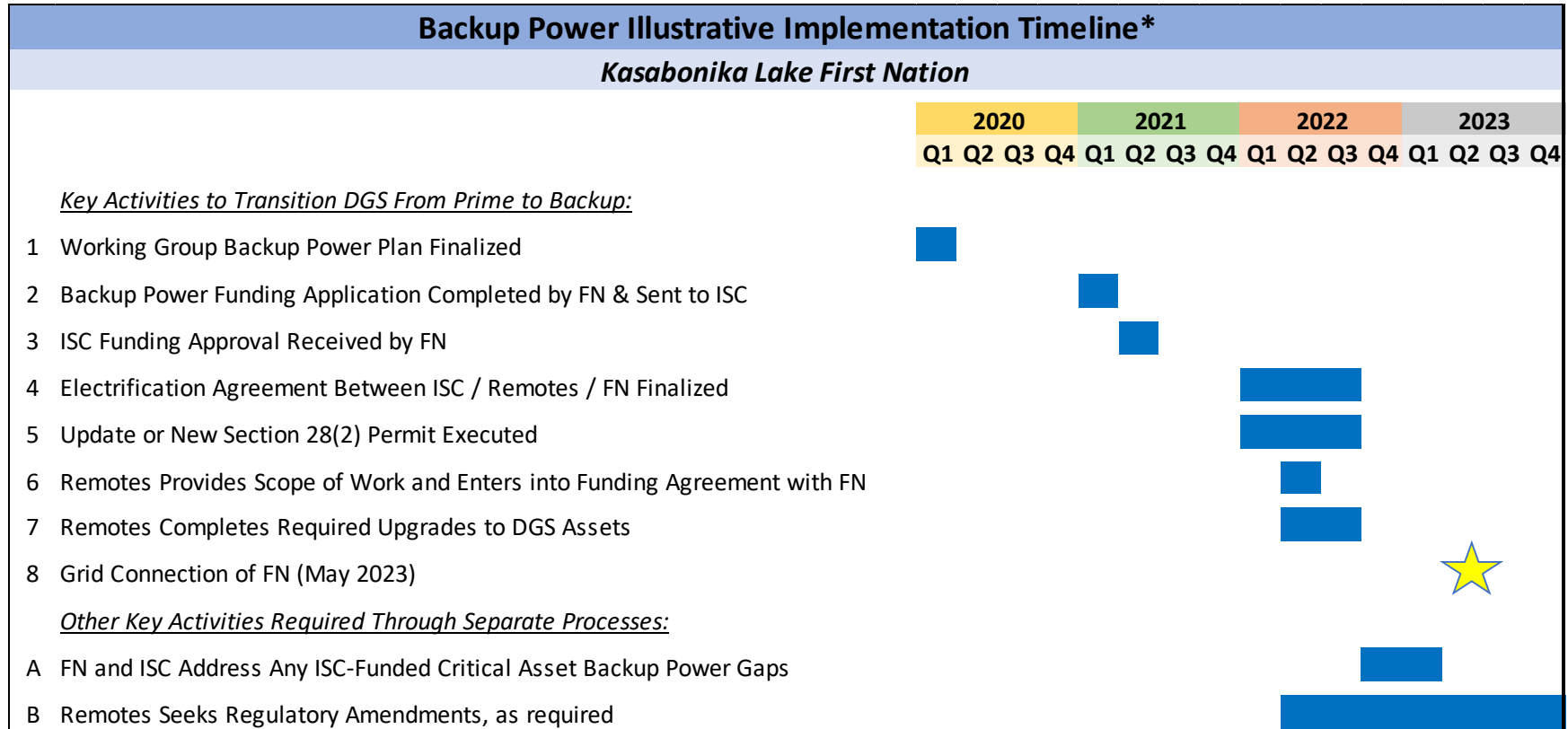
1. Summary

Estimated Connection Date:	May 2023
Current Local Distribution Company:	Hydro One Remote Communities Inc.
Recommended Option (<i>See details below</i>):	Re-purpose existing DGS for Backup
Recommended Operator:	Updated Electrification Agreement with Remotes until 2030, at a minimum
Recommended Funding Responsibility:	Transitional Capital Costs: ISC O&M and Replacement Capital Costs: Remotes
Implementation Requirements:	<ul style="list-style-type: none"> • Confirm funding commitments • Updated Electrification Agreement with Remotes • DGS upgrades to operate as backup power

Options	Estimated Initial / Transitional Costs	Estimated Implementation Costs	ISC Funded Health and Safety Critical Assets Gaps	Estimated O&M Costs to 2030	Total Estimated Costs to 2030	Considerations
Re-Purpose Existing DGS for Backup	\$118,000	\$20,000	\$150,400	\$1,888,203	\$2,176,603	<ul style="list-style-type: none"> • Will provide full community backup • Does not allow for near term clean-up of contaminated DGS site • Requires Operating Agreement with Remotes
ISC to ensure ISC-funded critical assets ¹ have backup power	N/A	\$100,000	\$934,400	N/A	\$1,034,400	<ul style="list-style-type: none"> • Does not provide full community backup • Allows for decommissioning and clean-up of any contamination at the DGS site

¹ - Critical Assets are: water treatment plants, wastewater treatment plants & related lift stations, schools, nursing stations & nurse residences, and fire halls

2. Implementation Timeline



*Timeline is estimated and is subject to change

Backup Power Plan Summary Sheet – Kingfisher Lake First Nation

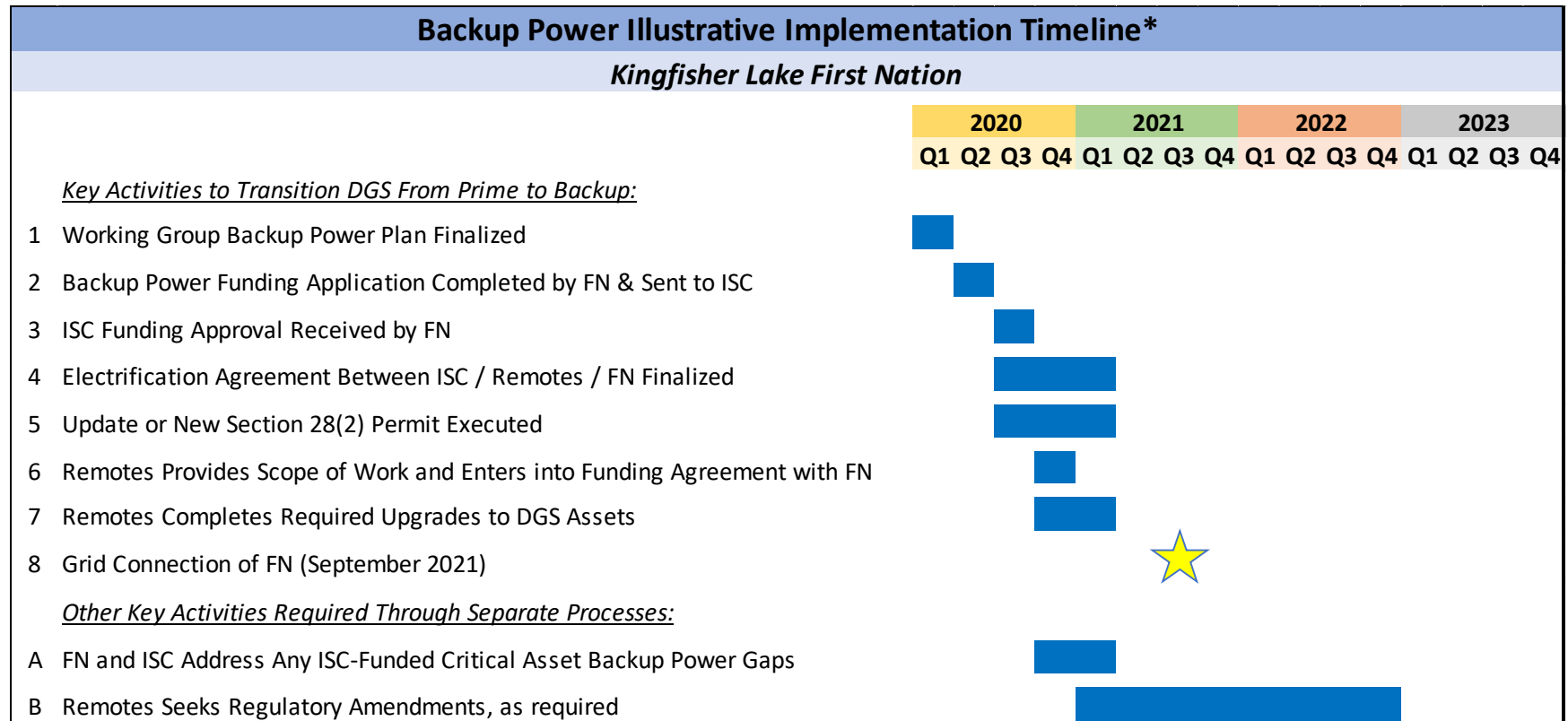
1. Summary

Estimated Connection Date:	September 2021
Current Local Distribution Company:	Hydro One Remote Communities Inc.
Recommended Option (<i>See details below</i>):	Re-purpose existing DGS for Backup
Recommended Operator:	Updated Electrification Agreement with Remotes until 2030, at a minimum
Recommended Funding Responsibility:	Transitional Capital Costs: ISC O&M and Replacement Capital Costs: Remotes
Implementation Requirements:	<ul style="list-style-type: none"> • Confirm funding commitments • Operating Agreement with Remotes • Determine environmental baseline at DGS site • Complete upgrades required to operate as backup power

Options	Estimated Initial / Transitional Costs	Estimated Implementation Costs	ISC Funded Health and Safety Critical Assets Gaps	Estimated O&M Costs to 2030	Total Estimated Costs to 2030	Considerations
Re-Purpose Existing DGS for Backup	\$118,000	\$20,000	\$150,400	\$2,202,541	\$2,490,941	<ul style="list-style-type: none"> • Will provide full community backup • Does not allow for near term clean-up of contaminated DGS site • Requires Operating Agreement with Remotes
ISC to ensure ISC-funded critical assets ¹ have backup power	N/A	\$100,000	\$1,091,200	N/A	\$1,191,200	<ul style="list-style-type: none"> • Does not provide full community backup • Allows for decommissioning and clean-up of any contamination at the DGS site

¹ - Critical Assets are: water treatment plants, wastewater treatment plants & related lift stations, schools, nursing stations & nurse residences, and fire halls

