

1 Q. Please provide tables indicating the capital budgets for (1) Rural Distribution and (2)
2 Diesel Plants for each year from 2019 to 2023. Please provide the justification used
3 to plan each capital project, with start dates, for that time period.

4

5

6 A. Hydro's five-year capital plan is a living document and is revised on an ongoing basis
7 as new asset condition information becomes available, asset management
8 strategies evolve, and demands and priorities change within asset classes. The five-
9 year capital plan supports Hydro's responsibility to maintain its infrastructure
10 providing safe, reliable and least-cost electricity for customers.

11

12 Please see PUB-Nalcor-152, Attachment 1 for Hydro's rural distribution projects for
13 the years 2019 to 2023 and PUB-Nalcor-152, Attachment 2 for Hydro's diesel plants
14 for the years 2019 to 2023.

Rural Distribution Project Description	Expended to 2018	2019	2020	2021	2022	2023	Total	Justification
Distribution System Upgrades (2018-2019) - Various	383.8	2,771.2	-	-	-	-	3,155.0	Rebuild of distribution feeders through the examination of Hydro's worst performing feeders in an effort to enhance reliable operation.
Install Recloser Remote Control (2018-2019) - English Harbour West and Barachoix	63.7	275.0	-	-	-	-	338.7	This program is justified on the requirement to provide reliable service.
Distribution System Upgrades (2019-2020)	-	390.8	5,490.1	-	-	-	5,880.9	Rebuild of distribution feeders through the examination of Hydro's worst performing feeders in an effort to enhance reliable operation.
Provide Service Extensions - All Regions (2019)	-	4,700.0	-	-	-	-	4,700.0	Annual allotment based on past expenditures to provide for service connections, including street lights to new customers.
Upgrade Distribution Systems - All Regions (2019)	-	3,470.0	-	-	-	-	3,470.0	Annual allotment based on historical expenditures, which provide for the replacement of deteriorated poles, substandard structures, corroded and damaged conductors, transformers/street lights/reclosers, and other associated equipment.
Install Recloser Remote Control (2019-2020) - Rocky Harbour	-	66.1	319.9	-	-	-	386.0	This program is justified on the requirement to provide reliable service.
Level 2 Condition Assessment for Submarine Cable Farewell Head to Change Islands	-	300.1	-	-	-	-	300.1	Project is required to establish the suitability of these cables for continued operation.
Additions for Load - Distribution System - Wabush	-	186.7	-	-	-	-	186.7	Load growth related.
Distribution System Upgrades (2020-2021)	-	-	511.1	6,257.9	-	-	6,769.0	Rebuild of distribution feeders through the examination of Hydro's worst performing feeders in an effort to enhance reliable operation.
Provide Service Extensions - All Regions (2020)	-	-	4,790.0	-	-	-	4,790.0	Annual allotment based on past expenditures to provide for service connections, including street lights to new customers.
Upgrade Distribution Systems - All Regions (2020)	-	-	3,550.0	-	-	-	3,550.0	Annual allotment based on historical expenditures, which provide for the replacement of deteriorated poles, substandard structures, corroded and damaged conductors, transformers/street lights/reclosers, and other associated equipment.
Replace Burgeo Substation Transformer - Grandy Brook	-	-	204.5	859.2	-	-	1,063.7	Rebuild of transformer as a result of deteriorated components that require replacement. Work to take place under the Terminal Station Refurbishment & Modernization program.
Additions for Load - Distribution System (2020-2021)	-	-	535.0	315.0	-	-	850.0	Load growth related.
Install Recloser Remote Control (2020-2021) - Various	-	-	50.0	500.0	-	-	550.0	This program is justified on the requirement to provide reliable service.
Install Sectionalizing for Cold Load Pickup - Port Hope Simpson	-	-	250.0	-	-	-	250.0	Will enable the diesel plant operator to trouble shoot a fault on the distribution feeder, isolate, and restore unaffected customers in the absence of a line crew.
Implement Geographical Information System - Various	-	-	100.0	100.0	-	-	200.0	Accurate and reliable information will assist with ensuring that distribution upgrades are done in the most efficient and cost effective manner. This system will eliminate some of those manual documentation processes and will make information readily available to a broader group of people.
Distribution System Upgrades (2021-2022)	-	-	-	586.5	6,046.0	-	6,632.5	Rebuild distribution feeders through the examination of Hydro's worst performing feeders in an effort to enhance reliable operation.
Provide Service Extensions - All Regions (2021)	-	-	-	4,890.0	-	-	4,890.0	Annual allotment based on past expenditures to provide for service connections, including street lights to new customers.
Upgrade Distribution Systems - All Regions (2021)	-	-	-	3,620.0	-	-	3,620.0	Annual allotment based on historical expenditures, which provide for the replacement of deteriorated poles, substandard structures, corroded and damaged conductors, transformers/street lights/reclosers, and other associated equipment.
Additions for Load - Distribution System (2021)	-	-	-	678.9	-	-	678.9	Load growth related.
Install Recloser Remote Control (2021-2022) - Various	-	-	-	50.0	513.3	-	563.3	This program is justified on the requirement to provide reliable service.
Distribution System Upgrades (2022-2023)	-	-	-	-	750.0	6,750.0	7,500.0	Rebuild distribution feeders through the examination of Hydro's worst performing feeders in an effort to enhance reliable operation.
Provide Service Extensions - All Regions (2022)	-	-	-	-	4,990.0	-	4,990.0	Annual allotment based on past expenditures to provide for service connections, including street lights to new customers.
Upgrade Distribution Systems - All Regions (2022)	-	-	-	-	3,680.0	-	3,680.0	Annual allotment based on historical expenditures, which provide for the replacement of deteriorated poles, substandard structures, corroded and damaged conductors, transformers/street lights/reclosers, and other associated equipment.
Convert L2 to 25kV - Little Bay	-	-	-	-	173.0	1,625.7	1,798.7	Removal of the Beachside substation to eliminate maintenance and replacement costs.

