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BARRISTERS & SOLICITORS

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ONTARIO ENERGY BOARD
EB-2007-0606/EB-2007-0615

| OEB BOARD SECRETARY | |
|---|---|
| File No | Sub File 9 |
| Panel | G.K./P.S./C.C. |
| Licensing | R.B./L.K./P.D. |
| Other | M.H./A.P./V.C. |
| | M.M. |
| 00/04 | CCC IRs Union/EGDI |

CCC/VECC IRs Board Staff
CCC/VECC IRs EGDI

August 20, 2007

**DELIVERED**

Kirsten Walli
Board Secretary
Ontario Energy Board
Suite 2701
2300 Yonge Street
Toronto, ON M4P 1E4

Dear Ms. Walli:

**Re: EB-2007-0606/EB-2007-0615**

We are counsel to the Consumers Council of Canada. On behalf of our client, and on behalf of the Vulnerable Energy Consumers Coalition ("VECC"), we enclose eleven (11) copies of the following:

1. Our client's interrogatories to Enbridge Gas Distribution Inc. ("EGD");
2. our client's interrogatories to Union Gas Ltd.;
3. the interrogatories of our client and VECC to Board Staff; and
4. the interrogatories of our client and VECC to EDG.

Electronic copies in both Word and PDF format have been sent to you by e-mail.

Yours very truly,

**WeirFoulds LLP**

Robert B. Warren

RBW/ag

*c: Patrick Hoey, Enbridge Gas Distribution Inc.*
*Mike Packer, Union Gas Ltd.*
*Michael Buonaguro*
*Julie Givan*
*All Parties*

**UNION GAS LIMITED**
**ENBRIDGE GAS DISTRIBUTION INC.**
**EB-2007-0606 / EB-2007-0615**

**INTERROGATORIES FOR ENBRIDGE GAS DISTRIBUTION**

**FROM THE CONSUMERS COUNCIL OF CANADA**

## 1. Multi-Year Incentive Ratemaking Framework

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

B/T1/S1/p. 22
Please provide a copy of the survey referred to in the evidence, "*An International Survey of Performance Based Regulation Mechanisms Approved by Energy Regulators*."

B/T1/S1
Under what circumstances would EGD accept the use of a price cap model for the determination of its rates?

### 1.2 What is the method for incentive regulation that the Board should approve for each utility?

B/T1/S1/p. 2
For the period 1996-2006 please provide the cost per customer breaking out both capital costs and O&M costs for each year. Please provide the forecast numbers and actuals.

B/T1/S1/p. 2
For the period 1996-2006 please provide the forecast and actual levels of customer attachments for each year.

B/T1/S1/p. 5
Did EGD originally plan to seek approval of a price cap incentive regulation framework? If so, when did it reject that framework? And if so, please provide copies of all records, whether internal or external, related to the decision to switch from a price cap to a revenue cap framework.

B/T1/S1/p. 5
EGD states that customer attachments have been at a pace of 45,000 to 50,000 per year. For the period 2008-2012 please provide EGD's current forecast of attachments for each of those years. Please include all assumptions used in arriving at that forecast.

B/T1/S1/p. 8
The evidence states that EGD's unit distribution rate, as approved by the Board has grown at an average annual rate of 3.83%. For each year 1996-2006 please provide the unit increase for each rate class. Also, please provide the average annual rate for each of those years.

B/T1/S1/p. 22
EGD refers to it cast iron replacement program in terms of differentiating itself from Union. Please provide a schedule which sets out the expected expenditures for the program through to the completion of the program. For each year of the program since its inception please provide forecast and actual expenditure levels.

B/T1/S1
Why does EGD prefer an incentive regulation model for rate-making rather than a cost of service approach? Why is EGD's revenue cap proposal better for ratepayers than the current rate-setting approach? Why is it better for EGD's shareholders?

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

B/T1/S1
EGD is not proposing to eliminate the risk to its shareholders associated with weather. Please indicate why EGD continues to support the status quo. If weather risk was eliminated for EGD's shareholders does EGD agree that its cost of equity and/or equity thickness levels would have to be adjusted to reflect the lower risk. If not, why not? If so, how should they be adjusted?

