Ontario Energy Board | Commission de l'énergie de l'Ontario

Ontario

BY EMAIL

June 17, 2022

Ms. Nancy Marconi
Registrar
Ontario Energy Board
2300 Yonge Street, 27th Floor
Toronto, ON M4P 1E4

Dear Ms. Marconi:

Re: Generic UTR Issues Proceeding
Export Transmission Service Rate
OEB Staff Interrogatories - APPrO Evidence

Ontario Energy Board File Number: EB-2021-0243

In accordance with Procedural Order No. 2 please find attached the OEB staff interrogatories on the evidence filed by the Association of Power Producers of Ontario (APPrO) in the above proceeding. This document has been sent to APPrO and to all other registered parties to this proceeding.

Yours truly,

Michael Price Digitally signed by Michael Price Date: 2022.06.17 10:32:50 -04'00'

Michael Price
Senior Advisor, Generation & Transmission

cc. All parties to EB-2021-0243

Encl.

Generic UTR Issues Proceeding
Export Transmission Service Rate
EB-2021-0243
OEB Staff Interrogatories - APPrO Evidence
June 17, 2022

Please note: Association of Power Producers of Ontario (APPrO) is responsible for ensuring that all documents it files with the OEB, including responses to OEB staff interrogatories and any other supporting documentation, do not include personal information (as that phrase is defined in the *Freedom of Information and Protection of Privacy Act*), unless filed in accordance with rule 9A of the OEB's *Rules of Practice and Procedure*.

Staff-1

Ref.: Power Advisory Report / p. 9 / paragraph 18

Preamble

Power Advisory states on page 9: "export traders pay congestion rents that are used to offset a portion of transmission-related costs."

Question(s)

a) Please explain whether and how transmitters receive congestion rents. If they do not, please clarify the statement above that congestion rents are used to offset a portion of transmission-related costs – by whom and how?

Staff-2

Ref.: Power Advisory Report / p. 10 / paragraph 22

Preamble

The Power Advisory Report (Report) states that "All of the evidence in this proceeding is clear that export customers do not impose a cost on Ontario's electricity grid."

Question(s)

a) Please explain and clarify that export customers' use of the Ontario electricity grid does not impose any short-term or long-term congestion, nor any operations, maintenance, administration, or capital costs on it.

Staff-3

Ref.: Power Advisory Report / p. 10 / paragraph 23

Preamble

Power Advisory states "The financial impact to Ontario ratepayers from increasing the ETS rate **to** $6.54/MWh would have been a net increase in costs of $42.6 million over the 2018-2021 timeframe" (emphasis added).

The second heading in Table 1 states "Increasing ETS Rate **to** $4.69/MWh" (emphasis added).

Question(s)

a) Please confirm whether the second heading in Table 1 should read as "Increasing ETS Rate **by** $4.69/MWh" (from $1.85/MWh for a total ETS rate of $6.54/MWh). Otherwise, please clarify.

b) Please confirm whether the estimated $42.6 million is an annual total in each of 2018, 2019, 2020 and 2021 or whether it is a cumulative total over the period 2018 through 2021.

c) What was the approximate total ratepayer cost over the 2018-2021 timeframe and approximately what proportion of that does $42.6 million represent?

d) Has Power Advisory conducted sensitivity analyses of this result? If no, why not? If yes, please summarize key findings of the sensitivity analysis.

e) To what variables is the estimated $42.6 million figure most sensitive and in which direction?

Staff-4

Ref.: Power Advisory Report / p. 10 / Table 1

Preamble

Table 1 of the Report indicates the financial impact of increasing and decreasing the ETS rate. The impact of increasing the ETS rate is shown as a decrease in congestion rent of $169.0 million from 2018 to 2021 and the impact of lowering the ETS rate is shown as an increase in congestion rent of $111.0 million from 2018 to 2021.

