Board Staff Interrogatory #195

Interrogatory

Reference:
Exhibit F2 / Tab 1 / Schedule 1 / p. 9 / Chart 1

Preamble:

OPG provided the following chart that highlights the impact of the normalizations applied to the value for money metrics.

Indicator	Non-Normalized	Refurbishment Normalization	CANDU and age-related Normalization	Combined Normalization
3-year Total Generation Cost per MWh	PN: $62.39 DN: $67.00	PN: N/A DN: $54.18	PN: $44.85 DN: $50.99	PN: $44.85 DN:$38.84
3-year Total Generating Cost per Unit	PN: $228.27 DN: $442.14	PN: N/A DN: $357.53	PN: $176.31 DN: $355.07	PN: $176.31 DN: $270.46
3-Year Non-Fuel Operating Cost per MWh	PN: $53.85 DN: $47.10	PN: N/A DN: $37.85	N/A	N/A
3-year Capital Cost per MW DER	PN: $30.66 DN: $116.67	PN: N/A DN: $89.78	N/A	N/A

Question(s):

a) Please confirm that there are three adjustments that form part of the CANDU and age-related normalization (technology, age and outages).

b) Please expand Chart 1 at Exhibit F2 / Tab 1 / Schedule 1 / p. 9 to include the impact of each of the three CANDU and age-related normalization on three-year TGC / MWh shown separately.

c) Please file alternative versions of Chart 1 at Exhibit F2 / Tab 1 / Schedule 1 / p. 9 that show the impact of each normalization (refurbishment and each of the CANDU

and age-related normalizations) on the first, second and third quartile performance indicators.[1]

d) Please provide the same expanded chart as requested in parts (b) and (c) for 2017 and 2018.

Response

a) Confirmed.

b) and c) Chart 1 below has been expanded to show the impact of technology, age and outage adjustments separately on 2019 Value for Money metrics. The impact on the first, second and third quartiles is also shown in Chart 1 below.

Chart 1: Expanded Summary of Normalization Methodology Adjustments to Value for Money Metrics (2019 Three-Year Metrics)

Indicator	Non-Normalized	Refurbishment Normalization	Technology, Age-related & Outage Normalization	Combined Normalization	Technology Only ($)	Age Related Only ($)	Outage Duration Only (MWh)
3-Year Total Generating Cost per MWh	PN: $62.39 DN: $67.00	PN: N/A DN: $54.18	PN: $44.85 DN: $50.99	PN: $44.85 DN: $38.84	PN: $49.23 DN: $52.41	PN: $61.35 DN: $68.40	PN: $58.07 DN: $63.49
3-Year Total Generating Cost per Unit	PN: $228.27 DN: $442.14	PN: N/A DN: $357.53	PN: $176.31 DN: $355.07	PN: $176.31 DN: $270.46	PN: $180.13 DN: $345.86	PN: $224.45 DN: $451.34	N/A
3-Year Non-Fuel Operating Cost per MWh	PN: $53.85 DN: $47.10	PN: N/A DN: $37.85	N/A	N/A	N/A	N/A	N/A
3-Year Capital Cost per MW DER	PN: $30.66 DN: $116.67	PN: N/A DN: $89.78	N/A	N/A	N/A	N/A	N/A
TGC/MWh Quartiles							
1st Quartile	$34.63	$34.63	$30.83	$30.83	$32.96	$32.31	$34.21
2nd Quartile	$41.85	$41.85	$36.12	$36.12	$39.59	$37.80	$40.83
3rd Quartile	$51.01	$51.01	$44.84	$44.84	$47.95	$48.41	$50.25

d) Chart 2 and Chart 3 below show the same expanded summary as Chart 1 for 2018 and 2017, respectively.

[1] The referenced quartile-based performance indicators are shown in Ex. F2-1-1, Attachment 5 / p. 4 (as an example).

Chart 2: Expanded Summary of Normalization Methodology Adjustments to Value for Money Metrics (2018 Three-Year Metrics)

Indicator	Non-Normalized	Refurbishment Normalization	Technology, Age-related & Outage Normalization	Combined Normalization	Technology Only ($)	Age Related Only ($)	Outage Duration Only (MWh)
3-Year Total Generating Cost per MWh	PN: $67.76 DN: $59.06	PN: N/A DN: $51.19	PN: $49.29 DN: $45.14	PN: $49.29 DN: $37.65	PN: $54.06 DN: $45.98	PN: $66.87 DN: $60.50	PN: $62.81 DN: $56.22
3-Year Total Generating Cost per Unit	PN: $234.18 DN: $384.74	PN: N/A DN: $333.47	PN: $183.78 DN: $308.93	PN: $183.78 DN: $257.66	PN: $186.84 DN: $299.53	PN: $231.11 DN: $394.14	N/A
3-Year Non-Fuel Operating Cost per MWh	PN: $57.92 DN: $42.14	PN: N/A DN: $36.37	N/A	N/A	N/A	N/A	N/A
3-Year Capital Cost per MW DER	PN: $33.39 DN: $89.03	PN: N/A DN: $73.46	N/A	N/A	N/A	N/A	N/A
TGC/MWh Quartiles							
1st Quartile	$35.59	$35.59	$33.14	$33.14	$35.26	$34.62	$35.48
2nd Quartile	$43.41	$43.41	$37.75	$37.75	$41.33	$40.67	$42.77
3rd Quartile	$53.95	$53.95	$46.80	$46.80	$50.07	$50.30	$53.55

Chart 3: Expanded Summary of Normalization Methodology Adjustments to Value for Money Metrics (2017 Three-Year Metrics)

Indicator	Non-Normalized	Refurbishment Normalization	Technology, Age-related & Outage Normalization	Combined Normalization	Technology Only ($)	Age Related Only ($)	Outage Duration Only (MWh)
3-Year Total Generating Cost per MWh	PN: $67.22 DN: $54.40	PN: N/A DN: $50.54	PN: $49.26 DN: $41.62	PN: $49.26 DN: $37.94	PN: $53.80 DN: $42.09	PN: $66.55 DN: $55.94	PN: $62.34 DN: $51.90
3-Year Total Generating Cost per Unit	PN: $233.75 DN: $337.56	PN: N/A DN: $313.62	PN: $184.74 DN: $270.73	PN: $184.74 DN: $246.79	PN: $187.07 DN: $261.17	PN: $231.41 DN: $347.10	N/A
3-Year Non-Fuel Operating Cost per MWh	PN: $56.89 DN: $39.62	PN: N/A DN: $36.89	N/A	N/A	N/A	N/A	N/A
3-Year Capital Cost per MW DER	PN: $33.89 DN: $67.75	PN: N/A DN: $59.81	N/A	N/A	N/A	N/A	N/A
TGC/MWh Quartiles							
1st Quartile	$37.78	$37.78	$34.78	$34.78	$36.27	$36.38	$37.24
2nd Quartile	$43.66	$43.66	$39.52	$39.52	$41.03	$41.94	$42.39
3rd Quartile	$54.26	$54.26	$49.35	$49.35	$51.66	$52.95	$53.55