Q. Revise Table 1, Attachment 2 Basis of Estimate and Impact Analysis, using the revised amounts for components in the table that have changed costs and the original amounts for the remaining components. Add additional columns that show the potential low and high ranges that were used for QRA, similar to what was provided in Schedule 1, Attachment 1, Appendix A of the Life Extension Application Bay d'Espoir Unit 7.

A. As the method used for Quantitative Risk Analyses ("QRA") for the Avalon Combustion Turbine Project and the Bay d'Espoir Unit 7 Life Extension Project ("Bay d'Espoir Unit 7 Project") are fundamentally different, the ranging information cannot be added to the table, as requested. For completeness of information, Newfoundland and Labrador Hydro ("Hydro") has provided a revised table (Table 1 of this response), which combines the values from the original Basis of Estimate (filed as part of the 2025 Build Application)[1] and the revised Basis of Estimate (filed as part of the Avalon Combustion Turbine Evidentiary Update).[2]

Table 1[3] from the Basis of Estimate and Impact Analysis contains the values from the original Basis of Estimate,[4] (column title "Estimated Cost (Rev B0)") along with the updated information showing the increase in the price of a Direct Cost Item and an Indirect Cost Item. That table also provides updated subtotals (column title "Changed Cost (Rev B1)"). Table 1 of this response presents the increase in the combustion turbine ("CT") purchase price and the increase in cost for freight and supplier representation added to the line-item estimated cost.

[1] "2025 Build Application," Newfoundland and Labrador Hydro, March 21, 2025, sch. 5, att. 1, s. 1.0, p. 7 of 125.
[2] "Application for the Purchase and Installation of Bay d'Espoir Unit 8 and Avalon Combustion Turbine – Revision 1 and Evidentiary Update," Newfoundland and Labrador Hydro, April 16, 2026, att. 2, s. 1.0, p. 3.
[3] Application for the Purchase and Installation of Bay d'Espoir Unit 8 and Avalon Combustion Turbine – Revision 1 and Evidentiary Update," Newfoundland and Labrador Hydro, April 16, 2026, att. 2, s. 1.0, p. 3.
[4] "2025 Build Application," Newfoundland and Labrador Hydro, March 21, 2025, sch. 5, att. 1.

Table 1: Cost Summary ($)[5]

Component	Estimated Cost (Rev B1)
Direct Construction Costs	
CWP[6]-0000: Site-Wide Development	[redacted]
CWP-1000: Tank Farm	
CWP 2000: CT Plant + Increased cost for the CTs	
CWP-3000: Transformer Yard	
CWP-4000: Switchyard	
CWP-5000: Raw Water	
CWP-6000: Fuel Offloading	
CWP-7000: Transmission Lines	
Subtotal Direct Construction Costs	**462,748,525**
Indirect Construction Costs	
Contractor Indirect + Increased Cost for CT Freight and Supplier Representation	[redacted]
EPCM[9] Consultant	
Hydro Project Management	
Other Hydro Costs (Spare Transformer, Insurance, FEED,[10] etc.)	
Indirect Construction Costs Subtotal	**226,222,903**
Subtotal Base Cost (Direct + Indirect) Estimate	**688,971,428**
Project Contingency + Increase in Contingency due to Non-Fixed Terms of the CT Contract	75,455,117[11]
Subtotal Base Estimate (with Contingency)	**764,426,545**
Escalation + Decrease in Escalation due to the Award of the CT Contract	33,683,583[12]
Interest During Construction + Increase in IDC due to Greater Costs for CT Purchase	76,137,030[13]
Subtotal Planned Budget	**874,247,158**
Management Reserve + Decrease in Management Reserve due to Increased Certainty of CT Costs	121,628,000[14]
Total Cost Estimate (Authorized Budget upon Approval)	**995,875,158**

[5] Numbers may not add due to rounding.
[6] Construction Work Package ("CWP").
[7] [redacted]
[8]
[9] Engineering, Procurement, and Construction Management ("EPCM").
[10] Front-End Engineering and Design ("FEED").
[11] Total for this item is the original estimate of $65,117,352 plus the increase of $10,337,765 noted in Revision B1.
[12] Total for this item is the original estimate of $44,845,915 less the decrease of $11,162,332 noted in Revision B1.
[13] Total for this item is the original estimate of $66,569,342 plus the increase of $9,567,688 noted in Revision B1.
[14] Total for this item is the original estimate of $128,239,838 less the increase of $6,611,838 noted in Revision B1.