Question(s)

a) Please explain how much of the estimated change in congestion rent would flow to transmission rights holders versus Ontario ratepayers. If less than a full share of the change would flow to Ontario ratepayers, please clarify why that value was not used in the Table 1 instead.

b) Please break down the decrease in congestion rent under the “Increasing ETS Rate to $4.69/MWh” scenario in Table 1 into allocated Congestion Rents received from the Market, TR Auction Revenue, TR Payments to Rights Holders and Transmission Rights Clearing Account Disbursements to Ontario Ratepayers. Please update the Benefit to Ontario Ratepayers in Table 1 based on Transmission Rights Disbursements to Ontario Ratepayers instead of Congestion Rents.

c) Please break down the increase in congestion rent under the “Lowering ETS Rate to $0/MWh” scenario in Table 1 into allocated Congestion Rents received from the Market, TR Auction Revenue, TR Payments to Rights Holders and Transmission Rights Clearing Account Disbursements to Ontario Ratepayers. Please update the Benefit to Ontario Ratepayers in Table 1 based on Transmission Rights Disbursements to Ontario Ratepayers instead of Congestion Rents.

Staff-5

Ref.: Power Advisory Report / p. 13 / paragraph 35
Power Advisory Report / p. 10 / paragraph 23
Power Advisory Report / p. 10 / Table 1

Preamble

Power Advisory states on page 13: "The updated ETS rate, based on Elenchus' cost allocation methodologies, would increase the ETS rate to $3.66/MWh to as much as $6.54/MWh – potentially a nearly four-fold increase from its current level."

Power Advisory states on page 10: "The financial impact to Ontario ratepayers from increasing the ETS rate to $6.54/MWh would have been a net increase in costs of $42.6 million over the 2018-2021 timeframe".

Table 1 on Page 10 summarizes Power Advisory's analysis of the "Financial Impact" of an increase of the ETS rate to $6.54/MWh.

Question(s)

a) Please provide an estimate of the financial impact to Ontario ratepayers from increasing the ETS rate to $3.66/MWh. If possible, please provide the results in the same format as Table 1 on Page 10 of Power Advisory's report.

b) Please provide an estimate of the financial impact to Ontario ratepayers from increasing the ETS rate to $5.42/MWh. If possible, please provide the results in the same format as Table 1 on Page 10 of Power Advisory's report.

Staff-6

Ref.: Power Advisory Report / p. 11 / paragraph 24

Preamble

Power Advisory states on page 11: "The value of energy exports in the current electricity grid – which is now largely a fixed cost system – is vastly different than when the ETS rate was initially set in the early 2000s and into the last decade…."

Question(s)

a) Please explain what is meant by "the value of energy exports".

b) Please explain what is meant by a "fixed cost system", and the significance of this.

c) Please explain what the electricity grid was previously and the significance of this to setting the ETS rate in contrast to the current electricity grid.

d) Please explain how and why the value of energy exports has changed since the ETS rate was initially set up to the present.

Staff-7

Ref.: Power Advisory Report / p. 9 / paragraph 17
Power Advisory Report / p. 15 / paragraph 42

Preamble

Power Advisory states on page 15: "The IESO's analysis expects that any increase in revenue from a higher ETS will be fully offset by a decrease in revenue from congestion rents".

Power Advisory states on page 9: "All else being equal, increasing the ETS rate increases the transactional cost of exporting energy from Ontario".

Question(s)

a) Please clarify how increasing the ETS rate increases transaction costs for exporting energy from Ontario and why this might cause a reduction in revenue from Congestion Rent.

Staff-8

Ref.: Power Advisory Report / p. 15 / paragraph 42

Preamble

Paragraph 42 in the Report states that "A reduction in congestion rent will reduce disbursements from the Transmission Rights Clearing Account (TRCA), which are used to reduce the overall revenue requirement for Network transmission costs paid by all Ontario ratepayers."

Question(s)

a) Please explain how TRCA disbursements are applied to Network transmission costs paid by Ontario ratepayers.

b) Please describe in detail how Congestion Rents received from the Market, TR Auction Revenue and TR Payments to Right Holders flow to Ontario end-use customers including the dollar amount for class A, class B and low-volume customers and any differences.

c) Please describe how ETS revenue flows to Ontario end-use customers. including the dollar amount for class A, class B and low-volume customers and any differences.

d) Please compare and contrast how the various streams of revenue from exports in the responses to question b) and c) flow to the benefit of Ontario end-use customers.

e) Please provide the reduction in Congestion Rents received from the Market, TR Auction Revenue and TR Payments to Right Holders if the ETS rate is increased to $6.54/MWh.

f) Please provide the increase in Congestion Rents received from the Market, TR Auction Revenue and TR Payments to Right Holders if the ETS rate is decreased to $0.00/MWh.

g) Please provide the reduction in Congestion Rents received from the Market, TR Auction Revenue and TR Payments to Right Holders if the ETS rate is increased to $3.66/MWh.