Install Recloser Remote Control (2022-2023) - Various	-	-	-	-	50.0	526.0	576.0	This program is justified on the requirement to provide reliable service.
Additions for Load - Distribution System (2022)	-	-	-	-	500.0	-	500.0	Load growth related.
Provide Service Extensions - All Regions (2023)	-	-	-	-	-	5,090.0	5,090.0	Annual allotment based on past expenditures to provide for service connections, including street lights to new customers.
Upgrade Distribution Systems - All Regions (2023)	-	-	-	-	-	3,760.0	3,760.0	Annual allotment based on historical expenditures, which provide for the replacement of deteriorated poles, substandard structures, corroded and damaged conductors, transformers/street lights/reclosers, and other associated equipment.
Distribution System Upgrades (2023-2024)	-	-	-	-	-	750.0	750.0	Rebuild distribution feeders through the examination of Hydro's worst performing feeders in an effort to enhance reliable operation.
Additions for Load - Distribution System (2023)	-	-	-	-	-	500.0	500.0	Load growth related.
Convert Nipper's Harbor (L8) to 25kV - Bottom Waters	-	-	-	-	-	387.0	387.0	Removal of the Nippers Harbour substation will eliminate maintenance and replacement costs.
Install Recloser Remote Control (2023-2024) - Various	-	-	-	-	-	25.0	25.0	This program is justified on the requirement to provide reliable service.
Total Distribution	447.5	12,159.9	15,800.6	17,857.5	16,702.3	19,413.7	82,381.5	-

