

1 Q. Consumer Question: In the report submitted to the Federal Panel by Nalcor, Lower
2 Churchill Hydroelectric Generation Project Nalcor Energy Final Written Submissions
3 (see p. 22, item 44),
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5 "Nalcor considered opportunities to increase the efficiencies at existing generation
6 facilities. For some existing hydroelectric facilities, Nalcor found that it could
7 increase power output by one to two percent by replacing the turbines, stator rings
8 and wicket gates with newer equipment. This increased efficiency could amount to
9 additional production capacity of up to 30 MW".
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11 a. Can Nalcor list these hydro sites with the cost of the efficiency upgrades?
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13 b. Has this 30 MW of capacity been included in Nalcor's forecast for the isolated
14 island option? If not, why not?
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17 A. The above passage from Nalcor's Final Written Submission referenced Volume 1-A,
18 page 2-21 of Nalcor's EIS¹:
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20 "In addition to new hydroelectric development projects, Hydro
21 has considered increasing the efficiencies and thus improving the
22 energy output of existing hydroelectric generating stations. The
23 five major facilities that have been considered are Cat Arm (127
24 MW), Bay d'Espoir (604 MW), Hinds Lake (75 MW), Upper Salmon
25 (84 MW), and Granite Canal (40 MW). Of these Cat Arm, Hinds
26 Lake and Unit 7 at Bay d'Espoir present minor opportunities to

¹ <http://www.nalcorenergy.com/assets/eisvol1a.pdf>, page 2-21

1 increase current energy output. By replacing the turbine, stator
2 rings and wicket gates with new up-to-date equipment the energy
3 output of these three facilities can be increased by one to two
4 percent and generation capacity by up to 30 MW. The Granite
5 Canal facility has only been in operation since 2003 and is already
6 equipped with the most up-to-date and efficient power
7 generating technology. The original runners for Units 1 to 6 of the
8 Bay d’Espoir plant have been replaced with new turbines. Thus,
9 there are currently very limited opportunities to increase the
10 energy output of these facilities and, even in total, these do not
11 approach a level equivalent to the power to be produced by the
12 Project.”

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14 a) The facilities where upgrades could be undertaken are Hinds Lake, Bay d’Espoir
15 Unit 7, and Cat Arm. Standalone cost estimates of these potential upgrades
16 have not been developed, as they would only be undertaken coincident with a
17 refurbishment of the plants in question.

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19 b) These minor efficiency upgrades, either in the form of additional energy or
20 increased capacity, have not been included in the generation expansion plan.
21 Given the uncertain timing of these potential minor upgrades (as part of a plant
22 refurbishment) and their minimal energy potential, these upgrades are most
23 appropriately considered on a case by case basis as plant refurbishments occur.