Staff-9

Ref.: Power Advisory Report / p. 15 / paragraph 45

Preamble

Power Advisory states that “Ontario’s dynamic design for determining congestion rents is not replicated in other markets and – given how material congestion rents have been in recent years – understates the true cost (and value to Ontario ratepayers) of exporting energy from Ontario into neighbouring jurisdictions.”

Question(s)

a) Please clarify if Power Advisory is saying that Ontario’s intertie pricing design systematically undervalues the benefits of exporting energy from Ontario? If so, please explain, otherwise, please clarify the statement.

Staff-10

Ref.: Power Advisory Report / pp. 16-17 / paragraph 49
Power Advisory Report / p. 37 / paragraph 90

Preamble

Power Advisory states on pages 16-17:

> "applying principles of the pole attachment charges to exports is inappropriate, since their use of delivery assets are different. Pole attachment charges are for consistent access and use of fixed assets (in this case utility poles used by telecommunication companies). […] Conceptually, this can be the same as purchasing a fixed amount of transfer capacity on a transmission line. Exports, on the other hand, do not make long-term fixed commitments to capacity on transmission infrastructure. Instead, exports use the system when an economic opportunity exists. This "opportunity service" targets excess capacity in the system that is being inefficiently used by existing domestic demand. […] Any cost allocation methodology should recognize the economic opportunity nature of exports and that exports do not purchase a fixed amount of capacity from the system."

Power Advisory states on page 37:

> "The reason for a near steady-state of exports is a combination of factors. First, export volumes include wheel through transactions, which are a simultaneous import and export of energy – (a trader offers an equivalent amount of imports and exports in the same hour). Second, export trades may be done on an uneconomic basis when they are part of a long-term contractual agreement, as discussed previously."

Question(s)

a) Please clarify whether traders acting under long-term contracts are "opportunity traders" or are they demonstrating a greater commitment to the infrastructure?

b) Is it Power Advisory's view that it would be appropriate to allocate some shared costs to long-term contract traders but only incremental costs to "opportunity traders"?

c) Does Power Advisory consider the Elenchus 2014 Methodology an appropriate cost allocation methodology that recognizes the economic opportunity nature of exports? Why or why not?

Staff-11

Ref.: Power Advisory Report / p. 17 / paragraph 50

Preamble

Power Advisory states: “A cost-benefit analysis should be assessed when determining cost allocation to secondary users of the transmission system.”

Question(s)

a) Please explain what is meant by “secondary users of the transmission system”.

b) Please explain what Power Advisory considers an appropriate cost-benefit analysis methodology to determine cost allocation to secondary users of the transmission system.

Staff-12

Ref.: Power Advisory Report / p. 21 / paragraph 58

Preamble

In this paragraph Power Advisory quotes OPG’s estimate of its marginal cost of production from hydro facilities of $14.40/MWh where the marginal costs are driven by water rental fees and property taxes. About 3,000 MW of hydro supply continues even at market prices as low as zero due largely to “must-run” restrictions. Power Advisory states that this is an economic inefficiency that arises due to the hybrid design of the electricity market and surplus baseload generation.

Question(s)

a) Does the marginal cost of $14.40/MWh represent the cost of real resource inputs into the production of hydro that are used up in the process and therefore unavailable for other uses? Examples of real resource inputs would be labour costs, the cost of station service electricity, or, in the case of a gas-fired generator, the cost of fuel used. Or, do these marginal costs represent a simple transfer from OPG to the recipients of water rental fees and property taxes? Please explain how Power Advisory arrives at answers.

b) If the marginal cost of $14.40/MWh is a simple revenue transfer and does not reflect the use of real productive resources, is it correct to say that hydro production is inefficient if the price of electricity is zero? Why or why not?

c) If the $14.40/MWh marginal cost does in fact represent the cost of real resources used in the production process, does the fact that the hydroelectricity is produced on a “must-run” basis have any bearing on the efficiency or inefficiency of the hydroelectric production? Why or why not?

