

1 Q. [InterGroup Consultants Evidence, page 60, lines 23 to 27]

2 Please provide data of each and every occasion that supports the claims that the
3 50 Hz hydraulic generation is used by all other Island Interconnected customers
4 during (i) normal situations, when the Comer Brook Pulp and Paper ("CBPP")
5 generation provides stability and grid support and (ii) emergencies when the
6 CBPP generation can be heavily used to maintain service to all ratepayers. In the
7 response, please specify any of the occasions that Hydro compensated CBPP for
8 use of its 50 Hz hydraulic generation indicating the amount of compensation in
9 each case.

10 A. (i) As provided in Table 7-1 of Pre-filed Testimony of Messrs Bowman and Najmidinov,
11 under normal operation a shortfall of 27 MW from total of 108 MW needed for CBPP
12 must come from either CBPP 50 Hz power that is converted to 60 Hz, or from Hydro
13 purchases. Absent 50 Hz power converted to 60 Hz, CBPP would have been purchased
14 this 27 MW from Hydro, compared to only 9 MW of Power on Order in the Test Year
15 forecasts (after 18 MW 50 Hz power converted to 60 Hz) providing benefit to the system
16 in both capacity and fuel savings as well as other Island Interconnected customers. This
17 serves to offset the need to run Holyrood and bring on a high cost fuel source that must
18 be shared by all customers. In this manner, the benefit of the frequency converter is
19 similar to the benefit provided by CDM activities.¹

20 In addition, if the frequency converter could be used at a higher level, such as the 22.5
21 MW as it was run during the 2014 winter outages, more 50 Hz to 60 Hz generation could
22 be converted to 60 Hz, which in turn would reduce load on the system (e.g., Holyrood
23 generation) by a further 4.5 MW during those times where CBPP has surplus 50 Hz
24 generation.

¹ Please see pages 60 and 61 of the Pre-filed Testimony prepared by InterGroup which notes "[a]s a comparison of the value provided, the frequency converter even in its currently derated state permits 158 GW.h of annual energy to be delivered to the 60 Hz grid that would otherwise be captive on the 50 Hz side. As 60 Hz power, it serves to reduce the net load on Hydro's system, and save Holyrood generation. This power is over 5 times that provided by all CDM activities to date, and the net cost to ratepayers would be one-third of that for CDM (\$0.35 million/year for the Frequency Converter power of 158 GW.h, compared to \$1 million/year for the CDM amortization, for 32 GW.h)."

1 (ii) Based on the information available to Messrs Bowman and Najmidinov, CBPP
2 provided 7.706 GW.h assistance to the system over January – March 2014 . A portion of
3 this benefit would have arisen only due to Hydro's agreement to operate the frequency
4 converter at 22.5 MW during this period versus the derated cap of 18 MW that was
5 otherwise in place. In exchange for this total generation (and in particular the associated
6 demand benefit, not just energy) Hydro paid CBPP \$6.226 million for delivered capacity
7 that varied from 20 MW up to 60 MW over a 148 hour time period, however most of this
8 payment would have been for CBPP's 60 Hz hydro generation and not related to the 50
9 Hz generation which would have been utilized only to a maximum of 22.5 MW output.