2. Implementation Timeline



*Timeline is estimated and is subject to change

Backup Power Plan Summary Sheet – Kitchenuhmaykoosib Inninuwug First Nation

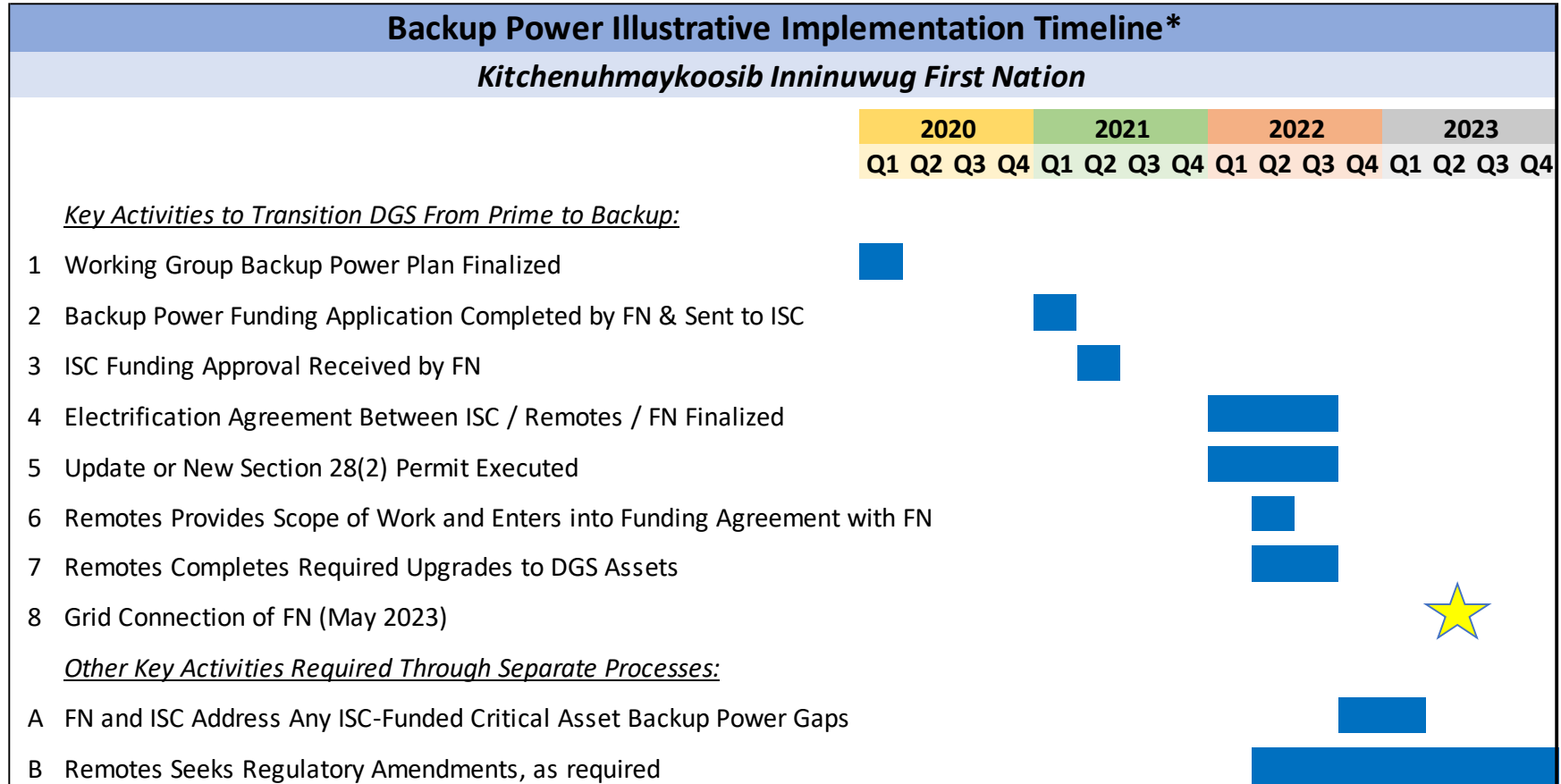
1. Summary

Estimated Connection Date:	May 2023
Current Local Distribution Company:	Hydro One Remote Communities Inc.
Recommended Option (<i>See details below</i>):	Re-purpose existing DGS for Backup
Recommended Operator:	Updated Electrification Agreement with Remotes until 2030, at a minimum
Recommended Funding Responsibility:	Transitional Capital Costs: ISC O&M and Replacement Capital Costs: Remotes
Implementation Requirements:	<ul style="list-style-type: none"> • Confirm funding commitments • Updated Electrification Agreement with Remotes • DGS upgrades to operate as backup power

Options	Estimated Initial / Transitional Costs	Estimated Implementation Costs	ISC Funded Health and Safety Critical Assets Gaps	Estimated O&M Costs to 2030	Total Estimated Costs to 2030	Considerations
Re-Purpose Existing DGS for Backup	\$118,000	\$20,000	\$234,400	\$2,375,161	\$2,747,561	<ul style="list-style-type: none"> • Will provide full community backup • Does not allow for near term clean-up of contaminated DGS site • Requires Operating Agreement with Remotes
ISC to ensure ISC-funded critical assets ¹ have backup power	N/A	\$100,000	\$234,400	N/A	\$334,400	<ul style="list-style-type: none"> • Does not provide full community backup • Allows for decommissioning and clean-up of any contamination at the DGS site

¹ - Critical Assets are: water treatment plants, wastewater treatment plants & related lift stations, schools, nursing stations & nurse residences, and fire halls

2. Implementation Timeline



*Timeline is estimated and is subject to change

Backup Power Plan Summary Sheet – North Caribou Lake First Nation

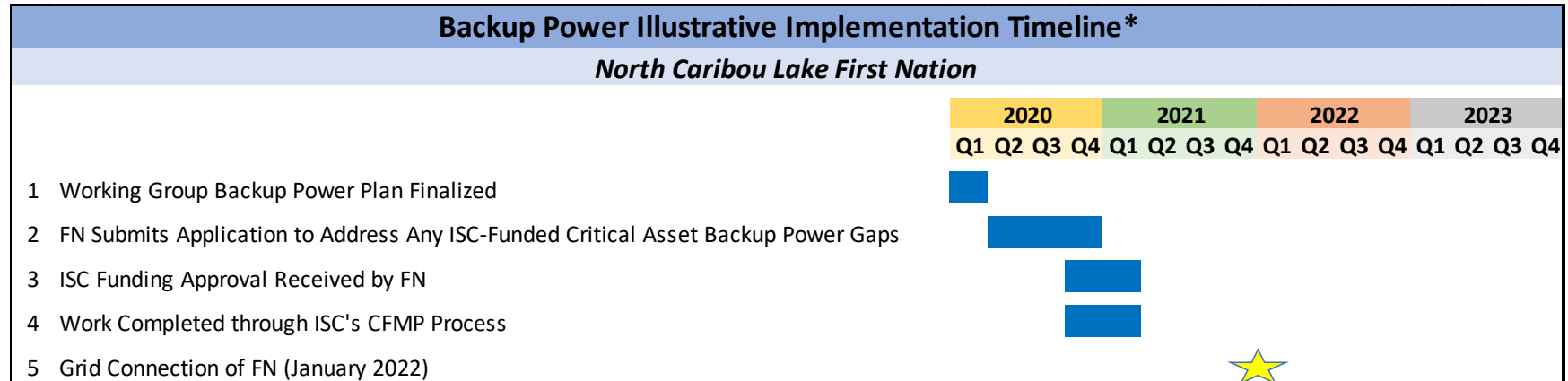
1. Summary

Estimated Connection Date:	January 2022
Current Local Distribution Company:	Hydro One Remote Communities Inc.
Recommended Option (<i>See details below</i>):	Critical Asset Backup Power Only
Recommended Operator:	N/A
Recommended Funding Responsibility:	ISC to fund Health & Safety Critical Asset gaps
Implementation Requirements:	<ul style="list-style-type: none"> • Confirm funding commitments • If/when there are critical assets, ensure backup is in place

Options	Estimated Initial / Transitional Costs	Estimated Implementation Costs	ISC Funded Health and Safety Critical Assets Gaps	Estimated O&M Costs to 2030	Total Estimated Costs to 2030	Considerations
New containerized DGS on greenfield site	\$3,903,900	\$390,000	\$206,400	\$1,979,823	\$6,480,123	<ul style="list-style-type: none"> • Will provide full community backup • Requires a new site • More implementation risks (lead times, winter road availability, permitting requirements, etc.) • Allows for decommissioning and clean-up of any contamination at the DGS site
ISC to ensure ISC-funded critical assets ¹ have backup power	N/A	\$100,000	\$1,147,200	N/A	\$1,247,200	<ul style="list-style-type: none"> • Does not provide full community backup • Allows for decommissioning and clean-up of any contamination at the DGS site

¹ - Critical Assets are: water treatment plants, wastewater treatment plants & related lift stations, schools, nursing stations & nurse residences, and fire halls

2. Implementation Timeline



*Timeline is estimated and is subject to change

Backup Power Plan Summary Sheet – Pikangikum First Nation

3. Summary

Estimated Connection Date:	Grid Connected in December 2018
Current Local Distribution Company:	Hydro One Remote Communities Inc.
Recommended Option (<i>See details below</i>):	Critical Asset Backup Power Only
Recommended Funding Responsibility:	ISC to fund Health & Safety Critical Asset gaps
Implementation Requirements:	<ul style="list-style-type: none"> • Confirm funding commitments • Ensure critical asset backup is in place

Options	Estimated Initial / Transitional Costs	Estimated Implementation Costs	ISC Funded Health and Safety Critical Assets Gaps	Estimated O&M Costs to 2030	Total Estimated Costs to 2030	Considerations
New containerized DGS on greenfield site	\$5,848,700	\$390,000	\$122,400	\$2,037,863	\$8,398,963	<ul style="list-style-type: none"> • Will provide full community backup • Requires a new site • More implementation risks (lead times, winter road availability, permitting requirements, etc.) • Allows for decommissioning and clean-up of any contamination at the DGS site
ISC to ensure ISC-funded critical assets ¹ have backup power	N/A	\$12,500	\$122,400	N/A	\$134,900	<ul style="list-style-type: none"> • Does not provide full community backup • Allows for decommissioning and clean-up of any contamination at the DGS site

¹ - Critical Assets are: water treatment plants, wastewater treatment plants & related lift stations, schools, nursing stations & nurse residences, and fire halls

2. Implementation Timeline*

Backup Power Illustrative Implementation Timeline*																
<i>Pikangikum First Nation</i>																
2020				2021				2022				2023				
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
1	Working Group Backup Power Plan Finalized															
2	FN Submits Application to Address Any ISC-Funded Critical Asset Backup Power Gaps															
3	ISC Funding Approval Received by FN															
4	Work Completed through ISC's CFMP Process															

*Timeline is estimated and is subject to change

Backup Power Plan Summary Sheet – Sachigo Lake First Nation

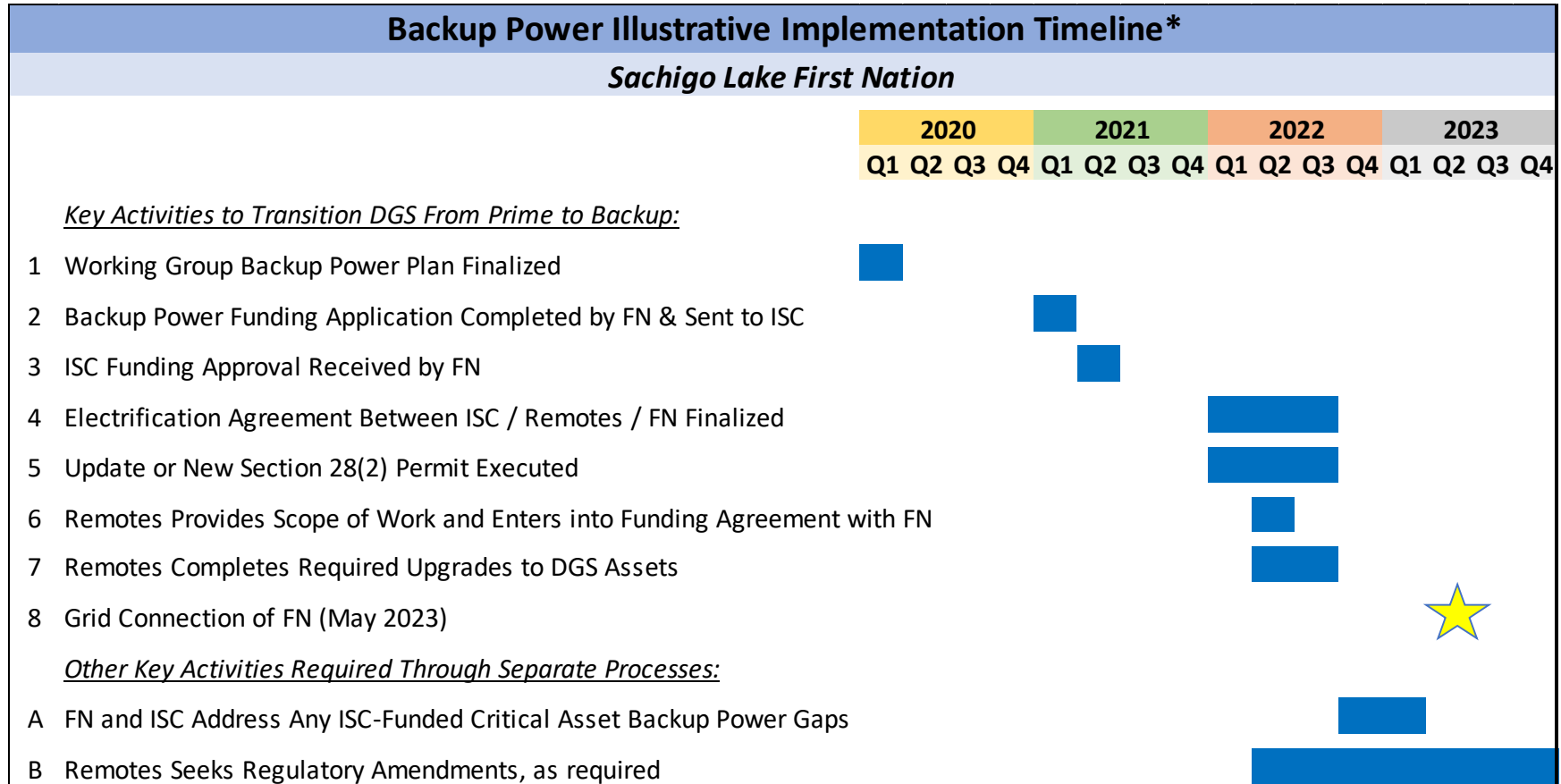
1. Summary

Estimated Connection Date:	May 2023
Current Local Distribution Company:	Hydro One Remote Communities Inc.
Recommended Option (<i>See details below</i>):	Re-purpose existing DGS for Backup
Recommended Operator:	Updated Electrification Agreement with Remotes until 2030, at a minimum
Recommended Funding Responsibility:	Transitional Capital Costs: ISC O&M and Replacement Capital Costs: Remotes
Implementation Requirements:	<ul style="list-style-type: none"> • Confirm funding commitments • Updated Electrification Agreement with Remotes • DGS upgrades to operate as backup power

