BEFORE THE ALBERTA ENERGY AND UTILITIES BOARD

NOVA Gas Transmission Ltd.

2005 General Rate Application, Phase 2

Written Reply Testimony of
Dr. J. Stephen Gaske
On Behalf of
NOVA Gas Transmission Ltd.

Zinder Companies, Inc.
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PREPARED REPLY TESTIMONY
OF J. STEPHEN GASKE
ON BEHALF OF
NOVA GAS TRANSMISSION LTD.

1. Introduction and Summary

Q1. Please state your name, position and business address.

A. My name is J. Stephen Gaske and I am President of Zinder Companies, Inc., 7514 Wisconsin Avenue, Suite 550, Bethesda, MD 20814.

Q2. What is the purpose of your testimony?

A. ATCO Pipelines ("AP") has asked the Alberta Energy and Utilities Board ("EUB" or "Board") to require a large increase in rates for NGTL's intra-Alberta customers.[1] To advance its proposal, ATCO Pipelines and its consultant, Mr. Gordon Engbloom of Confer Consulting Ltd., presents numerous economic arguments and analyses and claims that NGTL's toll design fails to satisfy reasonable ratemaking principles.[2] NGTL has asked me to evaluate and respond to these arguments and analyses of ATCO Pipelines and Mr. Engbloom. NGTL also has asked me to evaluate and respond to issues of accountability for facilities that have been raised by ATCO Pipelines.

Q3. Would you please summarize your conclusions concerning the claims and proposals of ATCO Pipelines in this proceeding?

A. ATCO Pipelines claims that it cannot compete fairly for delivery markets in Alberta because the existing FT-A rate level on the Alberta System is too low to

[1] See, e.g., Evidence of ATCO Pipelines, Ex. 07-005, p. 15-16, Tables 3.2-1 and 3.2-3.
[2] See, e.g., Evidence of Confer Consulting Ltd., Ex. 07-006, p. 2, lines 6-24.

properly reflect costs and that the FT-A customers are being subsidized.[3] It attempts to support these claims with Mr. Engbloom's arguments concerning proper ratemaking fundamentals, and ATCO Pipelines and Mr. Engbloom propose four rate designs that they assert would better reflect the costs of FT-A service than the methods used by NGTL to design its system-wide rate and tariff structure.

The results of my evaluation are:

- Mr. Engbloom mis-states and mis-applies fundamental principles of ratemaking when he criticizes NGTL's use of distance-of-haul ("DOH") results to support rate relationships, and also when he advocates his cost allocation approach as the conceptually correct way to determine relative costs for ratemaking.

- Claims that other services subsidize the level of the FT-A rate component of intra-Alberta transmission charges are specious as they ignore the full transportation transaction.

- The rate structure and rate design recommendations of ATCO Pipelines and Mr. Engbloom are not consistent with a goal of improving price signals for construction of new facilities because it is likely to encourage diversion of gas supplies away from the Alberta System's facilities and/or provide incentives for construction of new, competitive, and possibly unnecessary pipeline facilities at the receipt end of the pipeline systems.

- ATCO Pipelines' and Mr. Engbloom's rate structure and rate design proposals are likely to increase the price paid for natural gas by its own captive delivery customers, and also to reduce the efficiency of the natural gas commodity markets in Alberta, by inhibiting the ability of customers to access lower cost gas supplies.

- The FT-A rate design advocated by ATCO Pipelines and Mr. Engbloom in this proceeding is not consistent with a goal of providing price signals that promote the efficient utilization of existing pipeline facilities.

- ATCO Pipelines' analysis and recommendation concerning the use of receipt revenues for accountability purposes fails to properly acknowledge: (i) that a pipeline must continually seek to connect delivery markets where gas

[3] Ex. 07-005, p. 1-2.

prices are highest in order to retain receipt revenues in a competitive market; (ii) the implications of its FT-R and FT-A rate recommendations on competition to attract or retain FT-R receipt revenues; and (iii) the economic efficiency of financial liabilities that are incurred when a delivery customer guarantees that new facilities will be used at a certain minimum level.

- NGTL's Alberta System rate structure is superior to any of ATCO Pipelines' and Mr. Engbloom's proposed alternatives because the existing rate structure simultaneously: reasonably reflects the relative costs of providing various services, provides proper price signals, broadly promotes efficient usage and construction of facilities, and provides a division of responsibilities among the customers that appears to be viewed as being reasonably fair or acceptable by the majority of diverse interests.

Q4. How is your testimony organized?

A. Section 2 of this testimony addresses the issues of costs and ratemaking raised in the evidence of ATCO Pipelines and Mr. Engbloom.. It will explain why NGTL's DOH approach, which uses identifiable differences in unit costs to support rate relationships, correctly applies ratemaking principles, while Mr. Engbloom's cost allocation approach does not. In addition, this section will describe other flaws in the application of ratemaking principles by ATCO Pipelines and Mr. Engbloom.

Section 3 addresses issues related to competition and analyzes the effects that ATCO Pipelines and Mr. Engbloom's proposal is likely to have on pipeline competition, natural gas market efficiency, consumers and the public. The section will explain why the rate structure and rate design recommendations of ATCO Pipelines and Mr. Engbloom are likely increase the price paid for natural gas by its own captive delivery customers, and will also reduce the efficiency of the natural gas commodity markets in Alberta. In doing so, the section will demonstrate why it is unreasonable and invalid for ATCO Pipelines and Mr. Engbloom to ignore explicitly the full-haul FT-A/FT-R rate which recovers all of the proper costs of intra-Alberta transportation.

Section 3 also will explain why ATCO Pipelines' and Mr. Engbloom's rate design proposal is likely to have its greatest impact on competition to attract receipt volumes and revenues, and the implications that their FT-R and FT-A rate recommendations would have on competition to attract or retain FT-R receipt revenues. The analysis will show why the recommendations of ATCO Pipelines and Mr. Engbloom are likely to (i) unnecessarily handicap the ability of NGTL's Alberta System to attract and retain customers and revenues at the receipt end of its system; and (ii) increase incentives to divert gas away from existing facilities operated by NGTL's Alberta system and/or construct new, competitive, and possibly uneconomic pipeline facilities at the receipt end of the pipeline systems operating in Alberta.

Section 4 deals with various issues raised by ATCO Pipelines concerning accountability for the costs of new pipeline facilities at delivery points on the system. Among the issues addressed is an explanation of the reasons that efficiency and reasonable ratemaking goals are served when a delivery customer incurs financial liabilities by guaranteeing that new facilities will be used at a certain minimum level.

Finally, Section 5 will present my conclusions and recommendations to the Board.

2. Cost and Ratemaking

2.1. ATCO Pipelines' and Mr. Engbloom's Assertions Concerning Ratemaking Principles are Inappropriate

Q5. At page 19, lines 15-20 of the evidence submitted on behalf of ATCO Pipelines, Mr. Engbloom states:

> **"At a broader level, the use of unit cost ratios to examine the results from any cost allocation method is questionable. It is the annual cost of service derived from direct assignment and cost allocation that is important. If these are used to derive sound cost allocation, and corresponding tolls, then the ratios of one toll, or component thereof, to another may be informative but should not be determinative."[4]**

Do you agree with this statement of rate design principles?

A. No. There are a variety of misunderstandings reflected in this statement concerning the use of rate relationships rather than basic cost allocation methods to establish rates. These misunderstandings of proper ratemaking principles are important because ATCO Pipelines bases its rate design recommendations on a belief that cost allocation should determine rate relationships and that it is improper to use cost ratios to determine rate relationships.[5]

In order for a rate structure to have an economically meaningful relationship to costs, it must establish rate relationships that appropriately reflect the ***relative*** differences in costs of providing different services. Given the physical configuration of the NGTL system and the structure of its services, unit cost relationships are highly significant for setting the Alberta System rates. For example, the Alberta System is a complex system with many alternative routes and both receipt and delivery points situated throughout the system. As a result,

[4] Ex. 07-006, page 19, lines 15-20.
[5] For example, see Ex. 07-005, page 3, lines 12-14.

throughout the system, numerous short-haul intra-Alberta transactions are overlaid on longer-haul export transactions. Nevertheless, the Alberta System rate structure uses a form of zone-rate structure that reflects cost differences related to distance of haul without being able to identify a unique physical zone boundary within the web-like, overlapping structure of the system. This is no small achievement and the use of unit-cost relationships is the mechanism by which it is achieved.

In contrast, Mr. Engbloom argues that costs must be allocated separately to FT-R, FT-D and FT-A services in order to determine the separate costs required to provide each of these three services. However, there is no separate cost of providing FT-R service that can be allocated on a cost basis to FT-R service. The receipt and delivery components of transportation service, and the specific contract arrangements by which those components are shared among the customers, make use of NGTL's Alberta System transmission facilities on a joint and concurrent basis. There is no single, mechanical formulary way with which transmission costs can or must be split between the receipt and delivery functions, and there is no single correct method for allocating such costs. By claiming that cost allocation can determine true unit cost relationships Mr. Engbloom is overstating the ability of cost allocation to reflect the differences in costs occasioned by one service or the other. A unit cost relationship that recognizes the relative distance of haul is likely to be far more useful in reflecting the differences in costs of serving the two groups of customers than an allocation of embedded costs.

Q6. Does Professor Bonbright's treatise on *Principles of Public Utility Rates* share your opinion concerning proper cost determination and specifically contradict Mr. Engbloom's claims?

A. Yes. For example, Bonbright states (page 366-67, emphases added) as follows:

> This chapter began by raising the question what, if any, significance should be attached to fully-distributed cost apportionments as points of departure for public utility rate making. As a provisional answer, it suggested that the significance must lie in whatever claim can be made for the apportioned costs as ***indices***, not of absolute costs but ***of relative differential*** or incremental or marginal ***costs.***[6]

Elsewhere, he elaborates on this principle as follows:

> What has been said, however, is by no means meant to imply that cost analysis is useless for rate-making purposes. On the contrary, it is utterly essential. But ***the really important analyses are not those which attempt to apportion total capital costs and operating costs among the different classes or units of service. Instead, they are the analyses designed to disclose differential, or incremental, or marginal, or escapable costs – costs which are not ordinarily derivable from total costs*** and which cannot be added together so as to equal this total.
>
> ***It is these costs which should be the primary object of study of the utility cost analyst***. Whether or not, in addition, some kind of apportionment of unallocable cost residues is also worth making … is a secondary question, on which I venture no present opinion.[7]

The DOH ratio is used by NGTL's Alberta System to calculate the relative differential or incremental costs of serving intra-Alberta shippers, as opposed to ex-Alberta shippers. This ratio acts as an index of relative costs that distinguish the intra-Alberta and export services on the Alberta System. As such, the DOH ratio is a good example of exactly the type of analysis that Professor Bonbright says is the most significant for ratemaking. He goes on to strongly criticize the

[6] Bonbright, James C., *Principles of Public Utility Rates*, Columbia University Press, 1961. (page 366-67, emphases added).
[7] Id., page 368.

ability of cost allocation (i.e., "fully-distributed costs") to properly reflect the relevant differences in costs between two services or classes of customer. On this issue he has the following conclusions:

> ***The basic deficiency of [fully-distributed cost] analysis lies in its failure to distinguish between actual cost finding and mere cost apportionment – between those costs that can be imputed to specific classes or units of service by differential cost analysis*** and those other costs that should be deemed unallocable from the standpoint of cost determination even if they are somehow apportioned as a provisional step in rate determination.[8]

Q7. Does the later book on *Principles of Public Utility Rates* by Bonbright, Danielsen and Kamerschen express a similar view that annual cost allocation, such as that advocated by Mr. Engbloom does not identify the proper differential or relative costs caused by different services?

A. Yes. In that book the authors express the following conclusion on cost determination and rate relationships:

> In view of what has just been said, ***one might suppose that the theory of public utility rate structures or <u>rate differentials</u>*** **would call for acceptance of the same principle already accepted in the determination of entire rate levels**, namely, the principle of service at cost. Just as, under the fair-return standard, rates as a whole should cover costs as a whole, so the rates for any given class of service (e.g., residential versus commercial) should cover the costs of supplying that class. And so the rates charged to any single customer within that class should cover the costs of supplying this one customer. ***Under this assumption, the theory of rate structures would be reduced to a mere theory of cost determination through the aid of modern techniques of cost accounting and cost analysis.***
>
> Unfortunately, ***no such simple identification of reasonable rates with rates measured by costs of service is attainable***. One major reason is due to the excessive complexity of the cost relations … Two other reasons are due to the inherent conflict between a cost-based system of reasonable rate levels ***and a cost-based system of specific rates and rate relationships***. The sources

[8] Id., page 367.

> of this conflict lie, on the one hand, in the fact that incremental costs are non-additive so cost-based rates under circumstances of decreasing cost will fail to meet a company's revenue requirement. On the other hand, the problem of joint and common costs makes it ***impossible to allocate, at least on a cost basis, the costs attributable to specific classes and units of service***.[9] (Emphasis added).

Notably, Bonbright, Danielsen and Kamerschen refer to the overall objective of the exercise as the theory of rate structures or "rate differentials." NGTL's Alberta System's method of using the DOH results to establish rate differentials is consistent with this objective. In addition, the authors specifically reject the notion that the theory of rate structures can be reduced to a process of cost determination through cost accounting, such as the allocated cost approach advocated by Mr. Engbloom.

Consequently, Mr. Engbloom is incorrect in his understanding of fundamental principles of public utility rate structures when he states that:

> "(i)t is the annual cost of service derived from direct assignment and cost allocation that is important. If these are used to derive sound cost allocation, and corresponding tolls, then the ratios of one toll, or component thereof, to another may be informative but should not be determinative."[10]

A correct description of the principle is that rate differences should reflect the differences between the unit costs of providing each service. NGTL's Alberta System has correctly applied the principles of ratemaking in its approach that sets the unit cost rate for export transportation at a level approximately two times the

[9] Bonbright, J. C., Danielsen, A.L., Kamerschen, David R., *Principles of Public Utility Rates, 2nd edition*, Public Utility Reports, Inc., 1988. (page 390-391, emphases added).

[10] Ex. 07-006, page 19, lines 16-20.

rate for intra-Alberta transportation because the average DOH is approximately two times as far.

Thus, Mr. Engbloom's criticism of NGTL's Alberta System approach, and the basis for his recommended alternative approach, mis-state and mis-apply fundamental principles of ratemaking. ATCO Pipelines' and Mr. Engbloom's Proposal Does Not Reflect Reasonable Cost Relationships

Q8. Do you agree with Cases 3 and 4 of the proposal, at pages 16-19 of Mr. Engbloom's evidence, to allocate costs to each of the three primary services (FT-R, FT-A and FT-D) as if they are separate, stand-alone services?

A. No. Mr. Engbloom incorrectly suggests that costs should be allocated to each sub-component of transmission service as if each component is a stand-alone service. This proposal is economically flawed because Receipt service and Delivery service are simply two perspectives on the same transportation service. As I discussed in Section 1.2.3 of my Direct Evidence, the transmission costs are not separable as between receipt and delivery services: it is impossible to have one component of the service (i.e., receipt or delivery) without also providing the other component of the transportation service.

Q9. Is the concept of separable costs important for evaluating Mr. Engbloom's claim that proper ratemaking requires that costs be allocated separately to NGTL's Alberta System's FT-R, FT-D and FT-A receipt service and delivery services?

A. In order to be meaningful, a cost allocation must assign costs to services in a manner that in some way reasonably reflects the manner in which costs are incurred to provide each service separately. Because they are merely two perspectives on the same service, neither receipt nor delivery components of transportation services can be provided separately. Thus, there is no

economically-meaningful method for using cost allocation to reflect the separate costs of providing receipt and delivery transportation services separately.

Q10. If receipt and delivery transmission costs cannot be allocated in an economically meaningful way, does this mean that transmission costs cannot be collected using separate receipt and delivery contracts?

A. No. Costs can be assigned and recovered under separate receipt and delivery contracts, but there should be no illusion that there is an inherent cost basis for recovering these costs separately. Instead, decisions concerning the proportion of transportation costs collected under each type of contract must, of necessity, be based on non-cost considerations. Consequently, there is no foundation for Mr. Engbloom's contention that proper ratemaking requires separate allocations of costs to FT-R, FT-D and FT-A services in order to determine the separate costs associated with each service.