Diesel Genset Replacements - Makkovik	604.1	4,703.3	3,592.8	-	-	-	8,900.2	Replacing unit which is at end of life.
Replace Secondary Containment System Liner - Nain	1,639.2	1,450.4	-	-	-	-	3,089.6	Replacing fuel tank dyke liner which failed permeability testing.
Replace Automation Equipment - St. Anthony Diesel Plant	307.4	1,565.9	-	-	-	-	1,873.3	Upgrading automation to ensure reliable generation.
Diesel Plant Engine Cooling System Upgrades - Various	638.4	671.6	-	-	-	-	1,310.0	Upgrade cooling systems to ensure reliable generation.
Diesel Plant Fire Protection - Postville	505.6	336.4	-	-	-	-	842.0	Installing fire protection in a plant that did not have any.
Diesel Genset Replacements (2019-2020)	-	525.6	3,421.8	-	-	-	3,947.4	Replacing units at end of life.
Overhaul Diesel Units - Various	-	2,511.3	-	-	-	-	2,511.3	Overhauling units at prescribed intervals.
Additions for Load - Isolated Generation Systems	-	1,523.6	658.9	-	-	-	2,182.5	Increasing capacity for load growth.
Diesel Plant Fire Protection (2019-2020)	-	377.2	1,540.2	-	-	-	1,917.4	Installing fire protection in plant which did not have any.
Upgrade Diesel Plant Building - Ramea	-	352.5	-	-	-	-	352.5	Replacing deteriorated building structure and siding.
Replace Human Machine Interface - Cartwright	-	306.9	-	-	-	-	306.9	Upgrading obsolete controls equipment.
Inspect Fuel Storage Tanks - Grey River	-	203.1	-	-	-	-	203.1	Inspect fuel tank per 10 year tank inspection plan.
Overhaul Diesel Units (2020) - Various	-	-	2,370.3	-	-	-	2,370.3	Overhauling units at prescribed intervals.
Additions for Load Growth - Upgrade S/S Transformer & Increase Capacity - Makkovik	-	-	1,853.6	-	-	-	1,853.6	Upgrade transformer to support load growth.
Replace Unit 5056 - St. Brendans	-	-	110.0	1,590.0	-	-	1,700.0	Replacing unit at end of life - deferred to 2022.
Replace Unit 2039 - St. Lewis	-	-	153.9	1,336.4	-	-	1,490.3	Replacing unit at end of life - deferred to 2022.
Purchase Mobile Diesel - Bishop's Falls	-	-	1,400.0	-	-	-	1,400.0	For emergency response - review required based on emergency response plan requirements.
Replace Automation Equipment - Various	-	-	261.5	983.7	-	-	1,245.2	Upgrading obsolete controls equipment.
Install Fire Protection in Diesel Plants (2020-21) - Paradise River	-	-	100.0	900.0	-	-	1,000.0	Installing fire protection in plant which did not have any.
Replace Programmable Logic Controllers - Various	-	-	250.0	250.0	250.0	-	750.0	Upgrading obsolete controls equipment.
Inspect Fuel Storage Tanks (2020) - Various	-	-	714.8	-	-	-	714.8	Inspect fuel tank per 10 year tank inspection plan.
Install Unit Fuel Metering - Various	-	-	600.0	-	-	-	600.0	To allow individual fuel consumption monitoring. Reviewing legislatively requirements.
Install Sequence of Events Monitor in Diesel Plants - Various	-	-	281.0	289.1	-	-	570.1	To facilitate failure investigation, etc. . Requirement will be reviewed based on one site completed prior to implementation elsewhere.
Upgrade Septic System - Nain	-	-	500.0	-	-	-	500.0	To connect to town septic system. Further requirement review being undertaken.
Replace Existing Bus with 1,600 Amp Bus - Hopedale	-	-	500.0	-	-	-	500.0	Cancelled as project scope included in previous plant expansion project.
Replace Main Breaker and Extend Plant - Little Bay Islands	-	-	500.0	-	-	-	500.0	Replacing obsolete equipment . Project may not be required as community has voted to resettle and are currently awaiting offer from Province.
Build Roadway for Freight Delivery - Norman Bay	-	-	307.0	-	-	-	307.0	To allow for safe transport of freight to plan from dock. Terrain is an issue.
Build Fire Separation Wall Between Transformers - St. Anthony Diesel Plant & L'Anse au Loup	-	-	50.0	250.0	-	-	300.0	Based on a recommendation from FM Global to reduce the risk of loss of more than one transformer in the event of one transformer catching fire. Requirement review being undertaken.
Replace Human Machine Interface (2020) - Various	-	-	299.5	-	-	-	299.5	Upgrading obsolete controls equipment.
Upgrade Water Line to Diesel Plant - Makkovik	-	-	250.0	-	-	-	250.0	Line is subject to freezing and needs to be replaced. Project is no longer required as existing supply line has been heat traced.
Construct Site Fencing - Port Hope Simpson	-	-	250.0	-	-	-	250.0	Additional fencing required for site security due to proximity to highway.

