

CCC/VECC #1

INTERROGATORY

Ref:

Issue Number: 3.1 and 3.2
Issue: 3.1 How should the X factor be determined?
3.2 What are the appropriate components of an X factor?

With regard to the PEG TFP Study, page iii, please provide the workpapers and data used to calculate the Recent GDPIPI Trend and the Summary Rate Trends shown in the Summary Price Cap Indexes Table.

RESPONSE

See our response to question 2 of EGD's interrogatories. Please note that access to some portions of the working papers requires the signing of a confidentiality agreement.

Witness: Mark Lowry

CCC-VECC #2

INTERROGATORY

Ref:

Issue Number: 3.1 and 3.2
Issue: 3.1 How should the X factor be determined?
3.2 What are the appropriate components of an X factor?

With regard to the PEG TFP Study, Table 16, please provide the workpapers and data use to calculate Table 16. Please include the source documents for the GDP-IPI and MFP. Please provide the same information for that supported Table 16 in the March Preliminary Study.

RESPONSE

See our response to question 2 of EGD's interrogatories. Please note that access to some portions of the working papers require the signing of a confidentiality agreement.

Witness: Mark Lowry

CCC/VEDD #3

INTERROGATORY

Ref:

Issue Number: 3.1 and 3.2
Issue: 3.1 How should the X factor be determined?
3.2 What are the appropriate components of an X factor?

With regard to the PEG TFP Study Table 15a, please provide the workpapers and data use to calculate this Table. Please include the source documents PEG received from Enbridge to calculate the capital index and the workpapers that show the calculation of the capital index. Please provide all PEG workpapers and data obtained from Enbridge used to calculate the "weights." Please provide the same information for that supported Table 15a in the March Preliminary Study.

RESPONSE

See our response to question 2 of EGD's interrogatories for the data and other working papers for the June PEG study.

See our response to question 20 of EGD's interrogatories for the data and other working papers for the March preliminary PEG study.

Please note that access to some portions of the working papers requires the signing of a confidentiality agreement.

Witness: Mark Lowry

CCC/VECC #4

INTERROGATORY

Ref:

Issue Number: 3.1 and 3.2
Issue: 3.1 How should the X factor be determined?
3.2 What are the appropriate components of an X factor?

With regard to the PEG TFP Study Table 15b, please provide the workpapers and data use to calculate this Table. Please include the source documents PEG received from Union to calculate the capital index and the workpapers that show the calculation of the capital index. Please provide all PEG workpapers and data obtained from Union used to calculate the "weights." Please provide the same information for that supported Table 15b in the March Preliminary Study.

RESPONSE

See our response to question 2 of EGD's interrogatories for the data and other working papers for the June PEG study.

See our response to question 20 of EGD's interrogatories for the data and other working papers for the March preliminary PEG study.

Please note that access to some portions of the working papers requires the signing of a confidentiality agreement.

Witness: Mark Lowry

CCC/VECC #6

INTERROGATORY

Ref:

Issue Number: 3.1 and 3.2
Issue: 3.1 How should the X factor be determined?
3.2 What are the appropriate components of an X factor?

With regard to the PEG TFP Study page 26, the study states "In the latest research we calculate elasticity-weighted outputs indexes using elasticity estimates that vary by company and reflect each company's special operating conditions." Please provide the company specific elasticities. Provide the all workpapers used to calculate these elasticities.

RESPONSE

Please see our response to question 12, parts c and d, of EGD's interrogatories.

Witness: Mark Lowry

CCC/VECC #7

INTERROGATORY

Ref:

Issue Number: 3.1 and 3.2
Issue: 3.1 How should the X factor be determined?
3.2 What are the appropriate components of an X factor?

With regard to the PEG TFP Study, Table 7, please explain why the residential and commercial volume and other volume differ from the values reported for these data in the March preliminary study. Provide all workpapers and documents that support your explanation.

RESPONSE

The changes in the residential and commercial volumes for Union between our March study to our June study are due to the following circumstances:

1. We upgraded our weather normalization model.
2. For the June report we excluded the DSM volume savings, whereas in the March report we included these DSM volume savings. PEG undertook this change to avoid giving the company double credit for their DSM program. It is our understanding that DSM costs will be recovered with a separate adjustment.