**2. Inflation Factor**

**2.1 What type of index should be used as the inflation factor (industry specific index or macroeconomic index)?**

**2.2 Should the inflation factor be based on an actual or forecast?**

B/T2/S1
Please explain how, in the context of EGD's proposed IR plan inflation would be adjusted? Does EGD support the use of actual or forecast inflation numbers?

**2.4 Should the gas utilities ROE be adjusted in each year of the incentive regulation (IR) plan using the Board's approved ROE guidelines?**

B/T2/S1
Please provide- EGD's position as to how the ROE level should be determined in the context of its plan.

B/T1/S1 p. 5
Does EGD have a target ROE which it plans to achieve during the proposed period of incentive regulation? If so, what is the target? Please provide all reports and analysis, whether internal or external, on which that target is based?

**3. X Factor**

**3.1 How should the X factor be determined?**

B/T3/S1/p. 32
The evidence states, "Economists generally agree that the housing sector has nowhere to go but down, which will take the pace of customer ads down with it as well." Please provide evidence to support this statement. Please indicate how, specifically, this applies to EGD's franchise area.

B/T3/S1/p. 32
The evidence states that, "Going forward the one bright spot for increasing output is the growing interest in gas fired electricity generation." Please provide a forecast for the 2008-2012 period of gas fired generation throughput expected to come on line in EGD's franchise area.

**4. Average Use Factor**

**4.1 Is it appropriate to include the impact of changes in average use in the annual adjustment?**

D/T4/S1
Please provide the complete terms of reference for the IndEco Research report.

B/T3/S1/p. 31
Please provide evidence to support the claim that there is a trend towards multi-family residential dwellings. Specifically, what evidence does EGD have to support the comment that this "trend" has impacted average annual use in its franchise area?

**4.2 How should the impact of changes in average use be calculated?**

B/T1/S1/p. 8
The evidence states that given the new 2006 Ontario Building Code has improved efficiency standards residential average use during the next 5 years will decline more than the historical trend, all else being equal. Please quantify the expected impact. Also, please provide all assumptions used in estimating the impact.

B/T1/S1/p. 10
Please explain how recognizing the impact of declining average use is "a built-in proxy for the productivity challenge."

## 5. Y Factor

### 5.1 What are the Y factors that should be included in the IR plan?

B/T4/S1/p. 12
EGD is proposing Y factor treatment for several capital cost categories. Please indicate what proportion of EGD's capital budget in any given year will be subject to pass-throughs under EGD's proposal.

B/T4/S1/p. 5
EGD has identified residential customer attachments as a challenge the Company faces in the context of an incentive regulation regime. What specific relief is EGD seeking regarding residential system expansion? Under EGD's proposal how will system expansion be treated?

B/T4/S1/p. 5
EGD expresses a concern that with respect to residential system expansion undertaken during an IR period the cross-over from revenue deficiency to revenue sufficiency associated with these projects is approximately 12 years. Please explain why this would not be offset by projects undertaken in prior years that would cross over during the plan period.

B/T4/S1/p. 13
EGD is proposing to establish Y factors for Leave to Construct Projects. Please explain, specifically, how these projects will be treated during the plan period and how the costs and revenues associated with these projects will be incorporated into rates. Would they be added to rate base during the plan? If so, how?

B/T4/S1/p. 13
EGD is proposing to establish a Y factor for Power Generation Customers. Please explain, specifically, how the revenues and costs associated with these customers will be treated during the plan and incorporated into rates. Would they be added to rate base during the plan? If so, how?

B/T4/S1/p. 14
EGD is proposing that "large scale system expansion and reinforcement pipeline projects" be treated as a Y factor. What constitutes "large scale"? Please explain EGD's proposal to deal with these projects during the plan period. Please identify, specifically, how the costs and revenues associated with these projects will be treated during the plan and incorporated into rates. Would they be added to rate base during the plan? If so, how?

B/T4/S1/p. 14
EGD is proposing that "safety and reliability projects" be treated as Y factors. Please explain, specifically, how the revenues and costs associated with these projects will be treated during the plan and incorporated into rates. Will they be added to rate base during the plan? If so, how?