Options	Estimated Initial / Transitional Costs	Estimated Implementation Costs	ISC Funded Health and Safety Critical Assets Gaps	Estimated O&M Costs to 2030	Total Estimated Costs to 2030	Considerations
Re-Purpose Existing DGS for Backup	\$118,000	\$20,000	\$178,400	\$1,781,469	\$2,097,869	<ul style="list-style-type: none"> • Will provide full community backup • Does not allow for near term clean-up of contaminated DGS site • Requires Operating Agreement with Remotes
ISC to ensure ISC-funded critical assets ¹ have backup power	N/A	\$100,000	\$1,119,200	N/A	\$1,219,200	<ul style="list-style-type: none"> • Does not provide full community backup • Allows for decommissioning and clean-up of any contamination at the DGS site

¹ - Critical Assets are: water treatment plants, wastewater treatment plants & related lift stations, schools, nursing stations & nurse residences, and fire halls

2. Implementation Timeline



*Timeline is estimated and is subject to change

Backup Power Plan Summary Sheet – Sandy Lake First Nation

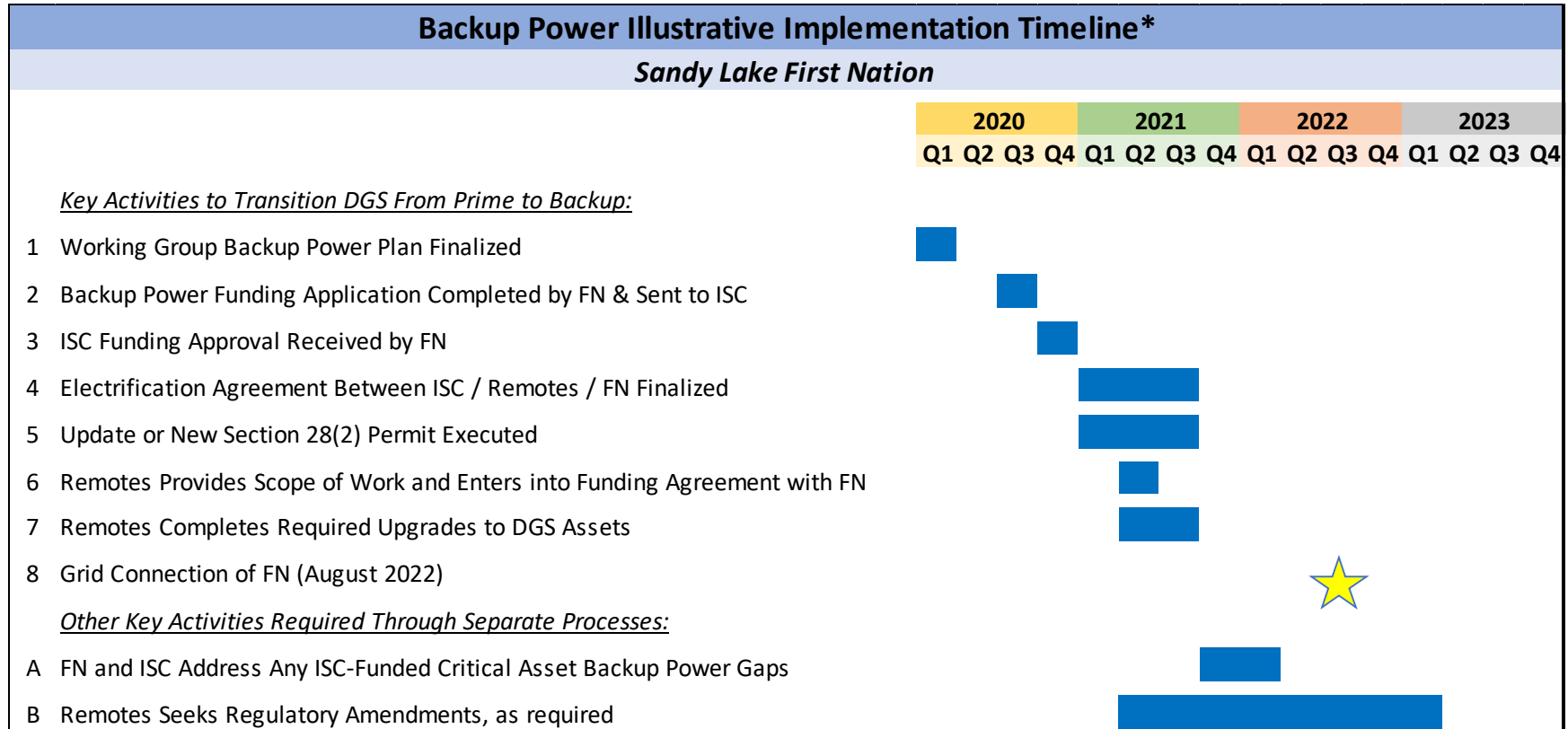
1. Summary

Estimated Connection Date:	August 2022
Current Local Distribution Company:	Hydro One Remote Communities Inc.
Recommended Option (<i>See details below</i>):	Re-purpose existing DGS for Backup
Recommended Operator:	Updated Electrification Agreement with Remotes until 2030, at a minimum
Recommended Funding Responsibility:	Transitional Capital Costs: ISC O&M and Replacement Capital Costs: Remotes
Implementation Requirements:	<ul style="list-style-type: none"> • Confirm funding commitments • Updated Electrification Agreement with Remotes • DGS upgrades to operate as backup power

Options	Estimated Initial / Transitional Costs	Estimated Implementation Costs	ISC Funded Health and Safety Critical Assets Gaps	Estimated O&M Costs to 2030	Total Estimated Costs to 2030	Considerations
Re-Purpose Existing DGS for Backup	\$118,000	\$20,000	\$150,400	\$2,412,953	\$2,701,353	<ul style="list-style-type: none"> • Will provide full community backup • Does not allow for near term clean-up of contaminated DGS site • Requires Operating Agreement with Remotes
ISC to ensure ISC-funded critical assets ¹ have backup power	N/A	\$100,000	\$307,200	N/A	\$407,200	<ul style="list-style-type: none"> • Does not provide full community backup • Allows for decommissioning and clean-up of any contamination at the DGS site

¹ - Critical Assets are: water treatment plants, wastewater treatment plants & related lift stations, schools, nursing stations & nurse residences, and fire halls

2. Implementation Timeline



*Timeline is estimated and is subject to change

Backup Power Plan Summary Sheet – Wapekeka First Nation

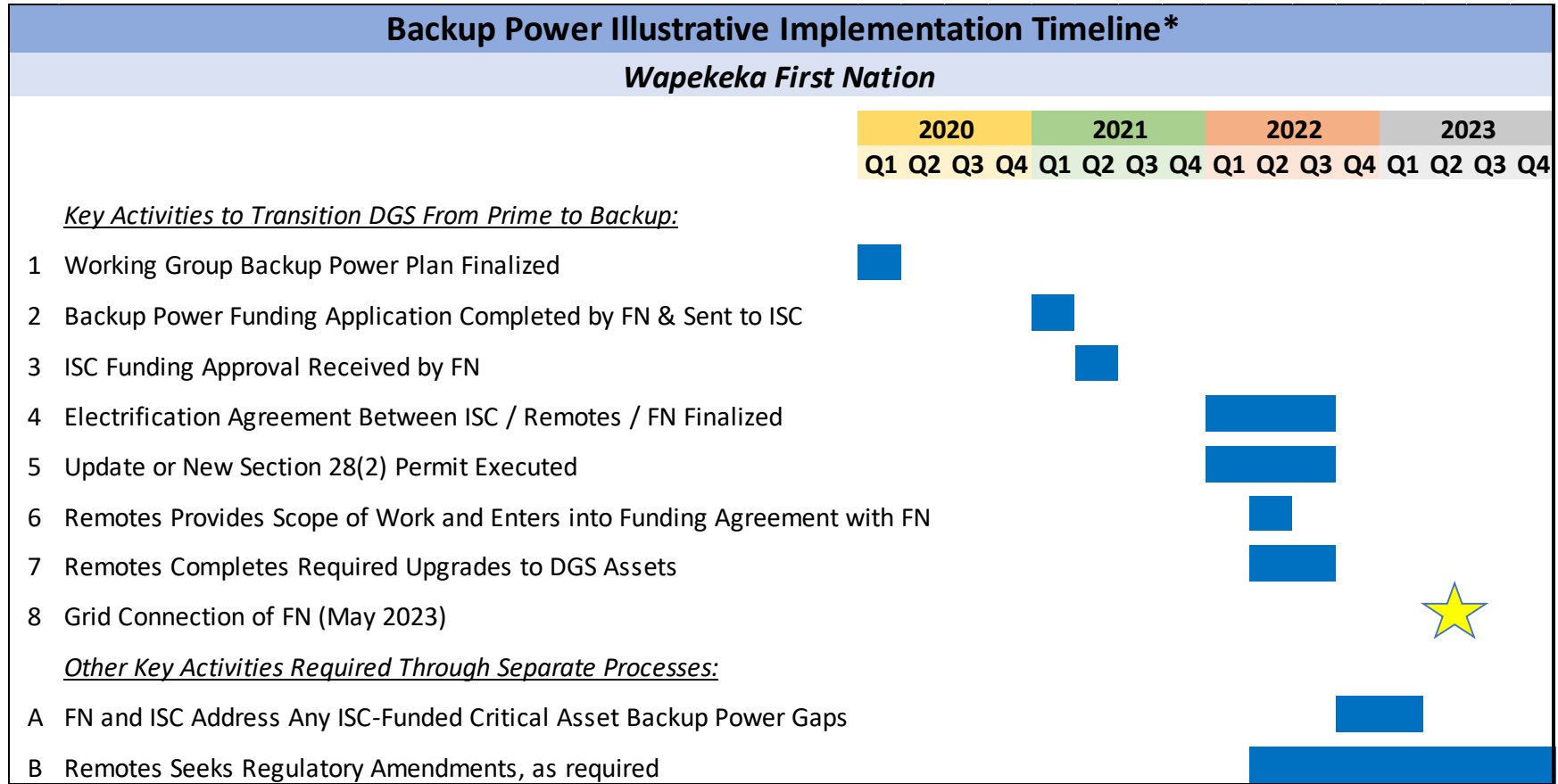
1. Summary

Estimated Connection Date:	May 2023
Current Local Distribution Company:	Hydro One Remote Communities Inc.
Recommended Option (<i>See details below</i>):	Re-purpose existing DGS for Backup
Recommended Operator:	Updated Electrification Agreement with Remotes until 2030, at a minimum
Recommended Funding Responsibility:	Transitional Capital Costs: ISC O&M and Replacement Capital Costs: Remotes
Implementation Requirements:	<ul style="list-style-type: none"> • Confirm funding commitments • Updated Electrification Agreement with Remotes • DGS upgrades to operate as backup power