Staff-13

Ref.: Power Advisory Report / p. 29 / paragraph 72

Preamble

Power Advisory states that “In a perfectly efficient market, congestion rents either accrue to ratepayers or are used to fund transmission expansion – essentially, funding an economic buildout of intertie capacity.”

Question(s)

a) Please confirm whether congestion rents are used to fund transmission expansion in Ontario. If not, why not?

b) Does Power Advisory propose that congestion rents should be used to fund transmission expansion In Ontario? Please explain the reason for Power Advisory’s position.

Staff-14

Ref.: Power Advisory Report / p. 34 / paragraph 82
Submissions on the ETS Rate / Attachment 3 / page 12 of 17

Preamble

Power Advisory states on page 34 that "Higher intertie prices result in greater congestion rent that will accrue to Ontario ratepayers – even with some congestion rents being avoided as a result of Transmission Rights (TRs), which act as a hedge against congestion rent."

The IESO in its Submission on the ETS Rate notes that:

> "These market design changes mean the vast majority of funds disbursed through the TRCA reduce transmission costs for domestic consumers. Further, it should be noted that the dynamic nature of the ICP and design changes made to the TRCA are aligned with wider IESO initiatives, including the Market Renewal Program".

Question(s)

a) Please provide Power Advisory's comments on the expected impacts of the Market Renewal Program (MRP) on Congestion Rents received from the Market, TR Auction Revenue, TR Payments to Right Holders and avoided Congestion Rents.

b) Please provide a forecast of Congestion Rents received from the Market, TR Auction Revenue, TR Payments to Right Holders and avoided Congestion Rents from 2023 to 2027 excluding the future impact of the IESO's MRP.

c) Please provide a forecast of Congestion Rents received from the Market, TR Auction Revenue, TR Payments to Right Holders and avoided Congestion Rents from 2023 to 2027 including the future expected impact of the IESO's MRP.

d) Please explain how and from whom is the shortfall paid if the payouts from Transmission Rights sold to Rights Holders exceed the Congestion Rents received from the Market.

e) What is the volume of Transmission Rights sold to Rights Holders that exceeded the volume of Congestion Rents received from the Market from 2017 to 2021?

f) What is the dollar value of Transmission Rights sold to Rights Holders that exceeded the dollar value of Congestion Rents received from the Market from 2017 to 2021?

Staff-15

Ref.: Power Advisory Report / p. 25 / paragraph 66
Power Advisory Report / p. 31 / paragraph 77
Power Advisory Report / p. 35 / paragraph 86

Preamble

Power Advisory states on page 31: “it is difficult to see a clear trend on when energy exports are most likely to flow, as they occur even in hours where the spread in real-time prices between the two markets is extremely negative – meaning HOEP was significantly higher than real-time prices in New York”.

Power Advisory states on page 25: “Overall, Ontario prices are significantly discounted compared to neighbouring wholesale markets – providing an ideal economic landscape for arbitraging Ontario supply into higher-priced wholesale markets and reducing system costs.”

Power Advisory states on page 25: “the Market Clearing Price (MCP) and its hourly average, HOEP – in Ontario is often well below that of neighbouring jurisdictions”.

Power Advisory states on page 35: “IESO does not publish offer and bid data – i.e. the price/quantity pairs that market participants submit into the wholesale market to generate or consume power. Every other wholesale market in North America publishes this data in an effort to provide price transparency and support a competitive market”.

Power Advisory states on page 35: “…there is a lack of data regarding curtailment and surplus energy. The IESO does not provide hourly data for these amounts. Ontario’s rate-regulated and contracted hydroelectric generators also do not provide surplus volumes on an hourly basis.”

Power Advisory states on page 35: “export traders are highly responsive to prices”.

Question(s)

a) Please clarify why Power Advisory states that export traders are highly responsive to prices given its other statements on the difficulty of seeing clear trends on when exports are likely to flow and on the significant discount of Ontario prices compared to neighbouring jurisdictions.

b) Please clarify and explain whether wholesale electricity prices will increase as a result of an increase to the ETS rate given the IESO's analysis, which expects that any increase in revenue from a higher ETS will be fully offset by a decrease in revenue from congestion rents.

