Q. Further to the reply to CA-NP-201, please provide a copy of the following:

(a) The cases referred to at footnote 7 at p. 5 of National Energy Board Reasons for Decision - Trans Quebec Maintenance Pipelines Inc. Cost of Capital - March, 2009;

(b) The Federal Court of Appeal decision <u>Trans Canada</u> v. <u>NEB</u> referred to on p. 5;

(c) A copy of the decision at footnote 9 of p. 5;

(d) Chapter 2 of the RH-2 - 2004, Phase II Decision referred to at p. 6.

A. (a) The requested documents, (i) Northwestern Utilities 1929, (ii) TCPL vs. NEB 2004, (iii) Bluefield Water Works 1923, and (iv) FPC vs. Hope 1944 are provided in Attachments A, B, C and D respectively.

(b) The requested document is provided in Attachment B.

(c) The requested document is provided in Attachment E.

(d) The requested chapter is provided in Attachment F.

Northwestern Utilities 1929

1929

CANADIAN CREDIT MEN'S TRUST ASSOCIATION LTD. v. HOFFAR LTD.

Mignault J.

The petition is therefore dismissed with costs.

Petition dismissed with costs.

Solicitors for the petitioner: *Griffin, Montgomery & Smith.*

Solicitor for the respondent: *R. W. Ginn.*

1928

*Oct. 24.

1929

*Feb. 5.

NORTHWESTERN UTILITIES, LIMITED .... } APPELLANT;

AND

THE CITY OF EDMONTON AND BOARD OF PUBLIC UTILITY COMMISSIONERS OF ALBERTA....... } RESPONDENTS.

THE CITY OF EDMONTON.............APPELLANT;

AND

NORTHWESTERN UTILITIES, LIMITED, AND BOARD OF PUBLIC UTILITY COMMISSIONERS OF ALBERTA .... } RESPONDENTS.

ON APPEAL FROM THE APPELLATE DIVISION OF THE SUPREME COURT OF ALBERTA

Public utilities—Public Utilities Act, Alta.—Hearings and investigations by Board of Public Utility Commissioners—Powers of Board—Obtaining of evidence—Absence of evidence—Order of Board fixing rates for gas supply in municipality by franchise holder—Return on investment—Inclusion in "rate base" of discount on sale of bonds—Appeal from Board's order—"Question of law."

The Board of Public Utility Commissioners of Alberta made an order in 1922 fixing rates chargeable for gas proposed to be supplied in the city of Edmonton by the predecessor of the appellant company. The Board fixed the rates on the basis of an allowance of 10% as a fair return on the investment in the enterprise, and in determining the "rate base" (the amount to be considered as invested in the enterprise) it included as a capital expenditure a sum which was the discount on the sale of the company's bonds. The rates were to continue in force for three years from the date on which gas was first

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*PRESENT:—Anglin C.J.C. and Mignault, Rinfret, Lamont and Smith JJ.

1929

NORTHWESTERN UTILITIES LTD. v. CITY OF EDMONTON.

supplied. In 1926 the appellant company applied for continuation of the rates. On this application the city objected to such a high rate of return and to the inclusion in the rate base of the item for bond discount. The Board continued said item in the rate base, but reduced the return to 9% "in view of the elements which go to make up the rate base, and in view of the altered conditions of the money market." The parties appealed (by leave) to the Appellate Division, Alta., and then to this Court, the company against the reduction of the rate of return, and the city against the inclusion of the bond discount item in the rate base. The company contended that no evidence was adduced before the Board of "altered conditions of the money market," and that, without hearing evidence upon the point and giving the company opportunity to establish that the conditions of the money market had remained unaltered since 1922, the Board acted without jurisdiction in making the reduction. Under s. 47 of *The Public Utilities Act, 1923*, Alta., c. 53, as amended 1927, c. 39, an appeal lies from the Board upon a question "of jurisdiction" or "of law," upon leave obtained.

Held 1. The company's last mentioned contention involved a "question of law," and therefore it had a right to appeal.

2. The city's appeal failed; the question raised thereon was not one of jurisdiction or law.

3. The company's appeal failed. The Board had power to reduce the rate of return, notwithstanding that at the hearing before it no witnesses testified as to altered conditions of the money market. The company's contention that to alter the rate of return would be unfair to its shareholders who had invested in the enterprise after the order fixing the rates in 1922, was not a matter open for consideration upon the appeal, as it did not involve a question of jurisdiction or law.

Per Rinfret and Lamont JJ.: A consideration of ss. 21 (4) (5), 25, 43, and 44 of the said Act, the purposes of the Act, and the extent of the powers vested in the Board, leads to the conclusion that the intention of the legislature was to leave it largely to the Board's discretion to say in what manner it should obtain the information required for the proper exercise of its functions; it was not to be hound by the technical rules of legal evidence, but was to be governed by such rules as, in its discretion, it thought fit to adopt. An inference that it had not the proper evidence before it as to the altered conditions of the money market could not be drawn from the fact that no oral testimony in respect thereof was given at the hearing. The company had notice that a reduction was sought and that the city was attacking the methods and principles adopted in fixing the rate of return in 1922. This put the whole question of a fair return at large and informed the company that it would have to establish to the Board's satisfaction every element and condition necessary to justify a continuation of the 10% rate; and there was nothing in the record to justify the conclusion that the company had not the opportunity of making proof at the hearing as to the conditions of the money market.

Per Smith J.: The Board has power to reduce the rate of return without evidence; the question of a fair rate of return is largely one of opinion, hardly capable of being reduced to certainty by evidence, and appears to be one of the things entrusted by the statute to the judgment of the Board.

1929
NORTH-WESTERN UTILITIES LTD. v. CITY OF EDMONTON.

APPEALS by Northwestern Utilities, Limited, and the City of Edmonton, respectively, from the dismissal by the Appellate Division of the Supreme Court of Alberta of their respective appeals from the award of the Board of Public Utility Commissioners for the Province of Alberta fixing rates to be paid by consumers of natural gas, for the supply of which within the city of Edmonton the said company, Northwestern Utilities, Limited, has a franchise.

The company applied to the Board for an order continuing the rates which had been fixed for a certain period by an order of the Board made in 1922. The Board made an award fixing the rates, from which each party appealed to the Appellate Division. Under s. 47 of *The Public Utilities Act* of Alberta, 1923, c. 53, as amended 1927, c. 39, an appeal lies from the Board to the Appellate Division "upon a question of jurisdiction or upon a question of law," if leave to appeal is obtained as therein provided. Such leave to appeal was obtained, it being reserved to each party to move before the Appellate Division to set aside the order granting leave to the other party, on the ground that the matters as to which leave to appeal was given did not involve any question of law or jurisdiction.

The company's objection to the Board's award was that it fixed the rates on the basis of an allowance of only 9%, instead of 10% which was allowed under the order made in 1922, as the "rate of return" on the investment in the enterprise. The Board in its award said:—

> In view of the elements which go to make up the rate base, and in view of the altered conditions of the money market, the Board believes it is justified in reducing the rate of return that the company shall be allowed, to nine per cent., and the Board's estimates are on that basis.

The company contended that there was before the Board no evidence of any "altered conditions of the money market," that the "elements which go to make up the rate base" were the same as in 1922, and afforded no reason for changing the rate of return, that to reduce the rate of return would be unfair to its shareholders, who had invested in the enterprise after the order fixing the rates in 1922, that the money was invested and the plant constructed on the strength of the principles laid down in the 1922 award, and that it was clearly understood that the principles then adopted would govern all future revisions.

1929
NORTH-WESTERN UTILITIES LTD. v. CITY OF EDMONTON.

The city's objection to the award was that, in determining the "rate base" (the amount to be considered as invested in the enterprise) it included (as it had done in the 1922 award) as a capital expenditure a sum which was the discount on the sale of the company's bonds.

The Appellate Division dismissed both appeals (no written reasons being given). Subsequently it made separate orders giving each party leave to appeal to the Supreme Court of Canada. On an application by both parties in the Supreme Court of Canada, the appeals were consolidated.

By the judgment of this Court both appeals were dismissed with costs.

E. Lafleur K.C. and *H. R. Milner K.C.* for Northwestern Utilities, Limited.

O. M. Biggar K.C. for the City of Edmonton.

The judgment of Anglin C.J.C. and Mignault J., was delivered by

ANGLIN C.J.C.—While, with my brother Smith, I incline to the view that the appellant company may have some reason to complain of unfairness in the judgment of the Board of Public Utility Commissioners reducing the rate of return from 10% to 9%, I agree with the conclusion reached by my brother Lamont and concurred in by my brother Smith that it is not open to us to entertain the appeal of the company on that ground. It does not seem to raise either a question of law or jurisdiction within the purview of the statute on which the right of appeal rests. I would dismiss the appeal.

The judgment of Rinfret and Lamont JJ. was delivered by

LAMONT J.—These are separate but consolidated appeals by the Northwestern Utilities, Limited (hereinafter called the Company) and the City of Edmonton, respectively, from the dismissal by the Appellate Division of the Supreme Court of Alberta of their respective appeals against the award made by the Board of Public Utility Commissioners on an application by the company for an

1929 NORTH-WESTERN UTILITIES LTD. v. CITY OF EDMONTON. Lamont J.

order fixing the price to be paid by the consumers of natural gas within the city. Subsequent to the dismissal of the appeals, the Appellate Division made separate orders giving each party leave to appeal to this Court. By a further order the appeals were consolidated.

The company is the successor of the Northern Alberta Natural Gas Development Company, which held a franchise from the city for the supply of natural gas to the inhabitants thereof.

Disputes having arisen between the Development Company and the city, and an action having been commenced, the parties, on August 28, 1922, agreed to a settlement of their difficulties. One of the terms of the settlement was that the prices or rates to be paid by the inhabitants of the city should be fixed by the Board of Public Utility Commissioners. An application was accordingly made to the Board, the parties were heard, and, on November 27, 1922, an order was made fixing the rates to be paid. These rates were to continue in force for three years from the date on which gas was first supplied to consumers.

In order to fix just and reasonable rates, which it was the duty of the Board to fix, the Board had to consider certain elements which must always be taken into account in fixing a rate which is fair and reasonable to the consumer and to the company. One of these is the rate base, by which is meant the amount which the Board considers the owner of the utility has invested in the enterprise and on which he is entitled to a fair return. Another is the percentage to be allowed as a fair return.

In the award of 1922, which came into operation in the fall of 1923, the Board included in the rate base as a capital expenditure the sum of $283,900 (10% of the cost of plant) as, "an allowance for the promotion and financing" of the company, and the sum of $650,000 which was the discount on the sale of the Development Company's bonds. It also determined that 10% was a fair return on the investment. The rates thus fixed by the Board, with certain alterations made with the consent of all parties, continued in force for three years. In October, 1926, the appellant company, which had succeeded to the rights of the Development Company, applied to the Board for an order continuing the rates for such period as the Board might see fit. In its reply to the application the city submitted (par. 23) that the order of November, 1922, should in certain respects be disregarded. One of these was the following:—

1929 NORTH-WESTERN UTILITIES LTD. v. CITY OF EDMONTON. Lamont J.

(e) Rate of Return. It is submitted that the methods and principles adopted in the fixing of the rate of return are erroneous and that the rate of return allowed is too high.

The city also protested against including in the rate base the item for the promotion and financing of the company and the item for bond discount.

In its answer to the city's reply the company alleged (par. 10) that at the hearing in 1922 the city was fully and adequately represented, that it had submitted evidence, that upon the award being delivered it raised no objection to any part thereof, and, therefore, was now estopped from contending that the principles then laid down were wrong in principle or in fact.

In its award the Board continued both the above mentioned sums in the rate base, but reduced the rate of return to the company from 10% to 9%. The reason assigned by the Board for this reduction is as follows:—

In view of the elements which go to make up the rate base, and in view of the altered conditions of the money market, the Board believes it is justified in reducing the rate of return that the Company shall be allowed, to nine per cent., and the Board's estimates are on that basis.

From the award the parties appealed, first to the Appellate Division of the Supreme Court of Alberta, and now to this Court. The company appealed against the reduction of the rate of return on its capital expenditure to 9%. Referring to the reasons given by the Board for making the reduction the company in its factum says:—

1. The city adduced no evidence as to "altered conditions of the money market" and

2. "The elements which go to make up the rate base" in 1927 are the same as in 1922.

The city appealed against the inclusion in the rate base of the item of the bond discount above mentioned.

The *Public Utilities Act* allows an appeal from the Board only upon a question of jurisdiction, or upon a question of law, and even then only when leave to appeal has first been obtained from a judge of the Appellate Division.

As against the company's appeal the city raises the preliminary objection that no question either of jurisdiction or law is involved therein. In my opinion the objection cannot be sustained. The substance of the company's

1929
NORTH-WESTERN UTILITIES LTD. v. CITY OF EDMONTON.
Lamont J.

appeal is that the Board in making a reduction in the rate of return did so for two reasons, one of which was the "altered conditions of the money market," and that of this no evidence was adduced before the Board. The company contends that, without hearing evidence upon the point, and without giving it an opportunity to establish that the conditions of the money market had remained unaltered since 1922, the Board was without jurisdiction to make the reduction. This contention was not stated in this form in the order granting leave to appeal to the Appellate Division, but the fixing of the rate of return at 9% only, was there set out as an error of the Board in respect of which leave to appeal was granted.

Whether or not the Board can properly base an order (in part at least) on the existence of a state of fact of which no evidence was adduced before it at the hearing and as to which the party affected has not had any opportunity of being heard is, in my opinion, a question of law which depends for its answer upon the construction to be placed upon the *Public Utilities Act*.

I am, therefore, of opinion that the company had a right to appeal.

The question involved in this appeal is: Had the Board jurisdiction to find as a fact how the conditions of the money market had altered between November, 1922, and July, 1927, without any witness testifying at the hearing that an alteration had taken place.

As the Board was determining what would be a fair return on the capital invested by the company in the enterprise, and as it reduced the return from 10% to 9%, it can, I think, be taken that by "the altered conditions of the money market" the Board meant that the returns for money invested in securities in which moneys were ordinarily invested had decreased during the period in question. In other words, that the rate of interest obtainable for moneys furnished for investment was, generally speaking, lower by a certain percentage in 1927 than it was in 1922. That, in my opinion, is all that is involved in the finding.

The duty of the Board was to fix fair and reasonable rates; rates which, under the circumstances, would be fair to the consumer on the one hand, and which, on the other

1929
NORTH-WESTERN UTILITIES LTD. v. CITY OF EDMONTON.
Lamont J.

hand, would secure to the company a fair return for the capital invested. By a fair return is meant that the company will be allowed as large a return on the capital invested in its enterprise (which will be net to the company) as it would receive if it were investing the same amount in other securities possessing an attractiveness, stability and certainty equal to that of the company's enterprise. In fixing this net return the Board should take into consideration the rate of interest which the company is obliged to pay upon its bonds as a result of having to sell them at a time when the rate of interest payable thereon exceeded that payable on bonds issued at the time of the hearing. To properly fix a fair return the Board must necessarily be informed of the rate of return which money would yield in other fields of investment. Having gone into the matter fully in 1922, and having fixed 10% as a fair return under the conditions then existing, all the Board needed to know, in order to fix a proper return in 1927, was whether or not the conditions of the money market had altered, and, if so, in what direction, and to what extent.