Options	Estimated Initial / Transitional Costs	Estimated Implementation Costs	ISC Funded Health and Safety Critical Assets Gaps	Estimated O&M Costs to 2030	Total Estimated Costs to 2030	Considerations
Re-Purpose Existing DGS for Backup	\$118,000	\$20,000	\$150,400	\$1,741,026	\$2,029,426	<ul style="list-style-type: none"> • Will provide full community backup • Does not allow for near term clean-up of contaminated DGS site • Requires Operating Agreement with Remotes
ISC to ensure ISC-funded critical assets ¹ have backup power	N/A	\$100,000	\$934,400	N/A	\$1,034,400	<ul style="list-style-type: none"> • Does not provide full community backup • Allows for decommissioning and clean-up of any contamination at the DGS site

¹ - Critical Assets are: water treatment plants, wastewater treatment plants & related lift stations, schools, nursing stations & nurse residences, and fire halls

2. Implementation Timeline



*Timeline is estimated and is subject to change

Backup Power Plan Summary Sheet – Keewaywin First Nation

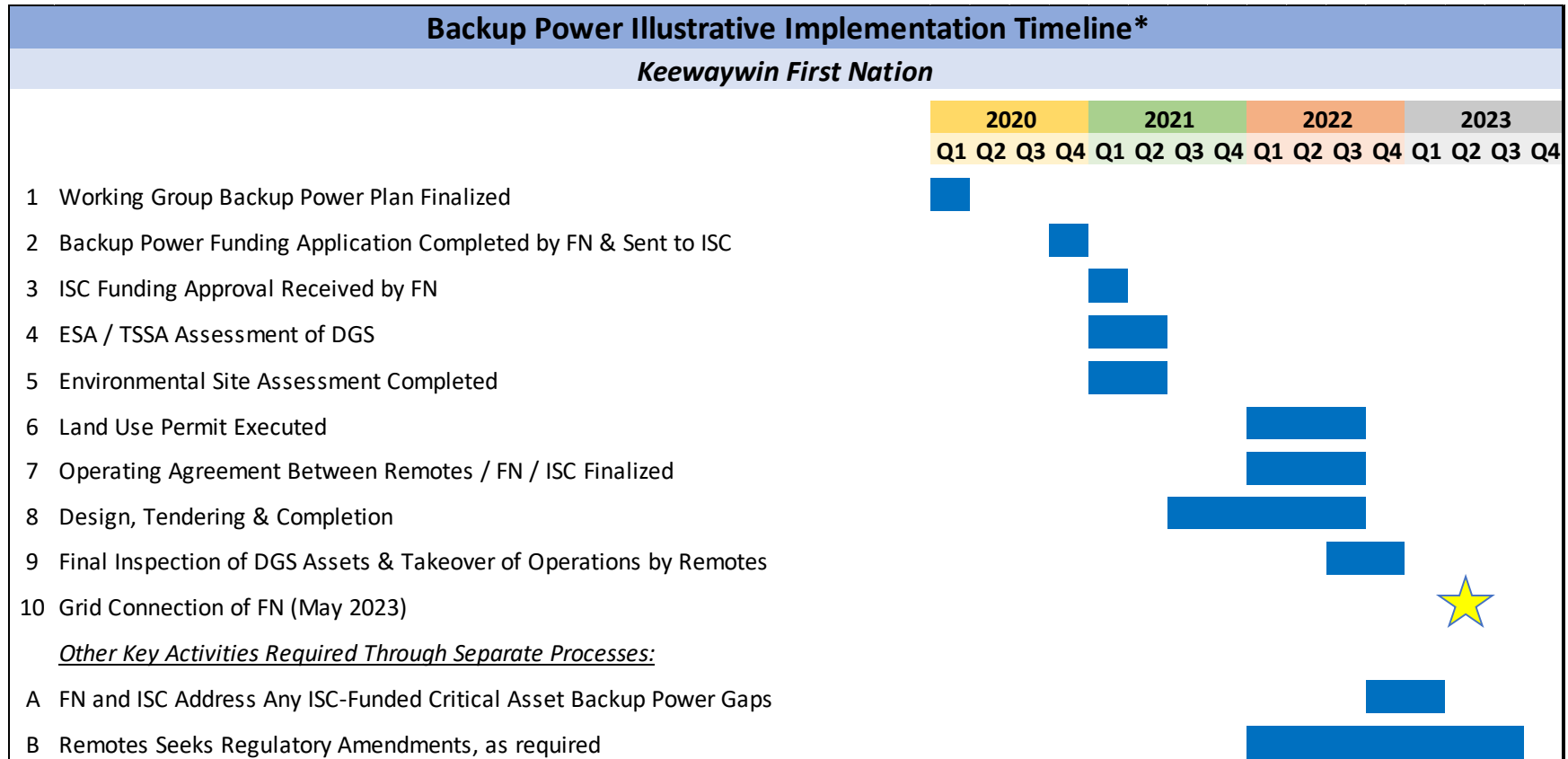
1. Summary

Estimated Connection Date:	May 2023
Current Local Distribution Company:	Independent Power Authority
Recommended Option (<i>See details below</i>):	Re-purpose existing DGS for Backup
Recommended Operator:	Operating Agreement with Remotes until 2030, at a minimum
Recommended Funding Responsibility:	Transitional Capital Costs: ISC O&M and Replacement Capital Costs: Remotes
Implementation Requirements:	<ul style="list-style-type: none"> • Confirm funding commitments • Operating Agreement with Remotes • Determine environmental baseline at DGS site • Complete upgrades required to operate as backup power

Options	Estimated Initial / Transitional Costs	IPA Compliance / Industry Standard	Estimated Implementation Costs	ISC Funded Health and Safety Critical Assets Gaps	Estimated O&M Costs to 2030	Total Estimated Costs to 2030	Considerations
Re-Purpose Existing DGS for Backup	\$684,000	\$300,000	\$680,000	\$122,400	\$1,676,424	\$3,462,824	<ul style="list-style-type: none"> • Will provide full community backup • Does not allow for near term clean-up of contaminated DGS site • Requires Operating Agreement with Remotes
New containerized DGS on greenfield site	\$3,568,400	N/A	\$390,000	\$122,400	\$1,677,424	\$5,758,224	<ul style="list-style-type: none"> • Will provide full community backup • Requires a new site • More implementation risks (lead times, winter road availability, permitting requirements, etc.) • Allows for decommissioning and clean-up of any contamination at the DGS site
ISC to ensure ISC-funded critical assets ¹ have backup power	N/A	N/A	\$100,000	\$1,063,200	N/A	\$1,163,200	<ul style="list-style-type: none"> • Does not provide full community backup • Allows for decommissioning and clean-up of any contamination at the DGS site

¹ - Critical Assets are: water treatment plants, wastewater treatment plants & related lift stations, schools, nursing stations & nurse residences, and fire halls

2. Implementation Timeline



*Timeline is estimated and is subject to change

Backup Power Plan Summary Sheet – Muskrat Dam First Nation

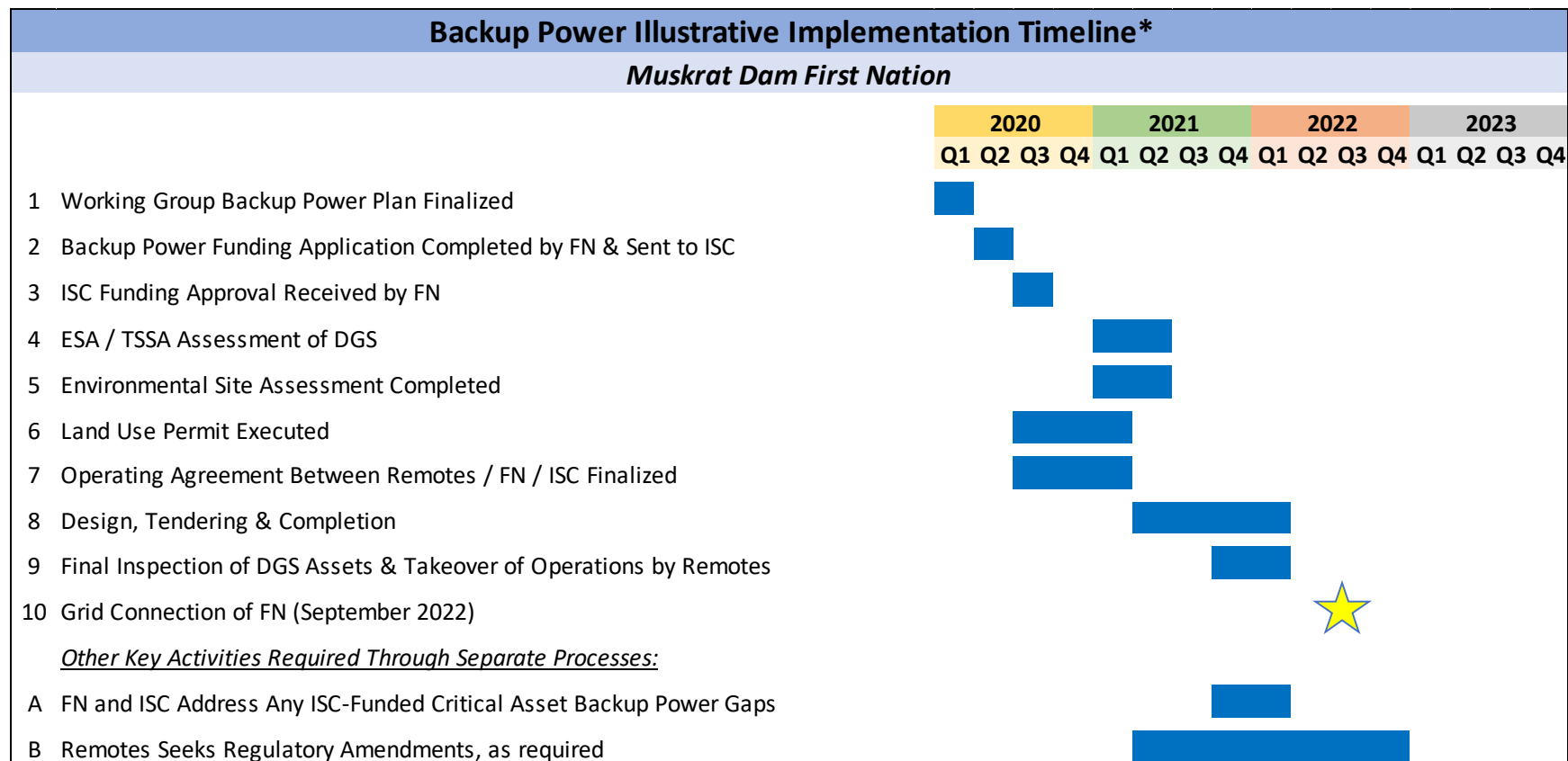
1. Summary

Estimated Connection Date:	September 2022
Current Local Distribution Company:	Independent Power Authority
Recommended Option (<i>See details below</i>):	Re-purpose existing DGS for Backup
Recommended Operator:	Operating Agreement with Remotes until 2030, at a minimum
Recommended Funding Responsibility:	Transitional Capital Costs: ISC O&M and Replacement Capital Costs: Remotes
Implementation Requirements:	<ul style="list-style-type: none"> • Confirm funding commitments • Operating Agreement with Remotes • Determine environmental baseline at DGS site • Complete upgrades required to operate as backup power

