Board Staff Interrogatories (Complete List)
Enbridge – 2008 Rates under an IR Framework (EB-2007-0606/0615)

1. Ref: Enbridge Ex. B, Tab 1, Sch 1, page 2 of 22, para 6

Issue Number: 1.1
Issue: What are the implications associated with a revenue cap, a price cap and other alternative multi-year incentive ratemaking frameworks?

Enbridge states in evidence that it is proposing a revenue cap, calculated on a per customer basis, adjusted annually.

a) Please outline Enbridge's proposed methodology for applying the revenue per customer cap at the rate class level.

b) Is Enbridge proposing that a fully allocated Cost-of-Service study be used to support its rate design proposals? Please explain.

c) Will this methodology be fixed during the IR plan?

d) Please confirm that Enbridge will seek Board approval for its proposed methodology in this proceeding.

2. Ref: Enbridge Ex. D, Tab 3, Sch 1, pages 15-16

Issue Number: 1.1
Issue: What are the implications associated with a revenue cap, price cap and other alternative multi-year incentive ratemaking frameworks?

PEG indicated that a revenue cap index is commonly paired with a balancing account that ensures that the revenue requirement is ultimately recovered.

a) Please indicate if Enbridge is proposing to establish a balancing account for the IR plan term.

b) Please provide the basis for the calculations of each entry in the balancing account. For example, is Enbridge proposing that the balancing account capture the difference between actual revenue (i.e., not normalized for weather) and the approved revenue requirement? Please explain.

c) What is the frequency, timing and process for disposing the amount accumulated in Enbridge's balancing account? Please explain

    i. How will the amount be allocated across customer classes for recovery in rates? Please explain.

3. Ref: Enbridge Ex. B, Tab 1, page 1 of 22, para 2

Issue Number: 1.1
Issue: What are the implications associated with a revenue cap, price cap and other alternative multi-year incentive ratemaking frameworks?

Enbridge states in evidence that it is proposing a revenue cap, calculated on a per customer basis for the five year period 2008 to 2012.

a) If the Board decided on a price cap for Enbridge, would Enbridge's IR parameter proposals change (e.g., plan term, marketing flexibility, inflation factor, off-ramps, etc.)?

4. Ref: Enbridge Ex. B, Tab 1, Sch 1, pages 1-2 of 22, para 4-5

Enbridge is proposing a revenue per customer cap on the grounds that the costs of a distribution utility are closely aligned with the number of customers it serves.

a) Please provide supporting documentation that demonstrates a direct link between the incurrence of customer care, meter reading, billing and collection costs and the number of new customers.

    i. For the above functions, if any are provided by a third party, please indicate the contract term, expiry date, and any foreseeable changes during the proposed IR plan term.

b) Please demonstrate how and on what basis the capital costs and operating and maintenance expense for transmission pressure (TP) mains vary with number of customers.

c) Please demonstrate how and on what basis the capital costs and operating and maintenance expense for high pressure (HP) mains vary with number of customers.

d) Please demonstrate how and on what basis the capital costs and operating and maintenance expense for low pressure (LP) mains vary with number of customers.

e) Please demonstrate how and on what basis storage costs vary with number of customers.

f) Based on the Board approved revenue requirement for fiscal 2007 relating to storage and distribution, please populate the following table:

Description	O&M and Net Investments ($ million)	Return and Taxes ($ million)	Total ($ million)	Cost per Customer ($/customer)
	a	b	c = a + b	d = c/customers
Storage				
Distribution Facilities				
Mains TP				
Mains HP				
Mains LP (including customer plant)				
UUF				
Bad Debt				
DSM				
Sub-Total				
Customer-related Costs				
Meters				
Sales Stations				
Services				
Customer Care				
Meter Reading				
Billing				
Collection				
Sub-Total				
Other				
Total				

5. Ref: Enbridge Ex. B, Tab 1, Sch 1, page 2 of 22, para 6

Issue Number: 1.3
Issue: Should weather risk continue to be borne by the shareholders, and if so what other adjustments should be made?

Enbridge states in evidence that it is proposing a revenue cap, calculated on a per customer basis, adjusted annually.

a) Does Enbridge believe that its shareholders should continue to bear weather risk? Please explain.

b) If the weather risk was removed from the shareholder, would Enbridge need to change its proposed IR plan? Please explain.

6. Ref: Enbridge Ex. B, Tab 3, Sch 3, page 17 of 64

Issue Number: 3.1
Issue: How should the X factor be determined?

Enbridge states in evidence that this is the manner that Statistics Canada calculates TFP growth for the overall economy and various sub-sectors and industries.

a) Please provide the latest Statistics Canada information that outlines the Canadian TFP growth for the overall economy and various sub-sectors and industries for the years 1994 - 2005.

7. Ref: Enbridge Ex. B, Tab 1, Sch 1, page 14 of 22, para 32

Issue Number: 3.1
Issue: How should the X factor be determined?

Enbridge states that in the past five years, the Board approved distribution margin has increased on average by 3.83%.

a) Please confirm that this average increase includes the impact of declining average use, the cast iron replacement main program and other safety and integrity programs.

8. Ref: Enbridge Ex. B, Tab 3, Sch 3, page 12 of 64

Issue Number: 3.3
Issue: What are the expected cost and revenue changes during the IR plan that should be taken into account in determining the appropriate X factor?