For the city it was argued that, as one of the statutory powers of the Board was to deal with the financial affairs of local authorities (s. 20 (*d*)), and as this included the power to authorize the issue of new debentures by these authorities and to determine the rate of interest to be paid thereon and also the power to order a variation of the rate of interest payable upon any debt of the local authority (s. 103), the Board must necessarily be familiar with the rate of interest prevailing from time to time and therefore did not require to have witnesses called to furnish it with information which in the regular performance of its duty it was obliged to possess. In view of the powers and duties of the Board under the Act there is, in my opinion, considerable to be said for the city's contention. It is not necessary, however, to determine this question, for in the statute itself I find sufficient to justify the conclusion that the intention of the Legislature was to leave it largely to the discretion of the Board to say in what manner it should obtain the information required for the proper exercise of its functions.

1929

North-western Utilities Ltd. v. City of Edmonton.

Lamont J.

The material provisions of the Act on this point are as follows:—

21. (4) The Board may in its discretion accept and act upon evidence by affidavit or written affirmation or by the report of any officer or engineer appointed by it or obtained in such other manner as it may decide.

(5) All hearings and investigations before the Board shall be governed by rules adopted by the Board, and in the conduct thereof the Board shall not be bound by the technical rules of legal evidence.

Section 25 provides that upon a complaint being made to the Board that any proprietor of a public utility has unlawfully done or unlawfully failed to do something relating to a matter over which the Board has jurisdiction, the Board shall "after hearing such evidence as it may think fit to require" make such order as it thinks fit under the circumstances. Section 43 provides that the Board may "appoint or direct any person to make an inquiry and report upon any application * * * before the Board." And by section 44 the Board may "review, rescind, change, alter or vary any decision or order made by it." A perusal of these statutory provisions and a consideration of the purposes of the Act and the extent of the powers vested in the Board leads me to the conclusion that the Legislature intended to create a Board which in the exercise of its functions should not be bound by the technical rules of legal evidence but which would be governed by such rules as, in its discretion, it thought fit to adopt (s. 21 (5)). We have not been made acquainted with the rules, if any, adopted by the Board to govern its investigations. Nor do we know what information it possessed as to the altered conditions of the money market; but, as it had authority to act on evidence "obtained in such manner as it may decide" (s. 21 (4)), an inference that it had not the proper evidence before it cannot be drawn from the fact that no oral testimony in respect thereof was given at the hearing. If, in this case, the Board had asked its secretary to inquire from the various financial institutions in Edmonton if there had been any alteration in the conditions of the money market between 1922 and 1927, and the secretary had reported that there had been a certain decrease in the returns from invested capital, would it have been necessary to call witnesses to verify the report? In my opinion it would not. Nor would it have been necessary to afford to either party an opportunity to controvert before the

1929

North-western Utilities Ltd. v. City of Edmonton.

Lamont J.

Board the information so obtained. Then would it have been necessary to mention in the award that the fact that such altered conditions had been established to the satisfaction of the Board by a report of its secretary? I can find nothing in the Act requiring mention to be made of the evidence or of the manner of obtaining it.

Reference was made to s. 86, which provides that no order involving any outlay, loss or depreciation to the proprietor of any public utility or to any municipality or person shall be made without due notice and full opportunity to all parties concerned to make proof to be heard at a public sitting of the Board, except in the case of urgency. A reduction in the rate of return to the company would, in my opinion, come within this section. The Board was, therefore, without jurisdiction to make the reduction unless the company had notice that a reduction was sought and had an opportunity of proving that under the circumstances existing at the time of the hearing the existing rate of return was fair and reasonable. That the company had notice that the city was demanding a reduction is beyond question (par. 23 (e)). It had more. It had notice that the city was attacking the methods and principles adopted in fixing the rate of return in 1922. This, in my opinion, put the whole question of a fair return at large and informed the company that it would have to establish to the satisfaction of the Board every element and condition necessary to justify a continuation of the 10% rate. The company does not say that it was refused an opportunity of putting in evidence as to the conditions of the money market. Nowhere does it deny that it could have put in evidence had it so desired. What it does say is that the city did not adduce evidence on the point and that no witnesses were called to testify before the Board in regard thereto. There is nothing before us to justify an inference that the company was not at liberty to call witnesses as to the conditions of the money market had it so desired. Moreover, in the order which the company obtained giving it leave to appeal it did not even suggest that it had no opportunity of submitting evidence as to the existing market conditions. The ground upon which the company relied to meet the city's demand for a reduction, as set out in the answer which it filed, was that as the city had ac-

1929

NORTH-WESTERN UTILITIES LTD. v. CITY OF EDMONTON.

Lamont J.

cepted the award when it was delivered and had raised no objection thereto, it was now precluded from seeking to set aside the principles upon which the rate of return was based. In its factum it went further and contended that, even if there was no estoppel, the principles then adopted should now be adhered to because it was on the strength of their having been adopted that the shareholders of the company invested their money in the enterprise. This contention cannot be made effective. In the first place, it involves neither a question of jurisdiction nor of law. In the second place, it is the duty of the Board to fix rates which, in its opinion, will be fair and reasonable at the time the order is made and for the period for which they are fixed. If any wrong principle or erroneous view has been adopted it is the duty of the Board at the next revision to correct the error. The argument that it would be unfair to the shareholders now to alter the rate of return is not a matter open for consideration on appeal. Moreover, when these shareholders invested their money they knew that the rates fixed were to be in force for three years only and that it would be the duty of the Board on the next revision to fix rates which at that time would be fair and reasonable under the circumstances then existing.

Our attention was also called to s. 47 (1a) as indicating an intention that evidence must be taken on all material points. That subsection reads as follows:—

(1a) On the hearing of any appeal referred to in subsection 1 of this section no evidence other than the evidence which was submitted to the Board upon the making of the order appealed from shall be admitted, and the Court shall proceed either to confirm or vacate the order appealed from, and in the latter event shall refer the matter back to the Board for further consideration and redetermination.

In my opinion this subsection means no more than that no new evidence is to be admitted on appeal.

The appeal of the company should therefore be dismissed with costs.

The appeal of the city should likewise be dismissed with costs. The items which should be included in the rate base cannot, in my opinion, be considered a question of jurisdiction or of law.

SMITH J.—The City of Edmonton had made an agreement with the Northern Alberta Natural Gas Development Company, by which the company obtained a fran-

1929

NORTH-WESTERN UTILITIES LTD. v. CITY OF EDMONTON.

Smith J.

chise to supply natural gas to the city, and agreed to construct the necessary works. The company failed to construct the works, and the city sued for damages for breach of contract. The actions were settled by an agreement dated 22nd August, 1922, under which the determination of the rates to be charged by the company for gas was referred to the Board of Public Utility Commissioners, and the company was, within six months after the fixing of the rates, to deposit $50,000 with the city, which was to be forfeited to the city as liquidated damages in case the company did not complete the construction of the works as agreed.

A rate hearing was held by the Board after this settlement, at which the company and the city were represented, and the Board made an award, setting out a rate basis and fixing prices for gas on this basis.

The difficulty about proceeding with the works had been the procuring of capital on the basis of prices provided in the original agreement and amendments made. The whole object of fixing a rate base and prices in advance of construction was to facilitate financing by the company. It would necessarily be on the basis of the award that investors would buy bonds and stock of the company. The company had the option of proceeding with the works or abandoning them and forfeiting the $50,000, after seeing the award. In July following the making of the award, the company assigned its franchise and property to the appellant, the Northwestern Utilities, Limited, which, by sale of its bonds and stock, raised the necessary capital, constructed the works, and put them in operation. The rate to be charged for gas was fixed by the award for three years, and at the end of this period the company applied to the Board for continuation of the rates fixed by the award. The rate base fixed by the Board in the award of 1922 contained many items, such as total investment, operating cost, depletion reserve, reserve for repayment of cost of plant, total necessary revenue, amounts of gas to be sold, and the rate of return on capital to be allowed. It is evident that, with the exception of the last of these items, the amounts fixed must have been estimates, liable to be varied by actual results.

1929 NORTH-WESTERN UTILITIES LTD. v. CITY OF EDMONTON. Smith J.

The rate of return to be allowed on capital was fixed in the award at 10%, not based on the ordinary rate of money on the market at the time or on an estimated future rate, but on consideration of the rate that would induce investors to risk their capital in an extremely hazardous and doubtful venture. At the hearing before the Board in 1922, the company had asked a 12% rate of return on capital, and the city had conceded 10%, which the Board fixed, though it stated that under the circumstances a return of more than 10% would not seem to be unjust. The reason set out for not fixing this higher rate was that it might so restrict the market that the higher rate would not compensate for the restriction of the market, and would therefore not be to the advantage of the company. It is, however, stated that in case of future revision, it may be found desirable, under certain circumstances, to increase this rate.

On the revision at the end of three years, this rate was not increased, but was reduced from 10% to 9%, at the instance of the city, and this reduction constitutes the ground of appeal.

In the reasons given by the Board in fixing the new rates, it is pointed out that, where rates have been fixed in advance of construction and financing, the Board is not precluded from subsequently making changes that may appear from subsequent reconsideration to be necessary, and it is then stated that

those investing in such a case must depend on the fairness of the Board in seeing that the Company is allowed a fair and reasonable return upon its investment, but the Board may, and indeed it should, take into consideration the circumstances under which such investment was made.

In discussing these circumstances in reference to a request by the city for elimination from the rate base of the 1922 award of the item for bond discount, the Board says:

There is, moreover, an additional factor to be considered in the present case and that is, that in 1922 the inclusion of the allowance for bond discount was practically agreed to by the city in its case and the item was not questioned by the city until at the recent hearing. It is only fair to assume that the fact of the inclusion of the bond discount in the rate base formed part of the inducement for the making of the investment. Under the circumstances, therefore, the Board does not feel justified in adopting the City's contention in this regard.

This lays down a principle with which one heartily agrees, and which applies exactly to the city's application for reduction of the rate of return on capital fixed in the award of 1922 at 10%. The Board fixed this rate with the assent of the city, and this rate, coupled with the suggestion by the Board that it might be increased, "formed part of the inducement for the making of the investment."

1929 NORTH-WESTERN UTILITIES LTD. v. CITY OF EDMONTON. Smith J.

The altered condition of the money market, given as a reason for the reduction of the rate to 9%, seems to me to have no bearing on the matter. The representation to the investor in 1922 was, for the risk you take in placing your capital in a hazardous undertaking, you will be allowed as a basis in fixing rates to be charged for gas a return of 10%. What the regular money market might be three years later could have nothing to do with the decision to invest. The whole question was, viewing the risk, and the chances, as matters then stood, was the chance of 10% on the money worth the risk of a bad investment, with the possibility of the loss of all or part of the capital?

The Board then, in my opinion, laid down a proper principle, and applied it in other instances, but failed to apply it to this item, as to which I think it was particularly applicable. The question is, can this Court set aside the finding of the Board as to this item on the appeal? I agree with my brother Lamont that, whether or not under the Act the Board was entitled to reduce the rate to 9% without evidence, because of a change in money market conditions, is a question of law, and that there is therefore a right of appeal, and it is with some regret that I feel bound to agree with him that the Board had jurisdiction to make the change in rate without evidence, and without giving the company an opportunity to offer evidence. The question of a fair rate of return on a risky investment is largely a matter of opinion, and is hardly capable of being reduced to certainty by evidence, and appears to be one of the things entrusted by the statute to the judgment of the Board.

I am not entirely in accord with the observations of my brother Lamont in reference to the sending out of someone to gather evidence of the state of the money market and acting on that party's report without the knowledge of the company. The objection in such a case would not be the failure to set out in the award the fact of such evidence and its nature, but the failure to disclose it to the company with an opportunity to answer it. If it were a case where, evi-

1929

NORTH-WESTERN UTILITIES LTD. v. CITY OF EDMONTON.

Smith J.

dence being necessary, it had been taken in the manner suggested, or otherwise, and a finding based on it without disclosure of it to the company and an opportunity to answer it, I would regard such a proceeding as contrary to elementary principles of justice, and as affording, under the statute, a ground for setting the award as to this item aside and referring it back for reconsideration. It does not, however, appear that any evidence was taken, and as stated, I have concluded that there was power to make the change without evidence.

I therefore concur with my brother Lamont in the disposal of this appeal.

Appeals dismissed with costs.

Solicitors for Northwestern Utilities, Limited: *Milner, Carr, Dafoe & Poirier.*

Solicitor for the City of Edmonton: *John C. F. Bown.*

1928

*Oct. 3, 4, 5, 6, 8, 9, 10, 11, 12, 15.

1929

*Feb. 5.

IN THE MATTER OF A REFERENCE AS TO THE RELATIVE RIGHTS OF THE DOMINION AND PROVINCES IN RELATION TO THE PROPRIETARY INTEREST IN AND LEGISLATIVE CONTROL OVER WATERS WITH RESPECT TO NAVIGATION AND WATER-POWERS CREATED OR MADE AVAILABLE BY OR IN CONNECTION WITH WORKS FOR THE IMPROVEMENT OF NAVIGATION.

Constitutional law—Water-powers—Navigable river—Public right of navigation—Right of the Dominion as to the use of the bed of a river and as to expropriation of provincial property—Relative rights of the Dominion and provinces over water-power created by works done by the Dominion—Boundary waters—Interprovincial and provincial rivers—B.N.A. Act, ss. 91, 92, 108 to 126.

The questions referred to this court by the Governor General in Council were answered as follows: (1)

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*PRESENT:—Anglin C.J.C. and Duff, Mignault, Newcombe, Rinfret, Lamont and Smith JJ.

(1) *Reporter's Note.*—In view of the difficulties which the court found in dealing with the questions before it and of the impossibility of giving precise and categorical answers, it was thought best in order to avoid misleading as to what was decided, to put as a head-note the text of the formal

1929

REFERENCE re WATERS AND WATER-POWERS.

Question 1 (a). Where the bed of a navigable river is vested in the Crown in the right of the province, is the title subordinate to the public right of navigation?

Question 1 (b). If not, has the Dominion the legislative power to declare that such title is subordinate to such right?

Answer: The questions as framed postulate the existence of a public right of navigation in the rivers to which they refer, as well as their navigability.

The title to the bed of the river is subject to that public right, except in so far as, at the date of the Union, the Crown possessed by law or has since acquired, under Dominion legislation, a superior right to use or to grant the use of the waters of the river for other purposes, such for example, as mining, irrigation or industry.

Question 2. Where the bed of a navigable river is vested in the Crown in the right of the province, has the Dominion power, for navigation purposes, to use or occupy part of such bed or to divert, diminish, or change the flow over such bed (a) without the consent of the province; (b) without compensation?

Question 3. Has the Parliament of Canada the power, by appropriate legislative enactment, to authorize the Dominion Government to expropriate the lands of the Crown in the right of the province for the purposes of navigation with provision or without provision for compensation?