Options	Estimated Initial / Transitional Costs	IPA Compliance / Industry Standard	Estimated Implementation Costs	ISC Funded Health and Safety Critical Assets Gaps	Estimated O&M Costs to 2030	Total Estimated Costs to 2030	Considerations
Re-Purpose Existing DGS for Backup	\$199,000	\$300,000	\$680,000	\$178,400	\$1,703,496	\$3,060,896	<ul style="list-style-type: none"> • Will provide full community backup • Does not allow for near term clean-up of contaminated DGS site • Requires Operating Agreement with Remotes
New containerized DGS on greenfield site	\$3,568,400	N/A	\$390,000	\$178,400	\$1,704,496	\$5,841,296	<ul style="list-style-type: none"> • Will provide full community backup • Requires a new site • More implementation risks (lead times, winter road availability, permitting requirements, etc.) • Allows for decommissioning and clean-up of any contamination at the DGS site
ISC to ensure ISC-funded critical assets ¹ have backup power	N/A	N/A	\$100,000	\$1,119,200	N/A	\$1,219,200	<ul style="list-style-type: none"> • Does not provide full community backup • Allows for decommissioning and clean-up of any contamination at the DGS site

¹ - Critical Assets are: water treatment plants, wastewater treatment plants & related lift stations, schools, nursing stations & nurse residences, and fire halls

2. Implementation Timeline



*Timeline is estimated and is subject to change

Backup Power Plan Summary Sheet – North Spirit Lake First Nation

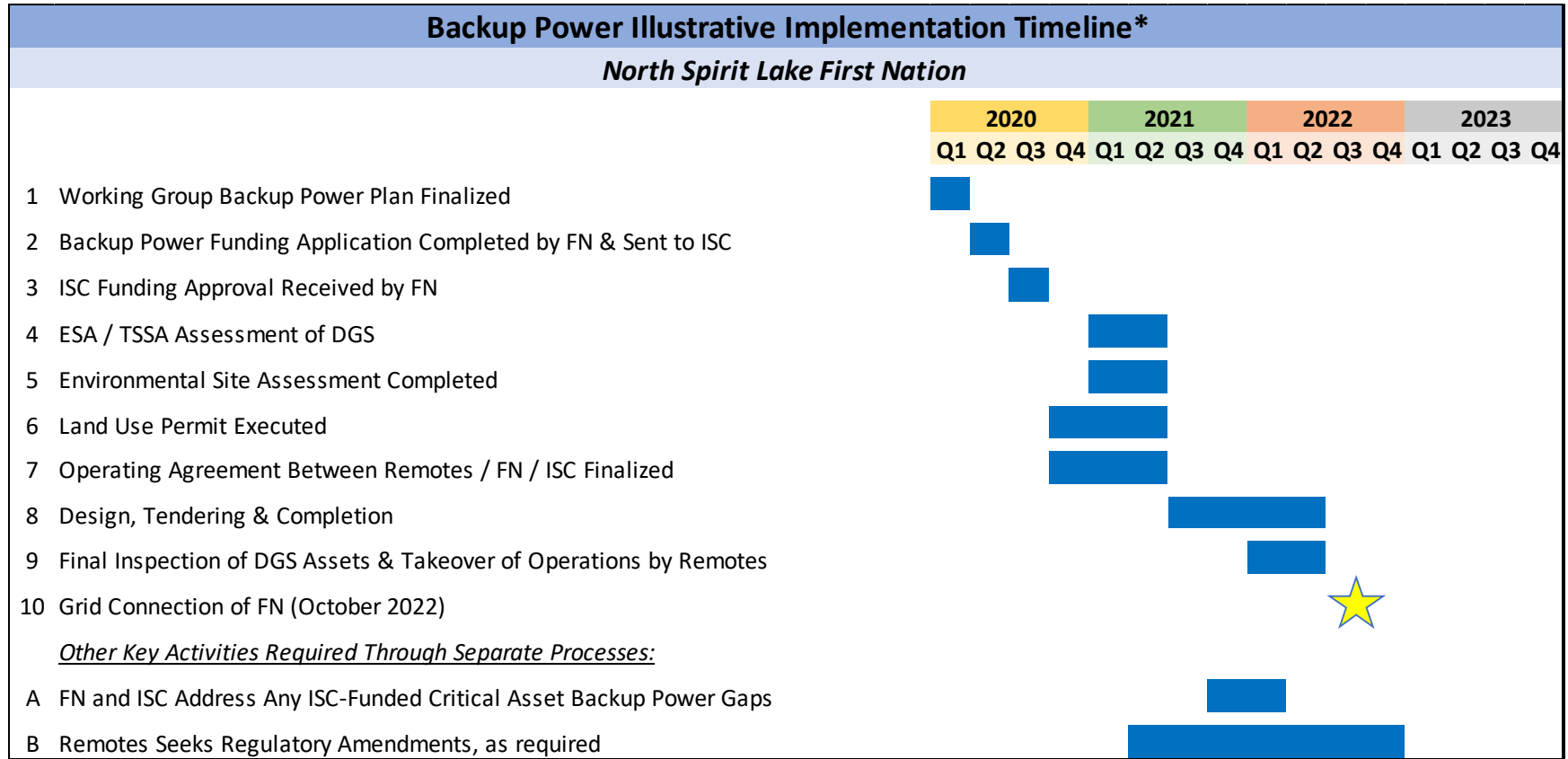
1. Summary

Estimated Connection Date:	October 2022
Current Local Distribution Company:	Independent Power Authority
Recommended Option (<i>See details below</i>):	Re-purpose existing DGS for Backup
Recommended Operator:	Operating Agreement with Remotes until 2030, at a minimum
Recommended Funding Responsibility:	Transitional Capital Costs: ISC O&M and Replacement Capital Costs: Remotes
Implementation Requirements:	<ul style="list-style-type: none"> • Confirm funding commitments • Operating Agreement with Remotes • Determine environmental baseline at DGS site • Complete upgrades required to operate as backup power

Options	Estimated Initial / Transitional Costs	IPA Compliance / Industry Standard	Estimated Implementation Costs	ISC Funded Health and Safety Critical Assets Gaps	Estimated O&M Costs to 2030	Total Estimated Costs to 2030	Considerations
Re-Purpose Existing DGS for Backup	\$209,000	\$300,000	\$680,000	\$335,200	\$1,648,790	\$3,172,990	<ul style="list-style-type: none"> • Will provide full community backup • Does not allow for near term clean-up of contaminated DGS site • Requires Operating Agreement with Remotes
New containerized DGS on greenfield site	\$3,568,400	N/A	\$390,000	\$335,200	\$1,649,790	\$5,943,390	<ul style="list-style-type: none"> • Will provide full community backup • Requires a new site • More implementation risks (lead times, winter road availability, permitting requirements, etc.) • Allows for decommissioning and clean-up of any contamination at the DGS site
ISC to ensure ISC-funded critical assets ¹ have backup power	N/A	N/A	\$100,000	\$1,119,200	N/A	\$1,219,200	<ul style="list-style-type: none"> • Does not provide full community backup • Allows for decommissioning and clean-up of any contamination at the DGS site

¹ - Critical Assets are: water treatment plants, wastewater treatment plants & related lift stations, schools, nursing stations & nurse residences, and fire halls

2. Implementation Timeline



*Timeline is estimated and is subject to change

Backup Power Plan Summary Sheet – Poplar Hill First Nation

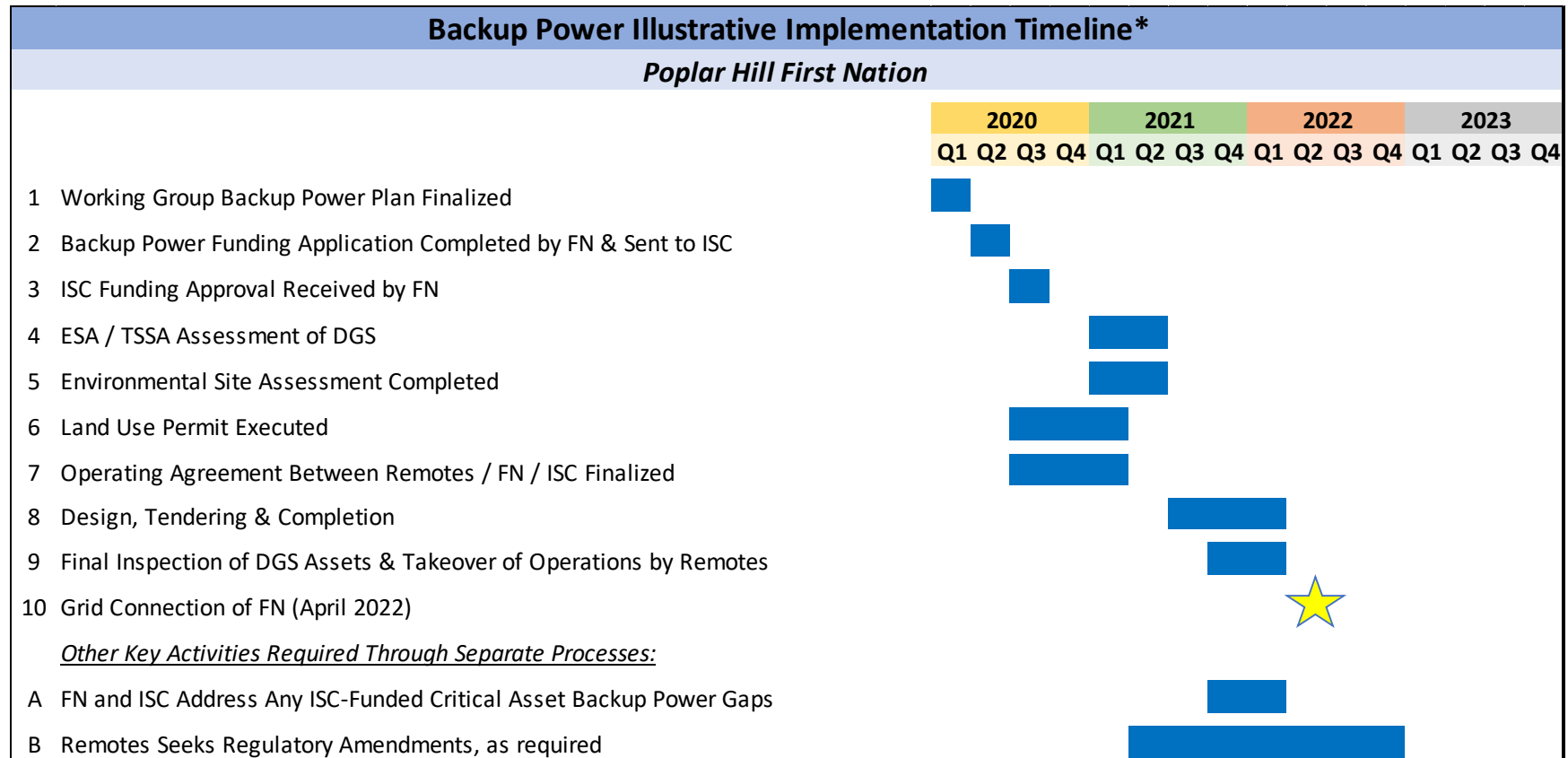
1. Summary

Estimated Connection Date:	April 2022
Current Local Distribution Company:	Independent Power Authority
Recommended Option (<i>See details below</i>):	Re-purpose existing DGS for Backup
Recommended Operator:	Operating Agreement with Remotes until 2030, at a minimum
Recommended Funding Responsibility:	Transitional Capital Costs: ISC O&M and Replacement Capital Costs: Remotes
Implementation Requirements:	<ul style="list-style-type: none"> • Confirm funding commitments • Operating Agreement with Remotes • Determine environmental baseline at DGS site • Complete upgrades required to operate as backup power