Staff-16

Ref.: Power Advisory Report / pp. 31-33 / paragraphs 77-80
Power Advisory Report / p. 32 / Figure 10
Power Advisory Report / pp. 35-37/ paragraphs 88-90
Power Advisory Report / pp. 36-37 / Figures 13 and 14

Preamble

The text on pages 31-33 and Figure 10 shows a scatter plot of electricity exports from Ontario to NYISO and real-time price spreads between the two markets. The scatter plot appears to show no correlation between the price spread and Ontario exports. The discussion highlights potential explanations for this:

- Many export trades may result from long-term contracts as opposed to arbitrage transactions.
- The final destination of the exports is not known. They may be wheel-throughs destined for a third market.
- Surplus baseload generation in Ontario compels exports regardless of the price spread.

The discussion on pages 35-37 and Figures 13 and 14 seem to convey a different message. The figures show exports plotted against HOEP and reveal a negative correlation. The discussion concludes that exports are highly responsive to the Ontario price.

Question(s)

a) Is the price spread in Figure 10 (Real-time NY price minus HOEP) known to traders at the time their exports are scheduled?

b) If the answer to the above is no, would pre-dispatch prices in Ontario and hour-ahead prices in New York be better measures of any arbitrage opportunity available to Ontario exporters? What in Power Advisory's opinion would be the best measure of the price spread to which arbitrage traders respond to?

c) Should ICPs be added to the Ontario price to get a better measure of arbitrage opportunities? Why or why not?

d) Does the export data in Figure 10 reflect net exports from Ontario to NYISO (Ontario exports to NYISO minus NYISO exports to Ontario) or do they reflect gross Ontario exports to NYISO?

e) In Power Advisory's opinion, would gross or net exports be the better measure of arbitrage activity? Why?

f) In Figures 13 and 14 a negative correlation between Ontario exports and the HOEP is revealed. Do the Ontario exports reflect the total of all Ontario exports at all interties per hour?

g) Do the export data reflect gross exports or net exports?

h) In Power Advisory's opinion would the negative correlation between Ontario exports and Ontario prices reflect the behaviour of arbitrage traders as opposed to bilateral contract or wheel-through traders?

i) Is there any reason to expect a different mix of arbitrage, contract, and wheel-through traders at different interties?

j) Are there any factors Power Advisory can point to that would explain the apparent difference in responsiveness of exports to price measures as between Figure 10 and Figures 13 and 14?

k) In Power Advisory's opinion are the two sections of the report highlighted in this set of interrogatories conveying contradictory messages? Why or why not?

Staff-17

Ref.: Power Advisory Report / p. 35 / paragraph 84

Preamble

Power Advisory states on page 35:

> The higher ETS rate imposes a significantly higher regulatory cost for exporting energy from Ontario – a cost that will have far-reaching impacts on various areas of the province's electricity sector, including the TR market, Environmental Attributes, system operations and future investment decisions at a time when the province is expected to need significant new, non-emitting capacity.

Question(s)

a) Please explain what is driving the expected need for significant new, non-emitting capacity.

b) What effect might the drivers described in response to part a) have on exports?

Staff-18

Ref.: Power Advisory Report / p. 39 / paragraph 94

Preamble

The Report states that congestion rents will also be impacted by the increase in the ETS rate. The Report then provides the change in congestion revenue.

Question(s)

a) Please confirm that congestion rents and congestion revenue are used interchangeably in the Report.

b) Please clarify that congestion rents refers to congestion rents received from the market and does not include TR Auctions Revenue. If this is the case please update references in the Report to congestion rents, accordingly, separating TR Payments to TR Holders from TR Auctions Revenue.

Staff-19

Ref.: Power Advisory Report / p. 13 / paragraph 33
Power Advisory Report / p. 41 / paragraph 103
Power Advisory Report / p. 47 / paragraph 121
Power Advisory Report / p. 35 / paragraph 85

Preamble

Power Advisory states on page 13: "The greater (less) the revenue received from exporters through the ETS rate, the less (greater) the revenue requirement related to the Network rate pool that will be allocated to ratepayers as part of the UTR."