The QRA process used for the Bay d'Espoir Unit 7 Project was a line-item ranging approach conducted by Hydro. This approach is described in the overview of that application.[15]

The QRA performed for the Avalon Combustion Turbine Project was conducted by Hatch Ltd. ("Hatch") during FEED. This QRA process was a Hybrid Parametric and Expected Value Method ("Hybrid Method"), as described in Hatch's Parametric QRA Report.[16]

The Hybrid Method used by Hatch does not require or utilize an extensive table, as used for the approach used for the Bay d'Espoir Unit 7 Project. While individual items in a cost estimate—such as the quantity of concrete or steel—can vary, experience[17,18,19,20,21] shows that overall project outcomes are influenced much more by broader project factors, such as planning, complexity, and execution. The Parametric Model addresses these systemic risks by using industry-wide historical data from many completed projects to understand how these broader factors affect costs. Because they are based on real project outcomes, they already reflect the combined impact of many typical uncertainties.

The Hybrid Method builds on the Parametric Model by also considering specific risk events—such as delays or major changes—using a structured approach. The specific risks are only applied where there are clear, significant uncertainties. This approach combines the strength of historical data with the focused consideration of key risks. Applying additional uncertainty to every individual cost item via line-item ranging would effectively double-count risks that are already included and could lead to inflated Contingency or reserve levels.

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[15] "Life Extension Application – Bay d'Espoir Unit 7," Newfoundland and Labrador Hydro, June 20, 2025, sch. 1, s. 5.1.1.
[16] 2025 Build Application," Newfoundland and Labrador Hydro, March 21, 2025, sch. 5, att. 1, att. 3.
[17] Association for the Advancement of Cost Engineering (2024), Professional Guidance Document No. 02 *Guide to Quantitative Risk Analysis*.
[18] Association for the Advancement of Cost Engineering (2008), Recommended Practice 40R-08 *Contingency Estimating – General Principles*.
[19] "BC Hydro Site C Project – Lessons Learned Report to Inform Future Major Capital Projects," BC Hydro, October 30, 2025. https://www.sitecproject.com/sites/default/files/2025_10_30_BCH_SC_LL_RPT.pdf
[20] John K. Hollman and Raminder S. Bali, *(RISK-4240) Case Study: Use of Hybrid Parametric and Expected Value QRA Method on the Keeyask Hydropower Megaproject*, Association for the Advancement of Cost Engineering, 2024. https://validest.com/uploads/1/3/6/0/136072948/hollmann_bali_keeyask_study.pdf
[21] John K. Hollman et al., *(RISK.1721) Variability in Accuracy Ranges: A Case Study in the Canadian Hydropower Industry*, Association for the Advancement of Cost Engineering, 2014. https://validest.com/uploads/1/3/6/0/136072948/hollmann_hydro_2014.pdf

The risk events that were modelled for the Avalon Combustion Turbine Project, along with the input ranges on those events, can be found in Table 6-1 of the impact analysis memo submitted as part of the evidentiary update.[22]

As part of the impact analysis conducted by Hydro, there was one additional specific risk item added to the items found in Table 6-1, that being the potential combustion turbine contract changes resulting from the non-fixed contract elements. This is covered in detail in the Briefing Note Impact Analysis of CT Price Increase on Project Cost provided in the Avalon Combustion Turbine Evidentiary Update.[23]

While the approaches used for the Avalon Combustion Turbine Project and the Bay d'Espoir Unit 7 Project are both recognized and acceptable QRA processes, they are fundamentally different and use different inputs. The table referenced for the Bay d'Espoir Unit 7 Project was an input to that modelling process and cannot be reproduced for the Avalon Combustion Turbine Project, as a different QRA method was utilized that does not contain inputs in the same manner.

[22] "Application for the Purchase and Installation of Bay d'Espoir Unit 8 and Avalon Combustion Turbine – Revision 1 and Evidentiary Update," Newfoundland and Labrador Hydro, April 16, 2026, att. 1, att. 2, p. 41 of 45.
[23] "Application for the Purchase and Installation of Bay d'Espoir Unit 8 and Avalon Combustion Turbine – Revision 1 and Evidentiary Update," Newfoundland and Labrador Hydro, April 16, 2026, att. 2, att. 5, pp. 9 of 20 to 12 of 20.