The changes for Enbridge are due to:

1. The upgrade of our weather normalization model.
2. For the June report we excluded the DSM volume savings, whereas in the March report we included these DSM volume savings. PEG undertook this change to avoid giving the company double credit for their DSM program. It is our understanding that DSM costs will be recovered with a separate adjustment.

Witness: Mark Lowry

3. Rate 100 volumes were included in the residential and commercial category for the June report. In the March report Rate 100 volumes were classified in the "other volumes" category. We also weather normalized these volumes in the June report.

The weather normalization models, along with the data and code that produced these results, are available in our responses to EGD interrogatories in question 2 for the June report and question 20 for the March preliminary report.

CCC-VECC #8

INTERROGATORY

Ref:

Issue Number: 3.1 and 3.2
Issue: 3.1 How should the X factor be determined?
3.2 What are the appropriate components of an X factor?

With regard to the PEG TFP Study, Table 7, please provide the fixed revenue weights used to calculate the Fixed Revenue weighted quantity index. If the weights differ from the weights used in the March preliminary study, provide the weights used in the March preliminary study. Please provide all workpapers and documents that support the calculation of the PEG TFP study weights and the March preliminary study weights.

RESPONSE

Please see the attached excel file entitled "CCC-VECC-Q8.xls" for data on the revenue weights used in June and March. The 2005 revenue shares are held constant for the fixed revenue weighted output quantity index. Please see our response to EGD question 2 and question 20 for the data and working papers that calculated these weights.

In regards to Union the change from March to June is due to receiving more detailed data on the breakdown of their customer charges into their specific rate classes. We also excluded storage from the revenue weighted index in the June report.

In regards to Enbridge in March rate 100 was lumped in with all other contract rate classes. In the June report we separated rate 100 out of the contract grouping and treated it as a general service rate class. Besides this upgrade in the treatment of rate 100 the revenue weights were the same for the March and June reports.

Witness: Mark Lowry

Revenue Weights used for the Revenue-Weighted Output Quantity Index: Enbridge

June Report Revenue Weights										
Year	Customer Charges					Volumetric Charges				
	Rate 1 s1n	Rate 6 s6n	Rate 9 s9n	Rate 100 s100n	Contract sconn	Rate 1 s1v	Rate 6 s6v	Rate 9 s9v	Rate 100 s100v	Contract sconv
2000	18.7%	3.5%	0.0%	0.3%	0.3%	45.9%	21.2%	0.1%	5.6%	4.5%
2001	21.0%	3.8%	0.0%	0.3%	0.3%	43.2%	20.7%	0.2%	5.8%	4.9%
2002	21.8%	4.0%	0.0%	0.3%	0.3%	43.2%	20.1%	0.1%	5.4%	4.8%
2003	21.4%	4.6%	0.0%	0.3%	0.3%	44.4%	19.3%	0.1%	5.4%	4.1%
2004	21.1%	4.5%	0.0%	0.3%	0.3%	44.7%	19.3%	0.1%	5.5%	4.2%
2005	24.0%	4.4%	0.0%	0.3%	0.3%	42.8%	19.2%	0.1%	5.6%	3.3%

March Report Revenue Weights								
Year	Customer Charges				Volumetric Charges			
	Rate 1 s1n	Rate 6 s6n	Rate 9 s9n	Contract sconn	Rate 1 s1v	Rate 6 s6v	Rate 9 s9v	Contract sconv
2000	18.7%	3.5%	0.0%	0.6%	45.9%	21.2%	0.1%	10.1%
2001	21.0%	3.8%	0.0%	0.6%	43.2%	20.7%	0.2%	10.6%
2002	21.8%	4.0%	0.0%	0.6%	43.2%	20.1%	0.1%	10.2%
2003	21.4%	4.6%	0.0%	0.6%	44.4%	19.3%	0.1%	9.6%
2004	21.1%	4.5%	0.0%	0.6%	44.7%	19.3%	0.1%	9.7%
2005	24.0%	4.4%	0.0%	0.5%	42.8%	19.2%	0.1%	8.9%