Enbridge states in evidence that replacing and upgrading infrastructure facilities is an additional structural change confronting EGDI during the forthcoming IR period, and thus must be accounted for in its X factor…..Omitting an X factor component designed to measure future changes in infrastructure expenditures that differ from the past trends will lead to an incorrect X factor.

a) Please provide Enbridge's estimate, with supporting documentation, of the adjustment that would be required to the price cap formula to mitigate the risk of these significant changes beyond the amount provided in PEG's recommendation.

b) Please provide Enbridge's estimate, with supporting documentation, of the adjustment that would be required to the revenue cap formula to mitigate the risk of these significant changes beyond the amount provided in PEG's recommendation.

9. Ref: Enbridge Ex. B, Tab 1, Sch 1, pages 9-10 of 22, para 25

Issue Number: 3.3
Issue: What are the expected cost and revenue changes during the IR plan that should be taken into account in determining the appropriate X factor?

Enbridge states in evidence that IR plan challenges include managing cost increments within the plan for contracted services. A large portion of the Company's annual spending related to customer attachment and distribution network services benefits from a fixed unit price contract that has been in place since 2004. That contract will expire early in the IR plan and the current expectation is that the cost of these services will increase at a rate greater than the rate of inflation.

a) Does the fixed unit price contract contain an escalation factor (i.e., indexing parameters)? If so, please explain in detail.

b) What is the contract expiry date?

c) Why does Enbridge expect this contract to increase? Please explain.

   i. What is the expected rate of increase of this contract? Please explain.

10. Ref: Enbridge Ex. B, Tab 1, Sch 1, page 6 of 22, para 17

Issue Number: 3.3
Issue: What are the expected cost and revenue changes during the IR plan that should be taken into account in determining the appropriate X factor?

Enbridge states in evidence that its customer base continues to grow at about 2.5% per year (45,000 to 50,000 new customers are attached annually).

a) Does Enbridge expect this current growth rate to continue over the IR plan term?

   i. Please provide Enbridge's forecast, with supporting documentation, of new customer attachments during the IR plan.

11. Ref: Enbridge Ex. B, Tab 1, Sch 1, page 13 of 22, para 30

Issue Number: 3.3
Issue: What are the expected cost and revenue changes during the IR plan that should be taken into account in determining the appropriate X factor?

Enbridge states in evidence that it believes that the business conditions it faces: ….the potential for industrial volume loss…..

a) Please describe, with supporting documentation, the expected revenue changes during the IR plan attributed to the forecasted (potential) industrial volume loss.

12. Ref: Enbridge Ex. B, Tab 3, Sch 3, page 12 of 64

Issue Number: 4.2
Issue: How should the impact of changes in average use be calculated?

Enbridge states in evidence that in the context of Ontario's natural gas demand conditions shaping the average use of facilities is a significant element which causes future conditions facing the regulated firm to differ from historic conditions. In this case the X factor formula must account for future or prospective declines in average use that differs from past trends.

a) Please outline, with supporting documentation, the expected revenue changes during the IR plan attributed to forecasted declining average use.

b) Please provide Enbridge's estimate, with supporting documentation, of the adjustment that would be required to the price cap formula to mitigate the risk of these significant changes beyond the amount provided in PEG's recommendation.

c) Please provide Enbridge's estimate, with supporting documentation, of the adjustment that would be required to the revenue cap formula to mitigate the risk of these significant changes beyond the amount provided in PEG's recommendation.

13. Ref: Enbridge Ex. B, Tab 1, Sch 1, page 8 of 22, para 21

Issue Number: 4.2
Issue: How should the impact of changes in average use be calculated?

Enbridge states in evidence that given the new 2006 Ontario Building Code has improved energy efficiency standards, residential average use during the next five years will decline more than the historical trend, all else being equal.

a) Please provide a projection for each year of the proposed plan term of the impact of the new 2006 Ontario Building Code on average use.

14. Ref: Enbridge Ex. B, Tab 1, Sch 1, page 8 of 21, para 23

Issue Number: 4.2
Issue: How should the impact of changes in average use be calculated?

Enbridge states in evidence that the volumes and customers for the years 2002-2006 in Table 1 are the following:

Years	**EGD Volumes**[1] MN M^3	**PEG calculations of EGD's volumes**[2] MN M^3	**EGD Customers**[1] Mn	**PEG Calculations of Customers**[2] Mn
2002	11,776	11,275	1.565	1.567
2003	11,775	12,646	1.615	1.622
2004	11,775	12,257	1.676	1.676
2005	12,298	12,166	1.719	1.725

[1] Enbridge Ex. B, Tab 1, Sch 1, p 8 of 22, para 23, Table 1
[2] Enbridge Ex. D, Tab 2, Sch 1, p 54 of 106, Table 11a

2006	12,290	NA	1.793	NA
2007	11,776	NA	1.823	NA

a) Please confirm that Enbridge's annual volumes and number of customers outlined in Table 1 are based on Board approved forecasts.

b) Please confirm that the difference between Enbridge's annual volumes (Enbridge Ex. B, Tab 1, Sch 1, p 8 of 22, para 23) and PEG's annual volumes (Enbridge Ex. D, Tab 2, Sch 1, p 54 of 106) is due to the different weather normalization methodologies. Please explain.

c) Please explain the difference between Enbridge's annual number of customers (Enbridge Ex. B, Tab 1, Sch 1, p 8 of 22, para 23) and PEG's annual number of customers (Enbridge Ex. D, Tab 2, Sch 1, p 54 of 106).