Answer: These questions cannot be answered categorically either in the affirmative or in the negative.

The conditions controlling the exercise of Dominion legislative powers for purposes embraced within the comprehensive phrase, "navigation purposes," depend in part upon the nature of the "purpose," in part upon the nature of the means proposed for accomplishing it, and in part upon the character of the particular power called into play. Reference is respectfully made to the observations in the accompanying reasons, as indicating the governing principles with as much definiteness as is safe or practicable.

Question 4. By section 108 of the British North America Act, 1867, and the first item of the Third Schedule thereto, the following public works and property of each province, amongst others, shall be the property of Canada, namely "Canals with lands and water-power connected therewith."

Has the province any proprietary interest in or beneficial ownership of or legislative control over the water-power which, though connected with the said canals, is created or made available by reason of extensions, enlargements or replacements of said canals made by the Dominion since Confederation and which is not required from time to time for the purpose of navigation?

Question 5. Where the bed of a navigable river is vested in the Crown in the right of the province, has the province any proprietary interest in or beneficial ownership of or legislative control over the water-power created or made available by works for the improvement of navigation constructed thereupon in whole or in part by or under the authority of the Dominion since Confederation which is not required from time to time for the purposes of navigation?

TCPL vs. NEB 2004

Source: http://decisions.fca-caf.gc.ca/fca/2004/2004fca149.shtml

Date: 20040405

Docket: A-327-03

Citation: 2004 FCA 149

CORAM: ROTHSTEIN J.A.

NOËL J.A.

SHARLOW J.A.

BETWEEN:

TRANSCANADA PIPELINES LIMITED

Appellant

and

THE NATIONAL ENERGY BOARD, CANADIAN ASSOCIATION OF

PETROLEUM PRODUCERS, CENTRA GAS MANITOBA INC., CORAL ENERGY

CANADA INC., INDUSTRIAL GAS USERS ASSOCIATION, MIRANT

CANADA ENERGY MARKETING, LTD., and ONTARIO MINISTER OF ENERGY

Respondents

Heard at Toronto, Ontario, on February 16, 2004.

REASONS FOR JUDGMENT BY: ROTHSTEIN J.A.

CONCURRED IN BY: NOËL J.A.

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REASONS FOR JUDGMENT

ROTHSTEIN J.A.

INTRODUCTION

[1] This is an appeal from a February 2003 decision of the National Energy Board (RH-R-1-2002), pursuant to leave granted by this Court under section 22 of the *National Energy Board Act*, R.S.C. 1985, c. -7.

[2] There are two issues in the appeal. The first is whether the National Energy Board ("Board") erred in taking customer or consumer interests into account in determining the rate of return on capital it would allow the appellant's Canadian Mainline natural gas transmission system ("the Mainline") to earn. The second is whether the Board erred by fettering its discretion by refusing to depart from an automatic adjustment mechanism it had used to establish the Mainline's rate of return on equity.

[3] In order to understand the issues under appeal, it is first necessary to provide some background and the procedural history leading to the February 2003 decision.

BACKGROUND

[4] The National Energy Board regulates interprovincial natural gas transmission pipelines. The Mainline is considered a Group 1 pipeline by the Board. Group 1 pipelines are major pipelines which are audited by the Board on a regular basis and whose operating results are continuously monitored by the Board.

[5] The tolls charged for transporting natural gas on the Mainline are regulated by the Board on a cost of service basis. That means that for a future period, referred to as a "test" year, the Board, based on the evidence before it, estimates the costs to be incurred by the Mainline. The tolls which the Board allows the Mainline to charge its customers are designed to generate sufficient revenue to recover these approved costs while at the same time fairly allocating charges to users in relation to the costs and benefits of different services. Included in the cost of service, and indeed, the largest single component of the Mainline's costs, is the Mainline's cost of capital.

[6] The cost of capital to a utility is equivalent to the aggregate return on investment investors require in order to keep their capital invested in the utility and to invest new capital in the utility. That return will be made in the form of interest on debt and dividends and capital appreciation on equity. Usually, that return is expressed as the rate of return investors require on their debt or equity investments.

[7] The rate of return on debt is not usually controversial. It normally consists of the weighted average interest rate for the test year on the utility's outstanding long-term debt. On the other hand, the rate of return on equity is often the subject of controversy and of much debate by expert witnesses.

[8] Unlike debt, where the interest rate payable is directly observable, the rate of return on equity cannot be accurately determined in advance. There are various methods experts use to estimate the rate of return on equity required by investors. The one adopted by the Board is an Equity Risk Premium methodology whereby the Board estimates a risk-free rate based on government bond rates and adds a risk premium to account for the risk associated with equity investment in a "benchmark" pipeline.

[9] Once the separate rates of return on debt and equity are established, they are consolidated into a composite rate of return on capital, based on the relative amounts of debt and equity in the utility's capital structure. In order to account for varying levels of risk between pipelines, the Board constructs for each pipeline a capital structure, i.e. the relative portions of debt and equity capital needed to finance its prudently acquired assets plus its working capital, on the basis of expert evidence. The greater the risk attributed to each pipeline, the greater the required equity component of its capital structure. That is because bond investors, who are more risk averse than equity investors, will not lend funds to an enterprise unless there is sufficient equity capital invested in the enterprise to give them confidence that they will be able to recover their investment from the assets of the enterprise in the event of default.

[10] For example, if the required rate of return on debt is 5%, the required rate of return on equity is 10% and the utility's capital structure, as determined by the Board, consists of 60% debt and 40% equity, the composite rate of return on capital would be 5% H 0.60 + 10% H 0.40 = 7%.

[11] The composite rate of return on capital is then multiplied by a rate base which consists of the Board's determination, according to its accounting regulations, of the net book value of the utility's prudently acquired assets plus its working capital. Multiplying the rate of return required by investors by this rate base gives the total dollar amount of return required by investors. The product is equivalent to the utility's estimated cost of capital for the test year. That cost is added to all other costs to get the utility's total cost of service. The total is then allocated amongst the utility's customers.

[12] Even though cost of capital may be more difficult to estimate than some other costs, it is a real cost that the utility must be able to recover through its revenues. If the Board does not permit the utility to recover its cost of capital, the utility will be unable to raise new capital or engage in refinancing as it will be unable to offer investors the same rate of return as other investments of similar risk. As well, existing shareholders will insist that retained earnings not be reinvested in the utility.

[13] In the long run, unless a regulated enterprise is allowed to earn its cost of capital, both debt and equity, it will be unable to expand its operations or even maintain existing ones. Eventually, it will go out of business. This will harm not only its shareholders, but also the customers it will no longer be able to service. The impact on customers and ultimately consumers will be even more significant where there is insufficient competition in the market to provide adequate alternative service.

PROCEDURAL HISTORY

[14] In 1994, the Board conducted a public hearing into the cost of capital of certain Group 1 pipelines including the Mainline. The purpose of the hearing was to fix the cost of capital for those pipelines for the period commencing January 1, 1995, and to establish, if possible, an automatic mechanism to adjust the rate of return on equity in the future in order to avoid the expense of litigating annual or biennial changes to the rate of return on equity.

[15] As a result of that proceeding, the Board issued reasons for decision (RH-2-94) in March 1995 fixing the Mainline's return on equity for the 1995 test year at 12.25% based on a deemed capital structure of 70% debt and 30% equity. The Board's deemed capital structure did not provide for any explicit preferred share capital. Therefore, all references to equity refer to common equity.

[16] The Board also established an adjustment mechanism by which the rate of return on equity would be adjusted on January 1 in 1996 and each subsequent calendar year. This mechanism was based upon the Equity Risk Premium methodology whereby:

1. a risk free (Government of Canada) bond yield forecast would be forecasted for the forthcoming year;

2. this bond yield forecast would be deducted from the bond yield forecast of the immediately preceding year;

3. this difference would be multiplied by a factor of 0.75 to determine the adjustment to the rate of return on equity;

4. the product derived in step 3 would be added to or deducted from the rate of return on equity determined by the Board for the preceding year;

5. the sum resulting from step 4 would be rounded to the nearest 25 basis points (1/100th of a percent).

[17] The Mainline's rate of return on equity was adjusted according to this formula in 1996 and subsequent years, although in 1997, the Board abandoned the rounding adjustment, i.e. step 5 above.

[18] By 2001, the appellant had concluded that application of the formula was understating its required rate of return on capital. Therefore, the appellant applied, pursuant to subsection 21(1) of the *National Energy Board Act*, for "review and variance of the [1995 decision] to allow for the determination of a fair return for TransCanada for the years 2001 and 2002." Subsection 21(1) provides:

21. (1) Subject to subsection (2), the Board may review, vary or rescind any decision or order made by it or rehear any application before deciding it.	21. (1) Sous réserve du paragraphe (2), l'Office peut réviser, annuler ou modifier ses ordonnances ou décisions, ou procéder à une nouvelle audition avant de statuer sur une demande.

[19] The appellant submitted that the Board should approve a new methodology for determining the Mainline's cost of capital - the After-Tax Weighted-Average Cost of Capital (ATWACC) methodology. Alternatively, if the ATWACC methodology was not accepted, the appellant submitted that the required rate of return on equity for the Mainline should be 12.5% for 2001 and 2002 and that based on its risk, the deemed equity component of the Mainline's capital structure should be increased to 40%.

[20] As a result of the appellant's submissions, the Board conducted a hearing in February, March and April 2002. The issues at the hearing were:

1. Is the Rate of Return on Common Equity (ROE) formula, established by the Board in its RH-2-94 Decision, still appropriate for determining TransCanada's ROE?

2. Is the After Tax Weighted-Average Cost of Capital (ATWACC) methodology an appropriate regulatory approach to determining cost of capital?

3. In the event the Board decides to adopt the ATWACC methodology, what is the appropriate

ATWACC for TransCanada?

4. In the event the Board declines to adopt the ATWACC methodology and it is determined that the ROE formula is no longer suitable:

a) What would be an appropriate methodology for determining return on capital and capital structure for TransCanada?

b) In applying the above-determined methodology, what would be an appropriate return on capital and capital structure for TransCanada?

5. What is the appropriate effective date for changes to TransCanada's cost of capital? (RH-4-2001 at 4).

[21] By reasons for decision (RH-4-2001) dated June 2002, the Board:

1 . rejected the appellant's ATWACC proposal;

2. determined that the rate of return on equity for the Mainline should continue to be based on the adjustment formula established in its 1995 decision; and

3. increased the deemed equity component of the Mainline's capital structure from 30% to 33% to account for increased business risk.

[22] By application to the Board dated September 16, 2002, the appellant applied for a review and variance of the 2002 decision. This application was also made pursuant to subsection 21(1).

[23] Section 44 of the *National Energy Board Rules of Practice and Procedure, 1995*, SOR/95-208 sets out the requirements for a review application. Subsection 44(2) provides:

44 (2) An application for review or rehearing shall contain	(2) La demande de révision ou de nouvelle audition contient les éléments suivants :
...	...
(b) the grounds that the applicant considers sufficient, in the case of an application for review, to raise a doubt as to the correctness of the decision or order ... including	b) les motifs que le demandeur juge suffisants pour mettre en doute le bien-fondé de la décision ou de l'ordonnance, s'il s'agit d'une demande de révision, ... notamment :
(i) any error of law or of jurisdiction,	(i) une erreur de droit ou de compétence,
...	...

[24] In its decision on the review & variance application (RH-R-1-2002), dated February 2003, the Board found that the appellant had not raised a doubt as to the correctness of its 2002 decision and dismissed the application for review and variance.

[25] The appellant was granted leave to appeal the Board's 2003 decision to this Court.

ANALYSIS

1. Standard of Review and Approach to the Decision Being Appealed

[26] In view of my conclusion that the appeal should be dismissed, it is not necessary to conduct an extensive standard of review analysis. Even on the most intrusive standard of review (correctness), it has not been demonstrated that the Board erred in law.

[27] There is also a question of the extent to which the Court should consider the Board's 2002 decision, which itself was not appealed. Normally, the Court is to restrict itself to a consideration of the decision under appeal. However, when the question is whether the Board erred or came to an unreasonable or patently unreasonable result in finding in its 2003 decision that the appellant had not raised a doubt as to the correctness of the prior 2002 decision, it is necessary to have regard, at least to some extent, to that prior decision. Rather than becoming bogged down into the intricacies of the scope of the Court's review, I am satisfied, even on a unrestricted consideration of both the 2002 and 2003 decisions, that the Board made no error of law in either case.

2. Did the Board err in considering customer or consumer interests in determining

the Mainline's rate of return on capital?

[28] As a preliminary point, the appellant drew a distinction between its customers and the ultimate consumers. For purposes of this decision, such a distinction is immaterial. The appellant's position is that the Mainline's return on capital should be determined solely from the perspective of the Mainline, without considering other interests, whether they be direct customers or ultimate consumers.

a) The Board is not required to adopt any specific methodology in

determining tolls.

[29] The *National Energy Board Act* contains no provisions or directions which require the Board to determine a pipeline's rate of return on capital. The Act only requires that "all tolls be just and reasonable." Subsections 60(1) and section 62 provide:

60. (1) A company shall not charge any tolls except tolls that are	60. (1) Les seuls droits qu'une compagnie peut imposer sont ceux qui sont_:
(a) specified in a tariff that has been filed with the Board and is in effect; or	a) soit spécifiés dans un tarif produit auprès de l'Office et en vigueur;
(b) approved by an order of the Board.	b) soit approuvés par ordonnance de l'Office.
62. All tolls shall be just and reasonable, and shall always, under substantially similar circumstances and conditions with respect to all traffic of the same description carried over the same route, be charged equally to all persons at the same rate.	62. Tous les droits doivent être justes et raisonnables et, dans des circonstances et conditions essentiellement similaires, être exigés de tous, au même taux, pour tous les transports de même nature sur le même parcours.

[30] The authority of the Board to determine just and reasonable tolls is not limited by any statutory directions. The broad authority of the Board was well articulated by Thurlow C.J. in *British Columbia Hydro and Power Authority v. West Coast Transmission Company Ltd. et al.,* [1981] 2 F.C. 646 at 655-56 (C.A.):

There are no like provisions in part IV of the *National Energy Board Act*. Under it, tolls are to be just and reasonable and may be charged only as specified in a tariff that has been filed with the Board and is in effect. The Board is given authority in the broadest of terms to make orders with respect to all matters relating to them. Plainly, the Board has authority to make orders designed to ensure that the tolls to be charged by a pipeline company will be just and reasonable. But its power in that respect is not trammelled or fettered by statutory rules or directions as to how that function is to be carried out or how the purpose is to be achieved. In particular, there are no statutory directions that, in considering whether tolls that a pipeline company propose to charge are just and reasonable, the Board must adopt any particular accounting approach or device or that it must do so by determining cost of service and a rate base and fixing a fair return thereon.