B/T4/S1/p. 13
EGD is proposing that the following categories of capital expenditures be included under the IR model as Y factors: "Leave to Construct Projects", "Power Generation Customers", "System Reinforcement and Community Expansion" and "Safety and Reliability". For each year 2000-2006 please identify how much of the overall capital budgets related to each of these categories. If so, how?

B/T4/S1/p. 13
Please provide the forecast level of costs and benefits associated with the EnVision Project for the duration of the project. Please identify the cost and benefit levels associated with the EnVision Project that are currently embedded in the 2007 rates. How will EGD ensure that the benefits associated with the EnVision Project flow through to ratepayers during the IR plan term? Would EGD support the establishment of a Y factor to ensure the EnVision benefits that are realized flow to ratepayers? If not, why not?

## 6. Z Factor

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

B/T1/S1, p. 18
EGD has cited "uninsured losses" and "litigation costs" as potential Z-factors. Please explain specifically what types of uninsured losses and litigation costs are contemplated.

B/T5/S1/p. 7
Please identify any changes EGD is proposing with respect to its 2008 Purchased Gas Variation Account.

B/T5/S1/p. 7
Please fully explain how the costs and revenues associated with the Electric program Earnings Sharing Deferral Account are currently treated. Please explain the way in which EGD calculates the fully allocated costs associated with these initiatives.

B/T5/S1/p. 15
EGD is proposing a new account, the 2008 Municipal Permit Fees Deferral Account. Please provide an estimate of the costs expected to be captured in that account in 2008. Please provide all assumptions used to arrive at that forecast.

**8. Term of the Plan**

**8.1 What is the appropriate plan term for each utility?**

B/T1/S1/p. 18
EGD proposes a term of five years for its IR plan period. Specifically, the evidence states that "a longer term is desirable to provide sufficient horizon for the recovery of investments and to identify and capture capital program efficiency improvements." Please provide examples of the capital program efficiency improvements EGD is referring to that would be restrained within the context of a shorter term plan.

**10. Earning Sharing Mechanism (ESM)**

**10.1 Should an ESM be included in the IR plan?**

B1/T1/S1
Please explain, in detail, why EGD is opposed to an Earnings Sharing Mechanism. Please explain, under what circumstances, EGD would support an ESM for its IR plan.

**UNION GAS LIMITED**
**EB-2007-0606 / EB-2007-0615**

**INTERROGATORIES FOR UNION GAS LIMTED**

**FROM THE CONSUMERS COUNCIL OF CANADA**

## 1. Multi-Year Incentive Ratemaking Framework

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

B/T1/p. 2
Union cites the Board's NGF Report, "A properly designed plan will ensure downward pressure on rates by encouraging new levels of efficiency in Ontario's gas utilities – to the benefit of customers and shareholders". Please identify, specifically, what new levels of efficiency Union plans to implement and how Union will ensure a downward pressure on rates during its IR plan period under its proposed plan.

B/T1/p. 2
Please explain, in detail, why Union does not support an earnings sharing mechanism as a part of its price cap plan. Please provide evidence as to how an earnings sharing mechanism has, in the past, inhibited Union from implementing productivity initiatives that would benefit Union's shareholders and ratepayers.

B/T1/p. 5
Union's evidence states that, "The benefit of productivity improvements, both cost efficiency gains and growth, should ultimately be shared between customers and the utility." Please explain, how, under Union's proposal productivity improvements would be shared with its customers during the plan.

B/T1/p. 12
Please explain why it would be fair to ratepayers to eliminate the three transmission related accounts. Please provide a schedule which sets out for each year since the accounts were established the total amounts in each account. Also, please provide the amounts cleared to ratepayers and shareholders in each of those years.

B/T1/p. 19
Under what conditions would Union support a revenue cap mechanism for its IR plan.

B/T1
Please provide copies of all documents presented to Union's senior management, Board of Directors and its shareholders in seeking approval of Union's proposed price cap plan.

## 3. X Factor

### 3.1 How should the X factor be determined?

B/T1/p. 24
Union's evidence states that the rate indexing research that supported PEG's proposed price cap design and overall IR recommendations for Union and Enbridge "appear to be strong conceptually and generally consistent with the approach in other jurisdictions." What empirical analysis did Union undertake in assessing PEG's data? Please provide copies of any studies or reports Union produced in response to the PEG study.