Q11. If separate proportions of receipt and delivery transmission costs cannot be determined on a cost basis, what are the bases for NGTL's Alberta System's assignment of these costs to receipt and delivery services?

A. Ultimately, transmission costs can be shared between receipt and delivery customers in a variety of reasonable ways, depending on the specifics of a particular pipeline. Furthermore, those components of the service can be kept separate or combined in various ways, depending again on the nature and specifics of the pipeline at issue.

There are two primary factors that are used to determine the proportion of transmission costs collected from the NGTL Alberta System's FT-R, FT-D and FT-A receipt and delivery customers: (1) differences in costs of providing intra-Alberta and ex-Alberta transportation associated with the approximate average

distance (the DOH) of the two classes of customers; and (2) a sense of fairness. The equal sharing of export transportation charges between receipt and delivery contracts is based on the fact that both components of the service are equally required.

Q12. Mr. Engbloom purports to allocate costs to (i) FT-R service; (ii) FT-D service; and, (iii) FT-A service on a "volume-distance" basis. Does Mr. Engbloom's approach reflect the separate costs of providing each of these three services?

A. No. Mr. Engbloom's contention that his method reflects the separate costs of each of these three services relies on the myth that it can measure where "receipt" ends and "delivery" begins. It is impossible to measure the volume-distance of FT-R, FT-D, or FT-A as stand-alone services because there is no point at which receipt ends and delivery begins. Thus, the allocation of transmission costs between the two components of a single service[11] does not, and cannot, reflect any identifiable difference in the costs of providing either component of the service. The reason that cost allocation cannot reflect any differences in transmission costs should be obvious: receipt and delivery transportation are the *same* service viewed from two different perspectives.

Q13. Can volume-distance factors theoretically reflect differences in the costs of full-path, end-to-end transportation services?

A. Yes. Because there are measurable beginning and ending points for full-path transportation services, volume-distance factors generally can be calculated that reflect the costs of the services. For example, the DOH ratio is a volume-distance relationship that supports the rate relationship that is used to establish the relative

[11] i.e., the FT-R and FT-A components of intra-Alberta transportation, or the FT-R and FT-D components of ex-Alberta transportation.

transmission cost responsibilities of (i) the full-haul intra-Alberta (FT-R/FT-A) transportation service and (ii) the full-haul ex-Alberta (FT-R/FT-D) service.

Q14. Does Mr. Engbloom recognize that the DOH ratio calculates a volume-distance relationship?

A. Mr. Engbloom's evidence ignores the fact that that the DOH ratio is derived from volume-distance calculations. In addition, Mr. Engbloom's approach to calculating the volume-distance of intra-Alberta and ex-Alberta gas transportation services (App. B, Table 3, l. 27-29, cols. 2 and 7) concludes that the average intra-Alberta molecule travels 641 km and the average ex-Alberta molecule travels 1,076 km. This calculation causes him to conclude that the intra-Alberta DOH is 60% of the ex-Alberta DOH. However, we know from straight-forward calculations that the correct ratio is in a range between 40% and 50%. Consequently, there is no reason that Mr. Engbloom's new version of a DOH calculation should displace the NGTL Alberta System's DOH calculation method that has been repeatedly tested and verified through the years by the Board and other interested parties.

2.1.1. ATCO Pipelines' subsidy analyses are flawed and mistaken

Q15. ATCO Pipelines at pages 2 and 19-23 advances a "subsidy" claim, centering on the notion that "full path" ex-Alberta shippers are somehow subsidizing the intra-Alberta shippers. Do you agree with that "subsidy" claim?

A. No. ATCO Pipelines' subsidy claim is murky and undefined. The concept of a subsidy is well-defined in economics, but ATCO Pipelines does not present an economic analysis that can support the claim that intra-Alberta customers, as a

group, are paying less than the marginal costs of transporting gas to intra-Alberta markets. Instead, its claim of subsidy rests on flawed premises.

In the rate analyses offered by both ATCO Pipelines, it is imperative to recognize that the NGTL Alberta System's receipt charges, which ATCO Pipelines ignores, *already contain an allocation of NGTL'S Alberta System transmission costs* that fully reflects the lower average distance of haul associated with a full path intra-Alberta haul. That approach to the analysis is flawed because it ignores the inextricable link between every single FT-A transaction and the prior payment to the Alberta System of an FT-R charge.

Q16. Do you have an example of the rate structure logic that ATCO Pipelines is ignoring in claiming that FT-A customers are being subsidized by FT-D customers?

A. Yes. The ratio of transmission charges for intra-Alberta transportation relative to export transmission charges reasonably reflects the distance-based relationship that is established by the DOH study and adjusted slightly to accommodate the sharing of export transmission charges between the FT-R and FT-D customers on a 50-50 basis. However, ATCO Pipelines' evidence confuses individual components of the transportation service with the actual transportation service. To explain the nature of this confusion and why it leads to incorrect conclusions concerning cost responsibility, I have prepared Figure 2.1.2-1 which shows the Unvarying IAB/Export Cost Relationship as Service Flexibility Increases. In panel A, and the other panels, the horizontal length of the two rectangles represents the transmission components of rates for: (i) intra-Alberta service (the small rectangle); and (ii) export shippers (the large rectangle). The vertical

length of the two rectangles represents the relative volumes of the intra-Alberta and ex-Alberta services. It should be noted that the outside shape of the objects shown on Panels A, B and C is identical in all three panels.

Q17. What does Panel A show?

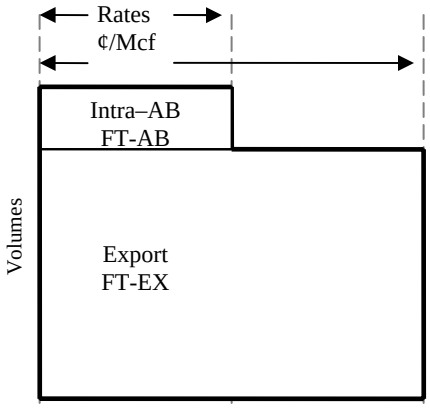
A. Panel A shows the amount of transmission charges that would be paid by intra-Alberta customers and the amount that would be paid by export shippers if NGTL were to use the DOH results to establish that export customers should pay a transmission component in their rates that is two times the amount of the transmission component the intra-Alberta customers pay. The service configurations represented in Panel A are very simple because there are only two types of contracts: Intra-Alberta (FT-AB) and Export (FT-EX). The important characteristics of these two contracts are as follows:

1. Every shipper is required to designate both a specific receipt point and a specific delivery point in its contract;
2. Under every service contract there is a single shipper that is responsible for paying the entire transportation charges from one end of the service to the other; and,
3. There is no NIT and no flexibility to change the pairing of specific receipt and delivery points in the contract.

With this simple service configuration there should be no confusion about whether intra-Alberta and export shippers are each paying a reasonable and appropriate share of the transportation costs because their total, full-path rates reflect the differences in their costs of service and each service is provided under a single, end-to-end contract. Thus, neither rate is divided into sub-components that might lead to confusion concerning the rate that is being paid for service.

Figure 2.1.2-1
Unvarying IAB/Export Cost Relationship as Service Flexibility Increases

Panel A – Full-Path Contracts

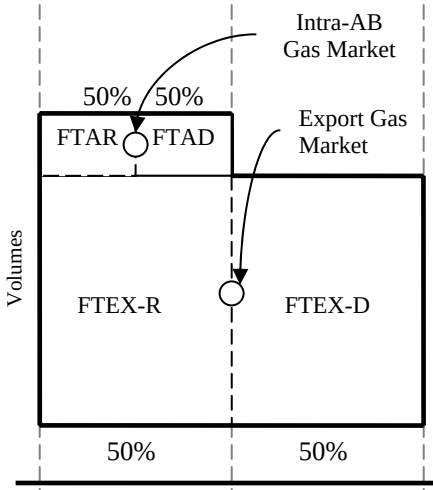


Intra-AB = 50% x Export

- One shipper end-to-end
- Two services: FT-AB and FT-EX
- Contracts pair Receipt/Delivery points

Drawbacks:
Shipper contract limited to one market or the other
Little or no flexibility to change supplier, buyer or location
No gas commodity trading; No NIT

Panel B – Split Contracts



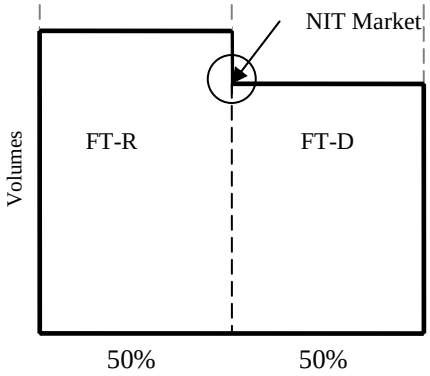
Intra-AB = 50% x Export

- Split each service into two shipper contracts
- Contracts share costs of each service equally
- Four contract and rate components: FTAR/FTAD and FTEX-R/FTEX-D
- Contracts do not require paired Receipt/Delivery points

Drawbacks:
Shipper contract limited to one market or the other
Gas trading in two smaller, separate markets

Benefits:
Flexibility to change supplier, buyer or location if other party has a matching contract type
Gas trading is facilitated

Panel C – Existing Method



Intra-AB = 50% x Export

- Split each service into two contracts
- Export costs shared equally
- Intra-Alberta transmission costs paid by receipt shipper
- Three contract and rate components: FT-R/FT-A and FT-R/FT-D
- Contracts do not require paired Receipt/Delivery points

Benefits:
Producers can sell in both markets with one contract
Greater flexibility to change supplier, buyer or location
Gas trading in one large market → NIT

Q18. Would it be possible to increase the efficiency of Alberta natural gas markets and increase the value of the pipeline's transportation services without changing the relative costs of providing each service?

A. Yes. Like Panel A, Panel B also shows a rate structure where Export shippers still pay a transmission rate component that is two times that paid by the Intra-Alberta shippers. However, the Intra-Alberta shippers are allowed to take their service under two separate contracts, receipt and delivery, that share the intra-Alberta transmission rate component equally. Similarly, export shippers are allowed to take their service under two separate contracts, receipt and delivery, that also share the Export transmission rate component equally. This gives all buyers and sellers of gas an opportunity to contract with anyone who has a matching contract. For example, shippers with Intra-Alberta receipt contracts can deal with any party that has an Intra-Alberta delivery contract, or they can take both the receipt and delivery contract and continue to take the same service and pay the same full-haul rates that they had under the service described in Panel A. However, the Panel B rate and service structure provides greater flexibility for customers who no longer need to obtain a new, separate transportation contract whenever they enter into a new bi-lateral purchase and sale transaction that involves different receipt or delivery points. This flexibility greatly simplifies the administration of contracts, and provides greater opportunities for gas to move to the markets where it has the highest value. In addition, there are efficiencies associated with the liquidity provided by decoupling the receipt from the delivery contracts for each service (i.e., intra/ex). The drawback to this approach is that there would be two separate commodity markets on the system for trading natural

gas and little flexibility to divert gas supplies from intra-Alberta markets to export markets and back again as the needs of the markets fluctuate on a daily and seasonal basis. Consequently, Panel B leaves room to make the transportation services even more valuable in their ability to facilitate an efficient natural gas commodity market.

Q19. By moving from the highly inflexible service offering shown in Panel A, to the flexible rate and tariff structure shown in Panel B, did the costs of providing intra-Alberta transmission service increase relative to the costs of export transmission service?

A. No. The average export volumes would still travel approximately twice as far, and there would be no change in the relative costs associated with giving both services greater flexibility.

Q20. How could the rates be refined so as to further enhance the value of the pipeline's service and the efficiency of the natural gas markets, without changing the relative transmission costs required to provide intra-Alberta and export transportation services?

A. Panel C shows that the rate structure barrier that separated intra-Alberta and export commodity gas trading markets in Panel B can be eliminated simply by changing the proportion of intra-Alberta transmission costs paid by receipt or delivery customers. By recovering 100% of the full-haul intra-Alberta transmission costs from receipt customers in Panel C, the receipt rate for intra-Alberta transportation would be equal to the receipt rate for ex-Alberta customers – allowing a single FT-R rate to be charged for both intra-Alberta transportation and export transportation services.

The change in rate structure from Panel B to Panel C provides several benefits to the market without changing the relative costs of providing service to either intra-Alberta or export shippers.

Q21. What benefits are achieved by changing the rate structure to allow a single receipt service and charge to be used for both intra-Alberta and export services?

A. This change in the rate structure relieves producers at receipt points from the necessity of specifying whether they want an intra-Alberta receipt contract or an export receipt contract with the pipeline. Since the intra-Alberta receipt rates and the export receipt rates are designed to be identical in Panel C, producers can get access to both markets under a single FT-R contract. Similarly, gas buyers in each market would suddenly have equal access to gas from all sellers with receipt contracts. By recovering 100 percent of the intra-Alberta share of transmission costs in the receipt charge, the liquidity and responsiveness of the natural gas commodity markets is improved, the contracting process for receipt shippers is simplified and the overall welfare of society is improved – all without changing the costs caused by intra-Alberta shippers relative to export shippers.

Q22. Why is it relevant that moving the rate structure from the structure in Panel A to the structure in Panel C, or moving the structure from Panel B to Panel C, can be accomplished without changing the relative costs caused by intra-Alberta and ex-Alberta transportation services?

A. This basic description of the rate structure logic is relevant because it demonstrates the fallacy of ATCO Pipelines' claims that export shippers are subsidizing intra-Alberta shippers. The overall shape of the figures in Panels A,

B and C are identical. Each class of service is paying a rate that is based on its relative differential cost of service. Thus, the rates for intra-Alberta transportation remain sufficient and the rates for export transportation do not become excessive simply by moving from the rate structure in Panel A to the more efficient and beneficial rate structure in Panel C. The fact that the Alberta System rate structure provides substantial benefits without changing the relative costs caused by either class is entirely ignored in ATCO Pipelines' and Mr. Engbloom's analyses and arguments. ATCO Pipelines' analysis focuses solely on the FT-A rate level and, thus, misses the big picture that Panels A, B and C all have the same shape and same full-path cost responsibility.

Q23. How does the ATCO Pipelines proposal change the relative rate relationships of the Existing Methodology?

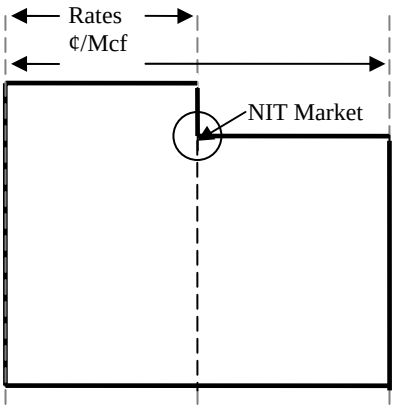
A. Figure 2.1.2-2 shows the difference between the Existing methodology and the ATCO Pipelines proposal. It can be seen that the total rate paid by intra-Alberta shippers will increase substantially relative to the total rate paid by export shippers if ATCO Pipelines' and Mr. Engbloom's rate proposal is adopted. However, a large portion of the subsidy argument advanced by ATCO Pipelines hinges on the contention that:

> "… any ***intra-Alberta delivery transmission costs***, including the costs of intra-Alberta delivery TBOs, included in the Total Revenue Requirement are not recovered through NGTL's FT-A rate, but are included in both receipt and export delivery firm rates." (Ex. 07-005, page 19, lines 3-6, emphasis added).

ATCO Pipelines' reference to "delivery transmission costs" attempts to make a distinction that does not exist, and is not relevant from a cost standpoint, because

every “delivery” transmission facility is also a “receipt” transmission facility. The examples in Figure 2.1.2-1 demonstrate that, like the famous principle in physics, intra-Alberta transmission costs can neither be created nor destroyed by merely separating a single point-to-point transportation contract into two receipt and delivery components that provide greater flexibility and value. The FT-A contract gives the holder a right to have gas delivered, but an FT-A customer is not being subsidized when the FT-R customer pays the transmission costs.