Revenue Weights used for the Revenue-Weighted Output Quantity Index: Union

June Report Revenue Weights									
year	Rate M2		Rate 01		Rate 10		Contract & Wholesale	Transmission	
	fixed	volumetric	fixed	volumetric	fixed	volumetric	volumetric	fixed	
	snM2fix	svM2vol	sn01fix	sv01vol	sn10fix	sv10vol	svdxcw	sfixdxcw	strsr
1999	9.9%	36.9%	4.2%	12.5%	0.3%	3.0%	7.7%	8.6%	17.1%
2000	9.9%	37.1%	4.2%	12.5%	0.3%	3.0%	7.7%	8.6%	16.8%
2001	10.5%	36.2%	4.5%	11.9%	0.3%	2.5%	8.4%	9.1%	16.6%
2002	10.0%	36.6%	4.2%	12.3%	0.3%	2.9%	8.1%	9.0%	16.7%
2003	12.4%	35.7%	4.0%	12.4%	0.2%	2.7%	7.5%	9.1%	16.0%
2004	15.8%	33.3%	4.8%	11.4%	0.3%	2.3%	6.4%	9.9%	15.9%
2005	19.9%	30.6%	6.0%	9.9%	0.4%	2.1%	5.4%	9.8%	16.1%

March Report Revenue Weights								
year	General Service	Rate M2	Rate 01	Rate 10	Contract & Wholesale	Storage	Transmission	
	fixed	Volumetric	Volumetric	Volumetric	Volumetric	fixed		
	sndxgs	svM2vol	sv01vol	sv10vol	svdxcw	sfixdxcw	sstor	strsr
1999	13.7%	35.7%	12.1%	2.9%	7.4%	8.3%	3.2%	16.6%
2000	13.7%	35.7%	12.1%	2.9%	7.4%	8.3%	3.9%	16.1%
2001	14.5%	34.5%	11.3%	2.3%	8.0%	8.7%	4.7%	15.9%
2002	13.5%	34.2%	11.5%	2.7%	7.6%	8.4%	6.6%	15.6%
2003	15.9%	34.0%	11.7%	2.6%	7.1%	8.6%	4.9%	15.2%
2004	19.5%	31.1%	10.7%	2.1%	6.0%	9.3%	6.3%	14.9%
2005	24.5%	28.7%	9.3%	2.0%	5.0%	9.1%	6.4%	15.1%

CCC/VECC #17

INTERROGATORY

Ref:

Issue Number: 3.1 and 3.2
Issue: 3.1 How should the X factor be determined?
3.2 What are the appropriate components of an X factor?

With regard to the PEG Study pages 18-19, the study explains that PEG collected data on US utilities from a variety of sources. Please provide the data base the PEG collected. Please provide source documentation for each data series in the data base.

RESPONSE

See our response to question 2 of EGD's interrogatories. Please note that access to some portions of the working papers requires the signing of a confidentiality agreement.

Witness: Mark Lowry

CCC/VECC #19

INTERROGATORY

Ref:

Issue Number: 3.1 and 3.2
Issue: 3.1 How should the X factor be determined?
3.2 What are the appropriate components of an X factor?

With regard to the PEG Study page 26, the study states "In the latest research we calculate elasticity-weighted output indexes using elasticity estimates that vary by company and reflect each company's special operating conditions." Please provide the elasticity estimates for every company that PEG calculated company specific elasticities. Show how each company's special operating conditions affected the elasticity estimate. Include all workpapers and documents used to determine the elasticity estimates.

RESPONSE

Please see our response to CCC-VECC question 6.

Witness: Mark Lowry

CCC/VECC #22

INTERROGATORY

Ref:

Issue Number: 3.1 and 3.2
Issue: 3.1 How should the X factor be determined?
3.2 What are the appropriate components of an X factor?