Options	Estimated Initial / Transitional Costs	IPA Compliance / Industry Standard	Estimated Implementation Costs	ISC Funded Health and Safety Critical Assets Gaps	Estimated O&M Costs to 2030	Total Estimated Costs to 2030	Considerations
Re-Purpose Existing DGS for Backup	\$199,000	\$300,000	\$680,000	\$279,200	\$1,860,872	\$3,319,072	<ul style="list-style-type: none"> • Will provide full community backup • Does not allow for near term clean-up of contaminated DGS site • Requires Operating Agreement with Remotes
New containerized DGS on greenfield site	\$3,568,400	N/A	\$390,000	\$279,200	\$1,860,872	\$6,098,472	<ul style="list-style-type: none"> • Will provide full community backup • Requires a new site • More implementation risks (lead times, winter road availability, permitting requirements, etc.) • Allows for decommissioning and clean-up of any contamination at the DGS site
ISC to ensure ISC-funded critical assets ¹ have backup power	N/A	N/A	\$100,000	\$1,063,200	N/A	\$1,163,200	<ul style="list-style-type: none"> • Does not provide full community backup • Allows for decommissioning and clean-up of any contamination at the DGS site

¹ - Critical Assets are: water treatment plants, wastewater treatment plants & related lift stations, schools, nursing stations & nurse residences, and fire halls

2. Implementation Timeline



*Timeline is estimated and is subject to change

Backup Power Plan Summary Sheet – Wawakapewin First Nation

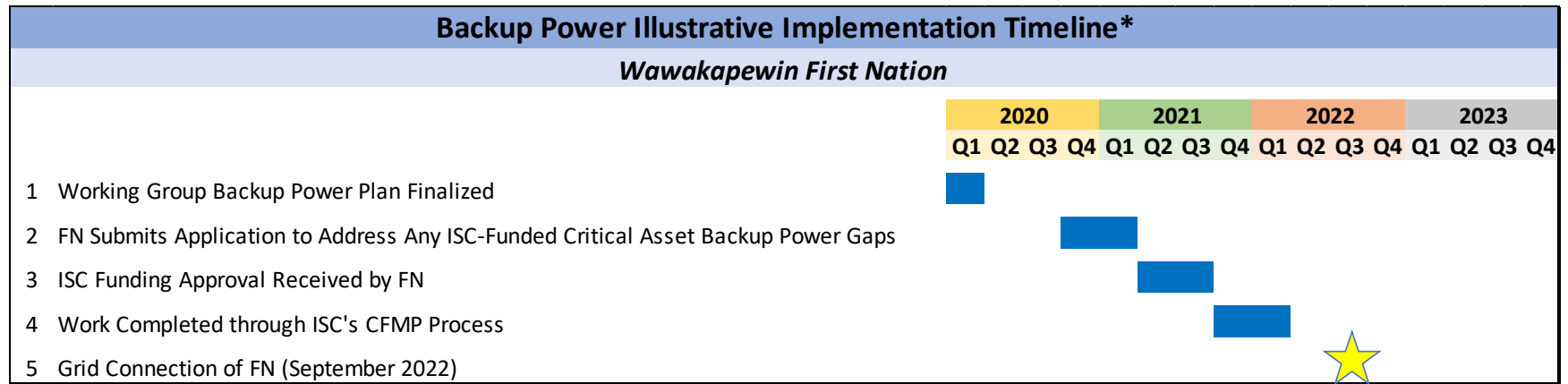
3. Summary

Estimated Connection Date:	September 2022
Current Local Distribution Company:	Independent Power Authority
Recommended Option (<i>See Below</i>):	Critical Asset Backup Power Only
Recommended Operator:	N/A
Recommended Funding Responsibility:	ISC to fund Health & Safety Critical Asset gaps
Implementation Requirements:	<ul style="list-style-type: none"> • Confirm funding commitments • If/when there are critical assets, ensure backup is in place

Options	Estimated Initial / Transitional Costs	Estimated Implementation Costs	ISC Funded Health and Safety Critical Assets Gaps	Estimated O&M Costs to 2030	Total Estimated Costs to 2030	Considerations
New containerized DGS on greenfield site	\$2,901,800	\$390,000	\$0	\$1,559,149	\$4,850,949	<ul style="list-style-type: none"> • Will provide full community backup • Requires a new site • More implementation risks (lead times, winter road availability, permitting requirements, etc.) • Allows for decommissioning and clean-up of any contamination at the DGS site • Requires that community access issues are addressed
ISC to ensure ISC-funded critical assets ¹ have backup power	N/A	\$0	\$0	N/A	\$0	<ul style="list-style-type: none"> • Does not provide full community backup • Allows for decommissioning and clean-up of any contamination at the DGS site

¹ - Critical Assets are: water treatment plants, wastewater treatment plants & related lift stations, schools, nursing stations & nurse residences, and fire halls

2. Implementation Timeline



*Timeline is estimated and is subject to change

Backup Power Plan Summary Sheet – Wunnumin Lake First Nation

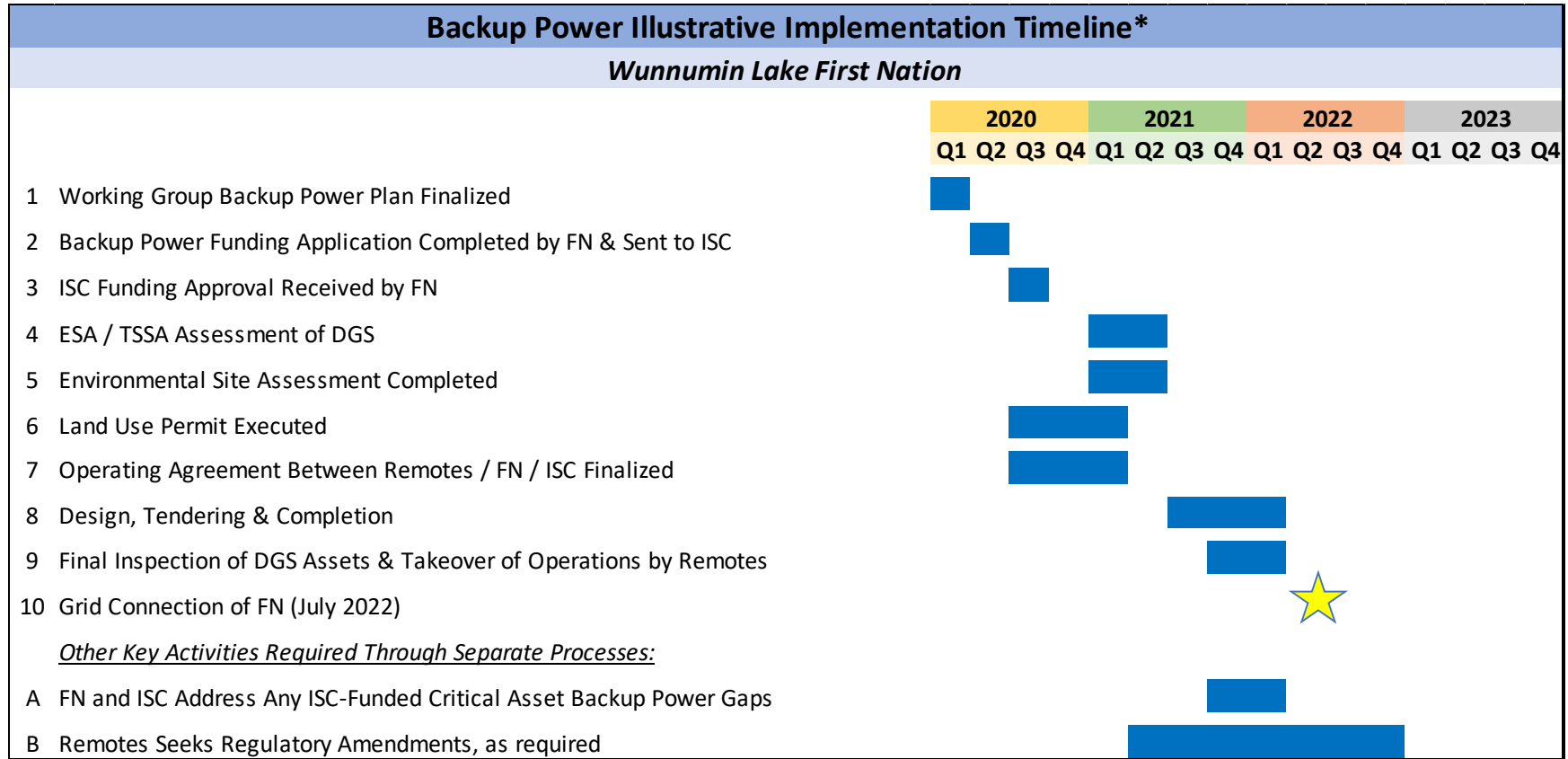
1. Summary

Estimated Connection Date:	July 2022
Current Local Distribution Company:	Independent Power Authority
Recommended Option (<i>See details below</i>):	Re-purpose existing DGS for Backup
Recommended Operator:	Operating Agreement with Remotes until 2030, at a minimum
Recommended Funding Responsibility:	Transitional Capital Costs: ISC O&M and Replacement Capital Costs: Remotes
Implementation Requirements:	<ul style="list-style-type: none"> • Confirm funding commitments • Operating Agreement with Remotes • Determine environmental baseline at DGS site • Complete upgrades required to operate as backup power

Options	Estimated Initial / Transitional Costs	IPA Compliance / Industry Standards	Estimated Implementation Costs	ISC Funded Health and Safety Critical Assets Gaps	Estimated O&M Costs to 2030	Total Estimated Costs to 2030	Considerations
Re-Purpose Existing DGS for Backup	\$209,000	\$300,000	\$680,000	\$150,400	\$2,006,226	\$3,345,626	<ul style="list-style-type: none"> • Will provide full community backup • Does not allow for near-term clean-up of contamination at the DGS site • Requires Operating Agreement with Remotes
New containerized DGS on greenfield site	\$4,299,900	\$0	\$390,000	\$150,400	\$2,006,226	\$6,846,526	<ul style="list-style-type: none"> • Will provide full community backup • Requires a new site • More implementation risks (lead times, winter road availability, permitting requirements, etc.) • Allows for decommissioning and clean-up of any contamination at the DGS site
ISC to ensure ISC-funded critical assets ¹ have backup power	N/A	N/A	\$100,000	\$934,400	N/A	\$1,034,400	<ul style="list-style-type: none"> • Does not provide full community backup • Allows for decommissioning and clean-up of any contamination at the DGS site

¹ - Critical Assets are: water treatment plants, wastewater treatment plants & related lift stations, schools, nursing stations & nurse residences, and fire halls

2. Implementation Timeline



*Timeline is estimated and is subject to change

Appendix B – BBA Backup Power Report

"BBA - REVISED REPORT - REMOTE COMMUNITIES BACKUP POWER SUPPLY ANALYSIS 861500" can be accessed via the following link: <https://gcdocs.intra.pri/aanc-inac/llisapi.dll/Overview/36929459>

Appendix C – Hydro One Remote Communities Inc. Backup Power Report (Dec 2018)

"H1RCI - BACKUP STUDY REPORT - December 2018" can be accessed via the following link: <https://gcdocs.intra.pri/aanc-inac/llisapi.dll/Overview/37014973>

Appendix D – Hydro One Remotes Containerized DGS Option Annex (Nov 2019)

"H1RCI - Backup Station Report - Containerized DGS Option Annex (FINAL).pdf" can be accessed via the following link:
<https://gcdocs.intra.pri/aanc-inac/llisapi.dll/Overview/57034168>

Appendix E – First Nations LP Shareholders Resolution (December 2018)

"FNLP - RESOLUTION ON BACKUP POWER - DECEMBER 2018 893395" can be accessed via the following link:
<https://gcdocs.intra.pri/aanc-inac/llisapi.dll/Overview/36949177>

Appendix F – Letters from Indigenous Services Canada to the Connecting Communities (December 2018 / November 2019):

"ARTICLE H AND N_SIGNED 3 LETTERS 888189" can be accessed via the following link: <https://gcdocs.intra.pri/aanc-inac/Ilisapi.dll/Overview/37017443>

"ARTICLE H AND N_SIGNED 13 LETTERS 888193" can be accessed via the following link: <https://gcdocs.intra.pri/aanc-inac/Ilisapi.dll/Overview/38001383>

"RDG Update Letter re Backup Power.pdf" can be accessed via the following link: <https://gcdocs.intra.pri/aanc-inac/Ilisapi.dll/Overview/57916030>

Appendix G – Backup Power Working Group – Terms of Reference

"BPWG - TOR Final (May 7, 2019) - SIGNED VERSION" can be accessed via the following link: <https://gcdocs.intra.pri/aanc-inac/llisapi.dll/Overview/44694944>

Appendix H – Summary of BPWG Engagement with Connecting Communities

The following table summarizes the BPWG's engagement with the Connecting Communities as of April 30, 2020. The first round of engagement was led by OSLP, with the second round coordinated with OSLP and respective Tribal Councils.