Figure 2.1.2-2
Disruption of Cost Relationship Incorrectly Inferred from Service Flexibility

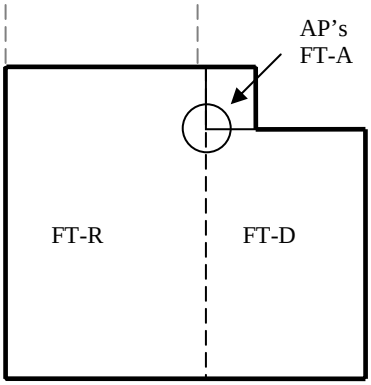


Intra-AB = 50% x Export

- Split each service into two contracts
- Export costs shared equally
- Intra-Alberta transmission costs paid by receipt shipper
- Three contract and rate components:[2] FT-R/FT-A and FT-R/FT-D
- Contracts do not require paired Receipt/Delivery points

Benefits:
Producers can sell in both markets with one contract
Greater flexibility to change supplier, buyer or location
Gas trading in one large market → NIT

Panel D – AP Proposal



Intra-AB = 60% x Export

- Split each service into two contracts
- Export costs shared equally
- Intra-Alberta transmission costs shared
- Three contract and rate components:[2] FT-R/FT-A and FT-R/FT-D
- Contracts do not require paired Receipt/Delivery points

Drawbacks:
Needlessly increases intra-Alberta costs without cost justification
Reduces efficiency of natural gas commodity markets
Encourages construction of unnecessary receipt facilities

Q24. Can you provide examples of other commercial transactions that are similar to the intra-Alberta FT-R/FT-A rate structure?

A. Yes. When a person receives a letter in the mail, the logic of ATCO Pipelines would say that the recipient of the letter is being subsidized because the sender of the mail paid for the postage stamp. Similarly, when a person receives a long-distance telephone call, the logic of ATCO Pipelines would conclude that the recipient of the call is being subsidized because the party that initiates the call is required to pay the long-distance charges. ATCO Pipelines' evidence is replete with oft-repeated casual accusations that intra-Alberta customers are subsidized because intra-Alberta transmission costs are paid by customers who initiate the gas transportation at the receipt points. However, these accusations are convincing only if one ignores the fact that all intra-Alberta transmission costs, like a postage stamp on a letter or long-distance telephone charges, are fully paid by the receipt customer who initiates the transportation.

Q25. Is Mr. Engbloom's attempt to directly assign transmission facilities to the FT-A component of the intra-Alberta transportation service a cogent way to identify costs on the Alberta System?

A. No. NGTL's Alberta System evolved since the 1950s as an integrated system that *concurrently* served users outside the province (ex Alberta) and users inside the province (intra Alberta). Over the decades, the notion that there are strict, fixed divisions between supply and market areas has been contradicted. Areas initially predominated by gas consumption have nevertheless been the subject of gas exploration and development. Similarly, regions that initially were the focus of supply investments have attracted and developed various gas/energy consumption entities and demands. Facilities originally installed to receive and aggregate new

supplies have later enabled customers of NGTL's Alberta System to benefit from huge downstream scale and scope economies at their delivery points. Facilities installed to deliver gas provide incentives for producers to (1) attach new supplies to the NGTL system, (2) retain service to the NGTL system, as opposed to seeking service from ATCO Pipelines or Alliance, and (3) spend money to find and develop new supplies that ultimately attach to NGTL. NGTL's integrated, interconnected facilities now span the length and breadth of the province and meet shipper demands in an environment of supply/market interdependence.

In that context, the receipt and delivery functions, and the specific contract services by which those functions are accomplished, make use of NGTL's transmission facilities on an *integrated* basis. The history and operation of the system refutes ATCO Pipelines' and Mr. Engbloom's contention that there are separate receipt and delivery costs of transportation. Direct assignment of facilities to the delivery component of rates has no inherent cost basis when the facilities are used equally by both receipt and delivery shippers. This approach has even less justification for a pipeline such as the Alberta System where the manner in which facilities are used often changes as the system evolves over time.

Q26. What do you conclude concerning the subsidy claims of ATCO Pipelines?

A. It is the total receipt-to-delivery point or "full-path" transaction, irrespective of how that transaction may be subdivided, that must be present in order to serve the ultimate consumer. Focusing only on the isolated service components, and ignoring the end-to-end transportation components and costs, misses the complete transportation/delivery service that users require and that in practice occurs.

Consequently, the notion that intra-Alberta shippers bear only an FT-A rate for their service is incorrect. An integral upstream FT-R payment has been paid by some party for any and every intra-Alberta delivery.[12] NGTL's rate algorithm properly recovers "full path" intra-Alberta transmission costs in the FT-R component of intra-Alberta transportation service. There is no basis for ATCO Pipelines to claim that a "subsidy" exists because a portion of the transmission costs are not recovered instead in the FT-A rate.

2.1.2. ATCO Pipelines' and Mr. Engbloom's Proposal Would Disrupt the Intra-Alberta v. Ex-Alberta rate relationship which is an important cost-based feature of the rate design

Q27. What are the most significant cost characteristics reflected in the Alberta System method of defining services and establishing different rates?

A. The most important cost-related feature in the rate structure is the distinction between the full-haul rates for intra-Alberta transportation and the full-haul rates for export transportation. Given the complex nature of the physical configuration of the Alberta System, and the flexibility of its service offerings, it is impossible to determine precisely the difference in transportation costs required to serve each of these two classes of customer. However, there is no doubt that physical distance of haul accounts for an important portion of the differences in costs. Consequently, in order to reflect distance-related differences, transmission costs are recovered based on the relative average distance of haul (DOH) of the intra-Alberta and ex-Alberta services . This volume-distance cost allocation between the intra-Alberta and ex-Alberta classes is the basic core characteristic of the existing Alberta System rate structure. However, because the relationship

[12] In fact, as discussed in section 3 of NGTL's Reply Evidence, more than 40 shippers hold both the FT-R and the FT-A components required for their transportation.

between distance and the separate costs for serving the intra-Alberta and ex-Alberta classes cannot be measured precisely, and is not a perfect correlation, a cost allocation based on a close approximation to the DOH volume-distance results should be acceptable for ratemaking; particularly because there are other compelling reasons to depart slightly from the DOH ratio.

Q28. How does NGTL translate the DOH volume-distance cost relationship into separate full-path transportation rates for the intra-Alberta and ex-Alberta classes of service?

A. Transmission costs are allocated to the two classes of service using a distance-based rate structure that establishes an FT-R "receipt" charge to recover intra-Alberta transmission costs and the first stage, or zone, of the export transmission costs. The additional transmission costs associated with the greater distance of export transportation are then recovered in the FT-D "delivery" charge that is applied to export volumes. Thus, the separation of transportation charges into "receipt" and "delivery" components facilitates NGTL's ability to reflect distance in the toll design without balkanizing the NIT market. For example, if NGTL, like most pipelines, were to assess all of the transportation charges from the origination point to the destination point under a single contract, and it also wanted to charge a higher rate for export deliveries than for intra-Alberta deliveries, the toll design might include two rate offerings. Shippers that only want to move gas to the intra-Alberta market would pay the demand charge for transportation in the first zone (which could be referred to by any number of names including: "zone 1," "short-haul service," "intra-Alberta transportation service," "receipt service," etc.). Shippers who want to sell gas in the export

market would pay the higher two-zone charge for use of both the "intra-Alberta zone" and the "Export zone." (Under current nomenclature the two-zone charge is referred to as "FT-R/FT-D" charge).

Q29. Does Mr. Engbloom's proposed method for allocating transmission costs between receipt and delivery services reflect general differences in the separable distance-related transmission costs required to provide intra-Alberta and ex-Alberta transportation services?

A. No. Mr. Engbloom's proposal ignores and would disrupt the current DOH volume-distance method used to reflect the difference in transmission costs associated with intra-Alberta and the longer-haul ex-Alberta transportation services. Table 2.1.3-1 shows the impact on the delivered prices of gas and the netback prices of gas that result from adopting ATCO Pipelines' and Mr. Engbloom's primary rate proposal as compared with NGTL's proposal. Table 2.1.3-1 is similar to Table 4 of Mr. Engbloom's testimony,[13] except that Table 2.1.3-1 tests the likely impact for NGTL's rates of each company's primary proposals.

[13] Ex. 007-06, page 20.

TABLE 2.1.3-1

Comparison of Impacts of Alternative Rate Proposals on Gas Prices at Locations on the NGTL

	Primary Rate Proposals*		DIFFERENCE
	NGTL	**ATCO**	(ATCO - NGTL)
	$/Mcf	$/Mcf	$/Mcf
NIT Gas Price	$7.0000	$7.0000	$ 0.0
Plus: FT-D Transport Rate	$0.1551	$0.1472	
Alberta Border Delivered Gas Price	**$7.1551**	**$7.1472**	$ (0.0079)
NIT Gas Price	$7.0000	$7.0000	$ 0.0
Less: FT-R Transport Rate	$0.1551	$0.1569	
Producer's Netback Gas Price	**$6.8449**	**$6.8431**	$ (0.0018)
NIT Gas Price	$7.0000	$7.0000	
Plus: FT-A Transport Rate	$0.0142	$0.0601	
Intra-Alberta Delivered Gas Price	**$7.0142**	**$7.0601**	$ 0.0459

* Excludes Fuel

2.1.3. ATCO Pipelines' Litmus Test is Not a Valid Cost or Ratemaking Principle

Q30. At page 2, lines 18-24 of its evidence, ATCO Pipelines proposes a "litmus test" for all pipeline rate structures. Is ATCO Pipelines' test appropriate?

A. No. ATCO Pipelines claims that the ultimate test of an appropriate pipeline rate structure, what ATCO Pipelines refers to as the "litmus test," is whether the rate structure could be readily adopted by another pipeline in Alberta. This test does not appear on the list of rate design principles proposed by Bonbright in his

classic 1962 treatise, nor is it on the list that appears in the 1989 edition in which Danielsen and Kamerschen add a review of literature and current events to the immutable principles enunciated in the more famous original treatise. Nor does this test appear in any of the dozens of books and articles on public utility or pipeline ratemaking of which I am aware. Instead, it is widely-recognized that the configuration, cost characteristics and commercial circumstances of pipelines tend to vary so widely that there is not a single rate structure that is appropriate for all pipelines. This is especially true in the case of NGTL which is unique among pipelines in Alberta.

2.1.4. ATCO Pipelines incorrectly asserts that a higher FT-A rate will provide proper price signals and accountability for new facilities.

Q31. Do you agree with ATCO Pipelines' claims that its rate proposal will provide proper price signals and improve accountability for new delivery facilities?

A. No. Instead, efficient price signals will be reduced on the Alberta System by ATCO Pipelines' proposal because (i) ATCO Pipelines and Mr. Engbloom propose to increase the total, full-haul intra-Alberta transportation rate, and (ii) a large amount of fixed costs will be shifted from demand charges into a variable commodity charge that is avoidable, and that has a high short-run marginal cost. In considering the price signals provided by the FT-A rate, it is important to identify those aspects of the price signals that might encourage customers to use the existing system efficiently, and those aspects of the price signals that might encourage efficient construction of new facilities. Although these two types of price signals could tend to produce the same results in the long run, it is possible to consider price signals for use of the existing system as a separate issue from the

price signals for construction of new facilities, to the extent that new facilities are subject to additional accountability measures that do not apply to customers that use existing facilities. For this reason this section of the evidence will focus primarily on the price signals for existing facilities, and Section 3 will focus on the price signals and accountability for new facilities.

Q32. Why will an increase in the full-haul (FT-R/FT-A) rate provide inefficient price signals?

A. Proper price signals would be undermined to the extent that ATCO Pipelines' and Mr. Engbloom's proposals would drive up the cost of intra-Alberta transportation on NGTL's Alberta System providing a rate umbrella for ATCO Pipelines to construct a large amount of competing receipt facilities on its own system. As I discussed earlier in this testimony, the full-haul intra-Alberta rate is based on the DOH volume-distance relationship and is superior to the 60% DOH ratio that ATCO Pipelines is implicitly proposing to the Board. To the extent that the increase in NGTL's full-haul rate induces a demand for ATCO Pipelines to construct otherwise unnecessary receipt facilities, the overall welfare of consumers and the public is likely to be reduced.

Q33. Why would a shift of fixed costs from demand charges to variable commodity charges also be likely to produce inefficient results?

A. The current NGTL methodology reflects transmission costs in a properly cost reflective, load-factor sensitive rate form. More particularly, NGTL's transmission costs are now assigned to the receipt and delivery transportation component, and then assessed to customers and service classes, on a demand basis. For either transportation component, the transmission costs have been

reflected in demand-form charges that are not sensitive to load factor, consistent with the fixed nature of pipeline transmission system costs. In contrast, the proposal advanced by ATCO Pipelines would assign transmission costs to an intra-Alberta FT-A delivery rate that NGTL would design and collect on a commodity *(avoidable)* basis. Such a mismatch between cost characteristics and rate design is contrary to cost behavior and is otherwise improper in these facts and circumstances.

For example, an *avoidable* commodity rate for delivery-classified transmission system costs will tend to encourage more low-load factor use and will discourage high load factor use of NGTL's Alberta system at the margin by charging the high load factor customer an average rate per unit that is greater than the average rate the customer could achieve with a fixed charge. These unit cost changes run precisely counter to cost behavior, and could provide inefficient price signals that drive higher load factor industrial customers away from the NGTL system and into the service base of ATCO Pipelines. In addition, high load-factor industrial customers attached to the ATCO Pipelines system, would have a strong incentive to obtain a large amount of baseload service from ATCO Pipelines under a demand charge while relying on NGTL's high-cost, but avoidable commodity rate for intermittent peak demands. Thus, a high variable commodity charge would reduce competition because it would render gas sourced on the NGTL system as the marginal supply for delivery customers connected to ATCO Pipelines. Again, this confluence of incentives would be likely to increase the demand for ATCO Pipelines to construct additional receipt facilities and it would

tend to handicap the Alberta System in any competition to serve high load-factor intra-Alberta delivery customers.

Q34. Could the walling off of ATCO Pipelines' receipt and delivery customers behind a high FT-A commodity charge have other indirect costs?

A. Yes. The value and practicality of NGTL's integrated ratemaking methodology is enhanced further because the entire ratemaking algorithm is accomplished in conjunction with achieving several other salient concurrent ratemaking objectives. For example, NGTL's rate and service structure promotes liquidity and flexibility by providing a large, composite NIT gas pool . The reduction in liquidity and flexibility of all customers is an "externality" cost associated with ATCO Pipelines' and Mr. Engbloom's proposal that should be considered as part of the decision-making process.

Q35. Is it plausible that an increased commodity rate would increase accountability for new facilities?

A. No. In fact ATCO Pipelines' and Mr. Engbloom's proposal could reduce accountability or, at best, produce no improvement if customers have no obligation to use the facilities. Without such an obligation, there could be no assurances that NGTL could collect a reasonable portion of the costs in the initial contract. Thus, the FT-A rate would need to be a demand charge in order for a change in the level of the FT-A rate to achieve any increase in the current level of accountability for new intra-Alberta pipeline facilities.

At page 39 of its evidence ATCO Pipelines suggests that the commodity charge might have a minimum annual charge, but that proposal is similar to the current approach where new customers must generate at least a minimum level of

usage or pay a minimum annual charge. Thus, from the standpoint of accountability for new facilities, the ATCO Pipelines approach would not be an improvement. However, from the standpoint of accountability and cost responsibility of existing customers, the ATCO Pipelines approach is clearly inferior to the current approach because it would move more costs that are currently collected from both new and old customers in a demand charge and collect those costs in an avoidable commodity charge.

Q36. Would ATCO Pipelines gain other competitive advantages from a high FT-A commodity charge?