15. Ref: Enbridge Ex. B, Tab 6, Sch 1, page 1 of 4, para 1

Issue Number: 5.1
Issue: What are the Y factors that should be included in the IR plan?

Enbridge states that the clearance of deferral and variance accounts will occur each year in conjunction with the April 1st QRAM and that it intends to clear the prior years December 31st year end actual balances.

a) Is Enbridge proposing to derive the unit rates for disposition (and effect the one-time adjustment on the customers' bill) based on actual consumption for the corresponding period?

b) Please explain why Enbridge is proposing to clear actual year-end balances as part of the April 1st QRAM instead of clearing forecast year-end balances in the January 1st QRAM?

c) Enbridge proposes to file, as part of the rate filing process, a forecast (eight months of actual and four months of forecast) of its deferral/variance account year-end balances. However, Enbridge is proposing that the actual year-end balances be cleared as part of the April 1st QRAM and not its January 1st QRAM. Is Enbridge proposing that an additional prudence review (i.e., an additional process) be conducted as part of the April 1st QRAM process to deal with the difference between forecast year-end balances and the actual year-end balances?

16. Ref: Enbridge Ex. B, Tab 5, Sch 1, pages 1-20 of 20

Issue Number: 5.1
Issue: What are the Y factors that should be included in the IR plan?

a) Please explain why the Deferred Rebate Account (DRA) will also include amounts arising from the differences between actual and forecast volumes used for the purpose of clearing deferral account balances.

b) Please provide an illustrative example of the accounting treatment for the amounts to be recorded in the proposed Storage and Transportation deferral account (S&TDA).

c) Enbridge proposes that the gas costs associated with the UAF variance be calculated at the end of the calendar year based on the estimated volumetric variance between the Board approved level and the estimate of the actual UAF. An adjustment will be made to the UAFVA in the subsequent year to record any differences between the estimated UAF and actual UAF. Based on Enbridge's proposal to clear actual year-end deferral/variance account balances as part of the April 1st QRAM, please explain why this variance account appears to require a different treatment.

a) Enbridge is proposing the establishment of a Municipal Permit Fees deferral account. Based on historical number of permits per year, please provide a forecast (or a range) of the amount that Enbridge expects to accumulate annually in this proposed deferral account.

   i. Please provide a list of municipalities in its franchise area that have passed a by-law to charge utilities for permits.

   ii. Does Enbridge propose that all permit fees be expensed or would some fees be capitalized? If so, please provide an itemization of permit categories and a description including rationale of their respective accounting treatment.

   iii. Did Enbridge consider applying for an adjustment to its 2007 base rates that would include a projection for municipal permit fees? Why was that option rejected?

a) Please explain the rationale for the continuation of the Ontario Hearing Costs variance account (OHCVA).

b) Please provide the annual amounts that were accumulated in the Debt Redemption deferral account (DRDA) over the last 10 years.

c) In Exhibit B1, Tab 1, Schedule 1, para. 41, Enbridge states that in the event that the Board revises the ROE Guidelines within the IR plan, the Company proposes that the ROE embedded in the plan be adjusted to reflect the revised Guidelines. Please explain the methodological differences between implementing a change in ROE during the plan term and any interests savings net of costs incurred as a result of a debt redemption.

d) Does the Income Tax Rate change Variance Account (ITRCVA) capture tax changes at the federal, provincial, and municipal level? Please explain.

17. Ref: Enbridge Ex. B, Tab 4, Sch 1, page 5 of 15, para 15

Issue Number: 5.1
Issue: What are the Y factors that should be included in the IR plan?

Enbridge in its evidence states that a customer attachment will take approximately 12 years to observe the cross-over from revenue deficiency to revenue sufficiency

a) Please provide detailed calculations, including all the assumptions, supporting the 12 year cross-over period.

b) Do Enbridge's 2007 base rates (i.e., approved revenue requirement) provide for the recovery of the aforementioned deficiency for customer projects that have been completed within the last 10 years?

c) Please confirm that, on average, subsequent to year 12, the revenue stream from the customers attached in the last 10 years exceeds costs to provide the service.

18. Ref: Enbridge Ex. B, Tab 4, Sch 1, pages 13-15 of 15, para 2-8

Issue Number: 5.1
Issue: What are the Y factors that should be included in the IR plan?

Enbridge states in evidence that projects proposed for Y factor treatment are:

- Leave to construct (LTC) projects
- Power generation customers
- System reinforcement and community expansion
- Safety and reliability

a) Does Enbridge believe that irrespective of a price cap or a revenue cap, it would propose that these types of capital expenditures be included as a Y factor?

19. Ref: Enbridge Ex. B, Tab 4, Sch 1, pages 13-15 of 15, para 2-8

Issue Number: 5.1
Issue: What are the Y factors that should be included in the IR plan?