Power Advisory states on page 41: "When the ETS rate is increased by $4.69/MWh, it results in a simultaneous impact of reducing export demand – by shrinking the potential for arbitrage – and resulting in greater spilled supply."

Power Advisory states on page 47: "Finally, we strongly support the current design of intertie pricing that introduces a dynamic pricing mechanism that provides a clear price signal for the value of Ontario's energy supply."

Power Advisory states on page 35: "[…] there are a number of limitations with available public data compared to what is required to provide a highly accurate estimate price elasticity and system-wide benefits of exports".

Question(s)

a) How would demand from Ontario customers be affected by a change to the ETS and resulting change to the UTRs? For example, would an increase to the ETS result in an increase or decrease to Ontario customer demand? Would a decrease to the ETS result in an increase or decrease to Ontario customer demand?

b) What are the impacts to Ontario ratepayers of any Ontario demand changes resulting from changes in the ETS rate? For example, would Ontario ratepayers pay more or less if the ETS was increased or decreased?

Staff-20

Ref.: Power Advisory Report / pp. 41 to 42 / paragraph 103

Preamble

The Report calculates the cost of increase in spill at OPG's regulated Hydro assets when the ETS rate is increased by $4.69/MWh. Power Advisory's analysis assumes that the decrease in exports when HOEP increases from $15.00/MWh to $20.00/MWh – is a proxy for an increase in the ETS rate of $5.00/MWh – which results in a 4.1 TWh reduction in hydro exports over the 2018 - 2021 time frame and an increase in spilled energy. Power Advisory applies a cost to Ontario ratepayers of $14.40 MWh for every unit of energy that is spilled.

Question(s)

a) Please explain why Power Advisory applied a HOEP increase range of $5.00/MWh instead of $4.69/MWh to determine the volume reduction in hydro exports.

b) Please provide the volume reduction in hydro exports with a $4.69/MWh increase in the ETS rate and update the cost of spill in 4a. of the Report. For this response, use HOEP from $15.00/MWh to $19.69/MWh.

c) Please explain why Power Advisory used a HOEP starting range of $14.40/MWh instead of $15.00/MWh.

d) Please provide the volume reduction in hydro exports with a $4.69/MWh increase in the ETS rate and update the cost of spill in 4a. of the Report. For this response, use HOEP from $14.40/MWh to $19.09/MWh.

Staff-21

Ref.: Power Advisory Report / p. 42 / paragraph 104
Power Advisory Report / pp. 45 to 46 / Table 4

Preamble

In Paragraph 104, Power Advisory estimates that with an increase in ETS rate by $4.69/MWh the reduction of exports will result in a reduction of market revenues from exports of $40.8 million.

In Table 4, which estimates the financial impact of decreasing the ETS rate to $0/MWh, there is no increase of exports shown.

Question(s)

a) Please provide the estimated increase in market revenues from exports for an ETS rate of $0/MWh.

b) Please explain why this is or is not a benefit to Ontario ratepayers.

Staff-22

Ref.: Power Advisory Report / p. 43 / paragraph 107

Preamble

Power Advisory states on page 43: “As exports decline, the combination of lower market prices (due to lower export demand and higher surplus or sub-marginal cost supply) […]”.

Question(s)

a) Please explain whether and how export demand increases the market prices in Ontario. For example, does the Ontario Market Clearing Price increase as a result of exports?

b) If market prices in Ontario do increase with higher export demand, please clarify how this increase in market prices in Ontario was factored into Power Advisory’s analysis of impacts to Ontario ratepayers of changes in the ETS (for example, were the higher prices portrayed as a benefit or cost to Ontario ratepayers?)

Staff-23

Ref.: Power Advisory Report / p. 47 / paragraph 119

Preamble

Power Advisory states on page 47: “The future of Ontario’s electricity market may be very different than the last ten years, when the province experienced significant amounts of SBG and curtailment”.

Power Advisory states on page 47: “The IESO’s current forecast expects SBG to decline materially with the closure of Pickering in 2026”.