A. Yes. Because of the way that ATCO Pipelines operates (i.e., by taking advantage of and incorporating the system operating flexibility accorded to ATCO Pipelines by NGTL), the ATCO Pipelines organization, more than any other current NGTL customer, can use that enhanced operational flexibility to benefit from an *avoidable* commodity rate for any transmission costs assigned to NGTL's FT-A rate. The fact that ATCO Pipelines recommends a high FT-A commodity charge, as well as the manner in which ATCO Pipelines has exercised its existing flexibility to use NIT to "transport" gas around the province, will:

- shift costs associated with serving ATCO Pipelines to other NGTL customers, providing a competitive disadvantage to NGTL;
- hold down ATCO Pipelines' own costs, giving ATCO Pipelines another a competitive advantage.[14]

For example, Figure 2.3-1 in the NGTL Evidence shows the dramatic reduction in Alberta System deliveries to interconnects with ATCO Pipelines. Notably, the significant high load factor, year-round loads that formerly generated receipt

[14] See the response to NGTL-AP-12.

revenues by sourcing gas from the Alberta System have virtually disappeared as summer deliveries to ATCO Pipelines interconnects are now nearly zero. Similarly, ATCO Pipelines now nominates less winter-period gas from the Alberta System, but the occasional needle peaks are still as high as ever, indicating that ATCO Pipelines relies on the Alberta System for far fewer volumes than in the past, but still requires essentially the same amount of capacity to serve its peak loads. Consequently, an FT-A commodity charge for service to *competing* pipelines such as ATCO Pipelines does not provide sufficient accountability and is not a sustainable practice in the current competitive environment. Thus, an FT-A demand charge would be essential to properly reflect the fixed costs of facilities that ATCO Pipelines uses at a low load factor and to provide proper price signals and incentives for ATCO Pipelines to increase its load factor on those facilities.

Q37. How is the phenomenon of NGTL's (i) functional service unbundling and (ii) the consequential rate design, germane to the rate structure and competition claims of ATCO Pipelines in this proceeding?

A. The ATCO Pipelines rate and competitive claims essentially ignore the fundamental differences between the two pipelines. As I stated before, the NGTL and ATCO Pipelines pipeline systems are different in many ways. Their respective histories and evolutions differ. Their facility configurations and operational factors differ. Their costs structures differ. Their shipper bases differ. Their services differ. Their rate frameworks differ. When services are designed and rates made for these two different pipelines systems, the congruence of their respective rate structures and levels would be more a startling coincidence than an

expectation or, even more remarkable, a requirement of "fair" competition. Yet ATCO Pipelines' position turns on that incorrect premise.

Q38. Please explain.

A. Refer to ATCO Pipelines Tables 3.2-2 and 3.2-4 on pages 15 – 16 of the ATCO Pipelines Evidence that compare the delivered cost of gas at Industrial Plant gates on the ATCO Pipelines system and the Alberta System under different ATCO rate proposals. ATCO Pipelines advances the notion that the rate relationships shown on the first table are improper, and that ATCO Pipelines' proposed solution (raising NGTL's FT-A rate) will eliminate the asserted competitive rate gap and, presumably, level the competitive playing field. But that claim does not follow and is flawed in myriad ways.

Q39. In what ways are those ATCO Pipelines claims wrong?

A. At an overarching level, different pipelines with different characteristics (facilities, operations, costs, shippers, services, rate frameworks, etc.) can and generally will have different rate levels and rate elements.

On a more detailed level, consider the first lines of each of the four tables on the cited pages 15 and 16. They each ***begin*** with an aggregated average gas cost (either a NIT cost or an ATCO Pipelines "on system" gas cost) that has *already embedded* within that price an array of system-wide receipt charges on each pipeline system. Thus, the comparisons presented by ATCO Pipelines in these tables are truncated to show an incomplete and flawed rate comparison that begins in midstream for what is a full-path transportation transaction. In this particular rate comparison proffered by ATCO Pipelines, NGTL's receipt charges

have already collected the full-path intra-Alberta transportation rates by the time the gas reaches the NIT market. In contrast, ATCO Pipelines has only collected one-half of the intra-Alberta transmission charges by the time gas gets to its on-System market.

Therefore, instead of looking at those cited ATCO Pipelines tables and concluding that the NGTL FT-A charge must be higher in order to "level the competitive playing field," one should look at the whole picture of full-path transportation tolls. When one looks at the broader picture it is just as plausible to conclude that ATCO Pipelines' rate structure is the problem in the context of the specific competitive test (which, in my judgment, is artificial and flawed) that ATCO Pipelines has assembled in these tables. In Section 3 of this Reply Testimony I show the broader picture and demonstrate why ATCO Pipelines does not suffer any disadvantages in the market, but it will create significant advantages and opportunities for itself if its rate proposals are adopted in this proceeding.

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2.2. If competition to serve delivery points is the concern, ATCO Pipelines should propose to change its own rate design to be competitive with NGTL.

Q40. As a general matter, do you agree that ATCO Pipelines' current rate levels, structure and bases should be (1) treated as fixed and foundational and then (2) accorded great materiality and relevance in setting NGTL's rates?

A. No. Rate design is undertaken with respect to specific pipelines, based on a prescribed set of facts that change from time to time. It is reasonable and proper for NGTL to predicate its cost allocations and rate design based on the specifics of its own system and its operations. It also is reasonable for ATCO Pipelines to do the same, i.e., to assess its own case-specific facts and circumstances whenever

it designs, changes and/or defends its own rate structure and levels before its customers and/or the Board.

However, ATCO Pipelines should not be entitled to begin with its own current rate levels/structure, freeze them at a point in time, and then expect NGTL's rates to be redesigned in a manner that serves ATCO Pipelines' competitive objectives. Instead, NGTL's rates should be judged as acceptable if they are aligned with NGTL's facts and circumstances, internally consistent, and otherwise are in compliance with the applicable ratemaking standards.

Q41. Are you saying that ATCO Pipelines' competitive concerns are not germane?

A. Competition should surely be a concern to ATCO Pipelines when ATCO Pipelines designs its own rates. In that context, ATCO Pipelines has and will exercise great discretion over the interfaces it creates for competition with NGTL. Depending on an array of factors (how ATCO Pipelines defines its services, how ATCO Pipelines allocates costs and designs rates, the configuration of the ATCO Pipelines facilities and system, how ATCO Pipelines operates its system, how ATCO Pipelines takes advantage of the extent to which NGTL connects and integrates ATCO Pipelines' two pipeline systems, how ATCO Pipelines' distribution affiliate benefits from the scope and scale economies offered by NGTL's interconnections and functional integration with ATCO Pipelines, etc.), ATCO Pipelines itself will create and respond to the various interfaces of competition with NGTL. However, the current rate levels and design of ATCO Pipelines' rates should not become the independent variables and NGTL's rates the dependent variable. Instead, ATCO Pipelines and NGTL should each design

their rates based on their own case-specific facts and circumstances, including the competitive environment that they face.

Q42. Are there any public policy advantages associated with requiring ATCO Pipelines to propose and justify changes to its own rates, rather than changing NGTL's currently reasonable rate structure?

A. Yes. In addition to competition with ATCO Pipelines to serve intra-Alberta markets, NGTL faces competition in a variety of other markets where the competing pipelines have established their own rate structures, business plans and competitive strategies. Because the essence of ATCO Pipelines' proposal is to increase NGTL's full-path tolls for intra-Alberta transportation, pipelines that compete with NGTL in other markets might reasonably expect the Board to make additional changes to the NGTL rate structure in future years so as to accommodate the rate structures and competitive strategies of those companies. Conceivably, Board hearings to accommodate individual competitors' parochial ideas for changes to NGTL's rate structure could become an annual sporting event once the Board establishes this precedent. Consequently, the public interest, and administrative efficiency, would be better served by requiring competitors to propose changes to their own rate structures, rather than inviting each competing pipeline (both jurisdictional and non-jurisdictional) to propose changes to otherwise reasonable rate structures of competing pipelines.

Q43. Would this approach mean that the Board should never entertain objections or proposals from competing pipelines?

A. No. Instead, this approach would mean that a pipeline's rate structure that is otherwise reasonable in terms of reflecting costs of service and other important

rate design principles should not be discarded or distorted in order to accommodate the existing rate structure, business plans and competitive strategies of a competitor. In these circumstances, a more efficient pipeline transportation market is likely to develop if competitors propose justifiable changes to their own rate structures. However, if it is clear that a pipeline's rate structure is unreasonably discriminatory or that its rate structure or other operating practices are likely to treat customers unreasonably, it is appropriate for the Board to consider changes to the pipeline's rate structure or other practices. In the circumstances presented by this proceeding, NGTL's rate structure reasonably reflects costs and promotes an efficient natural gas market. In contrast, ATCO Pipelines' proposal would unnecessarily increase the costs of intra-Alberta transportation to the detriment of ATCO Pipelines' captive customers, and lead to a likely reduction in the efficiency of Alberta natural gas markets.

3. Competition and Ratemaking

Q44. Relative to the NGTL's 2004 Phase 2 General Rate Proceeding, has ATCO Pipelines changed its claim as to the relevance and importance of ATCO Pipelines' rates as a predicate for determining just and reasonable rates for NGTL?

A. Yes. ATCO Pipelines' change of position has been fundamental. Whereas ATCO Pipelines in the last proceeding essentially claimed that ATCO Pipelines' rates and rate structure were irrelevant in setting NGTL's rates, ATCO Pipelines has now reversed course. ATCO Pipelines' evidence in this proceeding is replete with factual claims and reasoning that make ATCO Pipelines' current rate structure, components and levels a linchpin of its bases and support for refashioned NGTL rates, focusing on a higher FT-A rate.

Q45. Would you cite an illustration of the relevance and materiality that ATCO Pipelines now assigns to its own rate structure and level in setting NGTL's rates?

A. See, for example, (i) the tables appearing at pages 15 - 16 of the ATCO Pipelines evidence, (ii) the specific ATCO Pipelines rate element entries on those tables, and (iii) the ATCO Pipelines discussion of such rates in the context of evaluating the reasonableness of NGTL's rates. At bottom, ATCO Pipelines identifies a difference between its own delivery charge and that of NGTL, and fashions a new delivery charge for NGTL that will eliminate that difference. ATCO Pipelines argues that pipelines do not compete based on full-path tolls. This testimony will demonstrate why it is unreasonable and invalid to ignore the full-haul rate which recovers all of the proper costs of intra-Alberta transportation. However, all of

the tables on those pages start with gas prices in the NIT or ATCO Pipelines On-System markets and incorrectly omit the receipt charges upstream of those points.

3.1. ATCO Pipelines Incorrectly Maintains That Pipelines do not compete based on total transportation rates

Q46. At page 1, lines 18-24 of its evidence ATCO Pipelines states that pipelines do not compete based on total transportation rates and that receipt customers look solely at the level of gas prices they receive at the plant outlet, and delivery customers look solely at the price they must pay for delivered gas at the delivery point. Do you agree with this statement?

A. No. For any particular path from a gas source to a point of delivery, and in purchases of NIT gas where receipt costs are already embedded, the two pipelines compete on the basis of total transportation costs.

As an energy transporter, NGTL provides value to the economy by moving gas from locations where it has a low value to places where it has a high value. Although contracting and service options, designed around customer choice, may fragment the total cost of transportation into various components, each with their own pricing and service variations, it is nevertheless the total transaction that constitutes the service to the user. Thermal energy that is only received but not delivered, or that is only delivered but not received, can exist only as midstream (but incomplete) service choice options on the NGTL and ATCO Pipelines systems. Thus, by focusing on only the isolated service components, and ignoring the end-to-end transportation costs, ATCO Pipelines' evidence misses the essence of the complete competitive transportation/delivery service that users require.

Q47. Might some receipt customers be focused on the netback price of gas that they can obtain at receipt points, and some delivery customers focused on the delivered cost of gas at their delivery points.

A. Yes. But any such focuses are only part of the complete picture of interdependent transportation and delivery factors. However, the conclusion that ATCO Pipelines draws from this observation – that pipelines therefore do not compete based on total transportation costs – is incorrect because it ignores the effect that total transportation rates have on the price of gas at different locations. It should be noted that pipelines also compete on other dimensions than total transportation rates, such as: reliability of service; access to high value locations or low-cost gas supplies; liquidity of markets; diversity of supply; flexibility of services; long-term access to supplies, etc.

Q48. How do full-path transportation rates affect the cost of gas at different locations?

A. Figure 3.1-1 depicts the supply and demand for gas at different locations. The demand curve is downward sloping because lower delivered prices will cause consumers to want to purchase greater volumes of gas. Conversely, the supply curve is upward sloping because higher netback prices generally result in greater production of natural gas. In a competitive market with no transportation costs the price and quantity of gas produced will tend to move toward the point where the supply and demand curves depicted by the solid lines intersect. However, transportation costs will drive a wedge between netback prices that producers can obtain at receipt points and the price that consumers are willing to pay at delivery points.

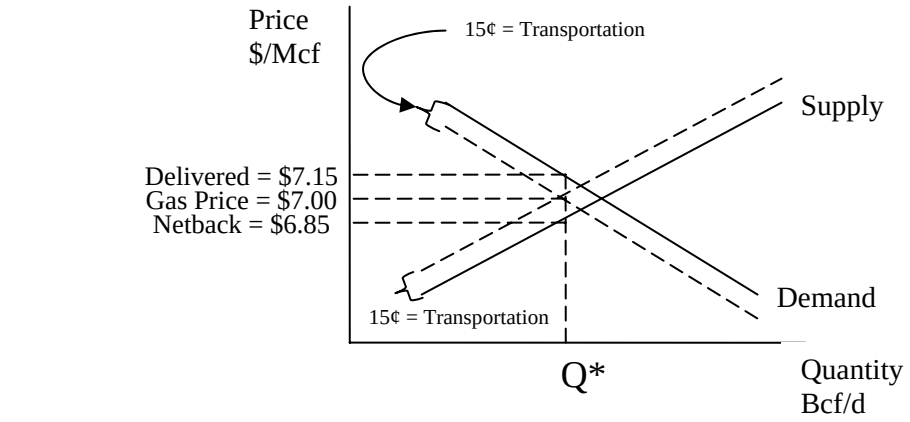
The effect of transportation costs on the supply and demand for natural gas is shown on the graph in Panel A by the dashed lines that are parallel to the solid supply and demand curves. In this example, the total, full-path transportation rates are 30¢ per Mcf and the transportation costs are split equally between the producer and the buyer of gas. Because buyers must pay transportation costs of 15¢, for any given volume of gas the buyers are now willing to pay a purchase price that is 15¢ less than they were willing to pay when they were not required to pay transportation costs. Thus, the effect of charging the buyers 15¢ for transportation costs is to shift the demand curve for gas downward by 15¢.

If producers are also required to pay transportation charges of 15¢ per Mcf, a similar shift in the supply curve will also occur. A 15¢ transportation charge levied on producers will mean that they now require a purchase price that is 15¢ higher than they required for any given quantity of gas when they were not required to pay transportation costs. As a result, the dashed line parallel to the supply curve is 15¢ above the solid supply curve that applies when producers are not required to pay transportation costs.

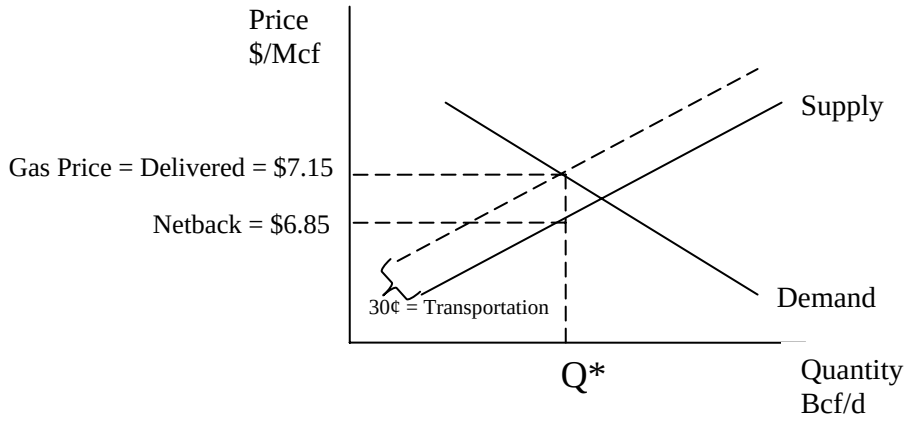
The intersection of the two dashed lines in Panel A denotes the market-clearing price and quantity of gas. At this intersection point, the volume of gas bought and sold is equal to Q* and the price of gas in the gas market is $7.00 per Mcf. Notice, however, that the netback price to producers is $6.85 and the delivered cost of gas to consumers is $7.15. The difference between delivered cost of gas and the netback price obtained by producers is the cost of transportation (i.e., $7.15 - $6.85 = 30¢).