Purchase and Install Sewage Lift System - Rigolet	-	-	210.1	-	-	-	210.1	Upgrade undersized sewage system.
Replace Unit Breakers - Port Hope Simpson	-	-	200.0	-	-	-	200.0	Upgrading obsolete controls equipment.
Upgrade and Add Site Fencing - L'Anse au Loup	-	-	200.0	-	-	-	200.0	Additional fencing required for site security.
Install Automatic Oil Filling System - Various	-	-	200.0	-	-	-	200.0	Justified on safety, to avoid having to top up engines manually. Requirement review being undertaken.
Install Engine Starting System - Various	-	-	200.0	-	-	-	200.0	To eliminate having starting batteries housed in wooden boxes and located next to gensets due to overheating issues.
Install Waste Oil Storage Tank - Various	-	-	150.0	-	-	-	150.0	To collect waste oil rather than having to handle drums. Requirement review being undertaken.
Upgrade Fuel Storage - Little Bay Islands	-	-	125.3	-	-	-	125.3	Required for reliability. Project may not be required as community has voted to resettle and are currently awaiting offer from Province.
Construct Lube Oil Ramp For Waste Oil - Nain	-	-	120.0	-	-	-	120.0	Cancelled as project scope included in previous plant expansion project.
Construct Site Fencing - Norman Bay	-	-	50.0	-	-	-	50.0	Additional fencing required for site security.
Plant Improvements (2021-2022) - Various	-	-	-	1,039.1	2,076.0	-	3,115.1	Various plant upgrades based on condition.
Overhaul Diesel Units (2021) - Various	-	-	-	2,424.2	-	-	2,424.2	Overhauling units at prescribed intervals.
Replace Unit 577 - Postville	-	-	-	113.1	1,636.0	-	1,749.1	Replacing unit at end of life , has been deferred to 2024.
Install Fire Protection in Diesel Plants (2021-2022) - Charlottetown	-	-	-	100.0	923.4	-	1,023.4	Installing fire protection in plant which did not have any.
Replace PLCs and Software - Various	-	-	-	300.0	300.0	300.0	900.0	Upgrading obsolete controls equipment.
Replace Fuel Lines and Control Valves to Bulk Storage.- Various	-	-	-	250.0	250.0	250.0	750.0	Replacing deteriorated equipment.
Replace PML 3800 Series Mini RTUs - Various	-	-	-	250.0	250.0	250.0	750.0	Upgrading obsolete controls equipment.
Inspect Fuel Storage Tanks (2021) - Various	-	-	-	700.0	-	-	700.0	Inspect fuel tank per 10 year tank inspection plan.
Replace Unit Breakers - Various	-	-	-	150.0	200.0	200.0	550.0	Upgrading obsolete controls equipment.
Additions for Load Growth - Isolated Generation Stations - Various (2021)	-	-	-	500.0	-	-	500.0	Increasing capacity for load growth.
Install Infrared Scanning Ports - Various	-	-	-	150.0	150.0	150.0	450.0	Safety justified project to allow infrared scanning without opening cabinet doors (arc flash hazard).
Replace Human Machine Interface (2021) - Various	-	-	-	307.8	-	-	307.8	Upgrading obsolete controls equipment.
Replace Bulk Storage Piping - Black Tickle	-	-	-	300.0	-	-	300.0	Replacing deteriorated equipment.
Replace DSLC and MSLC - Various	-	-	-	100.0	100.0	100.0	300.0	Upgrading obsolete controls equipment.
Upgrade Fuel Piping Bulk Tanks to Units - Grey River	-	-	-	200.0	-	-	200.0	Replacing deteriorated equipment.
Replace Radiator Stands - Black Tickle	-	-	-	50.0	150.0	-	200.0	Replacing deteriorated equipment.
Increase Plant Storage - Various	-	-	-	150.0	-	-	150.0	Based on 2009 Hatch Plant Condition Assessment report recommendations.
Install Electric Trolley on Jib Crane - Various	-	-	-	75.0	75.0	-	150.0	Upgrading manual cranes to electric.
Replace Diesel Engine - Various	-	-	-	-	3,300.0	2,200.0	5,500.0	Replacing units at end of life.
Overhaul Diesel Units (2022) - Various	-	-	-	-	2,500.0	-	2,500.0	Overhauling units at prescribed intervals.
Replace Unit 2054 - Hopedale	-	-	-	-	150.0	2,250.0	2,400.0	Replacing unit at end of life.
Replace Unit 2073 - Port Hope Simpson	-	-	-	-	150.0	2,250.0	2,400.0	Replacing unit at end of life.