Question(s)

a) In light of the IESO’s outlook for SBG, please clarify whether Power Advisory also expects that SBG will be lower in the future, particularly as units at the Pickering nuclear generating station begin to shut down?

b) How does Power Advisory expect the closure of Pickering will affect SBG?

c) Please comment on how the IESO’s current forecast for SBG compares to the SBG experienced over the past decade.

d) What impact would materially lower SBG have on congestion rent payments and transmission rights revenue?

e) Please comment on the potential role of storage and other technologies for helping to manage SBG in Ontario over the next decade.

Staff-24

Ref.: Power Advisory Report / p. 10 / Table 1
Power Advisory Report / p. 22 / paragraph 60

Preamble

Table 1 states (along with footnote 2) that increases in wind and waterpower curtailment increase costs for Ontario ratepayers.

Power Advisory states on page 22:

> “Both contracted and regulated assets are typically made financially whole for supply sold in the wholesale market. For example, output from a wind contract may be contracted with the IESO at $135/MWh – meaning it will be paid that amount for any MW it sells into the wholesale market. If HOEP is $10/MWh, it will receive a $125/MWh payment, which is recovered from ratepayers through the Global Adjustment. Regulated hydroelectric rates are approximately $43.88/MWh, with a top-up payment made to cover the difference between revenue earned in the wholesale market and the regulated rate.”

Question(s)

a) Please explain why wind and water curtailments increase costs for Ontario ratepayers.

b) Please reconcile Power Advisory's statement that wind and waterpower curtailment increase costs for Ontario ratepayers with its statement that contracted and regulated assets are typically made financially whole for supply sold in the wholesale market.

c) Does the total cost to Ontario ratepayers change depending on the fraction of generator revenues paid through the wholesale market versus the Global Adjustment? If so, how and why? Otherwise, please clarify.

Staff-25

Ref.: Power Advisory Report / p. 34 / paragraph 83
Power Advisory Report / p. 42 / Table 3

Preamble

Power Advisory states on page 34: "Power Advisory's analysis using historical data concludes that between 2018 and 2021 the impact of increasing the ETS by $4.69/MWh would be to reduce average hourly exports by 160 MW and congestion rents by $169 million – although that decrease would be offset by greater total export revenues due to the near $5/MWh increase in the ETS rate."

Page 43 Table 3 is titled "Financial Impact of Higher ETS Rate".

Question(s)

a) With respect to Table 3, please explain whether or not it is double counting to add "Reduced Market Revenues from Lower Exports" and spills/curtailments ("Financial Impact of Increased Hydro Spill" and "Ontario Ratepayer Impact from Curtailed Wind Supply"). If not, please explain why not. If yes, please revise the table and conclusion.

b) The table refers to a "Financial Impact" and an "Ontario Ratepayer Impact" related to hydro spill and wind curtailment, respectively. Please clarify the difference between the terms use if a difference was intended.

Staff-26

Ref.: Power Advisory Report / p. 10 / Table 1

Preamble

Page 10 Table 1 estimates that wind curtailment costs would have increased over the 2018 through 2021 period because of an increase to the ETS.

Question(s)

a) What was the approximate total wind production and cost prior to curtailment over the 2018-2021 timeframe (assuming the current ETS of $1.85/MWh)?

b) How much additional wind production does the Power Advisory analysis estimate was curtailed over the 2018-2021 timeframe because of the increase in ETS to $6.54/MWh?

c) Approximately what proportion of the values in (a) does the estimated additional curtailed production and estimated additional curtailment cost of $17,985,020 represent?

Staff-27

Ref.: Power Advisory Report / p. 10 / Table 1

Preamble

Page 10 Table 1 estimates that waterpower curtailment costs would have increased over the 2018 through 2021 period because of an increase to the ETS.

Question(s)

a) What was the approximate total waterpower production and cost prior to curtailment over the 2018-2021 timeframe (assuming the current ETS of $1.85/MWh)?

b) How much additional waterpower production does Power Advisory's analysis estimate was curtailed over the 2018-2021 timeframe because of the increase in ETS to $6.54/MWh?

c) Approximately what proportion of the values in (a) does the estimated additional curtailed production and estimated additional curtailment cost of $59,811,638 represent?