Enbridge states in evidence that projects proposed for Y factor treatment are:

- Leave to construct (LTC) projects
- Power generation customers
- System reinforcement and community expansion
- Safety and reliability

a) Please provide a forecast over the IR plan term of the capital expenses (annual and total over the plan term) that Enbridge expects to pass-through to customers.

b) Please provide the details on how the annual capital expenses would be converted into a Y factor (or cost of service amount)?

c) Please quantify the financial impact on a typical residential and commercial customer. In particular, please quantify the financial impacts of capital expenses associated with system reinforcement and safety and reliability projects.

d) Please provide a forecast over the IR plan term of the reductions in O&M expenses (annual and total over the plan term) attributable to system reinforcement, cast iron replacement and safety & integrity programs.

   i. Does Enbridge propose these reductions in O&M be included in the amount to be passed through to customers? Please explain.

   ii. Please quantify the financial impact for a typical residential and commercial customer.

20. Ref: Enbridge Ex. B, Tab 1, page 17 of 22, para 40

Issue Number: 6.1
Issue: What are the criteria for establishing Z factors that should be included in the IR plan?

Enbridge states in evidence that Z factors be related to:

- Changes in statutes
- Changes in regulations
- Changes in financial accounting reporting requirement guidelines
- Regulatory orders
- Uninsured losses
- Litigation costs

a) Please give examples of each of the listed Z factor events. For example, do changes in statues include changes to provincial and municipal tax laws?

b) Please confirm that the Z factor amounts would be symmetrical (i.e., positive or negative amounts)?

21. Ref: Enbridge Ex. B, Tab 1, pages 19-20 of 22, para 6

Issue Number: 9.1
Issue: Should an off-ramp be included in the IR plan?

Enbridge states in evidence that an off ramp from the IR plan in the event that there are significant and unanticipated developments that threaten the sustainability of the plan (in terms of expected outcomes). Such developments could be natural (e.g., devastation in the franchise due to hurricanes, floods), social (e.g., war) or economic (e.g., high inflation).

a) Please provide examples of unexpected outcomes in terms of the IR plan.

b) Please confirm that the impact of inflation would be captured in the inflation factor, GDP IPI FDD.

c) Please explain why the amounts related to natural disasters such as “devastation in the franchise due to hurricanes and floods” should not be considered for recovery as a Z factor.

d) Does Enbridge envision an economic off-ramp that would include the situation where the actual earnings are below an acceptable ROE? Please explain.

22. Ref: Enbridge Ex. B, Tab 1, page 1 of 22, para 2

Issue Number: 10.1
Issue: Should an ESM be included in the IR plan?

In this exhibit, the Company provides the rationale for and details of the revenue cap, calculated on a per customer basis, for the five year period 2008 to 2012.

a) Please confirm that Enbridge is not proposing an ESM in the IR plan.

b) Please outline the rationale for Enbridge's position. For example, does Enbridge believe that an ESM dilutes the incentive to achieve efficiencies?

23. Ref: Enbridge Ex. B, Tab 6, Sch 1, page 4 of 4, para 12

Issue Number: 11.1
Issue: What information should the Board and stakeholders be provided with during the IR plan?

In its evidence on Reporting Requirements, Enbridge states that any further reporting requirements would be onerous and counterproductive.

a) Would filing the following additional information on an annual basis be onerous and counter-productive – Standard ROE calculation schedules and Capital expenditures (annual actual capital expenditures by USoA accounts)?

24. Ref: Enbridge Ex. D, Tab 3, Sch 1, pages 15-16

Issue Number: 12.1.1
Issue: What should be the information requirements?

In its application, Enbridge states that in the event that a final rate Order is not in place on January 1, 2008, the Company requests that interim rates be set and implemented as of January 1, 2008.

a) Please clarify if: 1) Enbridge is requesting that its 2007 base rates (once approved by the OEB) be declared interim as of January 1, 2008 or (2) the Company is intending to come forward with a proposal for an Interim Rate Order that would supersede, on an interim basis, the 2007 Board approved rates until such time that a final Rate Order is issued and effected in rates. If the latter is applicable, please indicate when Enbridge will be filing its proposal.

25. Ref: Enbridge Ex. B, Tab 6, Sch 1, page 2 of 4, para 4

Issue Number: 12.3.2
Issue: How should the changes in the rate design be implemented?

Enbridge states in evidence that it supports the Board staff's recommendation which allows the Company to apply for rate-related changes (i.e., rate re-design proposals) during the IR plan period.

a) Is Enbridge planning to adjust the fixed monthly charge and the variable charge on a revenue neutral basis during the IR plan?

   i. If yes, please explain.

b) Please provide Enbridge's target(s) and associated timelines for moving the fixed monthly charge towards full customer-related cost recovery. For example, is Enbridge planning to implement 100% of full customer-related cost recovery in the next 5 years?

c) Does Enbridge agree that an increase in the fixed monthly charge mitigates the impact of declining average use?

   i. If no, please explain?

d) If Enbridge applies to increase the fixed monthly charge during the IR plan term, is it Enbridge's view that a corresponding adjustment to the X factor should be performed?

   i. If no, please explain.

   ii. If yes, please describe the process in which the X factor would be adjusted.

26. Ref: Enbridge Ex. B, Tab 7, Sch 1, page 2 of 4, para 4

Issue Number: 13.1
Issue: What information should the Board consider and stakeholders be provided with at the time of re-basing.

a) Please provide a mock-up of Drivers of Deficiency exhibit which would, albeit in a re-basing context at the end of an IR term, provide parties, with as much as practically possible, the same usefulness as in past proceedings.