Perform Plant Improvements as Per 2012 FEED Project (2022-2023) - Various	-	-	-	-	250.0	2,134.0	2,384.0	Based on 2009 Hatch Plant Condition Assessment report recommendations.
Replace Unit 2058 - Little Bay Islands	-	-	-	-	100.0	1,700.0	1,800.0	Replacing unit at end of life.
Install Fire Protection in Diesel Plants (2022-2023)	-	-	-	-	500.0	1,055.5	1,555.5	Installing fire protection in plant which did not have any.
Automate Diesel Plant (2022-23) - Postville	-	-	-	-	100.0	995.0	1,095.0	Upgrading obsolete controls equipment.
Additions for Load Growth - Isolated Generation Stations - Various (2022)	-	-	-	-	500.0	-	500.0	Increasing capacity for load growth.
Replace Human Machine Interface (2022) - Various	-	-	-	-	316.3	-	316.3	Upgrading obsolete controls equipment.
Upgrade Old Diesel Plant For Storage Area - Nain	-	-	-	-	250.0	-	250.0	Based on 2009 Hatch Plant Condition Assessment report recommendations.
Inspect Fuel Storage Tanks (2022) - Various	-	-	-	-	100.0	-	100.0	Inspect fuel tank per 10 year tank inspection plan.
Overhaul Diesel Units (2023) - Various	-	-	-	-	-	2,500.0	2,500.0	Overhauling units at prescribed intervals.
Upgrade Auxiliary System - Various	-	-	-	-	-	500.0	500.0	Upgrade of auxiliary systems as required. Further review required.
Install Fire Protection in Diesel Plants (2023-2024)	-	-	-	-	-	500.0	500.0	Installing fire protection in plant which did not have any.
Additions for Load Growth - Isolated Generation Stations - Various (2023)	-	-	-	-	-	500.0	500.0	Increasing capacity for load growth.
Replace Diesel Plants (2023-2024) - Various	-	-	-	-	-	400.0	400.0	Based on 2009 Hatch Plant Condition Assessment report recommendations.
Replace Human Machine Interface (2023) - Various	-	-	-	-	-	324.7	324.7	Upgrading obsolete controls equipment.
Plant Improvements (2023-2024) - Various	-	-	-	-	-	250.0	250.0	Based on 2009 Hatch Plant Condition Assessment report recommendations.
Replace Unit 2053 - Hopedale	-	-	-	-	-	137.7	137.7	Replacing unit at end of life.
Inspect Fuel Storage Tanks (2023) - Various	-	-	-	-	-	100.0	100.0	Inspect fuel tank per 10 year tank inspection plan.
Automate Diesel Plant (2023-2024)	-	-	-	-	-	100.0	100.0	Adding automation to a plant that is being operated manually.
Total Rural Generation	3,694.7	14,527.8	21,420.7	12,758.4	14,576.7	19,146.9	86,125.2	