[31] The Board has adopted a cost of service method for determining the Mainline's tolls. Before this Court, counsel for a number of the respondents suggested different methodologies for determining just and reasonable tolls that would be open to the Board, such as:

1. tolls based on agreements between pipelines and shippers;

2. tolls based on charges of other pipelines;

3. use of base year tolls adjusted for inflation;

4. tolls based on mechanisms to encourage utilities towards greater efficiency.

As no particular methodology is required by the *National Energy Board Act*, the Board could have adopted a different methodology for determining just and reasonable tolls for the Mainline.

b) Having adopted a cost of service methodology, the costs determined by the Board must be just and reasonable to both the Mainline and its users.

[32] In the case of the Mainline, the Board has adopted a cost of service methodology whereby the Mainline is to be compensated through tolls for its prudently incurred costs, including its cost of capital, and in particular, its cost of equity capital. Once it did so, it had to faithfully determine the Mainline's costs based on the evidence and its own sound judgment.

[33] Cost of equity for a future year cannot be directly measured and therefore must be based on estimates. The Board must choose an estimate that allows the Mainline to earn what has been termed a "fair return." In *Northwestern Utilities Ltd. v. Edmonton (City)*, [1929] S.C.R. 186 at 192-93, the Supreme Court defined a fair return in the following terms:

The duty of the Board was to fix fair and reasonable rates; rates which, under the circumstances, would be fair to the consumer on the one hand, and which, on the other hand, would secure to the company a fair return for the capital invested. By a fair return is meant that the company will be allowed as large a return on the capital invested in its enterprise (which will be net to the company) as it would receive if it were investing the same amount in other securities possessing an attractiveness, stability and certainty equal to that of the company's enterprise.

Tolls which reflect a fair return on capital will be just and reasonable to both the Mainline and its users.

[34] To put the matter another way, when the cost of service methodology is used to determine just and reasonable tolls, if the Board does not permit the Mainline to recover its costs because it has understated the Mainline's cost of equity capital, the Mainline will be unable to earn a fair return on equity. The tolls will therefore not be just and reasonable from the Mainline's point of view. On the other hand, the tolls must also be just and reasonable from the point of view of the Mainline's customers and the ultimate consumers who rely on service from the Mainline. Therefore, customers and consumers have an interest in ensuring that the Mainline's costs are not overstated. As respondents' counsel pointed out, there are numerous costing issues that may be subject to challenge. Questions may arise about, among other

things, the allocation of costs between the Mainline and other divisions of the appellant; whether costs have been, or are being, prudently incurred; and whether the Mainline's compensation plans are reasonable. And, specific to this appeal, customers and consumers have an interest in ensuring that the Mainline's cost of equity is not overstated.

c) The Board did not improperly consider the impact on customers or

consumers of increasing tolls to reflect the appellant's costs.

[35] In oral argument, the appellant conceded that it does not object to its customers having input into the Board's cost determinations and in particular, its cost of capital determination, provided the issues in dispute are restricted to the costs of the Mainline. However, the appellant does object to the Board taking the impact of tolls on customers and consumers into account in determining the Mainline's cost of equity capital. The appellant says that the required rate of return on equity must be determined solely on the basis of the Mainline's cost of equity capital. The impact of any resulting toll increases on customers or consumers is an irrelevant consideration in that determination. The appellant does concede that when the final tolls are being fixed, the impact on the customers and consumers may be relevant, but insists that it is irrelevant when determining the required return on equity.

[36] I think that this argument is sound and in keeping with the decision of the Supreme Court in *Northwestern Utilities*. The cost of equity capital does not change because allowing the Mainline to recover it would cause an increase in tolls. Under the Board's Equity Risk Premium methodology, the cost of equity capital is driven by the Board's estimate of the risk-free interest rate and the degree of risk investors perceive in the "benchmark" pipeline. The higher the risk, the higher their required rate of return. The degree of risk specific to the Mainline is accounted for by adjustments to its deemed capital structure. Accordingly, the cost to the Mainline of providing that rate of return on the equity component of its deemed capital structure is unaffected by the impact of tolls on customers or consumers.

[37] The appellant has not demonstrated that the Board took the impact on customers or consumers into account in making its determination of the Mainline's required rate of return on equity.

[38] It is true that in its 2002 decision, the Board did state:

In respect of the appropriate balance of customer and investor interests, the Board notes that customer interest in rate of return matters relates most directly to the impact the approved return will have on tolls. The Board is of the view that the impact of the rate of return on tolls is a relevant factor in the determination of a fair return (RH-4-2001 at 12).

[39] The appellant says it cannot tell if the Board took the impact on customers or consumers into account in making its determination of the Mainline's required rate of return on equity. There is certainly no indication in its 2002 reasons that the Board adjusted its estimate of the required rate of return on equity based upon the impact it would have on tolls. In fact, the Board simply applied the automatic adjustment formula adopted in its 1995 decision. That formula does not take into account the impact of tolls on customers or consumers.

[40] It is also true that, in relation to an adjustment the Board made in the Mainline's deemed capital structure in its 2002 decision, the Board did state:

In light of the above, the Board is of the view that it would be appropriate to increase the Mainline's deemed common equity ratio from 30% to 33%. The Board notes that this increase will raise the Mainline's annual cost of service and tolls by approximately 2%. The Board has determined that the toll increase is warranted by the prospective business risk facing the Mainline and that it will not impose an undue burden on shippers (RH-4-2001 at 59).

[41] As I understand the Board's reasons, in view of the Mainline's increased business risk, the

equity component of its deemed capital structure was increased from 30% to 33%. Because the required rate of return on equity was greater than the required rate of return on debt, this increased the overall estimate of the Mainline's required rate of return on capital, resulting in a 2% increase in tolls.

[42] While the Board observed that the increase would not be an undue burden on shippers, there is no suggestion that the increase in the equity component of the Mainline's deemed capital structure was in any way suppressed by considerations of its impact on customers or consumers. Nor, as I have said, is there any indication that the Board determined a required rate of return on equity for the Mainline and then adjusted it downward based on the impact it would have on tolls. In the absence of some indication in the Board's reasons, there is no basis for such an assumption.

d) The Board may adopt temporary measures to ameliorate "rate shock" so

long as the utility eventually recovers its costs.

[43] I would add one further point. While I agree with the appellant that the impact on customers or consumers cannot be a factor in the determination of the cost of equity capital, any resulting increase in tolls may be a relevant factor for the Board to consider in determining the way in which a utility should recover its costs. It may be that an increase is so significant that it would lead to "rate shock" if implemented all at once and therefore should be phased in over time. It is quite proper for the Board to take such considerations into account, provided that there is, over a reasonable period of time, no economic loss to the utility in the process. In other words, the phased in tolls would have to compensate the utility for deferring recovery of its cost of capital. In the end, where a cost of service method is used, the utility must recover its costs over a reasonable period of time, regardless of any impact those costs may have on customers or consumers (see *Hemlock Valley Electrical Services Ltd. v. British Columbia Utilities Commission et al.*, [1992] 12 B.C.A.C. 1 at 20-21 (C.A.)). In this case, however, there is no suggestion that the Board sought to phase in or otherwise understate the Mainline's cost of capital.

3. Did the Board fetter its discretion?

a) Appellant's arguments

[44] The appellant's second alleged error of law is that the Board fettered its discretion. The appellant submits that the Board placed an inappropriate onus on the appellant to demonstrate that the cost of equity adjustment formula established by the Board in its 1995 decision, but not expressed in the *National Energy Board Act* or in any judicial authority, was to govern unless the appellant could persuade the Board otherwise.

[45] In its factum, the appellant states that the high onus of reversal placed on it by the Board caused the Board to act "inconsistently with its obligations of impartiality as an administrative tribunal." Some of the respondents characterised this as an allegation of bias against the Board.

[46] In oral argument, the appellant added that the Board wrongly discarded evidence of both the appellant and the respondents because the Board was not open to reviewing the adjustment formula.

b) The intended duration of the automatic adjustment mechanism.

[47] In its 1995 decision, the Board was expressly addressing "what simplified procedure should be implemented to effect an annual adjustment to the rate of return applicable to pipelines between cost of capital proceedings" (RH-2-94 at 1). The Board explained its reasons for seeking an automatic adjustment mechanism in the following words:

In setting this matter down for hearing, it was the Board's intention to put in place means of improving the efficacy of the toll setting process for the year 1995 and beyond. The Board expressed the desire to avoid annual hearings on the cost of capital and was of the view that some automatic mechanism to adjust the return on common equity could be the most appropriate way to ensure that this return continued to be fair to all parties, while avoiding the expense of litigating annual or biennial changes in the rate of return. The Board therefore included as an issue in the RH-2-94 proceeding, the design and implementation of a predetermined adjustment mechanism to the rate of return on the common equity component. The Board's objective in this regard was to conduct detailed examinations of the pipelines' cost of capital only when significant changes had occurred in financial markets, business circumstances, or in general economic conditions (RH-2-94 at 1-2).

[48] After an extensive hearing in which it considered the submissions of pipelines, shippers, governments and others, the Board established the automatic adjustment mechanism whereby the cost of equity capital would be determined. As to how long the automatic adjustment mechanism would remain in place, the Board stated:

The Board is not setting a limit on the life of the mechanism and it does not expect to reassess the rate of return on common equity in a formal hearing for at least three years. The Board has confidence that the adjustment mechanism adopted will provide an appropriate balance between the interests of pipeline company shareholders and those of shippers (RH-2-94 at 32).

[49] In its 1995 decision, the Board also established a deemed capital structure for the Group 1 pipelines. As discussed above, the Mainline was deemed to have a capital structure made up of 70% debt and 30% equity. The Board expressed the view that its capital structure determination would endure for an extended period of years, but that the Board would be prepared to consider a re-assessment of capital structure if requested by a pipeline, its shippers or another interested party:

The Board also expects that the capital structure set in this hearing for each of the pipelines will endure for an extended period of years. The Board will be prepared to consider a reassessment of capital structures, likely on an individual basis, in the event of a significant change in business risk, in corporate structure or in corporate financial fundamentals. The Board does not favour routine reassessments of capital structure. For these reasons, the Board has not set out a specific date or any criteria for capital structure re-evaluation. Any reassessment of capital structure, for reasons such as those expressed above, must be at the request of the pipeline itself, its shippers or some other interested party. It would then be for the Board to assess the merits of such a request (RH-2-94 at 32).

[50] The Board's Order TG/TO-1-95, which implemented the 1995 decision, set the Mainline's deemed capital structure and required that the Mainline's cost of equity capital for 1996 and subsequent years be determined through the application of the adjustment formula. The Order contained no time limit and therefore continues in force until reviewed or varied by the Board.

c) The appellant did bear the burden of showing that the automatic adjustment mechanism should no longer apply.

[51] The Board applied its automatic adjustment mechanism annually until 2001 when the appellant brought its fair rate of return application, seeking a review and variance of the 1995 decision and the adoption of a new means of determining its cost of capital.

[52] The appellant's position seems to be that when it brought its fair rate of return application in 2001, the Board was required to disregard entirely the automatic adjustment mechanism and start fresh - with a clean slate as it were - to determine the appropriate method by which to estimate the Mainline's cost of capital.

[53] However, the adjustment formula was part of an order that continued to bind the appellant. Subsection 23(1) of the *National Energy Board Act* provides:

23. (1) Except as provided in this Act, every decision or order of the Board is final and conclusive.	23. (1) Sauf exceptions prévues à la présente loi, les décisions ou ordonnances de l'Office sont

définitives et sans appel.

Section 22 allows for appeals to the Federal Court of Appeal while subsection 21(1) allows the Board to review, vary and rescind its decisions and orders. Neither the Board's 1995 decision nor the order implementing it were appealed. The adjustment formula therefore continued to apply until the appellant demonstrated to the Board that it should be replaced.

[54] The hearing conducted by the Board on the appellant's fair return application was extensive. Written evidence was filed and the oral hearing proceeded for more than a month. The Board's 2002 decision was 64 pages long. The Board considered the appellant's ATWACC proposal and its alternative increased rate of return on equity proposal, reviewed the evidence of the witnesses and ultimately concluded that utilization of the automatic adjustment formula continued to yield a rate of return on equity that the Board considered to be appropriate for the Mainline.

[55] However, the Board did, to some extent, accept the appellant's argument that the Mainline's business risk had increased. In order to take account of the increased risk, the Board increased the equity component of the Mainline's deemed capital structure from 30% to 33% so that the capital structure would be 33% equity and 67% debt.

[56] I can detect no fettering of discretion or the placing of an improper onus on the appellant in the Board's reasons. In its 1995 decision, the Board stated that its automatic adjustment formula was to reflect a simplified procedure to determine annual adjustments to pipeline rates of return on common equity. It was therefore to continue indefinitely. When an affected party wishes to change the process, it has the onus to demonstrate that its proposal is preferable to the one which is the subject of a binding Board order. That is not an improper onus. Nor does it reflect a fettering of discretion by the Board. Most importantly, it does not give rise to any apprehension of impartiality or bias on the part of the Board.

[57] In reviewing the 2002 decision, the Review and Variance Panel found in its 2003 decision that the onus was on the appellant to demonstrate that the automatic adjustment formula was no longer appropriate and that the appellant had failed to do so:

The Fair Return Application was, among other things, an application for review of the RH-2-94 Decision and related orders, pursuant to subsection 21(1) of the Act. The onus was on TransCanada to prove to the Board in RH-4-2001 that the RH-2-94 Formula was no longer appropriate for determining the Mainline's return on equity. Neither the intervenors nor the Board had the onus in the RH-4-2001 proceeding to justify the continued use of the Formula. The Formula was appropriate unless and until TransCanada persuaded the Board otherwise.

TransCanada failed to meet the burden and accordingly, the RH-2-94 Formula continued to apply. The Board was not required in the RH-4-2001 Decision to justify that the Formula was appropriate; that determination was made in the RH-2-94 proceeding (RH-R-1-2002 at 24).

I find no error on the part of the Board in that analysis or conclusion.

d) The Board did not disregard or ignore evidence.

[58] As to the appellant's argument that the Board disregarded evidence, I agree that the Board did not adopt the evidence of any particular witness for or against the appellant. But that does not mean that the evidence was discarded or ignored. In cost of capital proceedings, the Board is entitled, on the basis of the evidence before it and the use of its own judgment, to choose a methodology for determining cost of capital and to estimate the cost of capital for a forthcoming year. Very often, the Board's estimate will not reflect the precise estimates of one side or the other or of one witness or another. Having regard to all the evidence, the Board will determine its own estimate. As long as that estimate is within the range of estimates put forward in the evidence and the Board demonstrates that it considered the estimates put forward, the Board cannot be said to have ignored evidence. Indeed, even if the Board's estimate is outside that range, if the Board shows that it considered the evidence submitted and provides adequate

reasons for its opinion, the Board will not be found to have ignored evidence.

[59] In this case, the estimates in the evidence of the required rate of return on equity ranged from 8.28% to 12.50%. The Board's reasons indicate that it considered the estimates put forward. Using its automatic adjustment formula, the Board calculated that the required rate of return on equity for the Mainline would be 9.61% in 2001 and 9.53% in 2002. I cannot see that the Board disregarded or ignored evidence in deciding to continue to utilize the automatic adjustment formula to determine the required rate of return on equity for the Mainline.