Figure 3.1-1
Effects of Transportation Rates on Gas Prices

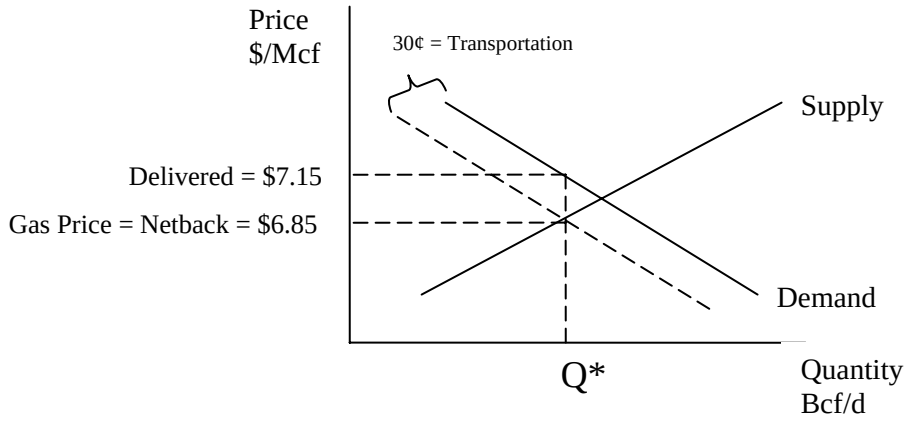
A Split 50-50 Between Receipt and Delivery Customers



B Receipt Shipper Pays Transportation



C Delivery Customer Pays Transportation



Q49. If the pipeline charges the delivery customer for all of the costs of transportation, how does that change the analysis?

A. Panel B in Figure 3.1-1 indicates that charging producers 30¢ for the full-path transportation costs will cause an upward shift in the supply curve, as represented by the dashed line that is parallel to, but 30¢ above, the solid-line supply curve. This rate structure results in a NIT price that is $7.15 but, once again, the netback price to producers is $6.85 and the delivered cost of gas to consumers is $7.15. The difference between delivered cost of gas and the netback price obtained by producers is the cost of transportation (i.e., $7.15 - $6.85 = 30¢).

Q50. Have you also prepared an example that depicts how the market will react when the receipt customers are required to pay all of the transportation costs?

A. Yes. Panel C in Figure 3.1-1 depicts the price-setting mechanism that occurs when delivery customers are required to pay all of the costs of transportation. When consumers are required to pay 100 percent of the 30¢ in transportation costs, the price that they would be willing to pay to purchase any given quantity of gas in the market would now be 30¢ less than the price they would be willing to pay for gas that is delivered to their doorstep. Thus, in this case the producers' supply curve would be unchanged, but the consumers' demand curve would be shifted downward by 30¢ per Mcf, the amount of the full-path transportation toll. The NIT price that results from this rate structure would be $6.85 per Mcf. Notice again, however, that the netback price to producers is $6.85 and the delivered cost of gas to consumers is $7.15. And, again, the difference in these two prices is dictated by the full-haul cost of transportation: 30¢ per Mcf.

Q51. Please illustrate why "full path" rates are germane in the context of the NGTL system.

A. NGTL customers can elect to take receipt service, delivery service, or both pieces of the transportation transaction. However, the gas molecules bear the costs of the total "full path" NGTL rate as they move from one location to another, irrespective of the contracting and service flexibility that allows the total charge to be unbundled and borne by different parties. It is the NGTL shippers and affected parties that choose the specific contract structure of the transaction. These contracting and service unbundling options have been shipper driven. Importantly, this NGTL service and rate structure has fostered the creation and growth of one of the largest, most robust and liquid mechanisms in North America for pooling natural gas. That composite NIT pool concurrently serves the demands of both intra-Alberta users and ex-Alberta users.

Q52. Is there empirical evidence that pipelines in Alberta compete based on the level of full-haul transportation rates?

A. Yes. The history of the Alberta System during the past decade demonstrates the importance of full-path tolls for competition between pipelines. During that time many new pipelines were proposed and several of these pipelines were constructed in order to by-pass and avoid the full-path tolls that were being charged when NGTL used a postage-stamp toll for export volumes. Several of these new pipelines did not split costs between receipt customers and delivery customers but, instead, had a single rate for the full-path transportation service. If one were to accept ATCO Pipelines' claim that pipelines do not compete on the basis of full-path rates, several of these by-pass pipelines would not have been

constructed or considered because either the producers at receipt points, or the customers at delivery points, ended up paying higher transportation rates to the new pipeline than they had been paying to the Alberta System. Nevertheless, either the receipt customer or the delivery customer, or both, thought they would be better off with a lower full-haul transportation rate than they could obtain under NGTL's former postage-stamp rate design. Thus, history disproves ATCO Pipelines' claim that pipelines do not compete based on full-path tolls.

Q53. What do you conclude from this analysis?

A. ATCO Pipelines' claims that its delivery services compete only with NGTL's delivery services, and that the full-haul transportation rates are not relevant to the analysis, is contrary to basic economic theory and empirical evidence, and should be dismissed by the Board. Appendix A contains a general proof of the proposition that – regardless of the proportion of full-haul transportation costs paid by either producers at receipt points, or consumers at delivery points – the full-haul cost of transportation is a factor in both the netback prices to producers and the delivered costs of gas to customers at delivery points because it largely determines the long run equilibrium difference between the prices at those two locations.

3.2. ATCO Pipelines' and Mr. Engbloom's proposal increases the probability that inefficient, duplicate receipt facilities will be constructed in Alberta

Q54. Are ATCO Pipelines' and Mr. Engbloom's proposed changes to NGTL's rate structure likely to cause an increase in demand for ATCO Pipelines to construct additional receipt facilities that increase ATCO Pipelines' receipt revenues at the expense of NGTL's receipt revenues?

A. Yes. The salient features of ATCO Pipelines' and Mr. Engbloom's proposal are that it would increases the Alberta System's total, full-path rates for intra-Alberta transportation and that it would continue to charge the FT-A rates on a commodity basis. These aspects of ATCO Pipelines' and Mr. Engbloom's proposal have greater significance than simply shifting the proportion of full-haul rates that are borne by delivery customers. The significant initial two-pronged effects of ATCO Pipelines' and Mr. Engbloom's proposal will be (i) to increase the delivered cost of gas that ATCO Pipelines' captive delivery customers must pay to obtain gas transported from upstream receipt points by NGTL, and (ii) to marginalize NGTL in competitive intra-Alberta transportation markets by greatly increasing the short-run marginal cost that intra-Alberta shippers would incur if they purchase gas from producers who use NGTL's receipt point facilities. The consequence of these two initial effects is likely to be diversion of Alberta System receipt volumes by ATCO Pipelines at dually-connected receipt points or new attachments to receipt points that could also either off-load or displace volumes transported by NGTL's Alberta System. Any of these outcomes could lead to increased construction of receipt facilities by ATCO Pipelines as a consequence of its proposed rate change.

3.2.1. Determinants of Demand for Pipeline Services

Q55. How does the price of gas at different locations affect the demand for a pipeline's services?

A. The difference between gas prices at receipt points and gas prices at delivery points is referred to as a "basis differential." The basis differential measures the market value of gas transportation between any two points and is probably the most important determinant of the demand for a pipeline's services. For example, if the basis differential between two points exceeds the rates, including fuel, associated with constructing a pipeline, some customer(s) in the market generally will be willing to pay the costs associated with additional pipeline capacity. Conversely, if the basis differential is expected to be less than the rates for transportation, plus fuel costs, between the two points, the value of pipeline capacity is less than the rates, and shippers will not use that route in the long run. As a general matter, the amount of pipeline capacity between two points will be in equilibrium when the costs of pipeline services are equal to the basis differential between the two points (generally on an average year-round basis). In theory, when the market is in equilibrium the pipeline will be able to charge rates that are no more and no less than its costs.

When transportation capacity is inadequate those entities who hold contractual rights to use the scarce transportation capacity may capture extraordinary profits in the market by causing sellers to receive less for their gas, and gas buyers to pay more, than they would if transportation capacity were not constrained. Indeed, expectations of persistently high basis differentials are the impetus for many transportation capacity additions.

The concept of the basis differential in pipeline economics is important because it belies ATCO Pipelines' claim that pipelines do not compete based on full-path rates. Total transportation rates are an important factor in pipeline competition because total transportation rates ultimately determine the equilibrium level of the basis differentials. Moreover, demand for a pipeline's services generally is unaffected by the proportions of total transportation costs that are paid by either buyers or sellers of gas. In addition, an understanding of the role of basis differentials is important for understanding why ATCO Pipelines' and Mr. Engbloom's proposal is likely to harm ATCO Pipelines' captive delivery customers and also encourage diversion of Alberta System receipt volumes by ATCO Pipelines at dually-connected receipt points and/or provide incentives for construction of additional receipt facilities by ATCO Pipelines that otherwise might not be needed. Finally, the concept of the basis differential is important for understanding why "receipt revenues" can and should be directly attributable to and associated with delivery facilities and services.

3.2.2. Economic implications of ATCO Pipelines' and Mr. Engbloom's proposals

Q56. What impact would an increase in NGTL's full-path rate for intra-Alberta transportation have on the cost of gas on ATCO Pipelines' system?

A. In its evidence, at page 14, line 12 to page 16, line 6, ATCO Pipelines explains that NIT prices and charges for transportation between the NIT market and its own system set a band for the price of gas on its system.[15] However, an increase in the Alberta System's full-haul intra-Alberta transportation rates would increase the price of gas on its system by raising the barrier between the two markets.

[15] Ex. 07-005, p. 14, line12 to p. 16, line 6.

Therefore ATCO Pipelines' captive delivery customers would see an increase in the delivered price of gas sourced from NGTL's Alberta System and producers attached directly to ATCO Pipelines' system would also experience an increase in the netback prices they can obtain in the market. In response to the higher prices and higher on-system basis differentials more producers are likely to request pipeline extensions to connect directly to ATCO Pipelines' system and producers located at dually-connected receipt points are likely to put more of their gas onto the ATCO Pipelines system. Either method of avoiding the higher NGTL full-path intra-Alberta tolls that ATCO Pipelines and Mr. Engbloom have proposed to the Board will potentially offload the Alberta System.

Q57. Can you show how these market forces are likely to work?

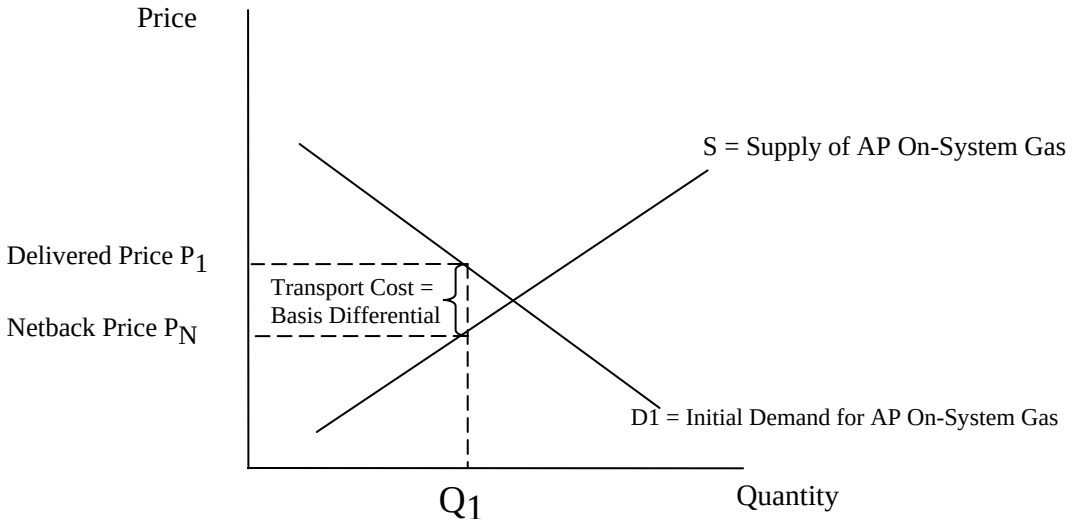
A. Yes. At the margin, many of ATCO Pipelines' customers obtain their gas from NGTL. But the demand for and supply of on-system gas on ATCO Pipelines' system can be represented by the graph of the supply and demand for gas on ATCO Pipelines' system shown on Figure 3.2.2-1. If ATCO Pipelines' capacity is initially in equilibrium, the basis differential between receipt points and delivery points will be equal to the costs of transportation. The equilibrium situation is shown in Panel A. However, an increase in the FT-A rate, especially if it is a commodity charge, is likely to shift the demand curve for gas on ATCO Pipelines' system upward by the amount of the increase in the FT-A rate, and will reduce the quantity and/or price that buyers are willing to pay for gas attached to NGTL's Alberta System. Panel B shows that this shift in the demand curve causes an increase in the basis differential. However, to the extent that ATCO

Pipelines may not initially have capacity to serve the increased demand, the delivered price of gas paid by ATCO Pipelines' delivery customers will increase and the basis differential will exceed the cost of transportation. Eventually producers will respond to the price signal provided by an increased basis differential on the ATCO Pipelines system by requesting that ATCO Pipelines construct additional receipt capacity and possibly delivery capacity. Thus, an increase in the FT-A rate is likely to increase construction of pipeline capacity by ATCO Pipelines to assist the market in avoiding the effects of the ATCO Pipelines' recommended increase in the Alberta System FT-A rate.

Figure 3.2.2-1
Supply and Demand for ATCO Pipelines' On-System Gas

A

ATCO Pipelines System When Pipeline Capacity is in Equilibrium



B

Basis Differential Increased by the Amount Of the Increased FT-R/FT-A Rates

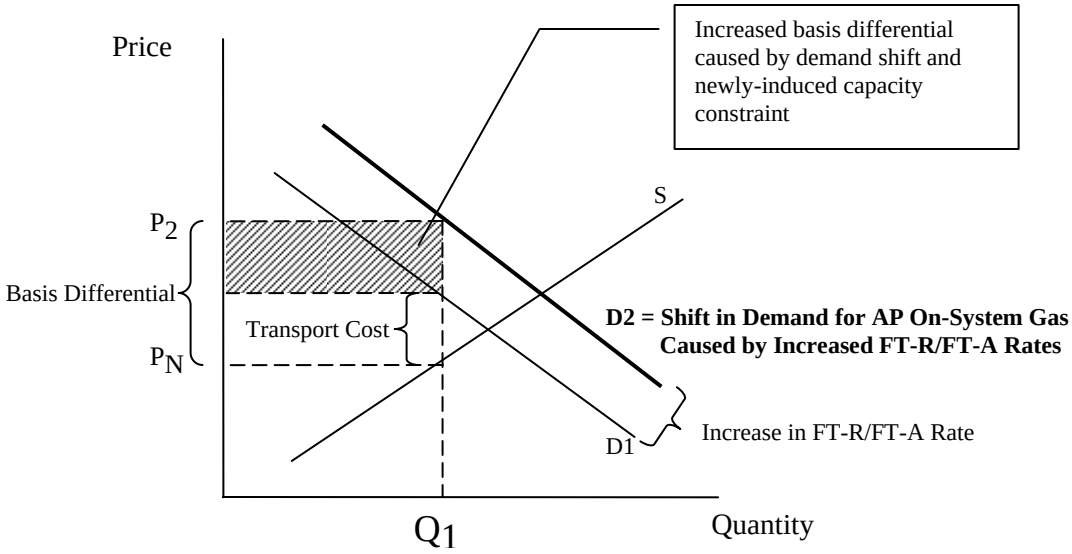
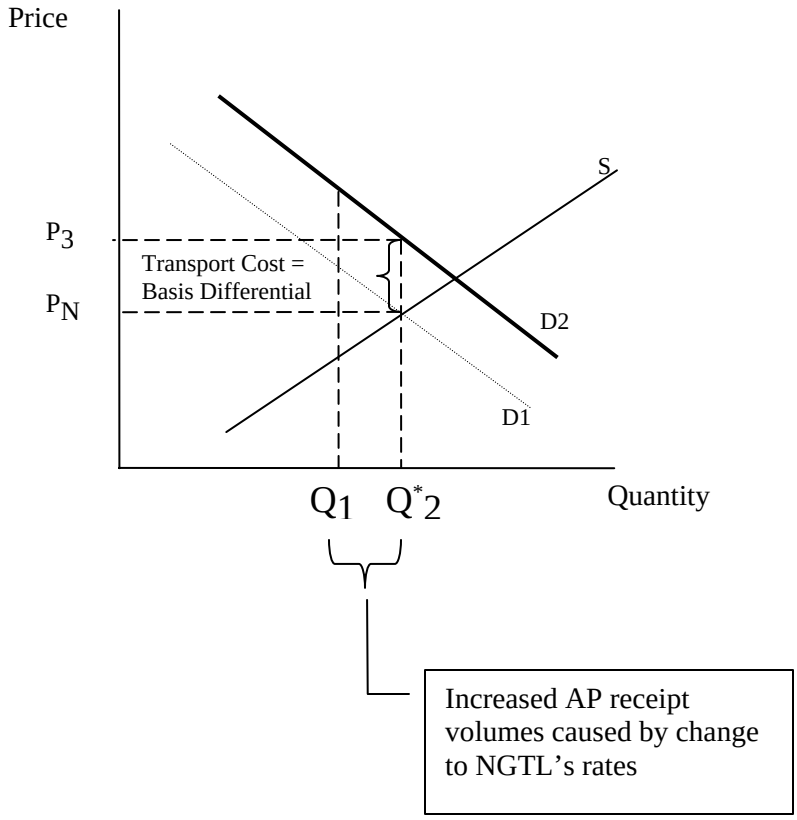


Figure 3.2.2-1 (cont.)

