Q. Further to PUB-NLH-617, the post HVDC study was done for 2018, and Hydro is forecasting that the Island Interconnected system load will increase over the next years. According to the responses to PUB-NLH-542 and PUB-NLH-543, Hydro is not expecting to add any additional generation until 2024, unless it is decided not to rely on power imports from Maritime Link to cover peak loads in the event of a bipole outage, in which case power generation would be added when the Holyrood power generation plant is retired. Please describe the general change to Teshmont's results if the study had been carried out immediately before the next planned addition of generation

A. Generation addition tables from Hydro's responses to PUB-NLH-542 and PUB-NLH-543 are provided in Table 1 and Table 2, respectively.

As stated in the question, the first proposed addition of generation in the scenario described in PUB-NLH-542 would be in 2024. If the Teshmont analysis had involved a probabilistic reliability assessment for this scenario for the year 2023, it is noted that the peak forecasted load is 1764 and the available capacity is 1790 with the Labrador Island Link out of service. It may therefore be concluded that there would be no expected unserved energy resulting from bipole outages.

Similarly, the first proposed addition of generation in the scenario described in PUB-NLH-543 would be in 2021. If the Teshmont analysis had involved a probabilistic reliability assessment for this scenario for the year 2020, it is noted that the peak forecasted load is 1736 and the available capacity is 1998 with both the Labrador Island Link and the Maritime Link out of service. It may therefore be concluded that there would be no expected unserved energy resulting from a bipole outages.

Table 1 - Generation Additions Table from PUB-NLH-542

Generation Additions in the Absence of LIL

	Island Interconnected Peak Demand	NL Hydro Hydro	NL Hydro Thermal[4]	Customer[5] Generation	NUG[3,6] Purchases	Labrador Island Link	Maritime Island Link[2]	Continuous Capacity at Winter Peak	Reserve	Reserve Margin	Additions Total	Reserve with Additions	Additions - CTs	
	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(%)	(MW)	(MW)	50 MW	100 MW
2020	1736	954	738.2	217	89	0	300	2,298	562	32.4%	0	562		
2021	1744	954	738.2	217	89	0	300	2,298	555	31.8%	0	555		
2022	1755	954	238.2	217	89	0	300	1,798	44	2.5%	0	44		
2023	1764	954	238.2	217	81	0	300	1,790	26	1.5%	0	26		
2024	1777	954	238.2	217	81	0	300	1,790	13	0.7%	100	113		1
2025	1793	954	238.2	217	81	0	300	1,790	-3	-0.2%	100	97		
2026	1813	954	188.2	217	81	0	300	1,740	-73	-4.0%	100	27		
2027	1831	954	188.2	217	81	0	300	1,740	-91	-5.0%	200	109		1
2028	1853	954	188.2	217	81	0	300	1,740	-112	-6.1%	200	88		
2029	1873	954	138.2	217	81	0	300	1,690	-183	-9.8%	200	17		
2030	1885	954	138.2	217	81	0	300	1,690	-195	-10.4%	250	55	1	
2031	1905	954	138.2	217	81	0	300	1,690	-214	-11.3%	250	36		
2032	1922	954	138.2	217	81	0	300	1,690	-232	-12.1%	250	18		
2033	1938	954	138.2	217	81	0	300	1,690	-248	-12.8%	300	52	1	
2034	1956	954	138.2	217	81	0	300	1,690	-266	-13.6%	300	34		
2035	1972	954	138.2	217	81	0	300	1,690	-282	-14.3%	300	18		

1. There are currently no demand management initiatives, other than the potential use of interruptible contracts, forecast during this period.
2. Assumes capacity is available through market or other contractual means to enable full use of the available transmission capacity.
3. Assumes that CBPP Co-Generation NUG contract is not renewed in 2023.
4. Assumes that Holyrood shuts down in 2021, Stephenville GT shuts down in 2025 and Hardwoods GT shuts down in 2028
5. Assumes capacity at winter peak of 117.9 MW for NP and 99.1 MW for Deer Lake Power.
6. Assumes capacity at winter peak of 18 MW for Star Lake, 8 MW for Corner Brook Co-gen and 63 MW for Nalcor Grand Falls and Bishop's Falls. Rattle Brook, Nalcor Buchans, St. Lawrence Wind and Fermeuse Wind are assumed to have 0 MW capacity at winter peak.

Table 2 - Generation Additions Table from PUB-NLH-543

Generation Additions in the Absence of LIL and ML

	Island Interconnected Peak Demand	NL Hydro Hydro	NL Hydro Thermal[3]	Customer[4] Generation	NUG[2,5] Purchases	Labrador Island Link	Maritime Island Link	Continuous Capacity at Winter Peak	Reserve	Reserve Margin	Additions Total	Reserve with Additions	Additions - CTs	
	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(%)	(MW)	(MW)	50 MW	100 MW
2020	1736	954	738.2	217	89	0	0	1,998	262	15.1%	0	262		
2021	1744	954	738.2	217	89	0	0	1,998	255	14.6%	300	555		3
2022	1755	954	238.2	217	89	0	0	1,498	-256	-14.6%	300	44		
2023	1764	954	238.2	217	81	0	0	1,490	-274	-15.5%	300	26		
2024	1777	954	238.2	217	81	0	0	1,490	-287	-16.1%	400	113		1
2025	1793	954	238.2	217	81	0	0	1,490	-303	-16.9%	400	97		
2026	1813	954	188.2	217	81	0	0	1,440	-373	-20.6%	400	27		
2027	1831	954	188.2	217	81	0	0	1,440	-391	-21.4%	500	109		1
2028	1853	954	188.2	217	81	0	0	1,440	-412	-22.3%	500	88		
2029	1873	954	138.2	217	81	0	0	1,390	-483	-25.8%	500	17		
2030	1885	954	138.2	217	81	0	0	1,390	-495	-26.3%	550	55	1	
2031	1905	954	138.2	217	81	0	0	1,390	-514	-27.0%	550	36		
2032	1922	954	138.2	217	81	0	0	1,390	-532	-27.7%	550	18		
2033	1938	954	138.2	217	81	0	0	1,390	-548	-28.3%	550	2	1	
2034	1956	954	138.2	217	81	0	0	1,390	-566	-28.9%	600	34		
2035	1972	954	138.2	217	81	0	0	1,390	-582	-29.5%	600	18		

1. There are currently no demand management initiatives, other than the potential use of interruptible contracts, forecast during this period.
2. Assumes that CBPP Co-Generation NUG contract is not renewed in 2023.
3. Assumes that Holyrood shuts down in 2021, Stephenville GT shuts down in 2025 and Hardwoods GT shuts down in 2028
4. Assumes capacity at winter peak of 117.9 MW for NP and 99.1 MW for Deer Lake Power. From Generation Supply Table
5. Assumes capacity at winter peak of 18 MW for Star Lake, 8 MW for Corner Brook Co-gen and 63 MW for Nalcor Grand Falls and Bishop's Falls. Rattle Brook, Nalcor Buchans, St. Lawrence Wind and Fermeuse Wind are assumed to have 0 MW capacity at winter peak.