Note, due to scheduling challenges and community closures related to Covid-19 precautions, not all community engagement sessions were held in each of the Connecting Communities.

Connecting Community		Date(s) of Engagement	Round of Engagement	Outcomes
1.	Bearskin Lake	Sept. 24, 2019	1	<ul style="list-style-type: none"> Support for centralized backup power Concern with extended outages in the community as homes require power for heating & medical purposes Support using existing DGS assets for backup power
		TBD	2	
2.	North Caribou Lake	Jul. 10, 2019	1	<ul style="list-style-type: none"> Community does not want to evacuate due to outages Concern with extended outages in the community as homes require power for heating & medical purposes Support for centralized backup power Concern with need for backup power beyond 2030
		Feb. 20, 2020	1	<ul style="list-style-type: none"> Met with trappers and elders, was not a full community meeting.
3.	Sachigo Lake	Sept. 16, 2019	1	<ul style="list-style-type: none"> Support using existing DGS assets for backup power Support for centralized backup power
		TBD	2	
4.	Kasabonika Lake	Jul. 10, 2019	1	<ul style="list-style-type: none"> Concern with lack of community representation on BPWG Requested additional backup power information for review
		TBD	2	
5.	Kingfisher Lake	Jun. 19, 2019	1	<ul style="list-style-type: none"> Backup power must meet needs of elders Concern with extended outages in the community as homes require power for heating & medical purposes Prefer supporting backup power via BCR over letter Support using existing DGS assets for backup power Support for centralized backup power
		TBD	2	
6.	Wapekeka	Nov. 19, 2019	1	<ul style="list-style-type: none"> Support using existing DGS assets for backup power
		TBD	2	
7.	Kitchenuhmaykoosib Inninuwug (KI)	Mar. 10, 2020	1	<ul style="list-style-type: none"> Support using existing DGS assets for backup power
		TBD	2	
8.	Pikangikum	Aug. 12, 2019	1	<ul style="list-style-type: none"> Support for centralized backup power Questions regarding backup power options Concern with extended outages in the community as homes require power for heating & medical purposes
		TBD	2	
9.	Deer Lake	Jul. 18, 2019	1	<ul style="list-style-type: none"> Support for centralized backup power Prefers that DGS assets remain in the community

				<ul style="list-style-type: none"> Support using existing DGS assets for backup power
		TBD	2	
10.	Sandy Lake	TBD	1	
		TBD	2	
11.	Wawakapewin	Feb. 13, 2020	1	<ul style="list-style-type: none"> Support for centralized backup power
		Mar. 12, 2020	2	<ul style="list-style-type: none"> Support for centralized backup power
12.	Wunnumin Lake	Aug. 22, 2019	1	<ul style="list-style-type: none"> Support using existing DGS assets for backup power Support for centralized backup power Would like environmental issues addressed Opposed to transferring existing DGS assets to Remotes for free
		TBD	2	
13.	Muskrat Dam	Aug. 1, 2019	1	<ul style="list-style-type: none"> Interested if community would receive payment from Remotes for backup power since assets are on MDFN land Support for centralized backup power pending further community discussions
		TBD	2	
14.	Keewaywin	Aug. 27, 2019	1	<ul style="list-style-type: none"> Chief wants new containerized DGS and Remotes compound to be located across the river to support a bridge project Community opposed to transferring existing DGS assets to Remotes for free Support for centralized backup power Concern around Energy participating in BPWG due to perception that they have ulterior motives (i.e. mining)
		Mar. 3, 2020	2	<ul style="list-style-type: none"> Concern for 'Critical Asset Only' option due to health & safety considerations Community meeting held and support using existing DGS assets for backup power
15.	North Spirit Lake	Sept. 10, 2019	1	<ul style="list-style-type: none"> Support for centralized backup power Tentative support using existing DGS assets for backup power, but further discussions required with Tribal Council
		Feb. 27, 2020	2	<ul style="list-style-type: none"> Community meeting held and support using existing DGS assets for backup power
16.	Poplar Hill	Jul. 19, 2019	1	<ul style="list-style-type: none"> Support for centralized backup power Concern with backup power beyond 2030 Concern whether critical asset backup will still be in place if other backup power options are implemented Support using existing DGS assets for backup power Extent of DGS site contamination is unknown
		Feb. 13, 2020	2	<ul style="list-style-type: none"> Strong support for re-purposing existing DGS assets for centralized backup power Concern for 'Critical Asset Only' option due to health & safety and to protect homes (i.e. frozen pipes) Backup Power Plan must consider all residents including sick and vulnerable

Note: the table above does not reflect group engagement sessions.

Appendix I – Hydro One Remote Communities Inc. Letter

"Hydro One Remote Backup Power Letter MAY 2020.pdf" can be accessed via the following link:
<https://gcdocs.intra.pri/aanc-inac/llisapi.dll/Overview/66952671>

Appendix J – Backup Power Precedents in Ontario

Five Nations Energy

Five Nations Energy Inc. is the corporation behind the Omushkego Ishkotayo Project, a 270 km of 115 kV transmission line that services the remote communities of Fort Albany, Kashechewan and Attawapiskat with Moosenee Hydro One's facility. Kashechewan Power Corporation and Attawapiskat Power Corporation (two provincially-licensed local distributors) retained the existing DGS assets to provide community backup power in Kashechewan and Attawapiskat. The DGS in Fort Albany was decommissioned when it reached its end of life. Diesel generators are rarely used since a section of the transmission line was doubled in 2015. DGS capacity has not increased while the load/demand has increased due to residents converting to electrical heating, thus sequential load shedding was required during extended outages from the grid.

Existing DGS are owned by the respective community and operated by their local distribution company (LDC). Maintenance of the generators is shared between the LDCs and Five Nations Energy Inc., the transmission line operator.

Anwaatin

In 2017-18, Anwaatin Inc. ("Anwaatin") intervened in Hydro One's rate application and brought forward a motion asking the OEB to further consider its evidence regarding extremely disparate and inadequate transmission system reliability in First Nation communities in Northern Ontario and the significant negative impacts of the very poor transmission reliability in the Anwaatin communities.

Anwaatin requested that part of Hydro One's approved capital budget be earmarked to remedy the outdated, outlier transmission assets that are causing the very poor reliability issues in the Anwaatin communities. Anwaatin represents Aroland First Nation, MoCreebec Eeyoud, and Waaskiinaysay Ziibi Inc. Development Corporation ("WZI"), an economic development corporation representing five First Nations in the Lake Nipigon watershed: Animbiigoo Zaagiigan Anishinaabek, Bingwi Neyaashi Anishinaabek, Biinjitiwaabik Zaaging Anishinaabek, Red Rock Indian Band, and Whitesand First Nation.

Anwaatin and Hydro One developed a Settlement Proposal, which was accepted by the OEB. Some of the key outcomes from the Settlement Proposal include:

- Hydro One undertaking a pilot project that is intended to explore the feasibility of implementing non-wires distributed energy projects ("Pilot Project") in and around the Anwaatin First Nation communities as a means to improve reliability in remote and radial areas of Hydro One's system. The Pilot Project is intended to provide Hydro One with an opportunity to assess whether similar and repeatable approaches may be used in other remote areas of its system that are experiencing poor reliability conditions.
- Hydro One's investment in the Pilot Project shall not exceed \$5 million and shall be funded from Hydro One's distribution capital investment plan.
- Anwaatin and Hydro One agreed to work together in an effort to offset or augment this investment amount by obtaining government funding through subsidies or grant programs.
- The Parties acknowledge that any further funding of this initiative is dependent on (i) the feasibility of the Pilot Project and (ii) further review and approval by the OEB to increase Hydro One's approved capital investment envelope and recovery through rates of the additional funding requirements.

- Anwaatin First Nation communities and Abundant Solar Energy plan to jointly develop and implement up to 45 MW of feed-in-tariff (FIT) contracted solar generation
- Hydro One will consider the feasibility of having this solar generation used as a source of supply to the energy storage facilities as part of the Pilot Project.
- Anwaatin and Hydro One will consult and cooperate on any other longer-term wires and/or non-wires electricity reliability proposals and solutions affecting the Anwaatin First Nation communities and may jointly pursue other projects intended to improve reliability in other regions served by Hydro One.

Pelee Island

Pelee Island is located on Lake Erie, near Windsor, and receives power via a submarine cable approximately 24 kilometres in length. Hydro One was able to provide backup generation on Pelee Island by virtue of an exemption granted to it by Ontario Regulation 71/02, made under the *Electricity Act, 1998*, and gazetted March 30, 2002, which amended Ontario Regulation 160/99. The rationale supporting the decision to implement backup power on Pelee Island is protection of residents from impacts resulting from outages, particularly during the winter months. Outages experienced by Pelee Island residents have typically lasted weeks to months. There are approximately 100 full-time residents on Pelee Island during the winter and as many as 500 during the summer.

DRAFT COMMUNITY BAND COUNCIL RESOLUTION FOR BACKUP POWER
(for a community currently being served by **Hydro One Remote Communities Inc.**)

WHEREAS: A meeting was held with ■ Chief and Council on [DATE] (and the community on [DATE]) to discuss the Backup Power Plan and requirements once the Wataynikaneyap Power LP Project (“Watay”) connects our community to the provincial electrical power grid;

WHEREAS: ■ First Nation is currently an off-grid community served by Hydro One Remote Communities Inc. (“Remotes”);

AND WHEREAS: At a shareholder meeting of 2472881 Ontario Ltd., the General Partner of First Nation LP, held on December 18, 2018, a resolution was passed supporting community wide backup power until 2030 at a minimum (A copy of the resolution is attached here as Schedule “A”);

AND WHEREAS: There are concerns that, once connected to the grid, there is the potential of an increased number of power outages as a result of the remoteness and radial nature of the transmission lines that will provide grid power to the communities;

AND WHEREAS: Indigenous Services Canada’s (“ISC”) “Level of Service Standards for Electric Power Supply and Distribution Systems” supports dedicated standby power only for critical infrastructure in communities where quality and reliability of power are a concern. Critical infrastructure consists of water treatment plant, wastewater treatment system including lift stations, school (or other emergency gathering point), nursing station, nurse residence(s), as well as fire hall;

AND WHEREAS: When centralized backup for the entire community is in place, _____ First Nation acknowledges that the standby backup power at a community gathering point (eg: school, community centre, band office, etc.), and fire hall will not be supported by ISC.

AND WHEREAS: It is the intent that centralized backup be in place at no cost to the community;

AND WHEREAS: Remotes has indicated an interest in continuing to operate and maintain its existing diesel generating site for the purpose of providing backup power to the community provided that a suitable agreement can be reached by all parties to accomplish this;

AND WHEREAS: ■ First Nation acknowledges that Remotes has accepted full responsibility for any existing soil and groundwater at the existing diesel generating site and will continue to monitor and manage their environmental responsibilities;

THEREFORE, BE IT RESOLVED THAT: ■ First Nation supports the repurposing of the Remotes diesel generating site and equipment systems for the purpose of providing a centralized backup power supply to the community until 2030 at a minimum as outlined in the Backup Power Plan; and

FURTHER BE IT RESOLVED THAT: Any costs related to the provision of backup power supply to the community will not be the responsibility of the First Nation.