C **Increased ATCO Pipelines' Throughput Caused by Higher Basis Differential**



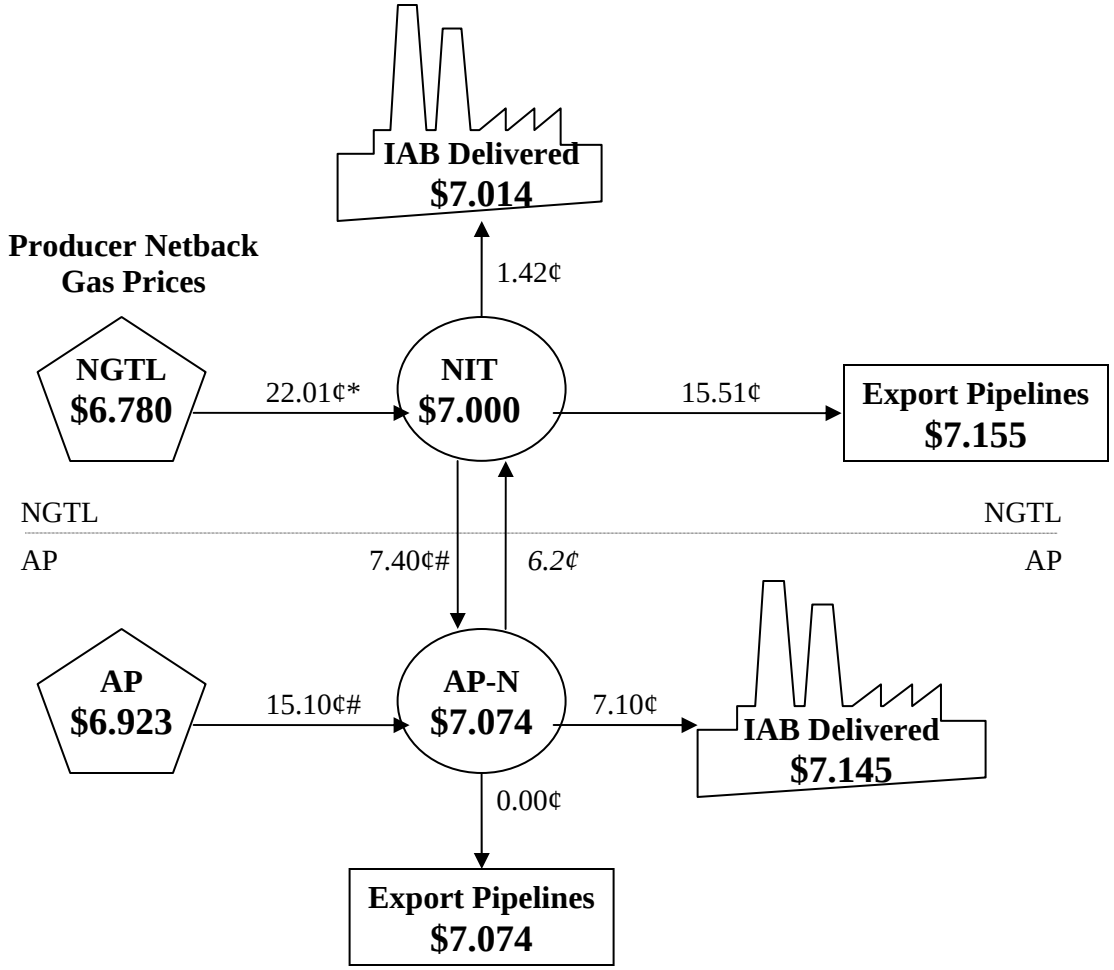
3.2.3. Impact of ATCO Pipelines' and Mr. Engbloom's Proposal on Gas Prices and Basis Differentials

Q58. How do the pipeline rates and rate structures interact with natural gas prices in determining the demand for competitive pipeline services in Alberta?

A. Although gas prices at locations on both systems fluctuate for a variety of reasons, a well-functioning natural gas market generally will result in prices at each location, or node, that reflect the costs of transportation between the various points. Consequently, it is possible to analyze the chain of events and changes in the price of natural gas that will tend to occur as a result of the changes to NGTL's Alberta System rate structure that ATCO Pipelines is proposing in this proceeding. Figure 3.2.3-1 shows a basic diagram of the existing transportation rates on NGTL's Alberta System and ATCO Pipelines' system. If we start with the assumption that the price of gas in the NIT market on NGTL's system is $7.000 per Mcf, market forces generally will exert pressure for the prices of natural gas at all other locations to be equal to the price of natural gas in the NIT market, plus the transportation rates between each other location, or node, in the province. Consequently, in order to maintain this relationship, the netback price to a producer attached to the Alberta System would be the NIT price, less the transportation charges between a producer and the NIT market. Similarly, gas prices in the ATCO Pipelines-North market should tend to equal the price of gas in the NIT market, plus the charges for transporting gas between the two different pipeline systems. That ATCO Pipelines-North gas price will tend to be reflected in the netback price at which producers attached to ATCO Pipelines' North system can obtain for their gas, and this market force will generally tend to force the netback price to equal the ATCO Pipelines-North price, less the charges for

transportation from the receipt point to the ATCO Pipelines-North market. The netback price to producers attached to ATCO Pipelines-North also should be equal to the NIT price, less the costs of transportation between the producers and the NIT market.

Figure 3.2.3-1
Transportation Rates and Competitive Gas Prices
Associated with NGTL's Rate Proposal



* Includes NGTL Fuel = 6.5¢
\# Includes ATCO Fuel = 5.9¢

Legend

- Gas producer at processing plant
- Gas pipeline network and commodity trading market
- Intra-Alberta industrial customer
- Non-jurisdictional export pipelines

Q59. How do these natural gas commodity price relationships affect competition between natural gas pipelines?

A. As supply and demand waxes and wanes at various locations, the market price at one location may become greater than the cost of building new pipeline capacity. On the other hand, market prices for natural gas may go down in a particular location and sellers at that location will begin to seek transportation to markets where they can sell their gas at higher prices. Pipelines provide value by connecting locations that have high gas prices with locations that have low gas prices. In a competitive natural gas pipeline market such as the Western Canada Sedimentary Basin, an outside shock that changes gas prices at various locations can induce a complex reaction as competing pipelines respond to these changes by constructing new pipeline facilities and other pipelines possibly lose business.

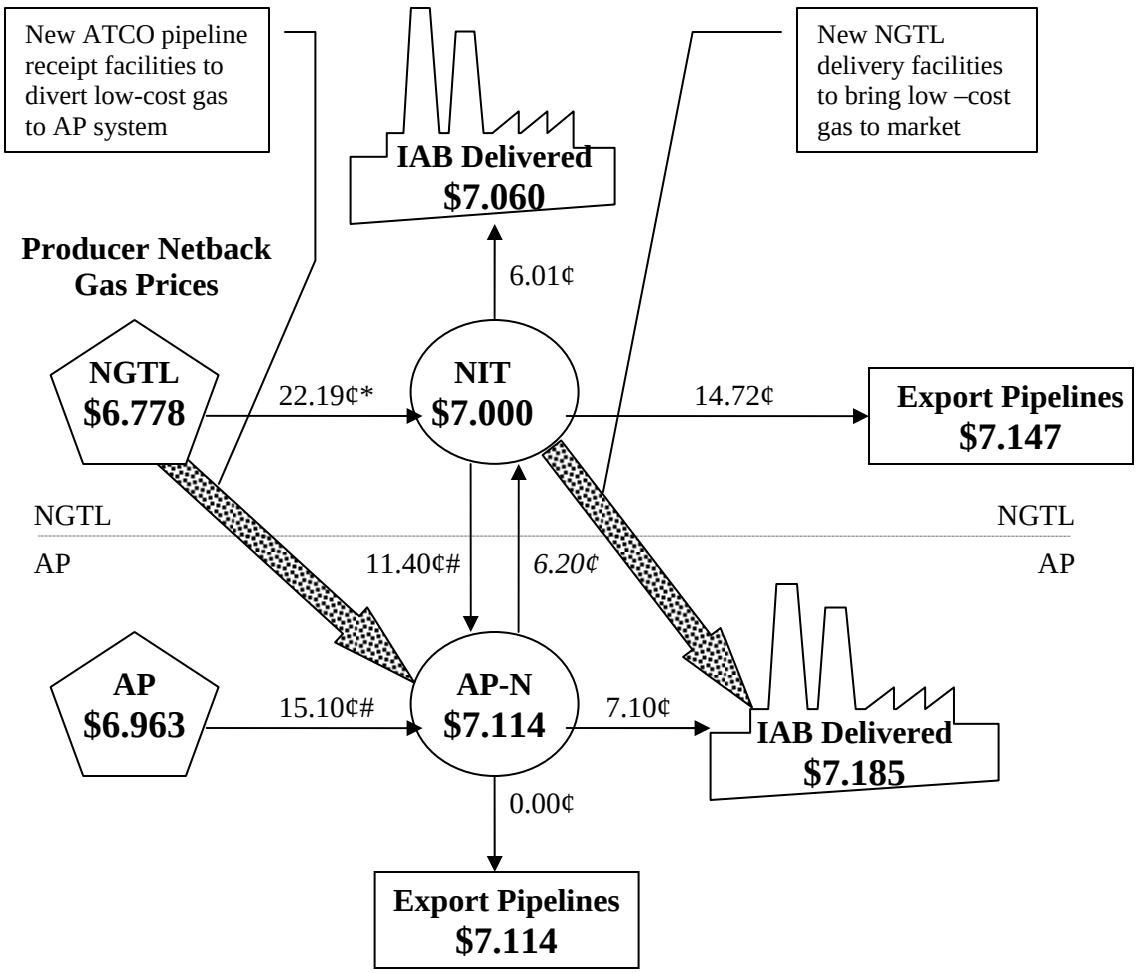
Q60. What would be the netback effects of ATCO Pipelines' and Mr. Engbloom's proposed changes to the Alberta System rate structure?

A. Figure 3.2.3-2 indicates the types of changes in gas prices that are likely to occur as a result of the ATCO Pipelines proposal. While the specific values of the gas prices shown on Figure 3.2.3-2 are unlikely to occur, the market forces associated with these changes in the Alberta System rate structure are likely to occur. For example, at page 14, lines 13-14 of its evidence, ATCO Pipelines indicates that "(t)he trading price on AP is determined in the market and based on the NIT price." With less gas-on-gas competition coming from gas sourced on NGTL's Alberta System, producers attached to ATCO Pipelines' receipt points would be able to raise their prices for a time, causing Industrial and Gas Distribution

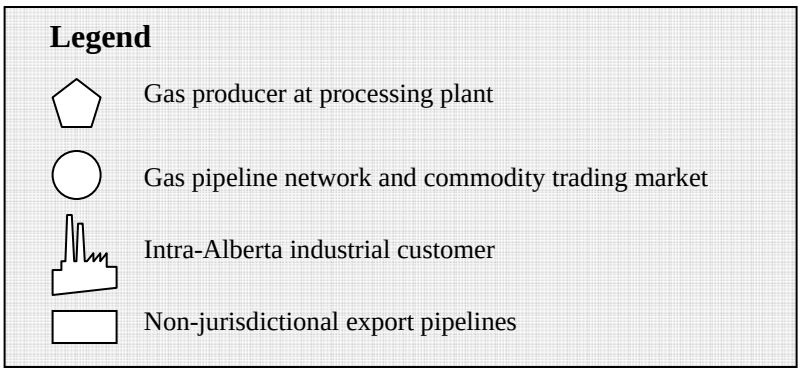
companies attached to the ATCO Pipelines system initially to pay higher prices for natural gas.

At the same time, higher full-haul transportation rates on the Alberta System would reduce the quantity of gas that customers want to source on that system and would put downward pressure on the prices available to producers attached to NGTL's Alberta System that might cause lower prices initially than the pure netback price would indicate. In other words, the basis differentials between various locations would be changed and numerous opportunities to construct new pipeline facilities would develop in response to those changes in basis differentials.

Figure 3.2.3-2
Transportation Rates and Competitive Gas Prices Derived From ATCO Pipelines' Rate Proposal



* Includes NGTL Fuel = 6.5¢
# Includes ATCO Fuel = 5.9¢



Q61. How might competing pipelines be affected by the change in gas prices at various locations?

A. On the ATCO Pipelines system producers at receipt points and gas buyers at delivery points will both experience higher prices. Thus, there will be a tendency for producers in Alberta to bring more gas to the ATCO Pipelines system and for gas buyers attached to ATCO pipelines' system to look for alternative, lower-priced gas supplies available on other pipelines. Numerous possible events might occur to push the market back into equilibrium, but one notable initial increase in basis differentials is likely to occur between receipt points on NGTL's Alberta System and delivery points on the ATCO Pipelines system. Two possible responses to the changes in market pressures occasioned by ATCO Pipelines' and Mr. Engbloom's proposals stand out as a result of the newly-created pressures on basis differentials:

1. ATCO Pipelines could construct additional receipt-area capacity to connect or expand capacity so that low-priced gas from producers attached to the Alberta System will come directly to ATCO Pipelines' system and NGTL's Alberta System would lose FT-R receipt revenues and also lose either FT-A or FT-D delivery revenues; or,

2. NGTL's Alberta System could construct a delivery area extension to connect directly to the delivery customers attached to the ATCO Pipelines system and ATCO Pipelines would lose receipt and delivery revenues.

Figure 3.2.3-2 depicts both of these alternative business opportunities for competing pipelines to bring low-cost gas from NGTL's Alberta System to alleviate the relatively higher prices that ATCO Pipelines' delivery customers would pay. One or the other of the pipelines might gain revenue at the expense of its competitor by constructing a pipeline connection that by-passes the existing pipeline capacity at interconnects between the Alberta System and ATCO

Pipelines, possibly bypassing the increased FT-R/FT-A charge, and also bypassing one of the pipelines' receipt and fuel charges. In other words, ATCO Pipelines' and Mr. Engbloom's proposed rate changes will create new economic opportunities and incentives to provide new transportation paths that will eliminate the increased charges associated with a transportation route that goes from receipt points on NGTL's Alberta System to delivery points on the ATCO Pipelines system. They each therefore have a strong incentive to compete vigorously to construct additional capacity so that they can provide full-path transportation from receipt to delivery points on only one system or the other.

Q62. How will a bypass by one pipeline affect the revenues of the other pipeline?

A. Competition means that one company is likely to obtain full-path revenues, by building a connection at one end of the pipe or the other, and the other company will get nothing. Doing nothing and continuing to share in transportation revenues between the two systems is not an option. If one of the pipelines is unable or unwilling to compete for business at both ends of the pipe simultaneously, it will lose business at both ends.

If ATCO Pipelines constructs new receipt facilities before NGTL's Alberta system manages to build new delivery facilities, ATCO Pipelines will increase its full-path volumes and revenues (most likely by the amount of its FSR charge since it will already be serving the delivery point), while NGTL's Alberta system will be likely to lose full-path FT-R + FT-A revenues at a minimum, and possibly the full-path export revenues. This means that by constructing facilities to attach new supply, or by diverting more supply at a dually-connected station,

ATCO Pipelines could receive 16.3¢ in receipt and delivery revenue while NGTL's Alberta System, would get 0.0¢.