27. Ref: Enbridge Ex. B, Tab 7, Sch 1, page 1 of 4, para 3

Issue Number: 13.1
Issue: What information should the Board consider and stakeholders be provided with at the time of re-basing.

Enbridge proposes that at the time of re-basing, it would provide historical year actuals (2011), bridge year (2012) and test year (2013).

a) Please confirm whether Enbridge will be including in its historical year evidence "continuity of rate base by plant type" schedules (that would track the actuals for 2007, 2008, 2009, 2010 and 2011)?

   i. If no, please explain.

28. Ref: Enbridge Ex. B, Tab 1, Sch 1, page 21 of 22, para 52

Issue Number: 14.1
Issue: Are there adjustments that should be made to base year revenue requirements?

a) Is Enbridge aware of any specific costs or amounts, in excess of $1.5 million, that are being recovered or are reflected in 2007 rates and will not recur in 2008?

29. Ref: Enbridge Ex. B, Tab 3, Sch 3, page 4 of 64

Issue Number: 3.1
Issue: How should the X factor be determined?

Dr. Bernstein states that "X factor measures must account for the effects of lower rates of capacity utilization coupled with a simultaneous upgrading of infrastructure capital".

a) Enbridge has proposed to recover the cost of its capital expenditures during the IR period via a Y factor. Should the X factor reflect this fact and be higher than it would be in the absence of the Y factoring? Please explain.

30. Ref: Enbridge Ex. B, Tab 3, Sch 3, page 5 of 64

Issue Number: 3.1

Issue: How should the X factor be determined?

Dr. Bernstein states that "Since the IR plan under the OEB involves price rebasing at the end of the forthcoming IR period, it is redundant to include a positive stretch factor...Rebasing ensures that consumers benefit from productivity improvements, since the new prices they face encompass the firm's superior productivity performance".

a) Does Dr. Bernstein believe that rebasing ensures that customers benefit from all productivity improvements, or just those that result in sustained productivity increases? Please explain.

   i) For example, if a company has an opportunity in year 1 of a five year plan to reduce costs for three years, will rebasing ensure that consumers benefit from this initiative?

b) Of the numerous instances in which explicit stretch factors have been approved in IR plans for energy and telecom utilities, please identify those instances in which price rebasing was not anticipated.

c) Do companies have an incentive under some PBR plans to defer certain kinds of expenditures until the end of the plan and then to try to recover them in the next rate case? Please explain.

   i) Is it possible, because of this problem, that customers sometimes do not experience any net benefits from PBR at the time of rebasing? Please explain.

31. Ref: Enbridge Ex. B, Tab 3, Sch 3, page 6 of 64

Issue Number: 3.1
Issue: How should the X factor be determined?

Dr. Bernstein states that "PEG's model contains severe restrictions prohibiting parameters to differ among firms, not just for a single year but for all years of a sample. This feature is particularly troubling since the model is purported to be used for benchmarking purposes (for example to set TFP targets)".

a) Econometric cost models that are estimated using panel data sometimes allow the intercept (constant) term of the model to vary between companies. Since PEG did not use the intercept term in his TFP trend benchmarks, is it Dr. Bernstein's view that intercept terms are germane to the calculation of a TFP trend benchmark?

   i) If yes, please provide the rationale, including the supporting mathematical theory.

b) With regard to the slope parameters (e.g., those for the output variables) that PEG uses to construct TFP trend benchmarks, does Dr. Bernstein believe that it is conventional in econometric cost studies, and more particularly those used in benchmarking, for these parameters to vary between companies?

   i) Please provide examples where this has been done in benchmarking.

32. Ref: Enbridge Ex. B, Tab 3, Sch 3, page 6 of 64

Issue Number: 3.1
Issue: How should the X factor be determined?

Dr. Bernstein states that "PEG also imposed parameter restrictions associated with the variables determining the degree of returns to scale and the rate of technological change. These are critical constraints".

a) Please identify the critical constraints that PEG has made.

b) Does Dr. Bernstein believe that this the constraints that PEG imposed on the functional form impart an upward bias to the resultant TFP trend target?

   i) If yes, please provide rationale.

33. Ref: Enbridge Ex. B, Tab 3, Sch 3, page 6 of 64

Issue Number: 3.1
Issue: How should the X factor be determined?

Dr. Bernstein states that "Since the data are not provided in PEG's study, it is impossible to discern how sensitive estimates of the degree of returns of scale and rate of technical change are to various parameter restrictions. This is unacceptable."

a) Did Enbridge request the data used by PEG in its econometric cost research?

b) Is Dr. Bernstein aware that data similar to those used by PEG can be purchased in the GasDat data package?

c) Has Enbridge attempted to develop econometric cost models independently using U.S. data?

i) What were the results?

34. Ref: Enbridge Ex. B, Tab 3, Sch 3, page 7 of 64

Issue Number: 3.1
Issue: How should the X factor be determined?

Dr. Bernstein states that "PEG also erroneously assumes that the capital input in a capital intensive industry like Ontario's gas utility industry can be readily and freely adjusted".

a) Does Dr. Bernstein believe that there is some alternative to a long run cost function that is more suitable for the development of TFP targets?

i) If yes, please provide a thorough description.