Staff-28

Ref.: Power Advisory Report / p. 9 / paragraph 18
Power Advisory Report / p. 24 / paragraph 63
Power Advisory Report / p. 10 / Table 1

Preamble

Power Advisory states on page 9: “A higher transaction cost will, in general, reduce exports in hours when it is economically advantageous to sell Ontario supply into neighbouring markets”

Power Advisory states on page 24: “External revenues help reduce costs for domestic ratepayers”.

Power Advisory states on page 24: "[…] more surplus and sub-marginal cost supply that is sold into neighbouring markets, the lower the overall system cost will be for Ontario ratepayers.”

Page 10, Table 1 estimates the change in export revenues over the 2018 through 2021 period resulting from a change to the ETS.

Question(s)

a) Please confirm whether the term “Market Revenues” in Table 1 refers to revenues earned by exporters for electricity exports (i.e., for the sale of electricity out of Ontario). Otherwise, please clarify.

b) Please confirm whether the term “Export Revenue” in Table 1 refers to ETS payments by exporters. Otherwise, please clarify.

c) Is Power Advisory saying that revenues earned by exporters for the sale of electricity out of Ontario (Market Revenues in Table 1) reduce the total cost paid by electricity ratepayers in Ontario? If yes, please explain how. Otherwise, please clarify.

d) What would have been the total dollar amount of “Market Revenues” (assuming the term refers to revenues earned by exporters for electricity exports) over the 2018-2021 timeframe assuming the current ETS of $1.85/MWh?

e) Approximately what proportion of the value in d) does the estimated decrease in Market Revenues of $40,871,596 in Table 1 represent?

f) How would Power Advisory characterize its confidence in the $40,871,596 figure? What are the key uncertainties to this result?

g) How much of the decrease in export revenues in the "Increasing ETS Rate to $4.69/MWh" scenario in Table 1 was revenue that would have covered the marginal cost of serving the demand that would not have existed but for the export demand? How much of the remaining export revenue would have therefore been available to reduce the total cost paid by electricity ratepayers in Ontario?

h) In Power Advisory's estimate, what share and dollar value of export revenues between 2018 and 2021 was useful in reducing the total cost paid by electricity ratepayers in Ontario as opposed to paying for the marginal cost of supplying the export quantity? Is the larger or smaller of these two shares reflected in Table 1 as the impact of reduced export volumes on Market Revenues? If it is the larger, please explain why this is not an overstatement of the impact of export revenues (Market Revenues) towards reducing the total cost paid by electricity ratepayers in Ontario.

Staff-29

Ref.: Power Advisory Report / p. 24 / paragraph 64
Power Advisory Report / p. 24 / Figure 5
Power Advisory Report / p. 25 / paragraph 65
Power Advisory Report / p. 25 / Figure 6

Preamble

Power Advisory states on page 24 (with reference to Figure 5): "Ontario's baseload supply accounts for as much as 70% of installed capacity […]".

Power Advisory states on page 25 (with reference to Figure 6): "When looking at actual energy output – not just installed capacity – the prevalence of Ontario's baseload supply is more extreme. In Ontario, baseload supply – including nuclear, hydro and solar – provided around 92% of all supply between 2018 and 2021."

Question(s)

a) Please provide the numbers for Ontario in Figures 5 and 6 by fuel type in a way that also shows the type and quantity of Ontario supply that is not baseload.

b) Please clarify what criteria Power Advisory used to determine what was and was not baseload supply for purposes of creating Figures 5 and 6.

Staff-30

Ref.: Power Advisory Report / pp. 27-28 / paragraph 70
Power Advisory Report / p. 28 / Figure 8

Preamble

Power Advisory states on pages 27-28: “With HOEP set at $15/MWh and a lack of congestion on the intertie […] all of the export bids are economic. […] The highest-priced bid is the last bid to be considered uneconomic”.

Question(s)

a) The words in the text box on Figure 8 refer to export bids. The X axis refers to export offers. Please clarify whether this a typographic oversight or an intentional distinction. If it is an intentional distinction, please explain.

b) Please clarify what is meant by the excerpt from pages 27 and 28 above in which the first sentence refers to economic bids and the second refers to an uneconomic bid.