CONCLUSION

[60] I would dismiss this appeal with costs.

"Marshall Rothstein"

J.A.

"I agree

Marc Noël J.A."

"I agree

K. Sharlow J.A."

FEDERAL COURT OF APPEAL

NAMES OF COUNSEL AND SOLICITORS OF RECORD

DOCKET: A-327-03

STYLE OF CAUSE: TRANSCANADA PIPELINES LTD

and

THE NATIONAL ENERGY BOARD ET AL.

PLACE OF HEARING: Toronto, Ontario

DATE OF HEARING: February 16 , 2004

REASONS FOR JUDGMENT: ROTHSTEIN J.A.

CONCURRED IN BY: NOËL J.A.

SHARLOW J.A.

DATED: April 5, 2004

APPEARANCES:

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Bluefield Water Works 1923

U.S. Supreme Court

BLUEFIELD WATER WORKS CO. v. PUBLIC SERVICE COMMISSION, 262 U.S. 679 (1923)

262 U.S. 679

BLUEFIELD WATERWORKS & IMPROVEMENT CO.
v.
PUBLIC SERVICE COMMISSION OF WEST VIRGINIA et al.
No. 256.

Argued January 22, 1923.
Decided June 11, 1923.

[262 U.S. 679, 680] Messrs. Alfred G. Fox and Jos. M. Sanders, both of Bluefield, W. Va., for plaintiff in error.

Mr. Russell S. Ritz, of Bluefield, W. Va., for defendants in error.

[262 U.S. 679, 683]

Mr. Justice BUTLER delivered the opinion of the Court.

Plaintiff in error is a corporation furnishing water to the city of Bluefield, W. Va., and its inhabitants. September 27, 1920, the Public Service Commission of the state, being authorized by statute to fix just and reasonable rates, made its order prescribing rates. In accordance with the laws of the state (section 16, c. 15-O, Code of West Virginia [sec. 651]), the company instituted proceedings in the Supreme Court of Appeals to suspend and set aside the order. The petition alleges that the order is repugnant to the Fourteenth Amendment, and deprives the company of its property without just compensation and without due process of law, and denies it equal protection of the laws. A final judgment was entered, denying the company relief and dismissing its petition. The case is here on writ of error.

1. The city moves to dismiss the writ of error for the reason, as it asserts, that there was not drawn in question the validity of a statute or an authority exercised under the state, on the ground of repugnancy to the federal Constitution.

The validity of the order prescribing the rates was directly challenged on constitutional grounds, and it was held valid by the highest court of the state. The prescribing of rates is a legislative act. The commission is an instrumentality of the state, exercising delegated powers. Its order is of the same force as would be a like enactment by the Legislature. If, as alleged, the prescribed rates are confiscatory, the order is void. Plaintiff in error is entitled to bring the case here on writ of error and to have that question decided by this court. The motion to dismiss will be denied. See Oklahoma Natural Gas Co. v. [262 U.S. 679, 684] Russell, 261 U.S. 290 , 43 Sup. Ct. 353, 67 L. Ed. --, decided March 5, 1923, and cases cited; also Ohio Valley Co. v. Ben Avon Borough, 253 U.S. 287 , 40 Sup. Ct. 527.

2. The commission fixed $460,000 as the amount on which the comp ny is entitled to a return. It found that under existing rates, assuming some increase of business, gross earnings for 1921 would be $80,000 and operating expenses $53,000 leaving $27,000, the equivalent of 5.87 per cent., or 3.87 per cent. after deducting 2 per cent. allowed for depreciation. It held existing rates insufficient to the extent of 10,000. Its order allowed the company to add 16 per cent. to all bills, excepting those for public and private fire protection. The total of the bills so to be increased amounted to $64,000; that is, 80 per cent. of the revenue was authorized to be increased 16 per cent., equal to an increase of 12.8 per cent. on the total, amounting to $10,240.

As to value: The company claims that the value of the property is greatly in excess of $460,000. Reference to the evidence is necessary. There was submitted to the commission evidence of value which it summarized substantially as follows:

a. Estimate by company's engineer on basis of reproduction new, less depreciation, at prewar prices $ 624,548 00 b. Estimate by company's engineer on basis of reproduction new, less depreciation, at 1920 prices 1,194,663 00 c. Testimony of company's engineer fixing present fair value for rate making purposes 900,000 00 d. Estimate by commissioner's engineer on basis of reproduction new, less depreciation at 1915 prices, plus additions since December 31, 1915, at actual cost, excluding Bluefield Valley waterworks, water rights, and going value 397,964 38 [262 U.S. 679, 685] e. Report of commission's statistician showing investment cost less depreciation 365,445 13 f. Commission's valuation, as fixed in case No. 368 ($360,000), plus gross additions to capital since made ($92,520.53) 452,520 53

It was shown that the prices prevailing in 1920 were nearly double those in 1915 and pre-war time. The company did not claim value as high as its estimate of cost of construction in 1920. Its valuation engineer testified that in his opinion the value of the property was $900,000-a figure between the cost of construction in 1920, less depreciation, and the cost of construction in 1915 and before the war, less depreciation.

The commission's application of the evidence may be stated briefly as follows:

As to 'a,' supra: The commission deducted $204,000 from the estimate (details printed in the margin),1 leaving approximately $421,000, which it contrasted with the estimate of its own engineer, $397,964.38 (see 'd,' supra). It found that there should be included $25,000 for the Bluefield Valley waterworks plant in Virginia, 10 per cent. for going value, and $10, 000 for working capital. If these be added to $421,000, there results $500, 600. This may be compared with the commission's final figure, $460,000. [262 U.S. 679, 686] As to 'b' and 'c,' supra: These were given no weight by the commission in arriving at its final figure, $460,000. It said:

> 'Applicant's plant was originally constructed more than twenty years ago, and has been added to from time to time as the progress and development of the community required. For this reason, it would be unfair to its consumers to use as a basis for present fair value the abnormal prices prevailing during the recent war period; but, when, as in this case, a part of the plant has been constructed or added to during that period, in fairness to the applicant, consideration must be given to the cost of such expenditures made to meet the demands of the public.'

As to 'd,' supra: The commission, taking $400,000 (round figures), added $25,000 for Bluefield Valley waterworks plant in Virginia, 10 per cent. for going val e, and $10,000 for working capital, making $477,500. This may be compared with its final figure, $460,000.

As to 'e,' supra: The commission, on the report of its statistician, found gross investment to be $500,402.53. Its engineer, applying the straight line method, found 19 per cent. depreciation. It applied 81 per cent. to gross investment and added 10 per cent. for going value and $10, 000 for working capital, producing $455,500.2 This may be compared with its final figure, $460,000.

As to 'f,' supra: It is necessary briefly to explain how this figure, $ 452,520.53, was arrived at. Case No. 368 was a proceeding initiated by the application of the company for higher rates, April 24, 1915. The commission made a valuation as of January 1, 1915. There were presented two estimates of reproduction cost less depreciation, one by a valuation engineer engaged by the company, [262 U.S. 679, 687] and the other by a valuation engineer engaged by the city, both 'using the same method.' An inventory made by the company's engineer was accepted as correct by the city and by the commission. The method 'was that generally employed by courts and commissions in arriving at the value of public utility properties under this method.' and in both estimates 'five year average unit prices' were applied. The estimate of the company's engineer was $540,000 and of the city's engineer, $392,000. The principal differences as given by the commission are shown in the margin. 3 The commission disregarded both estimates and arrived at $360,000. It held that the best basis of valuation was the net investment, i. e., the total cost of the property less depreciation. It said:

> 'The books of the company show a total gross investment, since its organization, of $407,882, and that there has been charged off for depreciation from year to year the total sum of $83,445, leaving a net investment of $324,427. ... From an examination of the books ... it appears that the records of the company have been remarkably well kept and preserved. It therefore seems that, when a plant is developed under these conditions, the net investment, which, of course, means the total gross investment less depreciation, is the very best basis of valuation for rate making purposes and that the other methods above referred to should [262 U.S. 679, 688] be used only when it is impossible to arrive at the true investment. Therefore, after making due allowance for capital necessary for the conduct of the business and considering the plant as a going concern, it is the opinion of the commission that the fair value for the purpose of determining reasonable and just rates in this case of the property of the applicant company, used by it in the public service of supplying water to the city of Bluefield and its citizens, is the sum of $360,000, which sum is hereby fixed and determined by the commission to be the fair present value for the said purpose of determining the reasonable and just rates in this case.'

In its report in No. 368, the commission did not indicate the amounts respectively allowed for going value or working capital. If 10 per cent. be added for the former, and $10,000 for the latter (as fixed by the commission in the present case), there is produced $366,870, to e compared with $360,000, found by the commission in its valuation as of January 1, 1915. To this it added $92,520.53, expended since, producing $ 452,520.53. This may be compared with its final figure, $460,000.

The state Supreme Court of Appeals holds that the valuing of the property of a public utility corporation and prescribing rates are purely legislative acts, not subject to judicial review, except in so far as may be necessary to determine whether such rates are void on constitutional or other grounds, and that findings of fact by the commission based on evidence to support them will not be reviewed by the court. City of Bluefield v. Waterworks, 81 W. Va. 201, 204, 94 S. E. 121; Coal & Coke Co. v. Public Service Commission, 84 W. Va. 662, 678, 100 S. E. 557, 7 A. L. R. 108; Charleston v. Public Service Commission, 86 W. Va. 536, 103 S. E. 673.

In this case (89 W. Va. 736, 738, 110 S. E. 205, 206) it said:

> 'From the written opinion of the commission we find that it ascertained the value of the

> petitioner's property for rate making [then quoting the commission] 'after [262 U.S. 679, 689] maturely and carefully considering the various methods presented for the ascertainment of fair value and giving such weight as seems proper to every element involved and all the facts and circumstances disclosed by the record."

The record clearly shows that the commission, in arriving at its final figure, did not accord proper, if any, weight to the greatly enhanced costs of construction in 1920 over those prevailing about 1915 and before the war, as established by uncontradicted evidence; and the company's detailed estimated cost of reproduction new, less depreciation, at 1920 prices, appears to have been wholly disregarded. This was erroneous. Missouri ex rel. Southwestern Bell Telephone Co. v. Public Service Commission of Missouri, 262 U.S. 276 , 43 Sup. Ct. 544, 67 L. Ed . --, decided May 21, 1923. Plaintiff in error is entitled under the due process clause of the Fourteenth Amendment to the independent judgment of the court as to both law and facts. Ohio Valley Co. v. Ben Avon Borough, 253 U.S. 287, 289 , 40 S. Sup. Ct. 527, and cases cited.

We quote further from the court's opinion (89 W. Va. 739, 740, 110 S. E. 206):

> 'In our opinion the commission was justified by the law and by the facts in finding as a basis for rate making the sum of $460,000.00 . ... In our case of Coal & Coke Ry. Co. v. Conley, 67 W. Va. 129, it is said: 'It seems to be generally held that, in the absence of peculiar and extraordinary conditions, such as a more costly plant than the public service of the community requires, or the erection of a plant at an actual, though extravagant, cost, or the purchase of one at an exorbitant or inflated price, the actual amount of money invested is to be taken as the basis, and upon this a return must be allowed equivalent to that which is ordinarily received in the locality in which the business is done, upon capital invested in similar enterprises. In addition to this, consideration must be given to the nature of the investment, a higher rate [262 U.S. 679, 690] being regarded as justified by the risk incident to a hazardous investment.'
>
> 'That the original cost considered in connection with the history and growth of the utility and the value of the services rendered constitute the principal elements to be considered in connection with rate making, seems to be supported by nearly all the authorities.'

The question in the case is whether the rates prescribed in the commission's order are confiscatory and therefore beyond legislative power. Rates which are not sufficient to yield a reasonable return on the value of the property used at the time it is being used to render the service are unjust, unreasonable and confiscatory, and their enforcement deprives the public utility company of its property in violation of the Fourteenth Amendment. This is so well settled by numerous decisions of this court that citation of the cases is scarcely necessary:

> 'What the company is entitled to ask is a fair return upon the value of that which it employs for the public convenience.' Smyth v. Ames (1898) 169 U.S. 467, 547 , 18 S. Sup. Ct. 418, 434 (42 L. Ed. 819).
>
> 'There must be a fair return upon the reasonable value of the property at the time it is being used for the public. ... And we concur with the court below in holding that the value of the property is to be determined as of the time when the inquiry is made regarding the rates. If the property, which legally enters into the consideration of the question of rates, has increased in value since it was acquired, the company is entitled to the benefit of such increase.' Willcox v. Consolidated Gas Co. (1909) 212 U.S. 19, 41 , 52 S., 29 Sup. Ct. 192, 200 (53 L. Ed. 382, 15 Ann. Cas. 1034, 48 L. R. A. [N. S.] 1134).

> 'The ascertainment of that value is not controlled by artificial rules. It is not a matter of formulas, but there must be a reasonable judgment having its basis in a proper consideration of all relevant facts.' Minnesota Rate Cases (1913) 230 U.S. 352, 434 , 33 S. Sup. Ct. 729, 754 (57 L. Ed. 1511, 48 L. R. A. [N. S.] 1151, Ann. Cas. 1916A, 18). [262 U.S. 679, 691] 'And in order to ascertain that value, the original cost of construction, the amount expended in permanent improvements, the amount and market value of its bonds and stock, the present as compared with the original cost of construction, the probable earning capacity of the property under particular rates prescribed by statute, and the sum required to meet operating expenses, are all matters for consideration, and are to be given such weight as may be just and right in each case. We do not say that there may not be other matters to be regarded in estimating the value of the property.' Smyth v. Ames, 169 U. S., 546, 547, 18 Sup. Ct. 434.
>
> '... The making of a just return for the use of the property involves the recognition of its fair value if it be more than its cost. The property is held in private ownership and it is that property, and not the original cost of it, of which the owner may not be deprived without due process of law.'

Minnesota Rate Cases, 230 U.S. 454 , 33 Sup. Ct. 762, 48 L. R. A. (N. S.) 1151, Ann. Cas. 1916A, 18.

In Missouri ex rel. Southwestern Bell Telephone Co., v. Public Service Commission of Missouri, supra, applying the principles of the cases above cited and others, this court said:

> 'Obviously, the commission undertook to value the property without according any weight to the greatly enhanced costs of material, labor, supplies, etc., over those prevailing in 1913, 1914, and 1916. As matter of common knowledge, these increases were large. Competent witnesses estimated them as 45 to 50 per centum. ... It is impossible to ascertain what will amount to a fair return upon properties devoted to public service, without giving consideration to the cost of labor, supplies, etc., at the time the investigation is made. An honest and intelligent forecast of probable future values, made upon a view of all the relevant circumstances, is essential. If the highly important element of present costs is wholly disregarded, such a forecast becomes impossible. Estimates for to-morrow cannot ignore prices of to-day.' [262 U.S. 679, 692] It is clear that the court also failed to give proper consideration to the higher cost of construction in 1920 over that in 1915 and before the war, and failed to give weight to cost of reproduction less depreciation on the basis of 1920 prices, or to the testimony of the company's valuation engineer, based on present and past costs of construction, that the property in his opinion, was worth $900,000. The final figure, $460,000, was arrived at substantially on the basis of actual cost, less depreciation, plus 10 per cent. for going value and $10, 000 for working capital. This resulted in a valuation considerably and materially less than would have been reached by a fair and just consideration of all the facts. The valuation cannot be sust ined. Other objections to the valuation need not be considered.