35. Ref: Enbridge Ex. B, Tab 3, Sch 3, page 19 of 64

Issue Number: 3.1
Issue: How should the X factor be determined?

Dr. Bernstein states that "a cost elasticity share-weighted industry TFP growth rate differs from the revenue share-weighted TFP growth rate and the former rate generally provides no guidance as to the appropriate PD component, and resulting X factor under IR".

a) Does Dr. Bernstein acknowledge that, given the current rate design of Enbridge and its slow volume/customer growth, its X factor will be substantially lower using a revenue weighted output index than using an elasticity weighted output index?

b) In Exhibit B, Tab 1, Sch 1, page 2 of 22, Enbridge states, "The costs of a distribution utility are closely aligned with the number of customers it serves. Each new customer represents new capital costs associated with attachment to the system (mains, service lines, meters) and new operations and maintenance costs (customer care, meter reading, billing and collection). It is appropriate therefore that a revenue adjustment mechanism recognize the increase in the number of customers as the measure of system growth." What is the rationale behind using a TFP index in the calculation of Enbridge's proposed X-factor that does not match the assertion that customer growth is "closely aligned" with cost growth but instead uses the much slower growing revenue-weighted TFP index?

c) In the proceeding that lead to the establishment of the "TPBR" plan, which involved the indexation of the revenue requirement for the O&M expenses

of Enbridge, the Company's witness Dr. Melvyn Fuss of the University of Toronto used the number of customers as the measure of output for the productivity index. The Board also agreed to this approach. Please justify Dr. Bernstein's approach.

d) Does Dr. Bernstein believe that TFP indexes used in an IR plan to cap growth in revenue per customer should use a revenue-weighted output index?

   i) If yes, please provide the rationale, including the mathematical reasoning.

36. Ref: Enbridge Ex. B, Tab 3, Sch 3, page 24 of 64

Issue Number: 3.1
Issue: How should the X factor be determined?

Dr. Bernstein states that "Next in line with PEG assign the AU term...of the pricing formula to R&C customers".

a) Please indicate where in PEG's study it takes this step.

37. Ref: Enbridge Ex. B, Tab 3, Sch 3, page 28 of 64

Issue Number: 3.1
Issue: How should the X factor be determined?

Dr. Bernstein states that "structural changes related to changing demand conditions...are not accounted for in the X factor associated with PEG's RCI".

a) Please explain why demand conditions are relevant in the design of an X factor for a revenue cap index when a balancing account ensures full recovery of losses from slow volume growth.

38. Ref: Enbridge Ex. B, Tab 3, Sch 3, page 29 of 64

Issue Number: 3.1
Issue: How should the X factor be determined?

Dr. Bernstein states that "The sample period for the IPD component differs from the PD component...This is inconsistent and could lead to sample cherry picking."

a) Suppose that the only sample period available for the calculation of the PD is quite unsuitable for the calculation of the IPD. Does Dr. Bernstein believe that the same period should be used for both even in this instance?

b) Does Dr. Bernstein believe that PEG has in fact engaged in cherry picking?

39. Ref: Enbridge Ex. B, Tab 3, Sch 3, page 29 of 64

Issue Number: 3.1
Issue: How should the X factor be determined?

Dr. Bernstein states that "The reason that PEG's IPD is more volatile than the PD term is that PEG uses inconsistent input prices. Industry TFP growth is based on PEG's econometric model, and so the input price index should be based on this model".

a) Please explain how PEG's econometric model, which was estimated using U.S. data, should be used to calculate the IPD for a Canadian utility.

40. Ref: Enbridge Ex. B, Tab 3, Sch 3, page 36 of 64

Issue Number: 3.1
Issue: How should the X factor be determined?

Dr. Bernstein states that "under the COS approach the assumption that revenue equals cost influences econometric estimates of the degree of returns to scale. In fact, the bias may result in inadvertently overestimating the degree of returns to scale."

a) Please indicate where, in PEG's explanation of the COS approach to capital costing, PEG assumes that revenue equals cost.

41. Ref: Enbridge Ex. B, Tab 3, Sch 3, page 38 of 64

Issue Number: 3.1
Issue: How should the X factor be determined?

Dr. Bernstein states that the fact that PEG's econometric model yields a TFP target that differs markedly from the company's actual TFP growth "indicates that PEG's model does not actually describe EGDI's cost determinants."

a) Does Dr. Bernstein believe that the actual TFP trend of a company will always be similar to the trend of a properly specified econometric projection?

b) PEG states in Enbridge Ex. D, Tab 3, Sch 1, page 44 of 113 that "In marked contrast with the US trend, the partial factor productivity index for the use of O&M inputs by Enbridge fell at a 0.70% average annual pace. PFP fell by more than 11% in 2003 and did not subsequently regain much of the lost ground". Does Dr. Bernstein agree with PEG's findings? Please explain.

c) Dr. Bernstein states on p. 9 of his evidence that the strong incentives under IR "derive from the fact that IR operates much like a fixed price contract...Conversely, traditional earnings regulation operates much like a cost plus contract. As a result, the prices consumers pay tend to vary continually with the reported cost of the firm". Since Enbridge has operated mainly under COS regulation after the end of its TPBR plan, does this suggest that this could have materially slowed its TFP growth?

42. Ref: Enbridge Ex. B, Tab 3, Sch 2, pages 2-3 of 24

Issue Number: 3.1
Issue: How should the X factor be determined?