B/T1/p. 36
Union has proposed its own method of calculating the X factor attributable to the general service class which differs from the approach proposed by PEG. Please provide examples of this method being applied in the context of other IR plans, if any. What evidence can Union provide to support its proposal that a 2.24 PCI is appropriate?

B/T1/p. 37
Is the differential between 2.24 and 1.12 PCs for general service and all other rate classes entirely related to historical declines in average use? If not, please explain what the differential is attributable to.

### 3.2 What are the appropriate components of an X factor?

B/T1/p. 32
Union has rejected the incorporation of a stretch factor in the determination of its proposed X-factor. Union's evidence is that volatile gas prices as one reason for decreasing throughput and revenue and therefore the need for a stretch factor. If the OPA undertakes significant fuel switching initiatives over the next few years has Union assessed the potential impact on its throughput? If these initiatives materialize how will they be treated during the IR plan? Would Union support a Z-factor to deal with the potential impact of fuel-switching? If not, why not?

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

## 4. Average Use Factor

### 4.2 How should the impact of changes in average use be calculated?

B/T1/p. 24
Please provide evidence which supports the determination of the -.72 average use factor adopted by Union. What analysis has Union done to determine its applicability to Union?

**5. Y Factor**

**5.1 What are the Y factors that should be included in the IR plan?**

B/T1/p. 12
Union is proposing that the base rates be adjusted to reflect the impact of moving to the 20-year declining trend weather forecasting methodology. Please explain how the $7 million amount was calculated.

**6. Z Factor**

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

B/T1/p. 39
Union is not proposing any new deferral accounts other than those established in the base year. Please provide a complete list of all existing deferral accounts and the approved method of accounting for each account.

B/T1/p. 40
Union has referred to Late Payment Penalty costs as a possible example of inclusion as a Z-factor. Please identify, to the extent possible, the expected LPP costs to be included in such an account.

B/T1/p. 41
Union has listed Permit Fees as a potential Z-factor category. Please estimate the potential annual costs associated with permit fees.

B/T1
What is the expected ongoing cost of implementing GDAR for Union over and above what is in Union's base rates? How will those

**8. Term of the Plan**

**8.1 What is the appropriate plan term for each utility?**

B/T1/p. 16
Union is proposing a 5-year term plan. The evidence states that, the term of a price cap plan must be long enough to justify incurring the implementation costs required to pursue the productivity improvements. Please provide examples of productivity initiatives that would be undertaken in a five-year plan but could not be undertaken in a three or four year time period.

**9. Off-Ramps**

**9.1 Should an off-ramp be included in the IR plan?**

B/T1/p. 42
Union's evidence is that within the context of a properly constructed IR plan there is no need for off-ramps. Under what circumstances would Union support an off-ramp? Please explain.

**12.3 Changes in Rate Design**

**12.3.1 What should be the criteria for changes in rate design?**

B/T1/p. 17
Union's evidence states that it would like the opportunity to adjust the fixed and variable charges annually. Please provide Union's proposals in terms of how it intends to adjust the fixed and variable components under its proposed 5-year plan.

B/T1/p. 17
Union's evidence is that it requires the flexibility to respond to a changing marketplace by developing new services. Please identify all new services contemplated and how those services will be priced.

**12.4 Non-Energy Services**

**12.4.4 What should be the information requirements for new non-energy services?**

B/T1/p. 41
Union's evidence is that it expects that if changes are required to the non-energy charges during the plan it will provide the Board with evidence that supports the change. What type of approval process is contemplated? Would it be outside Union's annual review process? Please provide details as to how these changes would occur. From Union's perspective would prior Board approval be required? If not, why not?

**UNION GAS LIMITED**
**ENBRIDGE GAS DISTRIBUTION INC**
**EB-2007-0606 / EB-2007-0615**

**ONTARIO ENERGY BOARD STAFF**

**FROM THE CONSUMERS COUNCIL OF CANADA AND THE VULNERABLE ENERGY CONSUMERS COALITION**

## INTRODUCTION

1. For the purposes of these interrogatories the study performed by the Pacific Economics Group, "Rate Adjustment Indexes for Ontario's Natural Gas Utilities," June 20, 2007 will be referred to as the "PEG TFP Study."