DRAFT COMMUNITY BAND COUNCIL RESOLUTION FOR BACKUP POWER
(for IPA communities)

WHEREAS: A meeting was held with ■ Chief and Council on [DATE] (and the community on [DATE]) to discuss the Backup Power Plan and requirements once the Wataynikaneyap Power LP Project (“Watay”) connects our community to the provincial electrical power grid;

WHEREAS ■ First Nation is currently a community whose power is generated and distributed by a community-owned Independent Power Authority (the “IPA”);

AND WHEREAS: At a shareholder meeting of 2472881 Ontario Ltd., the General Partner of First Nation LP, held on December 18, 2018, a resolution was passed supporting community wide backup power until 2030 at a minimum (A copy of the resolution is attached here as Schedule “A”);

AND WHEREAS: There are concerns that, once connected to the grid, there is the potential of an increased number of power outages as a result of the remoteness and radial nature of the transmission lines that will provide grid power to the communities;

AND WHEREAS: Indigenous Services Canada’s (“ISC”) “Level of Service Standards for Electric Power Supply and Distribution Systems” supports dedicated standby power only for critical infrastructure in communities where quality and reliability of power are a concern. Critical infrastructure consists of water treatment plant, wastewater treatment system including lift stations, school (or other emergency gathering point), nursing station, nurse residence(s), as well as fire hall;

AND WHEREAS: When centralized backup power for the entire community is in place, ____ First Nation acknowledges that standby backup power at the community gathering point (eg: school, community centre, band office etc.) and fire hall will not be supported by ISC.

AND WHEREAS: It is the intent that centralized backup be in place at no cost to the community;

AND WHEREAS: Hydro One Remote Communities Inc. (“Remotes”) has indicated an interest in operating and maintaining the current diesel generation assets of the IPA for the purpose of providing backup power to the community provided that a suitable agreement can be reached by all parties to accomplish this;

AND WHEREAS: ■ First Nation acknowledges that Remotes will have no environmental responsibility or liability for any pre-existing soil and groundwater contamination at the IPA’s diesel generating site identified by an environmental site assessment report;

THEREFORE, BE IT RESOLVED THAT: ■ First Nation supports the repurposing of the community owned diesel generating site and equipment systems for the purpose of providing a centralized backup power supply to the community until 2030 at a minimum as outlined in the Backup Power Plan; and

FURTHER BE IT RESOLVED THAT: Any costs related to the provision of backup power supply to the community will not be the responsibility of the First Nation.

Schedule "A"

MOTION #07: **Moved by** **Chief Eno H. Anderson**
 Seconded by **Chief Jacob Strang**

WHEREAS 22 First Nations are the shareholders of 2472881 Ontario Limited (the "Corporation"), and 2472881 Ontario Limited is the General Partner of First Nation LP ("FNLP");

AND WHEREAS the Indigenous people will continue to exercise s. 35 Aboriginal and Treaty rights according to our understanding of the spirit and intent of the Treaty as passed down to us by our elders, and also to exercise our inherent rights given to us by the Creator, across all of our homelands;

AND WHEREAS FNLP has contracted with Opiikapawiin Services LP ("OSLP") to provide various services relating to the Wataynikaneyap Transmission Project;

AND WHEREAS due to the length and remoteness of the Wataynikaneyap Transmission Project, there are risks of power outages, which negatively impact the wellbeing of First Nations communities;

AND WHEREAS the May 2018 BBA Report estimated the reliability of the Wataynikaneyap transmission lines, evaluated backup options, and recommended utilization of existing generators as the best potential near-term backup power solution;

AND WHEREAS the December 2018 Hydro One Remotes Report recommends that existing community diesel generation assets be repurposed to provide centralized backup power in each community until 2030, as a minimum;

AND WHEREAS the Parallel Process Agreement includes a commitment by Canada to additional planning on backup power, to be completed in 2019.

THEREFORE, BE IT RESOLVED THAT Opiikapawiin Services LP will participate in the planning process identified in the Parallel Process Agreement, with the position that community wide backup power will be required in each of the First Nations to be connected by Wataynikaneyap Power, until 2030 as a minimum. The Backup Power Plan and commitments will need to address environmental responsibility and concerns, on a community by community basis, including all past and present grievances relating to historical environmental contaminations at the generator sites.

FINALLY, BE IT RESOLVED THAT ISC shall be responsible for all costs associated with all environmental remediation and clean up.

– *CARRIED*

Appendix B

HORCI Letter of Opinion on Backup Power Plan



**Hydro One
Remote Communities Inc.**
680 Beaverhall Place
Thunder Bay, ON P7E 6G9
Toll Free: 1-888-825-8707
Telephone: (807) 474-2800
Fax: (807) 475-8123



June 8, 2021

Margaret Kenequanash, CEO
Wataynikaneyap Power LP
Margaret.Kenequanash@wataypower.ca

Re: Hydro One Remote Communities Inc. Opinion on Reliability through Proposed Backup Supply Arrangements – OEB File No.: EB-2018-0190

Margaret,

As you are aware, Hydro One Remotes has been an active participant in the backup working group and recognizes that backup power will enhance reliability, mitigate health and safety concerns as well as protect community assets. Hydro One Remotes is committed to offering safe, reliable, affordable electricity to our customers.

At the request of the May 17th, 2021 OEB letter to Wataynikaneyap Power LP, “The OEB also requests that WPLP seek opinions from the IESO and Hydro One Remote Communities Inc. on whether the backup power plan is sufficient from a reliability perspective in their view.”

As such, Hydro One Remotes provides the following opinion:

- For the off-grid communities currently served by Hydro One Remotes (Deer Lake, Kingfisher, Sandy Lake, Bearskin, Kasabonika, Wapekeka, Big Trout/KI, Sachigo) – Hydro One Remotes is confident that the backup plan as proposed will provide the necessary reliability desired until 2030.
- For the Independent Power Authority’s (“IPA”) (Poplar Hill, Wunnumin, Muskrat Dam, North Spirit Lake, Keewaywin) – Hydro One Remotes believes that the backup plan as proposed will provide the necessary reliability desired until 2030. The backup reliability within each of the IPA’s will depend largely on investment into the operating condition and capacity of the generating assets as well as relative peak load of the community, both of which have not been recently assessed.
- For the three communities with ISC critical funded assets only (Pikangikum, North Caribou as well as Wawakapewin if service is provided) - Hydro One Remotes is not in a position to provide comment as to whether the backup plan as proposed will provide the necessary reliability desired until 2030. Remotes does note that broader community-wide coverage would be more consistent with the approach in other communities and provide an enhanced level of reliability to all customers.

We trust that our opinion provided above will provide Wataynikaneyap and the OEB with the necessary feedback on expected backup power reliability. We look forward to continuing to work with you on the backup project for the benefit of all customers.

Sincerely,

Kraemer Coulter
Managing Director
Hydro One Remote Communities Inc.

cc. duane.fecteau@wataypower.ca; greg.beharriell@wataypower.ca; rachel.boone@canada.ca;
michelle.piano2@canada.ca; jody.knibbs@canada.ca; rlhabinski@xplornet.com;
christopher.goode@ontario.ca; justine.desmond@ontario.ca; naomi.martin@hydroone.com;
kevin.mann@hydroone.com

Appendix C

IESO Letter of Opinion on Backup Power Plan

June 23, 2021

Via Email



Independent Electricity System Operator

1600-120 Adelaide Street West
Toronto, ON M5H 1T1
t 416.967.7474

www.ieso.ca

Ms. Margaret Kenequanash
Chief Executive Officer
Wataynikaneyap Power GP on behalf of
Wataynikaneyap Power LP
300 Anemki Place, Suite B
Fort William First Nation, ON P7J 1H9

Dear Ms. Kenequanash:

**Re: Wataynikaneyap Power LP
Wataynikaneyap Transmission Project Semi-Annual Report on CWIP
Account and Backup Supply Arrangements
Board File No.: EB-2018-0190**

Wataynikaneyap Power LP (WPLP) filed its semi-annual report on construction work in progress (CWIP) Account and Backup Supply Arrangements (collectively, "semi-annual report") for the Wataynikaneyap Transmission Project with the Ontario Energy Board (OEB) on April 15, 2021. The OEB acknowledged receipt of the semi-annual report on May 17, 2021 and asked WPLP to seek opinions from the Independent Electricity System Operator (IESO) and Hydro One Remote Communities Inc. on whether the Backup Power Plan for the Connecting Communities of the Wataynikaneyap Transmission Project (Plan) is sufficient from a reliability perspective in their view. The IESO appreciates the opportunity to submit comments on the Plan.

The IESO's review was conducted from the perspective of whether the Plan conforms with backup power related recommendations in the former Ontario Power Authority's (OPA) 2014 Remote Connection Plan (2014 OPA Remote Connection Plan) and the IESO's 2016 Recommended Scope for the New Line to Pickle Lake and Supported Scope for the Remotes Connection Project (2016 Recommended Scope). The scope of the IESO's review is limited to this context as the Plan (and its referenced documents, including the BBA Backup Power Report¹) is broader than the IESO's expertise and mandate.

¹ In 2017, Wataynikaneyap retained the services of engineering firm BBA to assess backup power requirements for the Connecting Communities, options, advantages/disadvantages of each option, and a recommended option.

2014 OPA Remote Connection Plan

The 2014 OPA Remote Connection Plan recommended that backup generation systems be available in the remote communities in order to maintain reliability once they are supplied by transmission. At a minimum, the backup generation systems should maintain the level of reliability that the communities experienced when supplied exclusively by diesel generation; however, it was noted that backup generation may result in improvements to the level of reliability.

"The expected outage duration for transmission supply alone is estimated to be an improvement for IPA [Independent Power Authority] communities, but not generally for the average H1RCI [Hydro One Remote Communities Inc.] community. However, with the use of backup generation to mitigate the transmission system outages, it may be possible to improve outage frequency and duration for all communities."

Further, the 2014 OPA Remote Connection Plan provided estimates of total transmission outage durations per year and indicated that it is likely that backup generation of some form will be required. The detailed outage estimates included in the 2014 OPA Remote Connection Plan indicated that the transmission connected communities are expected to incur a total transmission outage duration per year ranging from 0.81% to 2.09%. These values consider the anticipated frequency of planned and forced (both momentary and sustained) outages, and the total duration expected for each type of outage.

Alignment with the 2014 OPA Remote Connection Plan

Section 2 of the Plan notes that the BBA Backup Power Report provided a refined transmission outage duration per year between 0.75% and 1.65% per community, based on the common causes of interruptions and based on Wataynikaneyap's proposed design for the transmission line. The IESO has not reviewed these estimates (doing so would be outside of its expertise), but accepts them as an update to the anticipated transmission outage duration per year per community that reflects the design of the project². The intent of the recommendation in the 2014 OPA Remote Connection Plan was that the backup power plan proposed by WPLP should result in a level of reliability that is similar to or better than when those communities were supplied by diesel. As such, the IESO recommends that WPLP provide confirmation that the Plan, including planned fuel reserves, meets this intent considering the revised transmission outage durations in the BBA Backup Power Report and other factors, as appropriate.

² The estimates provided in the 2014 OPA Remote Connection Plan are based on the performance of existing circuits in the Northwest.

2016 Recommended Scope

The supported scope for the remote connection project included the following provision:

"Facilitate the arrangement of backup electricity supply resources for connecting communities where: such facilities do not already exist; other arrangements have not been made or the community has not specifically requested an exemption. The backup supply resources, at a minimum, will maintain supply to essential loads within critical buildings (nursing station, airport, water treatment plant, and at least one of school/band office/community centre) in each community, consistent with each community's Emergency Preparedness Plan."

Alignment with the 2016 Recommended Scope

The Plan's recommendation to repurpose existing diesel generation for community-wide backup power for most communities (or provide backup power to Indigenous Services Canada-funded (ISC) critical assets only if repurposing diesel generation is not feasible) is consistent with the IESO's 2016 Recommended Scope. The IESO notes that the critical assets in the Plan included the majority of those listed in the 2016 Recommended Scope but does not include airports. The IESO recommends that WPLP confirm that backup supply will be available to the critical loads identified in each community's Emergency Preparedness Plan.

Yours truly,



Acting Director, Regulatory Affairs and Market Rules

cc: Ahmed Maria, Director, Transmission Planning, IESO
Beverly Nollert, Manager, Transmission Planning, IESO
Jonathan Myers, Counsel, Torys LLP
Charles Keizer, Counsel, Torys LLP
Duane Fecteau, Vice President, WPLP