On the other hand, if NGTL is first to construct facilities to directly connect to the market, it will be able to retain its full-path FT-R + FT-A revenues of 21.7¢. Under this scenario ATCO Pipelines would lose existing FSD delivery revenues of 7.1¢ and would lose either receipt revenues of 9.2¢, or the opportunity to increase its receipt revenues and facilities. In the end, it would be left with nothing in this particular competition if it does not win the business and build the direct connection first. Thus, both pipelines have "full-haul," receipt plus delivery, revenues at stake in the competition, even though the Alberta system might only construct delivery facilities, or ATCO Pipelines might only construct receipt facilities.

ATCO Pipelines' and Mr. Engbloom's rate proposal would tend to increase the incentives and opportunities to construct additional capacity for which the marginal revenue at stake for both pipelines is based on the full-path tolls. It is telling, therefore, that ATCO Pipelines wants the Board to isolate the FT-A rate from the other components of the rate structure, and it also wants the Board to focus only on the effect of the FT-A rate on competition to construct delivery facilities.

Q63. Is it equally likely that the receipt-connection and the delivery-connection competitive by-passes could occur?

A. In discussions with NGTL I have been told that the probability of some form of receipt-area bypass is high and that it is much more difficult and unlikely for a delivery-area bypass to occur.

Q64. Why is it important for the Board to understand the competitive market dynamics that are affected by ATCO Pipelines' and Mr. Engbloom's rate proposals?

A. ATCO Pipelines' evidence stresses that it is only interested in the effects of the FT-A rate on its ability to compete for intra-Alberta delivery markets. However, as the example above demonstrates ATCO Pipelines' and Mr. Engbloom's rate proposal actually enhances ATCO Pipelines' ability to compete for production-area receipt business by increasing the prices that its on-system delivery customers are likely to pay for natural gas. One outcome of its proposal is that ATCO Pipelines would have a greater ability to construct new receipt facilities that would be unnecessary but for its rate proposal. This outcome would defeat any claims that ATCO Pipelines' and Mr. Engbloom's rate proposal would increase incentives for efficient construction of pipeline facilities in Alberta.

In addition, NGTL is at risk of losing receipt revenues as a result of ATCO Pipelines' and Mr. Engbloom's proposals. There are several implications of this fact. First, NGTL and other pipelines in Alberta compete in part based on full-haul transportation rates. Second, there are multiple alternative routes between receipt and delivery areas in Alberta, which means that having a receipt point attached to NGTL's Alberta System provides very little assurance of continuing revenues unless NGTL's Alberta System competes to construct facilities to connect receipt shippers with high value delivery markets. Third, the example demonstrates how an expansion of receipt facilities can compete with delivery facilities and new delivery facilities can compete with receipt facilities. Consequently, it is incorrect to limit the analysis to delivery facilities or delivery competition, and it is incomplete to look only at the delivery component of the

transportation charge when all components of the service are required to provide any part of the service. Fourth, the dynamic competitive pipeline market in Alberta can cause gas to flow on other systems if reasonable rate relationships are not maintained. Because it faces actual and potential competition throughout the province, NGTL's Alberta system must maintain reasonable rates on all parts of its system and cannot use pricing power in one market to cross-subsidize services in another market.

3.3. ATCO Pipelines' and Mr. Engbloom's Proposals Will Reduce the Efficiency of Natural Gas Commodity Markets

Q65. Is there evidence that natural gas markets in Alberta are not integrated in a competitive, efficient manner?

A. Yes. Figure 20 in Appendix A of NGTL's Reply Evidence shows the daily difference between the price of gas ATCO Pipelines on the system and the NIT price on the Alberta System during the past eleven months. When two markets are integrated, the price of the natural gas commodity in the two markets will be highly correlated and will tend to move in parallel with each other. This phenomenon has been described as follows:[16]

[16] U.S. Federal Energy Regulatory Commission, *State of the Markets 2000*, p. 31.

The example below shows one way to measure the convergence of prices. Correlating the natural gas prices in neighboring states, it is evident that there was a dramatic change in early 1996. Before that period, the prices only loosely correlated, while after that period, the correlation increased and stabilized at a nearly perfect 1.0. This means that by 1997, if one knew the price of gas in Texas one essentially knew what the price should be in Louisiana. Efficient market arbitrage allows the prices to equilibrate at a rapid pace, without the need for intrusive regulatory action. However, in an efficient market these kinds of correlations will not always be perfect, since there will at times be constraints on the transportation system which will (and in fact should) lead to price divergences.

Although gas prices will tend to move together in efficient markets, there may be a difference in the level of the prices in each market that reflects the cost of transportation between the two markets. When the prices are not correlated, that fact is a strong indicator that there is a substantial friction restraining the ability of lower-priced gas in one market to respond to price signals by flowing to the other, higher-priced market. Or, equivalently, there is some inefficient barrier that impedes the ability of gas buyers in a high-priced market from gaining efficient access to lower-cost gas supplies in the other market. Frictionless access between the two markets allows gas to move easily between the markets so as to eliminate any differences in prices that are not related to transportation costs. This form of inefficiency in transportation markets has been described as follows:

> **Who Benefits from Complexity?** Complexity provides the arbitrage opportunities on which marketers thrive. In an *efficient* market with many locations, the price at A will nearly equal the price at B plus the price of shipping from B to A (the price of a transmission right from B to A). This provides little opportunity for arbitrage. By contrast, an *inefficient* market will typically have many pricing discrepancies and will provide many profitable opportunities. Marketers thrive on market inefficiency and are

paid for their role in making the prices converge, that is, in making the market more efficient.[17]

Q66. What does Figure 20 in Appendix A of NGTL's Reply Evidence suggest about the efficiency of gas markets on the ATCO Pipelines system?

A. The commodity price of gas on the ATCO Pipelines system obviously is not strongly correlated with NIT prices. If the two markets were strongly correlated, the difference in the price of gas between the two markets would be relatively flat. However, Figure 20 of Appendix A indicates that the gas price differential between the two systems fluctuates widely throughout the year, with natural gas prices on the ATCO Pipelines system generally significantly above the NIT prices in the winter, and gas prices on ATCO Pipelines system below NIT prices in the summer.

Q67. How does the apparent disconnect between the two natural gas commodity markets relate to ATCO Pipelines' and Mr. Engbloom's rate proposals in this proceeding?

A. Because ATCO Pipelines is proposing a large increase in the Alberta System's total full-haul rates for intra-Alberta transportation, and a large increase in the FT-A commodity charge, its proposal would tend to further disconnect the two gas commodity markets and cause its on-system delivery customers to pay higher premiums over the NIT price. For example, in its evidence ATCO Pipelines describes in detail how changes in the transportation rates charged to move gas between the two systems affects the price at which gas will trade in the ATCO Pipelines on-system trading market.[18] Thus, rather than increasing the efficiency of the Alberta natural gas market(s), ATCO Pipelines' and Mr. Engbloom's

[17] Steven Stoft, *Power System Economics*, IEEE Press, 2002, page 402, emphasis in the original.
[18] Ex. 07-005, p. 14, line12 to p. 16, line 6.

proposal would tend to reduce efficiency by increasing the disconnect between the prices on the two systems.

Q68. Can you summarize your views on the relevance of ATCO Pipelines' and Mr. Engbloom's rate design, and the problems stemming there from, in this proceeding in which NGTL's rates are being adjudicated?

A. Yes. As a general proposition, NGTL's Alberta System rates should be grounded in its own specific facts and circumstances. In my view, that cost foundation and internal consistency exists in this proceeding as demonstrated by NGTL in its evidence. If ATCO Pipelines' current rates are to be offered as a basis for claiming competitive disadvantage, as they have been in this proceeding, then the first and primary responsibility for rectifying that problem rests with ATCO Pipelines. Pipelines often make their rates by taking account of their current competitive environment. Because the Alberta System rates properly reflect the costs of various services on its system , it behooves ATCO Pipelines in the instant facts and circumstances, to review its own rate design to seek out remedies and competitive responses if the differences and relationships advanced by ATCO Pipelines are found to be competitively problematic

Regulators are accustomed to seeing interveners urging lower rates for a pipeline. When an intervenor instead urges a *higher* rate for a pipeline, it should be an important red flag for a regulator. ATCO Pipelines seeks a higher FT-A rate and its proposal here should be seen by the Board as an attempt to erect a rate barrier that will cut off its on-system customers from many of the competitive benefits that might be derived from service on NGTL.

In my view, it is proper to reject the notion, implicit in ATCO Pipelines' position, that it has no obligation to provide competitive full-haul rates. Thus, NGTL should not be forced to increase an otherwise proper component of its rate structure. Consumers and the public interest are likely to be served best in this case by requiring ATCO Pipelines to address ATCO Pipelines' own rate design choices.

4. Accountability

Q69. In its evidence, ATCO Pipelines claims that a major problem with the Alberta System rate and tariff structure is that it does not require intra-Alberta delivery customers to be accountable for costs associated with adding new delivery points to the Alberta System. Do you agree with ATCO Pipelines' assessment?

A. No. ATCO Pipelines' assessment fails to acknowledge the economic significance of the rate and tariff features employed by the Alberta System to ensure that customers at new intra-Alberta delivery points make financial commitments to demonstrate a legitimate market justification for new pipeline facilities. These financial commitments consist of:

> (i) MAV and EAV guarantees of usage of the facilities that guarantees revenues for the Alberta System and demonstrates a market need for the facilities, and
>
> (ii) a backstop guarantee to pay an annual FCS charge to the extent that the usage guarantee is not met.

A guarantee of annual usage can be an effective method for recovering the costs of the new facilities and for shifting market risks from the pipeline onto the delivery customer. A backstop guarantee in the form of the FCS charge provides additional financial guarantees to the pipeline and some flexibility to the delivery

customer. These accountability provisions are designed specifically to work with other features of the Alberta System rate structure that promote an efficient, flexible market for natural gas.

Q70. What are ATCO Pipelines' complaints concerning the usage guarantee and backstop guarantee method of ensuring need and accountability for new intra-Alberta delivery facilities?

A. ATCO Pipelines has several criticisms of this method of holding customers accountable and at risk for the costs of new intra-Alberta delivery facilities:

1. ATCO Pipelines suggests that the revenue collected from receipt shippers as a result of usage guarantees by delivery customers are "indirect" revenues that should not be considered as a contribution to new delivery facilities;

2. ATCO Pipelines argues that the EAV FCS charge does not require a sufficient financial commitment from delivery customers for pipeline extensions; and,

3. ATCO Pipelines argues that the MAV FCS charge also does not require a sufficient financial commitment from delivery customers for new metering and regulating facilities.

Q71. ATCO Pipelines claims that its proposed changes to NGTL's rate and tariff structure are intended to increase the accountability for new facilities required of potential new intra-Alberta delivery customers. Are ATCO Pipelines' proposals likely to encourage more efficient construction of pipeline facilities in Alberta?

A. No. ATCO Pipelines' proposals to increase accountability for new delivery facilities involve a two-pronged revision to the existing rate and tariff structure:

1. Increase the FT-A rate for intra-Alberta deliveries; and,

2. Change the initial financial commitments required of customers at new delivery points.

None of ATCO Pipelines' specific proposals concerning each of these prongs appear to have the potential to encourage efficient construction of new delivery facilities on the Alberta System. In addition, ATCO Pipelines' specific proposals are likely to induce additional construction in the Province of other types of pipeline facilities that would be unnecessary, and for which there would be no demand in the market, but for ATCO Pipelines' specific proposals.

4.1. ATCO Pipelines' Complaints Understate the Existing Level of Accountability for New Intra-Alberta Delivery Connections

Q72. Does ATCO Pipelines understate the existing level of accountability associated with new intra-Alberta delivery connections?

A. Yes. The main source of understatement concerns the treatment of usage guarantees provided by delivery customers at new intra-Alberta delivery points. In past proceedings there appear to have been three primary areas of concern with usage guarantees. First, there is a question as to whether the delivery customers are really indirectly paying the cost of the new facilities when they buy gas in the NIT market. In effect: Are the costs of transportation embedded in the NIT price? Second: Does a usage guarantee provide efficient price signals to the delivery customer? And, third: Should receipt revenues be counted as marginal revenues that are available to pay marginal costs?

Q73. Is it important to know whether the cost of transportation is embedded in the sales price of gas?

A. Basic economic theory strongly suggests that the cost of transportation must be a component of the delivered cost of gas if the transportation costs are paid by the seller, as they are for gas sold to intra-Alberta customers in the NIT market. However, from the standpoint of the pipeline's ability to recover the cost of

delivery facilities, it is not important whether the seller or the buyer of gas pays transportation costs, or how the seller and buyer might reflect transportation costs in the sales price of gas. It is only important that some party is willing to pay transportation costs in order to have gas delivered at the new delivery point. Nevertheless, it is important that the buyer values gas delivered to the new location so highly that it is willing to guarantee that it will outbid other potential buyers in the market who might wish to have the gas delivered to other locations. By outbidding other potential buyers, the customer at the new delivery point clearly is providing a direct economic benefit to the receipt customer who receives a higher price for delivered gas than he might otherwise receive.

Q74. Can usage guarantees provide efficient price signals for delivery customers who do not pay directly for facilities at new delivery points?

A. Yes. The crucial question is: Who bears the risk? The EAV and MAV mechanisms both require the delivery customer to actively bear risk and incur a financial liability that will be extinguished by causing the pipeline to earn transportation revenue from shippers at receipt points in connection with the new delivery facilities.

Q75. Is it common for companies in other industries to provide services or facilities in return for commitments or expectations that the company will be able to increase its revenues from other customers?

A. Yes. There are many examples of commercial arrangements where a company provides facilities or services in return for a commitment or an expectation that the facilities or services will be used in a manner that causes the company to collect the costs of those facilities or services from a third party. To cite just a

few examples, this type of commercial arrangement occurs in the banking, real estate, and news and information industries.

For example, banks often do not charge for checking accounts and access to ATM facilities for customers who maintain at least some minimum balance, so that the bank can then lend the checking account deposits to other customers and collect interest. If the customer's balance falls below the minimum, like the Alberta System FCS charge, the bank then assesses direct charges from the customer to pay the costs of checking, ATMs and other services. Real estate brokers often expend substantial time and resources taking potential homebuyers to various neighborhoods at no charge in the expectation that the broker will earn a commission that is paid for by the seller of a property. Similarly, many news and information services are provided to the public for no charge so that the information service can increase its audience and thereby increase the revenues that it collects from advertisers. In all of these examples, the company generates revenues from one type of customer (borrowers, homebuyers, advertisers) by providing services or facilities at no charge for other types of customers (depositors, homebuyers, readers or viewers).

Q76. Does the Alberta system currently provide transmission facilities or services for intra-Alberta deliveries without a guarantee that the customer will generate revenues for the company?

A. No. Before NGTL builds new transmission facilities, the usage commitment requires customers to make a commitment to use those facilities to buy a substantial amount of gas, for which the transportation costs will be paid by the shipper at the receipt end of the transaction. The customers have a specific

obligation to make substantial use of the new facilities and to pay cash to an FT-R shipper who, in turn, pays cash to NGTL for the costs of transportation. The FT-A customer also has a contingent obligation to make a direct cash payment to NGTL if the EAV commitment is not met. This commitment and guarantee both ensure that the customer is accountable for the new facilities.

Q77. Do commitments to use or pay for assets create financial liabilities that ensure efficient accountability?

A. Yes. These types of commercial arrangements are sufficiently common that the Financial Accounting Standards Board addresses them in its guidelines for accounting for liabilities that a customer (e.g., an FT-A customer) incurs. For example, Statement of Financial Accounting Concepts No. 6 provides the following discussion of financial liabilities:

> Characteristics of Liabilities
>
> 36. A liability has three essential characteristics: (a) it embodies a present duty or responsibility to one or more other entities that entails settlement by probable future transfer or use of assets at a specified or determinable date, on occurrence of a specified event, or on demand, (b) the duty or responsibility obligates a particular entity, leaving it little or no discretion to avoid the future sacrifice, and (c) the transaction or other event obligating the entity has already happened. Liabilities commonly have other features that help identify them—for example, most liabilities require the obligated entity to pay cash to one or more identified other entities are legally enforceable. However, those feature are not essential characteristics of liabilities. Their absence, by itself, is not sufficient to preclude an item's qualifying as a liability. That is, ***liabilities may not require an entity to pay cash but to convey other assets, to provide or stand ready to provide services, or to use assets. And the identity of the recipient need not be known to the obligated entity before the time of settlement.*** Similarly, although most liabilities rest generally on a foundation of legal rights and duties, existence of a legally enforceable claim is not a prerequisite for an obligation to qualify as a liability if for other reasons the entity has the duty or

responsibility to pay cash, to transfer other assets, or to provide services to another entity.