With regard to the PEG Study page 28, the study states "The revenues shares of the rate elements (e.g. customer and volumetric charges) of Enbridge and (especially) Union changed materially over the sample period, as an attempt was made to collect more revenue from customer charges." Please provide the revenue shares for each year in the sample period. Provide all workpapers and documents used to calculate the annual revenue shares.

RESPONSE

Please see our response to CCC-VECC question 8.

Witness: Mark Lowry

CCC/VECC #23

INTERROGATORY

Ref:

Issue Number: 3.1 and 3.2
Issue: 3.1 How should the X factor be determined?
3.2 What are the appropriate components of an X factor?

With regard to the PEG Study Table 6, please provide cost-shares used to weight the average of the subindexes. Please provide all workpapers and documents used to calculate the cost shares. Provide the same information for the March Preliminary Study.

RESPONSE

For the cost shares used to weight the input quantity subindexes for the June and March reports please see the attached file "CCC-VECC-Q23.xls". For the working papers and calculation of these cost shares please see PEG's responses to the EGD interrogatories in questions 2 and 20.

Witness: Mark Lowry

Cost Shares Used in Input Quantity Construction: Enbridge GD

June Report			
Year	Labour	Non-Labour	Capital: GD
2000	8.8%	18.6%	72.7%
2001	8.0%	18.4%	73.6%
2002	7.2%	18.3%	74.5%
2003	7.5%	20.4%	72.0%
2004	8.8%	22.5%	68.8%
2005	9.8%	23.2%	67.1%

March Report			
Year	Labour	Non-Labour	Capital: GD
2000	9.4%	19.9%	70.8%
2001	8.3%	19.0%	72.6%
2002	6.7%	17.2%	76.1%
2003	7.0%	19.0%	74.1%
2004	9.3%	23.8%	66.9%
2005	13.7%	32.6%	53.6%

Cost Shares Used in Input Quantity Construction: Enbridge COS

June Report			
Year	Labour	Non-Labour	Capital: GD
2000	9.0%	19.2%	71.8%
2001	9.0%	20.5%	70.5%
2002	8.1%	20.6%	71.3%
2003	8.7%	23.7%	67.6%
2004	9.4%	24.2%	66.4%
2005	10.1%	24.0%	65.9%

March Report			
Year	Labour	Non-Labour	Capital: GD
2000	9.0%	19.2%	71.8%
2001	9.0%	20.5%	70.5%
2002	8.1%	20.6%	71.3%
2003	8.7%	23.7%	67.5%
2004	9.4%	24.2%	66.4%
2005	10.1%	24.0%	65.9%

Cost Shares Used in Input Quantity Construction: Union COS

June Report

Year	Labour	Non-Labour	Capital: GD	Fuel
1999	20.1%	14.5%	64.1%	1.4%
2000	18.8%	13.0%	65.7%	2.5%
2001	18.5%	13.6%	65.0%	2.9%
2002	16.7%	14.2%	66.7%	2.3%
2003	18.3%	14.4%	63.0%	4.2%
2004	19.4%	15.5%	60.8%	4.3%
2005	20.4%	14.3%	60.7%	4.6%

March Report

Year	Labour	Non-Labour	Capital: GD	Fuel
1999	20.1%	14.5%	64.0%	1.4%
2000	18.8%	13.0%	65.7%	2.5%
2001	18.5%	13.6%	65.0%	2.9%
2002	16.7%	14.2%	66.7%	2.3%
2003	18.4%	14.4%	63.0%	4.2%
2004	19.4%	15.5%	60.8%	4.3%
2005	20.4%	14.3%	60.7%	4.6%

Cost Shares Used in Input Quantity Construction: Union GD

June Report

Year	Labour	Non-Labour	Capital: GD	Fuel
1999	18.5%	13.4%	66.9%	1.2%
2000	17.6%	12.2%	67.8%	2.3%
2001	16.2%	11.9%	69.3%	2.6%
2002	15.7%	13.4%	68.7%	2.2%
2003	15.6%	12.2%	68.6%	3.6%
2004	17.5%	14.0%	64.6%	3.9%
2005	19.0%	13.4%	63.3%	4.3%