3. Rate of return: The state commission found that the company's net annual income should be approximately $37,000, in order to enable it to earn 8 per cent. for return and depreciation upon the value of its property as fixed by it. Deducting 2 per cent. for depreciation, there remains 6 per cent. on $460,000, amounting to $27,600 for return. This was approved by the state court.

The company contends that the rate of return is too low and confiscatory. What annual rate will constitute just compensation depeds upon many circumstances, and must be determined by the exercise of a fair and enlightened judgment, having regard to all relevant facts. A public utility is entitled to such rates as will permit it to earn a return on the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding, risks and uncertainties; but it has no constitutional right to profits such as are realized or anticipated in [262 U.S. 679, 693] highly profitable enterprises or speculative ventures. The return should be reasonably sufficient to assure confidence in the financial soundness of the utility and should be adequate, under efficient and economical management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties. A rate of return may be reasonable at one time and become too high or too low by changes affecting opportunities for investment, the money market and business conditions generally.

In 1909, this court, in Willcox v. Consolidated Gas Co., 212 U.S. 19 , 48-50, 29 Sup. Ct. 192, 15 Ann. Cas. 1034, 48 L. R. A. (N. S.) 1134, held that the question whether a rate yields such a return as not to be confiscatory depends upon circumstances, locality and risk, and that no proper rate can be established for all cases; and that, under the circumstances of that case, 6 per cent. was a fair return on the value of the property employed in supplying gas to the city of New York, and that a rate yielding that return was not confiscatory. In that case the investment was held to be safe, returns certain and risk reduced almost to a minimum-as nearly a safe and secure investment as could be imagined in regard to any private manufacturing enterprise.

In 1912, in Cedar Rapids Gas Co. v. Cedar Rapids, 223 U.S. 655, 670 , 32 S. Sup. Ct. 389, this court declined to reverse the state court where the value of the plant considerably exceeded its cost, and the estimated return was over 6 per cent.

In 1915, in Des Moines Gas Co. v. Des Moines, 238 U.S. 153, 172 , 35 S. Sup. Ct. 811, this court declined to reverse the United States District Court in refusing an injunction upon the conclusion reached that a return of 6 per cent. per annum upon the value would not be confiscatory.

In 1919, this court in Lincoln Gas Co. v. Lincoln, 250 U.S. 256, 268 , 39 S. Sup. Ct. 454, 458 (63 L. Ed. 968), declined on the facts of that case to approve a finding that no rate yielding as much as 6 per cent. [262 U.S. 679, 694] on the invested capital could be regarded as confiscatory. Speaking for the court, Mr. Justice Pitney said:

> 'It is a matter of common knowledge that, owing principally to the World War, the costs of labor and supplies of every kind have greatly advanced since the ordinance was adopted, and largely since this cause was last heard in the court below. And it is equally well known that annual returns upon capital and enterprise the world over have materially increased, so that what would have been a proper rate of return for capital invested in gas plants and similar public utilities a few years ago furnishes no safe criterion for the present or for the future.'

In 1921, in Brush Electric Co. v. Galveston, the United States District Court held 8 per cent. a fair rate of return. 4

In January, 1923, in City of Minneapolis v. Rand, the Circuit Court of Appeals of the Eighth Circuit (285 Fed. 818, 830) sustained, as against the attack of the city on the ground that it was excessive, 7 1/2 per cent ., found by a special master and approved by the District Court as a fair and reasonable return on the capital investment-the value of the property.

Investors take into account the result of past operations, especially in recent years, when determining the terms upon which they will invest in such an undertaking. Low, uncertain, or irregular income makes for low prices for the securities of the utility and higher rates of interest to be demanded by investors. The fact that the company may not insist as a matter of constitutional right that past losses be made up by rates to be applied in the present and future tends to weaken credit, and the fact that the utility is protected against being compelled to serve for confiscatory rates tends to support it. In [262 U.S. 679, 695] this case the record shows that the rate of return has been low through a long period up to the time of the inquiry by the commission here involved. For example, the average rate of return on the total cost of the property from 1895 to 1915, inclusive, was less than 5 per cent.; from 1911 to 1915, inclusive, about 4.4 per cent., without allowance for depreciation. In 1919 the net operating income was approximately $24,700, leaving $15,500, approximately, or 3.4 per cent. on $460,000 fixed by the commission, after deducting 2 per cent. for depreciation. In 1920, the net operating income was approximately $25,465, leaving $16,265 for return, after allowing for depreciation. Under the facts and circumstances indicated by the record, we think that a rate of return of 6 per cent. upon the value of the property is substantially too low to constitute just compensation for the use of the property employed to render the service.

The judgment of the Supreme Court of Appeals of West Virginia is reversed.

Mr. Justice BRANDEIS concurs in the judgment of reversal, for the reasons stated by him in Missouri ex rel. Southwestern Bell Telephone Co. v. Public Service Commission of Missouri, supra.

Footnotes

[Footnote 1]

Difference in depreciation allowed $ 49,000 Preliminary organization and development cost 14,500 Bluefield Valley waterworks plant 25,000 Water rights 50,000 Excess overhead costs 39,000 Paving over mains 28,500 ___ $204,000

[Footnote 2] As to 'e': $365,445.13 represents investment cost less depreciation. The gross investment was found to be $500,402.53, indicating a deduction on account of depreciation of $134,957.40, about 27 per cent., as against 19 per cent. found by the commission's engineer.

[Footnote 3] Company City Engineer. Engineer.

[Footnote 1] Preliminary costs $14,455 $1,000

[Footnote 2] Water rights 50,000 Nothing

[Footnote 3] Cutting pavements over mains 27,744 233

[Footnote 4] Pipe lines from gravity springs 22,072 15,442

[Footnote 5] Laying cast iron street mains 19,252 15,212

[Footnote 6] Reproducing Ada springs 18,558 13,027

[Footnote 7] Superintendence and engineering 20,515 13,621

[Footnote 8] General contingent cost 16,415 5,448 ___ ___ 189,011 $63,983

[Footnote 4] This case was affirmed by this court June 4, 1923, 262 U.S. 443 , 43 Sup. Ct. 606, 67 L.

Ed. --.

FPC vs. Hope 1944

U.S. Supreme Court

FEDERAL POWER COM'N v. HOPE NATURAL GAS CO., 320 U.S. 591 (1944)

320 U.S. 591

FEDERAL POWER COMMISSION et al.
v.
HOPE NATURAL GAS CO.

CITY OF CLEVELAND
v.
SAME.

Nos. 34 and 35.
Argued Oct. 20, 21, 1943.
Decided Jan. 3, 1944.

[320 U.S. 591, 592] Mr. Francis M. Shea, Asst. Atty. Gen., for petitioners Federal Power Com'n and others.

[320 U.S. 591, 593] Mr. Spencer W. Reeder, of Cleveland, Ohio, for petitioner City of cleveland.

Mr. William B. Cockley, of Cleveland, Ohio, for respondent.

Mr. M. M. Neeley, of Charleston, W. Va., for State of West Virginia, as amicus curiae by special leave of Court.

Mr. Justice DOUGLAS delivered the opinion of the Court.

The primary issue in these cases concerns the validity under the Natural Gas Act of 1938, 52 Stat. 821, 15 U.S.C. 717 et seq., 15 U.S.C.A . 717 et seq., of a rate order issued by the Federal Power Commission reducing the rates chargeable by Hope Natural Gas Co., 44 P.U.R.,N.S., 1. On a petition for review of the order made pursuant to 19(b) of the Act, the [320 U.S. 591, 594] Circuit Court of Appeals set it aside, one judge dissenting. 4 Cir., 134 F. 2d 287. The cases are here on petitions for writs of certiorari which we granted because of the public importance of the questions presented. City of Cleveland v. Hope Natural Gas Co., 319 U.S. 735 , 63 S.Ct. 1165

Hope is a West Virginia corporation organized in 1898. It is a wholly owned subsidiary of Standard Oil Co. (N.J.). Since the date of its organization, it has been in the business of producing, purchasing and marketing natural gas in that state. 1 It sells some of that gas to local consumers in West Virginia. But the great bulk of it goes to five customer companies which receive it at the West Virginia line and distribute it in Ohio and in Pennsylvania. 2 In July, 1938, the cities of Cleveland and Akron filed complaints with the Commission charging that the rates collected by Hope from East Ohio Gas Co. (an affiliate of Hope which distributes gas in Ohio) were excessive and unreasonable. Later in 1938 the

Commission on its own motion instituted an investigation to determine the reasonableness of all of Hope's interstate rates. In March [320 U.S. 591, 595] 1939 the Public Utility Commission of Pennsylvania filed a complaint with the Commission charging that the rates collected by Hope from Peoples Natural Gas Co. (an affiliate of Hope distributing gas in Pennsylvania) and two non-affiliated companies were unreasonable. The City of Cleveland asked that the challenged rates be declared unlawful and that just and reasonable rates be determined from June 30, 1939 to the date of the Commission's order. The latter finding was requested in aid of state regulation and to afford the Public Utilities Commission of Ohio a proper basic for disposition of a fund collected by East Ohio under bond from Ohio consumers since June 30, 1939. The cases were consolidated and hearings were held.

On May 26, 1942, the Commission entered its order and made its findings. Its order required Hope to decrease its future interstate rates so as to reflect a reduction, on an annual basis of not less than $3,609, 857 in operating revenues. And it established 'just and reasonable' average rates per m.c.f. for each of the five customer companies. 3 In response to the prayer of the City of Cleveland the Commission also made findings as to the lawfulness of past rates, although concededly it had no authority under the Act to fix past rates or to award reparations. 44 P.U. R.,U.S., at page 34. It found that the rates collected by Hope from East Ohio were unjust, unreasonable, excessive and therefore unlawful, by $830, 892 during 1939, $3,219,551 during 1940, and $2,815,789 on an annual basis since 1940. It further found that just, reasonable, and lawful rates for gas sold by Hope to East Ohio for resale for ultimate public consumption were those required [320 U.S. 591, 596] to produce $11,528,608 for 1939, $11,507,185 for 1940 and $11.910,947 annually since 1940.

The Commission established an interstate rate base of $33,712,526 which, it found, represented the 'actual legitimate cost' of the company's interstate property less depletion and depreciation and plus unoperated acreage, working capital and future net capital additions. The Commission, beginning with book cost, made certain adjustments not necessary to relate here and found the 'actual legitimate cost' of the plant in interstate service to be $51,957,416, as of December 31, 1940. It deducted accrued depletion and depreciation, which it found to be $22,328,016 on an 'economic-service-life' basis. And it added $1,392,021 for future net capital additions, $566,105 for useful unoperated acreage, and $2,125,000 for working capital. It used 1940 as a test year to estimate future revenues and expenses. It allowed over $16,000,000 as annual operating expenses-about $1,300,000 for taxes, $1,460,000 for depletion and depreciation, $600,000 for exploration and development costs, $8,500,000 for gas purchased. The Commission allowed a net increase of $421,160 over 1940 operating expenses, which amount was to take care of future increase in wages, in West Virginia property taxes, and in exploration and development costs. The total amount of deductions allowed from interstate revenues was $13,495,584.

Hope introduced evidence from which it estimated reproduction cost of the property at $97,000,000. It also presented a so-called trended 'original cost' estimate which exceeded $105,000,000. The latter was designed 'to indicate what the original cost of the property would have been if 1938 material and labor prices had prevailed throughout the whole period of the piece-meal construction of the company's property since 1898.' 44 P.U.R.,N.S., at pages 8, 9. Hope estimated by the 'percent condition' method accrued depreciation at about 35% of [320 U.S. 591, 597] reproduction cost new. On that basis Hope contended for a rate base of $66, 000,000. The Commission refused to place any reliance on reproduction cost new, saying that it was 'not predicated upon facts' and was 'too conjectural and illusory to be given any weight in these proceedings.' Id., 44 P.U.R.,U.S., at page 8. It likewise refused to give any 'probative value' to trended 'original cost' since it was 'not founded in fact' but was 'basically erroneous' and produced 'irrational results.' Id., 44 P.U.R., N.S., at page 9. In determining the amount of accrued depletion and depreciation the Commission, following Lindheimer v. Illinois Bell Telephone Co., 292 U.S. 151 , 167-169, 54 S.Ct. 658, 664-666; Federal Power Commission v. Natural Gas Pipeline Co., 315 U.S. 575, 592 , 593 S., 62 S.Ct. 736, 745, 746, based its computation on 'actual legitimate cost'. It found that Hope during the years when its business was not under regulation did not observe 'sound depreciation and depletion practices' but 'actually accumulated an excessive reserve'4 of about $46,000,000. Id., 44 P.U.R.,N.S., at page 18. One member of the Commission thought that the entire amount of the reserve should be deducted from 'actual legitimate cost' in determining the rate base. 5 The majority of the [320 U.S. 591, 598] Commission concluded, however, that where, as here, a business is brought under regulation for the first time and where incorrect depreciation and depletion practices have prevailed, the deduction of the reserve requirement (actual existing depreciation and depletion) rather than the excessive reserve should be made so as to lay 'a sound basis for future regulation and control of rates.' Id., 44 P.U.R.,N.S., at page 18. As we have pointed out, it determined accrued depletion and depreciation to be $ 22,328,016; and it allowed approximately $1,460,000 as the annual operating expense for depletion and depreciation. 6

Hope's estimate of original cost was about $69,735,000-approximately $ 17,000,000 more than the amount found by the Commission. The item of $17, 000,000 was made up largely of expenditures which prior to December 31, 1938, were charged to operating expenses. Chief among those expenditures was some $12,600,000 expended [320 U.S. 591, 599] in well-drilling prior to 1923. Most of that sum was expended by Hope for labor, use of drilling-rigs, hauling, and similar costs of well-drilling. Prior to 1923 Hope followed the general practice of the natural gas industry and charged the cost of drilling wells to operating expenses. Hope continued that practice until the Public Service Commission of West Virginia in 1923 required it to capitalize such expenditures, as does the Commission under its present Uniform System of Accounts. 7 The Commission refused to add such items to the rate base stating that 'No greater injustice to consumers could be done than to allow items as operating expenses and at a later date include them in the rate base, thereby placing multiple charges upon the consumers.' Id., 44 P.U.R.,N.S., at page 12. For the same reason the Commission excluded from the rate base about $ 1,600,000 of expenditures on properties which Hope acquired from other utilities, the latter having charged those payments to operating expenses. The Commission disallowed certain other overhead items amounting to over $ 3,000,000 which also had been previously charged to operating expenses. And it refused to add some $632,000 as interest during construction since no interest was in fact paid.

