

1 Q. **Reference: Application, Attachment 1, Page 18, Lines 18 - 22**

2 On Page 18 at Lines 18 - 22, Hydro states:

3 The timing of a diesel generating station replacement depends heavily on the
4 existing condition and design capacity of the facility. Hydro has established a
5 replacement schedule (Table 4) for the diesel generating stations in southern
6 Labrador based on service life, plant capacity, and condition. The diesel
7 generating stations in Mary's Harbour and Port Hope Simpson have both
8 exceeded their design plant capacity and any future generation expansion
9 would likely require a new plant or extension.

10 Please describe all the constituent steps involved in a diesel generating station replacement.
11 How many of these diesel generating station replacements has Hydro completed in Labrador
12 based on the existing condition and design capacity of the facility? Provide a detailed listing
13 including location, project cost, year of construction, age of diesel generating station replaced.
14 Note if any sites were replaced due to extreme circumstances such as fire or catastrophic
15 failure.

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18 A. When a diesel generating station replacement is required there are many factors that are
19 assessed and considered to determine if a replacement is warranted. These include:

- 20 ● The age, condition, and design of the building;
- 21 ● The load profile of the community (growth, decline, or flat);
- 22 ● The size of the required gensets to serve the current and future load;
- 23 ● The current space in the diesel generating station to fit required gensets;
- 24 ● Crane capacity to lift existing and future gensets;
- 25 ● The ventilation capacity to cool generating station;
- 26 ● Genset spacing in the engine hall and ability to maintain a safe working area for operations
27 and maintenance activities; and

- 1 • Generating station location in the community and ability to expand existing plant.
- 2 The past five generating station replacements that Newfoundland and Labrador Hydro (“Hydro”)
- 3 has undertaken are listed in Table 1.

Table 1: Diesel Generating Station Replacements

Year	Location	Age	Rationale
2006	St. Lewis	36	<ul style="list-style-type: none"> • Load growth in the community; • Old generating station was too small to house the required larger units; and • Old generating station was a wooden structure, was not up to code, and was in very poor condition.
2002	Nain	24	<ul style="list-style-type: none"> • Load growth in the community; • Old generating station was too small to house the required larger units; and • Old generating station was a wooden structure, was not up to code, and was in very poor condition.
2001	McCallum	32	<ul style="list-style-type: none"> • Load growth in the community; • Old generating station was too small to house the required larger units; • Old generating station was a wooden structure, was not up to code, and was in very poor condition; and • Noise issues with old generating station requiring improved sound proofing.
1995	Port Hope Simpson	26	<ul style="list-style-type: none"> • Load growth in the community; and • Old generating station was too small to house the required larger units.
1994	Mary’s Harbour	19	<ul style="list-style-type: none"> • Replaced due to fire at old plant.

4 Hydro is unable to provide the costs associated with each of the diesel generating station

5 replacements as its database contains information at the individual asset level rather than the

6 overall diesel generating station level. Due to the nature of the replacements being completed

7 15–27 years ago, the replacement costs for those diesel generating stations would not be

8 reflective of the cost to a replace diesel generating station in 2021. As such, for the purposes of

9 developing the Class 5 estimates Hydro used in its cumulative present worth analysis, Hydro

1 used a combination of: (i) vendor estimates for certain assets (e.g., diesel gensets), (ii) recent
2 costs incurred for implementation of similar assets (e.g., installation of a fire suppression
3 system), and (iii) computation based on similar work scopes (e.g., cost per cubic meter of
4 concrete) for similar facilities.

5 The Charlottetown Diesel Generating Station contemplated in Alternative 2 of Hydro's analysis
6 (without distribution costs) was estimated to cost approximately \$18.4 million. The costs for
7 future diesel generating station replacements in each of Port Hope Simpson, Mary's Harbour,
8 and St. Lewis were estimated using the Charlottetown Diesel Generating Station costs, adjusted
9 based on the total capacity of the diesel generating station relative to the Charlottetown Diesel
10 Generating Station.