March Report

Year	Labour	Non-Labour	Capital: GD	Fuel
1999	19.2%	13.8%	65.7%	1.3%
2000	18.6%	12.9%	66.0%	2.5%
2001	16.6%	12.2%	68.5%	2.6%
2002	14.7%	12.6%	70.7%	2.0%
2003	14.5%	11.3%	70.9%	3.3%
2004	18.3%	14.6%	63.0%	4.0%
2005	25.0%	17.6%	51.8%	5.6%

CCC/VECC #24

INTERROGATORY

Ref:

Issue Number: 3.1 and 3.2
Issue: 3.1 How should the X factor be determined?
3.2 What are the appropriate components of an X factor?

With regard to the PEG Study Table 6, please provide all workpapers and documents used to calculate each subindex. Provide the same information for the March Preliminary Study.

RESPONSE

See our response to question 2 of EGD's interrogatories for the data and other working papers of the June PEG study.

See our response to question 20 of EGD's interrogatories for the data and other working papers of the March preliminary PEG study.

Please note that access to some portions of the working papers requires the signing of a confidentiality agreement.

Witness: Mark Lowry

CCC/VECC #25

INTERROGATORY

Ref:

Issue Number: 3.1 and 3.2
Issue: 3.1 How should the X factor be determined?
3.2 What are the appropriate components of an X factor?

With regard to the PEG Study Table 4, please provide all data used to determine output subindexes and the weights used to average the subindexes. Show how the weights were calculated. Provide all workpapers and documents that support the PEG calculations. Provide the same information for the March Preliminary Study.

RESPONSE

See our response to question 2 of EGD's interrogatories for the data and other working papers of the June PEG study. See our response to question 20 of EGD's interrogatories for the data and other working papers of the March preliminary PEG study. Please note that access to some portions of the working papers requires the signing of a confidentiality agreement.

Witness: Mark Lowry

CCC/VECC #27

INTERROGATORY

Ref:

Issue Number: 3.1 and 3.2
Issue: 3.1 How should the X factor be determined?
3.2 What are the appropriate components of an X factor?

With regard to the PEG Study Table 8a, please provide the elasticity estimates by company. Show all calculations used to determine the elasticity estimates. Provide all workpapers and documents used to make the elasticity calculations

RESPONSE

Please see our response to question 12, parts c and d, of EGD's interrogatories.

Witness: Mark Lowry

CCC/VECC #28

INTERROGATORY

Ref:

Issue Number: 3.1 and 3.2
Issue: 3.1 How should the X factor be determined?
3.2 What are the appropriate components of an X factor?

With regard to the PEG Study Table 8a, please provide the elasticity estimates by company. Show all calculations used to determine the elasticity estimates. Provide all workpapers and documents used to make the elasticity calculations.

RESPONSE

Please see our response to question 12, parts c and d, of EGD's interrogatories.

Witness: Mark Lowry

CCC/VECC #29

INTERROGATORY

Ref:

Issue Number: 3.1 and 3.2
Issue: 3.1 How should the X factor be determined?
3.2 What are the appropriate components of an X factor?

With regard to the PEG Study Table 8b, please provide the elasticity estimates by company. Show all calculations used to determine the elasticity estimates. Provide all workpapers and documents used to make the elasticity calculations

RESPONSE

Please see our response to question 12, parts c and d, of EGD's interrogatories.

Witness: Mark Lowry

CCC/VECC #30

INTERROGATORY

Ref:

Issue Number: 3.1 and 3.2
Issue: 3.1 How should the X factor be determined?
3.2 What are the appropriate components of an X factor?

With regard to the PEG Study Table 9a, please provide the elasticity estimates by company. Show all calculations used to determine the elasticity estimates. Provide all workpapers and documents used to make the elasticity calculations.

RESPONSE

Please see our response to question 12, parts c and d, of EGD's interrogatories.

Witness: Mark Lowry

CCC/VECC #31

INTERROGATORY

Ref:

Issue Number: 3.1 and 3.2
Issue: 3.1 How should the X factor be determined?
3.2 What are the appropriate components of an X factor?