2. For the purposes of these interrogatories the study performed by the Pacific Economics Group, "Price Cap Index Design for Ontario's Natural Gas Utilities," March 30, 2007 will be referred to as the "March Preliminary Study."

3. Where the information requested is not available in the precise form described in the question, or is not available for all years indicated, please provide all information with respect to the subject matter, which is available to you.

4. All information for which the original document is kept in electronic format should be provided in both its original electronic format and in hard copy. The format of the electronic copies should match the format of the original document. If the original format was created in a spreadsheet, provide the spreadsheet with the equations intact. If the original format contained any supporting mathematical calculations provide the supporting calculations.

5. All of the interrogatories relate to issues 3.1 and 3.2.

### 3.1 How should the X factor be determined?

### 3.2 What are the appropriate components of an X factor?

1. 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.

2. 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.

3. 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 Embridge 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 Embridge used to calculate the "weights." Please provide the same information for that supported Table 15a in the March Preliminary Study.

4. 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.

5. With regard to PEG TFP Study page 57, which states "Using GDPIPI as an output price index and the multifactor productivity index for the Canadian private business sector as a measure of the economy's TFP growth we can then estimate the trend in the economy's input price," please list the types of products and services that are included in the GDPIPI that are not used in the calculation of the multi-factor private business productivity measure. Provide the percentage of the GDPIPI that is represented by the goods and services included in the multi-factor private business productivity measure. Provide all documents and work papers used in answering this request.

6. 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.

7. 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.

8. 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.

9. With regard to the PEG Study page 12, the study states: "The inflation measure should track short term input price growth." Please define the meaning of short term and explain why the study should track the short term price? Does the short term include the most recent data available? For the last three other studies of Gas Utility TFP that PEG has conducted, provide the year the study was completed and the years over which inflation was measured?

10. Please provide the last three other studies of Gas Utility TFP studies that PEG has conducted.

11. With regard to the PEG Study page 12, the study states: "The X factor, meanwhile, should generally reflect the long run trend of TFP." Please define the meaning of the long term and explain why the study should estimate the TFP on a long term basis. For the last three other studies of Gas Utility TFP that PEG has conducted, provide the year the study was completed and the years over which the TFP was measured?

12. With regard to the PEG Study Table 1, list the US companies that conducted DSM programs for any period during the time of the study.

13. With regard to the PEG Study Table 1, for those US companies that conducted DSM programs for any period during the time of the study, provide the amount of energy savings generated by those programs.

14. With regard to the PEG Study Table 1, for those US companies that conducted DSM programs for any period during the time of the study, did PEG adjust the outputs of those companies to reflect the amount of energy savings generated by the DSM programs in any of PEG's statistical or econometric analyses?

15. With regard to the PEG Study Table 1, for those US companies that conducted DSM programs for any period during the time of the study, provide the amount of expenses associated with those programs.

16. With regard to the PEG Study Table 1, for those US companies that conducted DSM programs for any period during the time of the study, did PEG adjust the expenses of those companies to reflect the expenses associated with the DSM programs in any of PEG's statistical or econometric analyses?

17. 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.

18. With regard to the PEG Study page 25, the study states "At the sample mean values of the business conditions, for instance, we find in the model with COS costing that simultaneous 1% growth in all three output measures raises the total cost of service by only 0.87%." Please explain how the sample mean values are used to determine the value, "0.87%?" Were the variables shown in Table 19b used to determine the value, "0.87%?" Please provide the sample mean values for all variables listed in Tables 19a and 19b. Include all workpapers and documents used to determine the values.

19. 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.

20. With regard to the PEG Study page 19, the study states that "Good data on contract demands are unfortunately, not available from this or any other US source of which we are aware." Does that statement mean that the output quantities of US utilities did not include contract demands? If so, did the PEG study reduce any expense or cost quantity that the utilities may have used to provide contract demand service? If PEG did not reduce any expense or cost quantity, why did PEG not reduce those values?

21. With regard to the PEG Study page 26, the study states "We also computed output quantity indexes designed to measure the effect of growth in billing determinants (e.g. delivery volumes and contract demand) on revenue." In what units were delivery volumes and contract demand measured in? In what output quantity subindex is contract demand included?

22. 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.