Dr. Carpenter states that "At the moment, the model and the underlying data with which it is estimated have not been provided to parties in this proceeding, and thus PEG's results cannot be reproduced, tested, or validated at this time...Without full disclosure of the model and its underlying data it cannot provide a transparent basis for establishing future prices for EGDI."

a) Has Enbridge at any time been refused access to PEG's data or to details of his econometric work?

b) Does Dr. Carpenter acknowledge that similar data are available in the GasDat data package?

43. Ref: Enbridge Ex. B, Tab 3, Sch 2, page 5 of 24

Issue Number: 3.1
Issue: How should the X factor be determined?

Dr. Carpenter states that "PEG does not include a variable that reflects changes in customer density despite the fact that PEG and others have recognized this to be a critical component of gas distribution costs and necessary to correctly capture scale economies." .

a) Please identify all econometric studies of gas distribution cost that Dr. Carpenter has seen in which customer density has been found to be a statistically significant cost driver.

b) Is it Dr. Carpenter's view that gas distributor cost is higher or lower with higher density?

c) Would the "correct" treatment of customer density raise or lower the TFP index trend of EGDI or its econometric target?

44. Ref: Enbridge Ex. B, Tab 3, Sch 2, page 8 of 24

Issue Number: 3.1
Issue: How should the X factor be determined?

Dr. Carpenter states that "the companies that make up the peer group that PEG has chosen for EGDI do not have business characteristics that are similar to EGDI".

a) PEG discusses the drivers of productivity. Does Dr. Carpenter have issues with PEG's discussion of TFP growth drivers or the mathematical theory on which it is based?

b) Please explain why the static business conditions (e.g., throughput per customer, density, and cast iron mains) that Dr. Carpenter emphasizes in recommending a northeast peer group are especially important drivers of TFP growth.

    i) Please provide empirical evidence to substantiate this claim.

c) Does a finding that utilities in the northeast have a higher cost level have any necessary bearing on the pace of TFP growth?

d) Dr. Carpenter states on p. 7 that "EGDI [presumably meaning PEG] calculates a TFP for EGDI by taking a simple average of the TFP estimates that PEG calculates for each of the utilities in EGDI's peer group using the econometric model". Does the fact that the average TFP index trend of companies realizing large scale economies differs greatly from the sample mean, support PEG's contention that this is a critically important consideration in the selection of a TFP target for Enbridge?

e) The output growth and TFP growth of the sampled northeast distributors are both well below the sample norm. Does this finding support the hypothesis that the realization of incremental scale economies is an important TFP driver?

f) The companies in PEG's northeast sample do not appear to have realized substantial scale economies due, in part, to output growth that is much slower than that in the service territories of Union Gas and EGDI. Is this a disadvantage of limiting the peer group to utilities in the northeastern U.S., as Dr. Carpenter recommends?

g) Union Gas had a productivity trend much higher than that of EGDI during the sample period. Does Dr. Carpenter's recommended approach to peer group selection not suggest that Union would be a good peer?

h) What are the annual customer growth rates for each utility in Dr. Carpenter's proposed peer group for the 2000-2005 period?

i) What are the annual customer levels for each utility in Dr. Carpenter's proposed peer group for the 2000-2005 period?

45. Ref: Enbridge Ex. B, Tab 3, Sch 2, page 18 of 24

Issue Number: 3.1
Issue: How should the X factor be determined?

Dr. Carpenter states that "PEG's model provides no support for an empirical finding that EGDI has a greater prospect for the realization of scale economies than smaller firms in the U.S. sample".

a) Is it Dr. Carpenter's view that the addition of a density variable to the cost model would overturn the result that Enbridge is positioned to realize greater incremental scale economies?

b) Does the rapid customer growth of Enbridge have no bearing on the company's potential to earn scale economies?

46. Ref: Enbridge Ex. B, Tab 3, Sch 2, page 18 of 24

Issue Number: 3.1
Issue: How should the X factor be determined?

Dr. Carpenter states that "PEG's reasoning that the prospects for the realization of scale economies by a gas distribution company is inversely related to initial operating scale is faulty. At some point scale economies will plateau or be exhausted."

a) Is it Dr. Carpenter's opinion that a company the size of Enbridge has exhausted its potential to realize incremental scale economies?

i) If yes, please provide empirical substantiation for this claim.

47. Ref: Enbridge Ex. B, Tab 3, Sch 1, page 9 of 37, para 20-21

Issue Number: 3.1
Issue: How should the X factor be determined?

The input quantity subindexes displayed in the table on this page differ modestly from those reported in PEG's study.

a) Please discuss possible sources of the discrepancies.

48. Ref: Enbridge Ex. B, Tab 3, Sch 1, page 10 of 37, para 22

Issue Number: 3.1
Issue: How should the X factor be determined?

Mr. Lister states that "the Company has experienced some of the highest customer growth rates across Canada, which results in high upfront costs to support a long payback period, which would put downward pressure on the Company's measured TFP relative to other distributors".

a) Does Mr. Lister have issues with PEG's discussion of sources of TFP growth on pages 6 and 7 of his evidence?

   i) If yes, please explain.

b) In that discussion, PEG identifies economies of scale as a potentially important source of TFP growth. If a company is in a position to realize incremental scale economies, doesn't rapid customer growth produce greater incremental economies than slow growth?

   i) If yes, how then can Mr. Lister be sure that rapid customer growth slows TFP growth on balance?