Hope contended that it should be allowed a return of not less than 8%. The Commission found that an 8% return would be unreasonable but that 6 1/2% was a fair rate of return. That rate of return, applied to the rate base of $33,712,526, would produce $2,191,314 annually, as compared with the present income of not less than $5,801,171.

The Circuit Court of Appeals set aside the order of the Commission for the following reasons. (1) It held that the rate base should reflect the 'present fair value' of the [320 U.S. 591, 600] property, that the Commission in determining the 'value' should have considered reproduction cost and trended original cost, and that 'actual legitimate cost' (prudent investment) was not the proper measure of 'fair value' where price levels had changed since the investment. (2) It concluded that the well-drilling costs and overhead items in the amount of some $17,000,000 should have been included in the rate base. (3) It held that accrued depletion and depreciation and the annual allowance for that expense should be computed on the basis of 'present fair value' of the property not on the basis of 'actual legitimate cost'.

The Circuit Court of Appeals also held that the Commission had no power to make findings as to past rates in aid of state regulation. But it concluded that those findings were proper as a step in the process of fixing future rates. Viewed in that light, however, the findings were deemed to be invalidated by the same errors which vitiated the findings on which the rate order was based.

Order Reducing Rates. Congress has provided in 4(a) of the Natural Gas Act that all natural gas rates subject to the jurisdiction of the Commission 'shall be just and reasonable, and any such rate or charge that is not just and reasonable is hereby declared to be unlawful.' Sec. 5(a) gives the Commission the power, after hearing, to determine the 'just and reasonable rate' to be thereafter observed and to fix the rate by order. Sec. 5(a) also empowers the Commission to order a 'decrease where existing rates are unjust ... unlawful, or are not the lowest reasonable rates.' And Congress has provided in 19(b) that on review of these rate orders the 'finding of the Commission as to the facts, if supported by substantial evidence, shall be conclusive.' Congress, however, has provided no formula by which the 'just and reasonable' rate is to be determined. It has not filled in the [320 U.S. 591, 601] details of the general prescription8 of 4(a) and 5(a). It has not expressed in a specific rule the fixed principle of 'just and reasonable'.

When we sustained the constitutionality of the Natural Gas Act in the Natural Gas Pipeline Co. case, we stated that the 'authority of Congress to regulate the prices of commodities in interstate commerce is at least as great under the Fifth Amendment as is that of the states under the Fourteenth to regulate the prices of commodities in intrastate commerce.' 315 U.S. at page 582, 62 S.Ct. at page 741. Rate-making is indeed but one species of price-fixing. Munn v. Illinois, 94 U.S. 113 , 134. The fixing of prices, like other applications of the police power, may reduce the value of the property which is being regulated. But the fact that the value is reduced does not mean that the regulation is invalid. Block v. Hirsh, 256 U.S. 135 , 155-157, 41 S.Ct. 458, 459, 460, 16 A.L.R. 165; Nebbia v. New York, 291 U.S. 502 , 523-539, 54 S. Ct. 505, 509-517, 89 A.L.R. 1469, and cases cited. It does, however, indicate that 'fair value' is the end product of the process of rate-making not the starting point as the Circuit Court of Appeals held. The heart of the matter is that rates cannot be made to depend upon 'fair value' when the value of the going enterprise depends on earnings under whatever rates may be anticipated. 9 [320 U.S. 591, 602] We held in Federal Power Commission v. Natural Gas Pipeline Co., supra, that the Commission was not bound to the use of any single formula or combination of formulae in determining rates. Its rate-making function, moreover, involves the making of 'pragmatic adjustments.' Id., 315 U.S. at page 586, 62 S.Ct. at page 743. And when the Commission's order is challenged in the courts, the question is whether that order 'viewed in its entirety' meets the requirements of the Act. Id., 315 U.S. at page 586, 62 S.Ct. at page 743. Under the statutory standard of 'just and reasonable' it is the result reached not the method employed which is controlling. Cf. Los Angeles Gas & Electric Corp. v. Railroad Commission, 289 U.S. 287, 304 , 305 S., 314, 53 S.Ct. 637, 643, 644, 647; West Ohio Gas Co. v. Public Utilities Commission (No. 1), 294 U.S. 63, 70 , 55 S.Ct. 316, 320; West v. Chesapeake & Potomac Tel. Co., 295 U.S. 662, 692 , 693 S., 55 S.Ct. 894, 906, 907 (dissenting opinion). It is not theory but the impact of the rate order which counts. If the total effect of the rate order cannot be said to be unjust and unreasonable, judicial inquiry under the Act is at an end. The fact that the method employed to reach that result may contain infirmities is not then important. Moreover, the Commission's order does not become suspect by reason of the fact that it is challenged. It is the product of expert judgment which carries a presumption of validity. And he who would upset the rate order under the Act carries the heavy burden of making a convincing showing that it is invalid because it is unjust and unreasonable in its consequences. Cf. Railroad Commission v. Cumberland Tel. & T. Co., 212 U.S. 414 , 29 S.Ct. 357; Lindheimer v. Illinois Bell Tel. Co., supra, 292 U.S. at pages 164, 169, 54 S.Ct. at pages 663, 665; Railroad Commission v. Pacific Gas & E. Co., 302 U.S. 388, 401 , 58 S.Ct. 334, 341. [320 U.S. 591, 603] The rate-making process under the Act, i.e., the fixing of 'just and reasonable' rates, involves a balancing of the investor and the consumer interests. Thus we stated in the Natural Gas Pipeline Co. case that 'regulation does not insure that the business shall produce net revenues.' 315 U.S. at page 590, 62 S.Ct. at page 745. But such considerations aside, the investor interest has a legitimate concern with the financial integrity of the company whose rates are being regulated. From the investor or company point of view it is important that there be enough revenue not only for operating expenses but also for the capital costs of the business. These include service on the debt and dividends on the stock. Cf. Chicago & Grand Trunk R. Co. v. Wellman, 143 U.S. 339, 345 , 346 S., 12 S.Ct. 400, 402. By that standard the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital. See State of Missouri ex rel. South-western Bell Tel. Co. v. Public Service Commission, 262 U.S. 276, 291 , 43 S.Ct. 544, 547, 31 A.L.R. 807 (Mr. Justice Brandeis concurring). The conditions under which more or less might be allowed are not important here. Nor is it important to this case to determine the various permissible ways in which any rate base on which the return is computed might be arrived at. For we are of the view that the end result in this case cannot be condemned under the Act as unjust and unreasonable from the investor or company viewpoint.

We have already noted that Hope is a wholly owned subsidiary of the Standard Oil Co. (N.J.). It has no securities outstanding except stock. All of that stock has been owned by Standard since 1908. The par amount presently outstanding is approximately $28,000,000 as compared with the rate base of $33,712,526 established by [320 U.S. 591, 604] the Commission. Of the total outstanding stock $11,000,000 was issued in stock dividends. The balance, or about $17,000,000, was issued for cash or other assets. During the four decades of its operations Hope has paid over $ 97,000,000 in cash dividends. It had, moreover, accumulated by 1940 an earned surplus of about $8,000,000. It had thus earned the total investment in the company nearly seven times. Down to 1940 it earned over 20% per year on the average annual amount of its capital stock issued for cash or other assets. On an average invested capital of some $23,000,000 Hope's average earnings have been about 12% a year. And during this period it had accumulated in addition reserves for depletion and depreciation of about $46,000,000. Furthermore, during 1939, 1940 and 1941, Hope paid dividends of 10% on its stock. And in the year 1942, during about half of which the lower rates were in effect, it paid dividends of 7 1/2%. From 1939-1942 its earned surplus increased from $5,250,000 to about $13,700, 000, i.e., to almost half the par value of its outstanding stock.

As we have noted, the Commission fixed a rate of return which permits Hope to earn $2,191,314 annually. In determining that amount it stressed the importance of maintaining the financial integrity of the company. It considered the financial history of Hope and a vast array of data bearing on the natural gas industry, related businesses, and general economic conditions. It noted that the yields on better issues of bonds of natural gas companies sold in the last few years were 'close to 3 per cent', 44 P. U.R.,N.S., at page 33. It stated that the company was a 'seasoned enterprise whose risks have been minimized' by adequate provisions for depletion and depreciation (past and present) with 'concurrent high profits', by 'protected established markets, through affiliated distribution companies, in populous and industralized areas', and by a supply of gas locally to meet all require- [320 U.S. 591, 605] ments, 'except on certain peak days in the winter, which it is feasible to supplement in the future with gas from other sources.' Id., 44 P.U.R.,N.S., at page 33. The Commission concluded, 'The company's efficient management, established markets, financial record, affiliations, and its prospective business place it in a strong position to attract capital upon favorable terms when it is required.' Id., 44 P.U.R.,N.S., at page 33.

In view of these various considerations we cannot say that an annual return of $2,191,314 is not 'just and reasonable' within the meaning of the Act. Rates which enable the company to operate successfully, to maintain its financial integrity, to attract capital, and to compensate its investors for the risks assumed certainly cannot be condemned as invalid, even though they might produce only a meager return on the so- called 'fair value' rate base. In that connection it will be recalled that Hope contended for a rate base of $66,000,000 computed on reproduction cost new. The Commission points out that if that rate base were accepted, Hope's average rate of return for the four-year period from 1937-1940 would amount to 3.27%. During that period Hope earned an annual average return of about 9% on the average investment. It asked for no rate increases. Its properties were well maintained and operated. As the Commission says such a modest rate of 3.27% suggests an 'inflation of the base on which the rate has been computed.' Dayton Power & Light Co. v. Public Utilities Commission, 292 U.S. 290, 312 , 54

S.Ct. 647, 657. Cf. Lindheimer v. Illinois Bell Tel. Co., supra, 292 U.S. at page 164, 54 S.Ct. at page 663. The incongruity between the actual operations and the return computed on the basis of reproduction cost suggests that the Commission was wholly justified in rejecting the latter as the measure of the rate base.

In view of this disposition of the controversy we need not stop to inquire whether the failure of the Commission to add the $17,000,000 of well-drilling and other costs to [320 U.S. 591, 606] the rate base was consistent with the prudent investment theory as developed and applied in particular cases.

Only a word need be added respecting depletion and depreciation. We held in the Natural Gas Pipeline Co. case that there was no constitutional requirement 'that the owner who embarks in a wasting-asset business of limited life shall receive at the end more than he has put into it.' 315 U. S. at page 593, 62 S.C. at page 746. The Circuit Court of Appeals did not think that that rule was applicable here because Hope was a utility required to continue its service to the public and not scheduled to end its business on a day certain as was stipulated to be true of the Natural Gas Pipeline Co. But that distinction is quite immaterial. The ultimate exhaustion of the supply is inevitable in the case of all natural gas companies. Moreover, this Court recognized in Lindheimer v. Illinois Bell Tel. Co., supra, the propriety of basing annual depreciation on cost. 10 By such a procedure the utility is made whole and the integrity of its investment maintained. 11 No more is required. 12 We cannot approve the contrary holding [320 U.S. 591, 607] of United Railways & Electric Co. v. West, 280 U.S. 234, 253 , 254 S., 50 S.Ct. 123, 126, 127. Since there are no constitutional requirements more exacting than the standards of the Act, a rate order which conforms to the latter does not run afoul of the former.

The Position of West Virginia. The State of West Virginia, as well as its Public Service Commission, intervened in the proceedings before the Commission and participated in the hearings before it. They have also filed a brief amicus curiae here and have participated in the argument at the bar. Their contention is that the result achieved by the rate order 'brings consequences which are unjust to West Virginia and its citizens' and which 'unfairly depress the value of gas, gas lands and gas leaseholds, unduly restrict development of their natural resources, and arbitrarily transfer their properties to the residents of other states without just compensation therefor.'

West Virginia points out that the Hope Natural Gas Co. holds a large number of leases on both producing and unoperated properties. The owner or grantor receives from the operator or grantee delay rentals as compensation for postponed drilling. When a producing well is successfully brought in, the gas lease customarily continues indefinitely for the life of the field. In that case the operator pays a stipulated gas-well rental or in some cases a gas royalty equivalent to one-eighth of the gas marketed. 13 Both the owner and operator have valuable property interests in the gas which are separately taxable under West Virginia law. The contention is that the reversionary interests in the leaseholds should be represented in the rate proceedings since it is their gas which is being sold in interstate [320 U.S. 591, 608] commerce. It is argued, moreover, that the owners of the reversionary interests should have the benefit of the 'discovery value' of the gas leaseholds, not the interstate consumers. Furthermore, West Virginia contends that the Commission in fixing a rate for natural gas produced in that State should consider the effect of the rate order on the economy of West Virginia. It is pointed out that gas is a wasting asset with a rapidly diminishing supply. As a result West Virginia's gas deposits are becoming increasingly valuable. Nevertheless the rate fixed by the Commission reduces that value. And that reduction, it is said, has severe repercussions on the economy of the State. It is argued in the first place that as a result of this rate reduction Hope's West Virginia property taxes may be decreased in view of the relevance which earnings have under West Virginia law in the assessment of property for tax purposes. 14 Secondly, it is pointed out that West Virginia has a production tax15 on the 'value' of the gas exported from the State. And we are told that for purposes of that tax 'value' becomes under West Virginia law 'practically the substantial equivalent of market value.' Thus West Virginia argues that undervaluation of Hope's gas leaseholds will cost the State many thousands of dollars in taxes. The effect, it is urged, is to impair West Virginia's tax structure for the benefit of Ohio and Pennsylvania consumers. West Virginia emphasizes, moreover, its deep interest in the conservation of its natural resources including its natural gas. It says that a reduction of the value of these leasehold values will jeopardize these conservation policies in three respects: (1) exploratory development of new fields will be discouraged; (2) abandonment of lowyield high-cost marginal wells will be hastened; and (3) secondary recovery of oil will be hampered. [320 U.S. 591, 609] Furthermore, West Virginia contends that the reduced valuation will harm one of the great industries of the State and that harm to that industry must inevitably affect the welfare of the citizens of the State. It is also pointed out that West Virginia has a large interest in coal and oil as well as in gas and that these forms of fuel are competitive. When the price of gas is materially cheapened, consumers turn to that fuel in preference to the others. As a result this lowering of the price of natural gas will have the effect of depreciating the price of West Virginia coal and oil.

West Virginia insists that in neglecting this aspect of the problem the Commission failed to perform the function which Congress entrusted to it and that the case should be remanded to the Commission for a modification of its order. 16

We have considered these contentions at length in view of the earnestness with which they have been urged upon us. We have searched the legislative history of the Natural Gas Act for any indication that Congress entrusted to the Commission the various considerations which West Virginia has advanced here. And our conclusion is that Congress did not.