37. Most liabilities stem from human inventions—such as financial instruments, contracts, and laws—that facilitate the functioning of a highly developed economy and are commonly embodied in legal obligations and rights (or the equivalent) with no existence apart from them. Liabilities facilitate the functioning of a highly developed economy primarily by permitting delay—delay in payment, delay in delivery, and so on.[23]

Q78. Why is this accounting guideline germane for understanding the economic characteristics of the EAV mechanism?

A. This guideline provides a good generic discussion of the economic characteristics of arrangements whereby, in return for installing facilities or providing other goods, a customer guarantees to use the facilities or services in a way that generates revenues for the company, or to make cash payments to the extent that the usage guarantees are not met. The discussion of economic characteristics, active liabilities, and financial obligations associated with EAV-type provisions in the guideline is relevant regardless of whether a particular company, in a particular jurisdiction, is required to keep its books in accordance with this accounting guideline.

Q79. How is the economic discussion contained in this guideline relevant for evaluating the EAV and MAV mechanisms?

A. There are several aspects of this guideline that are germane to the EAV and MAV accountability mechanisms.

First, the guideline states that "liabilities may not require an entity to pay cash but … **to use assets**." Obviously the commitment to use the new transmission facilities is one prong of the accountability commitments. By committing to use, or pay an additional charge for, the newly-constructed

facilities an FT-A customer incurs a liability that can be an efficient alternative to a direct cash payment, and the accounting guideline specifically recognizes this as a legitimate alternative.

Second, in making an EAV and MAV commitment, the FT-A customer is agreeing to sacrifice assets in the future in order to purchase enough gas at the delivery point to extinguish the liability. At the time of the commitment, the FT-A customer may not know who it will buy the gas from, but the FT-A customer does know that it will be required to pay cash to someone (i.e., an FT-R shipper) who, in turn, will be paying the transportation costs. According to the accounting guidelines, the FT-A customer still has a substantial liability even when there is an inability to identify in advance which FT-R shipper will be the direct recipient of the FT-A customer's payment of cash for gas transported to the delivery point. This point is germane for the Alberta System because FT-A service provides flexibility to buy gas in NIT from any seller so that the customer is not required to tie together in advance any specific receipt and delivery points. Thus, the accounting guidelines recognize that the FT-A customer has a substantial liability even when the identity of the FT-R shipper is not known in advance.

Third, the guidelines recognize that liabilities facilitate the functioning of a highly-developed economy. The rate and tariff structure of the Alberta System relies on the EAV mechanism to provide accountability through financial commitments from FT-A customers, while also allowing the rate structure to facilitate multiple other goals at the same time. These other goals include reflecting differences in costs between intra-Alberta and ex-Alberta

transportation; providing a measured balance in the sharing of export transmission cost commitments between FT-R and FT-D customers; and promoting liquidity through the NIT market. By requiring usage guarantees in lieu of direct cash payments, the EAV and MAV mechanisms facilitate a balance of multiple goals on a complex pipeline system by creating the types of liabilities for FT-A customers that one often finds in highly-developed economies. Thus, the efficiency of usage guarantees required of delivery customers at new intra-Alberta delivery points should be seen as a means of promoting efficiency in the context of all of the features of the Alberta System that promote an efficient natural gas market.

4.2. Receipt Revenues associated with Delivery Customer Usage Guarantees Should be recognized as an Economic Benefit of New Delivery Facilities

Q80. Is there a fundamental flaw in ATCO Pipelines' tests of intra-Alberta transportation cost accountability?

A. Yes. ATCO Pipelines' analyses are all premised on the incorrect notion that a volume guarantee from an intra-Alberta delivery shipper has no impact on the receipt volumes that NGTL attracts or retains. In ATCO Pipelines' numerical analyses, there are no changes in overall system volumes as a consequence of volume guarantees obtained from new delivery customers.

Q81. Is there a relationship between the access to delivery markets that a pipeline provides, and the amount of receipt revenue that it can earn?

A. Yes. That is especially true when a pipeline faces actual and potential competition from other pipelines, but it is also true when a pipeline does not face competition from other pipelines. Ultimately, the value of any pipeline facility depends upon the differences in the value of gas at any two points. Thus, if a

pipeline can connect low cost gas to delivery points where gas costs are higher, and it can do so at a marginal cost that is less than the differences in gas values at the two points, the welfare of society generally is improved if the pipeline constructs the facilities. As discussed previously, a high difference in value between two points is established when a delivery customer guarantees that it will outbid other potential purchasers of gas to ensure that the gas is delivered to its delivery point. Thus, a usage guarantee provided by a gas buyer is a market test of the value of a new delivery point relative to the existing delivery points.

Viewed from the perspective of the gas seller, receipt customers would be willing to divert their gas from their current destinations so long as the value of the new destination exceeded the value of the old destination. In a monopoly market, a pipeline that constructs the new delivery facilities creates value for both the receipt customer that is selling gas and the delivery customer that is buying gas. Over time, a pipeline that offers access to the highest valued markets will encourage efficient production and utilization of resources.

Q82. How does this competition affect the relevance of receipt revenues associated with a delivery customer's usage guarantee?

A. In a competitive pipeline market there is a constant search for opportunities to connect areas with high gas prices to areas with lower gas prices. Sometimes a new high value delivery location develops and the pipeline must serve this location in order to retain load or simply to make its services more valuable. Other times there may be a delivery location that is already attached to a pipeline that, unfortunately connects the customer to high priced sources of gas. A second pipeline can create value for society by connecting that delivery location with

entirely different low-cost sources of gas. Similarly, a gas pipeline can be displaced by competitors if it connects producers at receipt points to downstream locations where gas prices are low, and competing pipelines charge lower rates to move gas between the same locations. However, in situations where an existing pipeline connects producers to locations where gas prices are low, it is common for competitors to offer to connect the producers to locations where they can obtain higher netbacks for their gas. The point is that receipt business, delivery business, or point-to-point business can only be retained in a competitive market if a pipeline continually seeks to connect high value locations with low value locations. In these competitive conditions, a pipeline has no assurances that it will retain receipt revenues unless it is willing to connect to new, high-value locations on the delivery side and to new, low-value locations on the receipt side. Consequently, in a competitive market, there should be a presumption that a usage guarantee from a delivery customer will ultimately retain receipt volumes or lead to connection of additional receipt volumes in response to the high value associated with the usage guarantee.

Q83. Does ATCO Pipelines correctly acknowledge that a pipeline must continually seek to provide connections to delivery markets where gas prices are highest in order to retain receipt revenues in a competitive market and to maximize the value of its system in the economy?

A. No. At pages 33 to 34 of its evidence, ATCO Pipelines argues that receipt revenues associated with a delivery customer's usage guarantee should not be considered as support for new facilities. Specifically, ATCO Pipelines endorses a policy that receipt revenues should not be used to justify new delivery facilities unless the incremental receipt volumes could not have accessed the NGTL system

without the applied-for facilities. This policy is likely to promote efficient construction of facilities in situations where two generally non-existent conditions are present: (i) a pipeline has a monopoly on virtually all parts of its system, and (ii) there is a reasonable presumption that gas is more valuable at every existing location than it would be at any new delivery location. However, neither of these conditions are present as the Alberta System faces competition for gas transportation at many locations throughout the Province. ATCO Pipelines' proposal would needlessly handicap one element of competition, NGTL's ability to construct intra-Alberta delivery facilities, while ignoring other directly affected elements of competition that are equally as important. Consequently, in evaluating ATCO Pipelines' proposals, it is essential to consider fully the broader dynamic, competitive market that is swirling all around NGTL's full-haul services. Competitors in Alberta divert gas production, or potentially can divert gas production, in many different directions and also can deliver to markets from a variety of locations depending upon the relative natural gas commodity prices at each location.

As I discussed in the competition section, delivery customers seek access to the lowest cost gas supplies and receipt customers seek access to locations that have the highest prices. Thus, when evaluating new intra-Alberta delivery facilities efficient pipeline and efficient natural gas commodity markets are more likely to be promoted by adopting a presumption that is very different from that advocated by ATCO Pipelines. The better policy would be: receipt revenues associated with delivery customer usage guarantees should be used in the analysis

so long as there are equivalent receipt volumes on the system that could access and be diverted to a competitors' system if the pipeline fails to provide access to high value delivery markets.

4.3. ATCO Pipelines' and Mr. Engbloom's Proposal for an increased FT-A commodity rate is not consistent with a desire for accountability or improved price signals, and is likely to induce unnecessary construction of facilities

Q84. Is ATCO Pipelines' commodity rate proposal consistent with a desire for accountability or improved price signals?

A. No. The ATCO Pipelines rate structure proposal involves (i) a significant increase in NGTL's total full-haul intra-Alberta transportation rate, (ii) a significant increase in the amount of fixed costs assigned to the FT-A service component and, importantly, (iii) recovery of these fixed costs through an avoidable commodity charge. These proposed changes to NGTL's intra-Alberta rates are inconsistent with ATCO Pipelines' stated purpose of providing improved price signals for efficient usage of NGTL's *existing* pipeline facilities. ATCO Pipelines' proposals also are inconsistent with a desire to provide greater incentives for efficient construction of new intra-Alberta pipeline facilities. Instead, ATCO Pipelines' and Mr. Engbloom's proposed change in the FT-A rate is likely to lead to less efficient use of NGTL's existing facilities and increase the incentives for ATCO Pipelines to construct additional receipt facilities to assist customers in avoiding the full-haul (FT-R/FT-A) intra-Alberta transportation rate that ATCO Pipelines is proposing for the Alberta System

Q85. Will ATCO Pipelines' and Mr. Engbloom's proposed FT-A rate design increase accountability and improve price signals in a way that will promote more efficient construction of new intra-Alberta delivery points?

A. No. An increase in the FT-A rate will not increase accountability for new facilities unless the FT-A rate is a demand-based rate because a new delivery customer would not be obligated to move a single Mcf through any new delivery facilities. However, a demand-charge and a contractual commitment from all FT-A customers would ensure that each customer pays a fixed charge for firm use of NGTL's fixed facilities. Because ATCO Pipelines uses a commodity-based OPR rate to pass through NGTL's commodity-based FT-A rate directly to its customers who source gas from the Alberta System, an increase in the FT-A will erect a barrier for existing ATCO Pipelines customers who might want to source gas from NGTL. As a commodity charge, the FT-A/OPR passthrough can easily be avoided by ATCO Pipelines customers so long as they do not source their gas from the NGTL system. In addition ATCO Pipelines' refusal to allow its customers to use NGTL's FT-P service, which is a demand-based rate, also erects a barrier that prevents ATCO Pipelines' captive delivery customers from sourcing gas on NGTL. The basic idea of its proposal is for ATCO Pipelines to charge demand-based rates, for which the customer faces no marginal costs on a daily basis, when the customer sources its gas on the ATCO Pipelines system, and then ask the Board to ensure that ATCO Pipelines' captive delivery customers face an increased FT-A commodity-based rate, with high marginal costs, if they attempt to buy gas that is sourced from the Alberta System. A high FT-A commodity charge does not necessarily assure any revenues or usage of new fixed facilities if the customer rarely uses the facilities and is only required to pay for the facilities

when it uses them. However, ATCO Pipelines' proposal is likely to lead to inefficient construction of receipt facilities.

5. Conclusions

Q86. What do you conclude from your assessment of ATCO Pipelines' and Mr. Engbloom's evidence filed in this proceeding?

A. ATCO Pipelines addresses its own competitive concerns and proposes rate structure and EAV changes that it claims will improve the available price signals and promote more efficient construction of facilities. However, ATCO Pipelines' and Mr. Engbloom's proposals are based on numerous flawed assumptions and analyses and are likely to reduce the price signals and incentives for efficient pipeline construction that are already in place.

ATCO Pipelines appears to consider only the narrow issue of how its proposed design of the Alberta System's FT-A rate might affect inter-pipeline competition to construct facilities at delivery points to serve intra-Alberta gas and did not give much consideration to how its proposed changes would affect other rates, markets or customers. However, proper rate analysis must consider how the entire rate structure works together to serve many different customers and the market in an efficient manner. In this regard, the Board should be fully cognizant that a broader analysis than that conducted by ATCO Pipelines strongly suggests that ATCO Pipelines' and Mr. Engbloom's FT-A rate proposal is likely to reduce the efficiency of both the pipeline market and also to reduce the efficiency of the natural gas commodity markets in Alberta by inhibiting the ability of customers to access lower cost gas supplies.

Q87. If the Board feels that issues of accountability and price signals need to be addressed, are ATCO Pipelines' and Mr. Engbloom's recommendations appropriate and reasonable?

A. No. In its Direct Evidence, NGTL describes several possibly reasonable alternative approaches for ensuring accountability for new intra-Alberta delivery facilities. Although each of these approaches could be used, there are good reasons why it is more efficient to use NGTL's current approach which requires the customer to make a commitment either to use the facilities intensively for several years, thereby demonstrating a need for the facilities, or to make a direct cash payment to the extent that the facilities are not heavily utilized during the initial demonstration years.

Q88. Does ATCO Pipelines face unfair or unreasonable competitive handicaps in its attempts to serve intra-Alberta markets as a consequence of NGTL's Alberta System rate design?

A. No. NGTL's full-haul intra-Alberta rate is cost-based and its EAV and MAV and backstop FCS charge help ensure that new delivery facilities are required by the market. ATCO Pipelines' claim that it is handicapped in competing to serve intra-Alberta delivery markets because of the level of NGTL's FT-A rate is without economic merit. It is the full-haul FT-R/FT-A rate that is relevant for cost recovery and the present level of full-haul rate properly reflects the costs of intra-Alberta transportation relative to costs associated with export services. Therefore, the Board should disregard ATCO Pipelines' arguments claiming cross-subsidy or unfair competition rather than adopting a piecemeal revision to NGTL's rate and service structure.

Q89. Does this conclude your Prepared Reply Testimony?

A. Yes.

APPENDIX A

Proof of the General Irrelevance of the Proportion of Transportation Costs Assigned to Receipt or Delivery Shippers in a Market

The price that buyers are willing to pay for gas in a trading market is given by the following equation for a demand curve:

$$P_D = D - dQ - pT \quad \{1\}$$

Where:

P_D = the price that buyers are willing to pay for gas in the commodity market;

D = a constant;

d = the absolute value of the slope of the demand curve

Q = the Quantity, or volume, of gas that buyers want to purchase;

P = the proportion of the transportation charges that the buyer/delivery customer is required to pay;

T = the full-haul charge for transportation.

Similarly, a general form of the supply curve that determines the price at which sellers sell gas in the market is:

$$P_S = S + sQ + (1-p)T \quad \{2\}$$

Where:

P_S = the price at which sellers are willing to sell gas in the commodity market;

S = a constant; and,

s = the slope of the supply curve.

Market-clearing transactions occur when the market price of gas for buyers (P_D) is equal to the market-clearing price for sellers (P_S). Consequently, we can set the right side of the two equations equal to each other:

$$D - dQ - pT = S + sQ + (1-p)T \quad \{3\}$$

And solve for Q:

$$(D - S) - pT = (d + s)Q + T - pT \quad \{4\}$$

$$\frac{D - S - T}{d + s} = Q^* \quad \{5\}$$

Because D, S, d and s are all constants, the volume of gas shipped on the system, Q*, depends upon the total transportation charge per unit. However, note that the solution shown by the last equation does not contain p. This means that Q* is unaffected by the method used to split the transportation costs between sellers (receipt shippers) and buyers (delivery customers). No matter how transportation costs are split between receipt and delivery customers, the quantity, Q*, is the same, which also means that the delivered price of gas and the netback price of gas remain unchanged. This occurs because the NIT price of gas adjusts to reflect and offset proportions of total transportation costs borne by buyers and sellers.