23. 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.

24. 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.

25. 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.

26. With regard to the PEG Study Table 3, please provide all data used to determine input 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.

27. 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.

28. 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.

29. 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.

30. 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.

31. 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.

32. 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.

33. 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.

34. 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.

35. 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.

36. With regard to the PEG Study Table 9a, for each utility please provide the growth of the elasticity weighted output index. Show all calculations used to determine the growth rate. Provide all workpapers and documents used to make the growth rate calculations.

37. With regard to the PEG Study Table 9b, for each utility please provide the growth of the elasticity weighted output index. Show all calculations used to determine the growth rate. Provide all workpapers and documents used to make the growth rate calculations.

38. With regard to the PEG Study Table 8a, for each utility please provide the growth of the elasticity weighted output index. Show all calculations used to determine the growth rate. Provide all workpapers and documents used to make the growth rate calculations.

39. With regard to the PEG Study Table 8b, for each utility please provide the growth of the elasticity weighted output index. Show all calculations used to determine the growth rate. Provide all workpapers and documents used to make the growth rate calculations.

40. 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.

41. 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.

42. With regard to the PEG Study Table 10, please explain how PEG calculated the elasticity estimates (rows A, B, C), weights (rows D, E, F) and technological change (row L). Provide all workpapers and documents used to make the elasticity, weight and technological change estimates.

43. With regard to the PEG Study Table 17, please show the calculations that determine the revenue effect in column (A) and the cost effect in columns (B) and (C). Provide all workpapers and documents that PEG used to make these calculations.

44. With regard to the PEG Study Table 19a, please provide the complete data base used to run the regression. Identify each series and provide the source for the series.

45. With regard to the PEG Study Table 19a, please show the calculations that determine the dependent variable, cost. Provide all workpapers and documents used to calculate the cost variable.

46. With regard to the PEG Study Table 19b, please provide the complete data base used to run the regression. Identify each series and provide the source for the series.

47. With regard to the PEG Study Table 19b, please show the calculations that determine the dependent variable, cost. Provide all workpapers and documents used to calculate the cost variable.

48. With regard to the PEG Study page 94, is it PEG's position that it is proper to use Shepherd's lemma in the presence of x-inefficiencies. If so, please explain why PEG holds this opinion?

49. With regard to the PEG Study page 83, the study states "These conditions were imposed prior to the model estimation." Please explain how PEG altered the general form of the equation such that the estimating equation meets these conditions. Show the general form of the equation prior to constructing the estimating equation and then show the estimating equation.

50. With regard to the PEG Study page 83, the study states "The parameters in this equation also appear in the total cost function. Thus, information about cost shares can be used to

sharpen estimates of the cost model parameters." Please explain how PEG used the additional information to sharpen the parameter estimates?

51. With regard to the PEG Study Table 12, please provide the depreciation study that supports the depreciation rate shown in column (H).

52. With regard to the PEG Study Table 1, please provide the average heating degree days for each US utility and the average heating degree days for Enbridge and Union. If the method used to determine US and Canadian average degrees is different, please provide an explanation of that difference.

53. With regard to the PEG Study page 90, equation 26,would you expect that changes in revenue to equal changes in cost if the change in revenue is measured in terms of actual revenue and the change in cost is measured in terms of economic cost under the following conditions:

    a. For a rate of return regulated utility

    b. For a specific time period such as between 200-2005, or would the equal be true only in the long run?

54. In its evidence at Exhibit B/T1/pp. 32-34 Union argues that there is no justification for a stretch factor during its next IR plan. Please review Union's evidence and provide PEG's views on the appropriateness of Union's proposal to adopt PEG recommendations excluding the stretch factor.

55. In its evidence at Exhibit B/T1/pp. 36-37 Union has rejected PEG's approach to establish a PCI for residential customers and proposes a different approach that establishes a PCI for general service customers of 2.24 and 1.12 for all other classes. Please review Union's evidence and provide PEG's views regarding the appropriateness of Union's approach.

56. In its evidence at Exhibit B/T4/S1 EGD provides a discussion regarding the challenges it faces with respect to capital investments in the context of an IR plan. In addition at Exhibit B/T4/S1/p. 13 EGD proposes to treat certain categories of capital as Y factors during the term of its IR plan. Please review EGD's evidence and provide PEG's views as to whether or not EGD's proposals are appropriate.