49. Ref: Enbridge Ex. B, Tab 3, Sch 1, page 12 of 37, para 26

Issue Number: 3.1
Issue: How should the X factor be determined?

Mr. Lister states concerning PEG's econometric projections that "it is not clear if other important variables, which are included in the U.S. model, are applied to the Company specific estimates. These parameters include the number of electric customers, the percentage of non-cast iron miles of main, and dummies to represent region and urban service providers".

a) Since Enbridge has no electric customers, would Mr. Lister agree that no adjustment for electric customers is appropriate?

b) Since Enbridge's status as a company serving an urban core is unchanged, would Mr. Lister agree that no adjustment for this variable is appropriate.

c) Since the company's reliance on cast iron is declining, and the % non-iron variable has a negative sign, would Mr. Lister agree that an adjustment for this variable using the econometric results would raise the company's econometric TFP target?

50. Ref: Enbridge Ex. B, Tab 3, Sch 1, page 15 of 37, para 34

Issue Number: 3.1
Issue: How should the X factor be determined?

Mr. Lister states that "creating a relevant peer group on the basis of similar operating characteristics should be the ultimate goal".

a) PEG's econometric projections and peer group are both based on mathematical and empirical research on the drivers of TFP growth. Does Mr. Lister agree with this general approach?

    i) Does Mr. Lister believe that substantial weight should be paid in peer group selection to drivers of cost levels even if they have no bearing on growth?

    ii) If yes, please provide a full substantiation for this view.

b) PEG's research suggests that large gas utilities with rapid customer growth have opportunities to earn substantial scale economies. Please indicate which companies in the northeastern U.S. have these twin characteristics.

51. Ref: Enbridge Ex. B, Tab 3, Sch 1, pages 22-23 of 37, para 49-52

Issue Number: 3.1
Issue: How should the X factor be determined?

Mr. Lister presents some numerical results to show that a stretch factor reduces performance incentives. In this analysis, the NPV of a cost containment initiative is linked to the external trend in the company's prices during the plan period.

a) Would a Hamilton steel producer cut back on cost cutting initiatives because it expected prices in the North American market to decline over the next five years?

    i) If yes, why would a PCI that contains a stretch factor that is insensitive to decisions concerning cost cutting initiatives have a different effect?

52. Ref: Enbridge Ex. B, Tab 3, Sch 1, page 25 of 37, para 58

Issue Number: 3.1
Issue: How should the X factor be determined?

Mr. Lister proposes to use EGDI's own productivity trend as the productivity target.

a) Why wouldn't the TFP trend of Union provide a more appropriate TFP target?

53. Ref: Enbridge Ex. B, Tab 3, Sch 1, page 27 of 37, para 63

Issue Number: 3.1
Issue: How should the X factor be determined?

Mr. Lister notes that PEG partner Larry Kaufmann once testified in support of a negative productivity differential for Boston Gas.

a) Please explain why this would validate a negative productivity trend for Enbridge.

54. Ref: Enbridge Ex. B, Tab 3, Sch 1, page 28 of 37, para 67

Issue Number: 3.1
Issue: How should the X factor be determined?

The input price subindexes displayed in the table on this page differ modestly from those reported in PEG's study.

a) Please discuss possible sources of the discrepancies.

55. Ref: Enbridge Ex. B, Tab 3, Sch 1, page 29 of 37, para 69

Issue Number: 3.1
Issue: How should the X factor be determined?

Mr. Lister states that "the largest customer benefit [from IR] is derived through the rebasing mechanism."

a) Does Mr. Lister acknowledge that utilities under IR sometimes defer maintenance and capital spending during the plan term and then file a request for sharply higher rates at the plan's conclusion?

    i) Is it possible for this strategy to eliminate the net gains of a rate rebasing for customers?

b) Did rebasing at the conclusion of Enbridge's TPBR plan produce material gains for customers? Please explain.

56. Ref: Enbridge Ex. B, Tab 3, Sch 1, page 33 of 37, para 80-82

Issue Number: 3.1
Issue: How should the X factor be determined?

Mr. Lister discusses the investment challenges facing Enbridge.

a) Please discuss in more detail the new investment requirements posed by the TSSA.

b) Please provide the data and descriptions of the planned future replacement and modernization of infrastructure capital, specifically the planned replacement of cast iron pipes.

    i) Please show how this significantly differs from the past trends and trends of the U.S. sample at large. Please include historical (for years 2000-2005) and projected data concerning Enbridge's total line miles and the percentages of same that are made of cast iron and bare steel.

    ii) Should expenses like these not be excluded from calculations to establish a TFP target for Enbridge?

57. Ref: Enbridge Ex. B, Tab 1, Sch 1, page 6 of 22, para 18

Issue Number: 3.1
Issue: How should the X factor be determined?

Enbridge states that in an IR plan there would not be any return on replacement capex such as that pertaining to cast iron and bare steel main replacement since they do not add "volumes or revenues".

a) The TFP research reflects a steady stream of replacement investments by the sampled gas utilities. In the absence of these investments, the PD term of the X factor would be higher, slowing rate growth. Doesn't this effectively provide a budget for replacement investment?