With regard to the PEG Study Table 9b, please provide the elasticity estimates by company. Show all calculations used to determine the elasticity estimates. Provide all workpapers and documents used to make the elasticity calculations.

RESPONSE

Please see our response to question 12, parts c and d, of EGD's interrogatories.

Witness: Mark Lowry

CCC/VECC #32

INTERROGATORY

Ref:

Issue Number: 3.1 and 3.2
Issue: 3.1 How should the X factor be determined?
3.2 What are the appropriate components of an X factor?

With regard to the PEG Study Table 8a, for each US utility, please show all calculations used to determine the company specific TFP estimate. Provide all workpapers and documents used to make the TFP calculations.

RESPONSE

See the working papers provided in our response to question 2 of EGD's interrogatories. Please note that access to some portions of the working papers requires the signing of a confidentiality agreement.

Witness: Mark Lowry

CCC/VECC #33

INTERROGATORY

Ref:

Issue Number: 3.1 and 3.2
Issue: 3.1 How should the X factor be determined?
3.2 What are the appropriate components of an X factor?

With regard to the PEG Study Table 8b, for each US utility, please show all calculations used to determine the company specific TFP estimate. Provide all workpapers and documents used to make the TFP calculations.

RESPONSE

See the working papers provided in our response to question 2 of EGD's interrogatories. Please note that access to some portions of the working papers requires the signing of a confidentiality agreement.

Witness: Mark Lowry

CCC/VECC #34

INTERROGATORY

Ref:

Issue Number: 3.1 and 3.2
Issue: 3.1 How should the X factor be determined?
3.2 What are the appropriate components of an X factor?

With regard to the March Preliminary Study Table 8, for each US utility, please show all calculations used to determine the company specific TFP estimate. Provide all workpapers and documents used to make the TFP calculations.

RESPONSE

See our response to question 20 of EGD's interrogatories. Please note that access to some portions of the working papers requires the signing of a confidentiality agreement.

Witness: Mark Lowry

CCC/VECC #35

INTERROGATORY

Ref:

Issue Number: 3.1 and 3.2
Issue: 3.1 How should the X factor be determined?
3.2 What are the appropriate components of an X factor?

With regard to the March Preliminary Study Table 8, for each US utility, please show all calculations used to determine the company specific expected scale economies estimate. Provide all workpapers and documents used to make these calculations.

RESPONSE

See the working papers attached to our response to question 20 of EGD's interrogatories. Access to some portions of the working papers requires the signing of a confidentiality agreement.

Please note that the column labeled "Expected Scale Economies" in Table 8 of our March preliminary report actually contains the growth rates of the elasticity-weighted output quantity indexes for each sampled company. This growth rate is the part of the scale economy effect on TFP that varies between companies if we assume that cost elasticities are the same for all companies.

Witness: Mark Lowry

CCC/VECC #40

INTERROGATORY

Ref:

Issue Number: 3.1 and 3.2
Issue: 3.1 How should the X factor be determined?
3.2 What are the appropriate components of an X factor?

With regard to the March Preliminary Study Table 9, for each US utility, please show all calculations used to determine the company specific TFP estimate. Provide all workpapers and documents used to make the TFP calculations.

RESPONSE

See the working papers provided in our response to question 2 of EGD's interrogatories. Please note that access to some portions of the working papers requires the signing of a confidentiality agreement.

Witness: Mark Lowry

CCC/VECC #41

INTERROGATORY

Ref:

Issue Number: 3.1 and 3.2
Issue: 3.1 How should the X factor be determined?
3.2 What are the appropriate components of an X factor?

With regard to the March Preliminary Study Table 9, for each US utility, please show all calculations used to determine the company specific expected scale economies estimate. Provide all workpapers and documents used to make these calculations.

RESPONSE

As noted in our response to CCC/VECC question 35, the figures in question are actually the growth rates of elasticity-weighted output quantity indexes. Details of their calculation are contained in the working papers provided in our response to question 2 of EGD's interrogatories. Please note that access to some portions of the working papers requires the signing of a confidentiality agreement.

Witness: Mark Lowry