**UNION GAS LIMITED**
**ENBRIDGE GAS DISTRIBUTION INC**
**EB-2007-0606 / EB-2007-0615**

**INTERROGATORIES FOR ENBRIDGE GAS DISTRIBUTION INC.**

**FROM THE CONSUMERS COUNCIL OF CANADA AND THE VULNERABLE ENERGY CONSUMERS COALITION**

**3.1 How should the X factor be determined?**

1. With regard to Enbridge Tab 3, Schedule 1, page 4, please provide a document that describes the method used to determine the TFP estimates shown in the Table 1.

2. With regard to Enbridge Tab 3, Schedule 1, paragraph 19, are all of the DSM programs used only by non-residential and non-commercial customers?

3. With regard to Enbridge Tab 3, Schedule 1, paragraph 19, please explain why you included the DSM volumes only with other volumes?

4. With regard to Enbridge Tab 3, Schedule 1, paragraph 19, provide the Excel spread sheet that shows the calculation of the revenue weights.

5. With regard to Enbridge Tab 3, Schedule 1, table 3, is it your understanding that the only for the differences between the R/C volumes shown in this table and the R/C volumes shown in the PEG Study table 7 is due to different heating degree day adjustments? If not, please explain what other adjustments could have caused differences in those estimates?

6. With regard to Enbridge Tab 3, Schedule 1, table 3, what is your understanding of the cause of the difference between the other volumes shown in this table and the other volumes reported in the PEG Study table 7.

7. With regard to Enbridge Tab 3, Schedule 1, table 4, what is your understanding of the cause of the fact that the labor subindex declines in your table while it increases in the PEG study table 6.

8. With regard to Enbridge Tab 3, Schedule 1, table 4, please provide the weights used to determine the input quantity index. Provide all workpapers and documents used to determine the weights.

9. With regard to Enbridge Tab 3, Schedule 1, paragraph 19, provide the Excel spread sheet that shows the calculation of the cost weights and the cost based TFP estimate of 0.31%.

10. With regard to Enbridge Tab 3, Schedule 1, paragraph 37, Enbridge states that it agrees with the PEG Study use of the Canadian aggregate business sector MFP to

measure the economy-wide TFP. In Enbridge Tab 3, Schedule 1, paragraph 1, this value is reported as 0.72, while the PEG study uses a value of 1.21 for this variable. Please explain the difference between the two estimates.

11. With regard to Enbridge Tab 3, Schedule 1, paragraph 44, Enbridge states that it agrees with the PEG Study method to determine economy wide input prices. In Enbridge Tab 3, Schedule 1, paragraph 1, this value is reported as 2.49, while the PEG study, table 16, uses a value of 2.99 for this variable. Please explain the difference between the two estimates.

**3.2 What are the appropriate components of an X factor?**

12. With regard to Enbridge Tab 3, Schedule 1, paragraph 76, the exhibit states that there has been a trend towards multi-family residential dwellings. Has this trend caused an increase in the relative density of residential customers? Please the number of residential customers per mile of distribution pipe for the years 1998 to 2005.

13. With regard to Enbridge Tab 3, Schedule 3, header page 4, has Dr. Bernstein performed any study that would indicate that there is intensifying decline in per-customer usage? If so, please provide that study? Has Dr. Bernstein performed any that would indicate that the decrease in per-customer usage is unrelated to DSM programs? If so, please provide that study. If Dr. Bernstein possesses a study that demonstrates that the decline in Enbridge's per-customer usage is intensifying, please provide that study.

14. With regard to Enbridge Tab 3, Schedule 3, header page 4, please describe the significant upgrades to infrastructure that Enbridge is experiencing. How long has Enbridge been investing in the upgrade? What percent of the upgrade is complete? What is the expected completion date of the program?

15. With regard to Enbridge Tab 3, Schedule 3, header page 5, has Dr. Bernstein performed any studies that indicate that future Enbridge investments will increase more rapidly than past trends indicate? If so, please provide the studies. If Dr. Bernstein possesses a study that demonstrates that Enbridge's investments will increase more rapidly than past trends indicate, please provide that study.