We pointed out in Illinois Natural Gas Co. v. Central Illinois Public Service Co., 314 U.S. 498, 506 , 62 S.Ct. 384, 387, that the purpose of the Natural Gas Act was to provide, 'through the exercise of the national power over interstate commerce, an agency for regulating the wholesale distribution to public service companies of natural gas moving interstate, which this Court had declared to be interstate commerce not subject to certain types of state regulation.' As stated in the House Report the 'basic purpose' of this legislation was 'to occupy' the field in which such cases as State of Missouri v. [320 U.S. 591, 610] Kansas Natural Gas Co., 265 U.S. 298 , 44 S.Ct. 544, and Public Utilities Commission v. Attleboro Steam & Electric Co., 273 U.S. 83 , 47 S.Ct. 294, had held the States might not act. H.Rep. No. 709, 75th Cong., 1st Sess., p. 2. In accomplishing that purpose the bill was designed to take 'no authority from State commissions' and was 'so drawn as to complement and in no manner usurp State regulatory authority.' Id., p. 2. And the Federal Power Commission was given no authority over the 'production or gathering of natural gas.' 1(b).

The primary aim of this legislation was to protect consumers against exploitation at the lands of natural gas companies. Due to the hiatus in regulation which resulted from the Kansas Natural Gas Co. case and related decisions state commissions found it difficult or impossible to discover what it cost interstate pipe-line companies to deliver gas within the consuming states; and thus they were thwarted in local regulation. H.Rep., No. 709, supra, p. 3. Moreover, the investigations of the Federal Trade Commission had disclosed that the majority of the pipe-line mileage in the country used to transport natural gas, together with an increasing percentage of the natural gas supply for pipe-line transportation, had been acquired by a handful of holding companies. 17 State commissions, independent producers, and communities having or seeking the service were growing quite helpless against these combinations. 18 These were the types of problems with which those participating in the hearings were pre- occupied. 19 Congress addressed itself to those specific evils. [320 U.S. 591, 611] The Federal Power Commission was given broad powers of regulation. The fixing of 'just and reasonable' rates (4) with the powers attendant thereto20 was the heart of the new regulatory system. Moreover, the Commission was given certain authority by 7(a), on a finding that the action was necessary or desirable 'in the public interest,' to require natural gas companies to extend or improve their transportation facilities and to sell gas to any authorized local distributor. By 7(b) it was given control over the abandonment of facilities or of service. And by 7(c), as originally enacted, no natural gas company could undertake the construction or extension of any facilities for the transportation of natural gas to a market in which natural gas was already being served by another company, or sell any natural gas in such a market, without obtaining a certificate of public convenience and necessity from the Commission. In passing on such applications for certificates of convenience and necessity the Commission was told by 7(c), as originally enacted, that it was 'the intention of Congress that natural gas shall be sold in interstate commerce for resale for ultimate public consumption for domestic, commercial, industrial, or any other use at the lowest possible reasonable rate consistent with the maintenance of adequate service in the public interest.' The latter provision was deleted from 7(c) when that subsection was amended by the Act of February 7, 1942, 56 Stat. 83. By that amendment limited grandfather rights were granted companies desiring to extend their facilities and services over the routes or within the area which they were already serving. Moreover, 7(c) was broadened so as to require certifi- [320 U.S. 591, 612] cates of public convenience and necessity not only where the extensions were being made to markets in which natural gas was already being sold by another company but in other situations as well.

These provisions were plainly designed to protect the consumer interests against exploitation at the hands of private natural gas companies. When it comes to cases of abandonment or of extensions of facilities or service, we may assume that, apart from the express exemptions21 contained in 7, considerations of conservation are material to the issuance of certificates of public convenience and necessity. But the Commission was not asked here for a certificate of public convenience and necessity under 7 for any proposed construction or extension. It was faced with a determination of the amount which a private operator should be allowed to earn from the sale of natural gas across state lines through an established distribution system. Secs. 4 and 5, not 7, provide the standards for that determination. We cannot find in the words of the Act or in its history the slightest intimation or suggestion that the exploitation of consumers by private operators through the maintenance of high rates should be allowed to continue provided the producing states obtain indirect benefits from it. That apparently was the Commission's view of the matter, for the same arguments advanced here were presented to the Commission and not adopted by it.

We do not mean to suggest that Congress was unmindful of the interests of the producing states in their natural gas supplies when it drafted the Natural Gas Act. As we have said, the Act does not intrude on the domain traditionally reserved for control by state commissions; and the Federal Power Commission was given no authority over- [320 U.S. 591, 613] 'the production or gathering of natural gas.' 1(b). In addition, Congress recognized the legitimate interests of the States in the conservation of natural gas. By 11 Congress instructed the Commission to make reports on compacts between two or more States dealing with the conservation, production and transportation of natural gas. 22 The Commission was also directed to recommend further legislation appropriate or necessary to carry out any proposed compact and 'to aid in the conservation of natural-gas resources within the United States and in the orderly, equitable, and economic production, transportation, and distribution of natural gas.' 11(a). Thus Congress was quite aware of the interests of the producing states in their natural gas supplies. 23 But it left the protection of [320 U.S. 591, 614] those interests to measures other than the maintenance of high rates to private companies. If the Commission is to be compelled to let the stockholders of natural gas companies have a feast so that the producing states may receive crumbs from that table, the present Act must be redesigned. Such a project raises questions of policy which go beyond our province.

It is hardly necessary to add that a limitation on the net earnings of a natural gas company from its interstate business is not a limitation on the power of the producing state either to safeguard its tax revenues from that industry24 or to protect the interests of those who sell their gas to the interstate operator. 25 The return which the Com- [320 U.S. 591, 615] mission allowed was the net return after all such charges.

It is suggested that the Commission has failed to perform its duty under the Act in that it has not allowed a return for gas production that will be enough to induce private enterprise to perform completely and efficiently its functions for the public. The Commission, however, was not oblivious of those matters. It considered them. It allowed, for example, delay rentals and exploration and development costs in operating expenses. 26 No serious attempt has been made here to show that they are inadequate. We certainly cannot say that they are, unless we are to substitute our opinions for the expert judgment of the administrators to whom Congress entrusted the decision. Moreover, if in light of experience they turn out to be inadequate for development of new sources of supply, the doors of the Commission are open for increased allowances. This is not an order for all time. The Act contains machinery for obtaining rate adjustments. 4.

But it is said that the Commission placed too low a rate on gas for industrial purposes as compared with gas for domestic purposes and that industrial uses should be discouraged. It should be noted in the first place that the rates which the Commission has fixed are Hope's interstate wholesale rates to distributors not interstate rates to industrial users27 and domestic consumers. We hardly [320 U.S. 591, 616] can assume, in view of the history of the Act and its provisions, that the resales intrastate by the customer companies which distribute the gas to ultimate consumers in Ohio and Pennsylvania are subject to the rate-making powers of the Commission. 28 But in any event those rates are not in issue here. Moreover, we fail to find in the power to fix 'just and reasonable' rates the power to fix rates which will disallow or discourage resales for industrial use. The Committee Report stated that the Act provided 'for regulation along recognized and more or less standardized lines' and that there was 'nothing novel in its provisions'. H.Rep.No.709, supra, p. 3. Yet if we are now to tell the Commission to fix the rates so as to discourage particular uses, we would indeed be injecting into a rate case a 'novel' doctrine which has no express statutory sanction. The same would be true if we were to hold that the wasting-asset nature of the industry required the maintenance of the level of rates so that natural gas companies could make a greater profit on each unit of gas sold. Such theories of rate-making for this industry may or may not be desirable. The difficulty is that 4(a) and 5(a) contain only the conventional standards of rate-making for natural gas companies. 29 The [320 U.S. 591, 617] Act of February 7, 1942, by broadening 7 gave the Commission some additional authority to deal with the conservation aspects of the problem. 30 But 4(a) and 5(a) were not changed. If the standard of 'just and reasonable' is to sanction the maintenance of high rates by a natural gas company because they restrict the use of natural gas for certain purposes, the Act must be further amended.

It is finally suggested that the rates charged by Hope are discriminatory as against domestic users and in favor of industrial users. That charge is apparently based on 4(b) of the Act which forbids natural gas companies from maintaining 'any unreasonable difference in rates, charges, service, facilities, or in any other respect, either as between localities or as between classes of service.' The power of the Commission to eliminate any such unreasonable differences or discriminations is plain . 5(a). The Commission, however, made no findings under 4(b). Its failure in that regard was not challenged in the petition to review. And it has not been raised or argued here by any party. Hence the problem of discrimination has no proper place in the present decision. It will be time enough to pass on that issue when it is presented to us. Congress has entrusted the administration of the Act to the Commission not to the courts. Apart from the requirements of judicial review it is not [320 U.S. 591, 618] for us to advise the Commission how to discharge its functions.

Findings as to the Lawfulness of Past Rates. As we have noted, the Commission made certain findings as to the lawfulness of past rates which Hope had charged its interstate customers. Those findings were made on the complaint of the City of Cleveland and in aid of state regulation. It is conceded that under the Act the Commission has no power to make reparation orders. And its power to fix rates admittedly is limited to those 'to be thereafter observed and in force.' 5(a). But the Commission maintains that it has the power to make findings as to the lawfulness of past rates even though it has no power to fix those rates. 31 However that may be, we do not think that these findings were reviewable under 19(b) of the Act. That section gives any party 'aggrieved by an order' of the Commission a review 'of such order' in the circuit court of appeals for the circuit where the natural gas company is located or has its principal place of business or in the United States Court of Appeals for the District of Columbia. We do not think that the findings in question fall within that category.

The Court recently summarized the various types of administrative action or determination reviewable as orders under the Urgent Deficiencies Act of October 22, [320 U.S. 591, 619] 1913, 28 U.S.C. 45, 47a, 28 U.S.C.A. 45, 47a, and kindred statutory provisions. Rochester Tel. Corp. v. United States, 307 U.S. 125 , 59 S.Ct. 754. It was there pointed out that where 'the order sought to be reviewed does not of itself adversely affect complainant but only affects his rights adversely on the contingency of future administrative action', it is not reviewable. Id., 307 U.S. at page 130, 59 S.Ct. at page 757. The Court said, 'In view of traditional conceptions of federal judicial power, resort to the courts in these situations is either premature or wholly beyond their province.' Id., 307 U.S. at page 130, 59 S.Ct. at page 757. And see United States v. Los Angeles & S. L.R. Co., 273 U.S. 299, 309 , 310 S., 47 S.Ct. 413, 414, 415; Shannahan v. United States, 303 U.S. 596 , 58 S.Ct. 732. These considerations are apposite here. The Commission has no authority to enforce these findings. They are 'the exercise solely of the function of investigation.' United States v. Los Angeles & S.L.R. Co., supra, 273 U.S. at page 310, 47 S.Ct. at page 414. They are only a preliminary, interim step towards possible future action-action not by the Commission but by wholly independent agencies. The outcome of those proceedings may turn on factors other than these findings. These findings may never result in the respondent feeling the pinch of administrative action.

REVERSED.

Mr. Justice ROBERTS took no part in the consideration or decision of this case.

Opinion of Mr. Justice BLACK and Mr. Justice MURPHY.

We agree with the Court's opinion and would add nothing to what has been said but for what is patently a wholly gratuitous assertion as to Constitutional law in the dissent of Mr. Justice FRANKFURTER. We refer to the statement that 'Congressional acquiescence to date in the doctrine of Chicago, etc., R. Co. v. Minnesota, supra (134 U.S. 418 , 10 S.Ct. 462, 702), may fairly be claimed.' That was the case in which a majority of this Court was finally induced to expand the meaning [320 U.S. 591, 620] of 'due process' so as to give courts power to block efforts of the state and national governments to regulate economic affairs. The present case does not afford a proper occasion to discuss the soundness of that doctrine because, as stated in Mr. Justice FRANKFURTER'S dissent, 'That issue is not here in controversy.' The salutary practice whereby courts do not discuss issues in the abstract applies with peculiar force to Constitutional questions. Since, however, the dissent adverts to a highly controversial due process doctrine and implies its acceptance by Congress, we feel compelled to say that we do not understand that Congress voluntarily has acquiesced in a Constitutional principle of government that courts, rather than legislative bodies, possess final authority over regulation of economic affairs. Even this Court has not always fully embraced that principle, and we wish to repeat that we have never acquiesced in it, and do not now. See Federal Power Commission v. Natural Gas Pipeline Co., 315 U.S. 575 , 599-601, 62 S.Ct. 736, 749, 750.

Mr. Justice REED, dissenting.

This case involves the problem of rate making under the Natural Gas Act. Added importance arises from the obvious fact that the principles stated are generally applicable to all federal agencies which are entrusted with the determination of rates for utilities. Because my views differ somewhat from those of my brethren, it may be of some value to set them out in a summary form.

The Congress may fix utility rates in situations subject to federal control without regard to any standard except the constitutional standards of due process and for taking private property for public use without just compensation. Wilson v. New, 243 U.S. 332, 350 , 37 S.Ct. 298, 302, L.R.A.1917E, 938, Ann.Cas.1918A, 1024. A Commission, however, does not have this freedom of action. Its powers are limited not only by the constitutional standards but also by the standards of the delegation. Here the standard added by the Natural Gas Act is that the rate be 'just [320 U.S. 591, 621] and reasonable.' 1 Section 62 throws additional light on the meaning of these words.

When the phrase was used by Congress to describe allowable rates, it had relation to something ascertainable. The rates were not left to the whim of the Commission. The rates fixed would produce an annual return and that annual return was to be compared with a theoretical just and reasonable return, all risks considered, on the fair value of the property used and useful in the public service at the time of the determination.

Such an abstract test is not precise. The agency charged with its determination has a wide range before it could properly be said by a court that the agency had disregarded statutory standards or had confiscated the property of the utility for public use. Cf. Chicago, M. & St. P.R. Co. v. Minnesota, 134 U.S. 418 , 461-466, 10 S.Ct. 462, 702, 703-705, dissent. This is as Congress intends. Rates are left to an experienced agency particularly competent by training to appraise the amount required.

The decision as to a reasonable return had not been a source of great difficulty, for borrowers and lenders reached such agreements daily in a multitude of situations; and although the determination of fair value had been troublesome, its essentials had been worked out in fairness to investor and consumer by the time of the en- [320 U.S. 591, 622] actment of this Act. Cf. Los Angeles G. & E. Corp. v. Railroad Comm., 289 U.S. 287 , 304 et seq., 53 S.Ct. 637, 643 et seq.. The results were well known to Congress and had that body desired to depart from the traditional concepts of fair value and earnings, it would have stated its intention plainly. Helvering v. Griffiths, 318 U.S. 371 , 63 S. Ct. 636.

It was already clear that when rates are in dispute, 'earnings produced by rates do not afford a standard for decision.' 289 U.S. at page 305, 53 S.Ct. at page 644. Historical cost, prudent investment and reproduction cost3 were all relevant factors in determining fair value. Indeed, disregarding the pioneer investor's risk, if prudent investment and reproduction cost were not distorted by changes in price levels or technology, each of them would produce the same result. The realization from the risk of an investment in a speculative field, such as natural gas utilities, should be reflected in the present fair value. 4 The amount of evidence to be admitted on any point was of course in the agency's reasonable discretion, and it was free to give its own weight to these or other factors and to determine from all the evidence its own judgment as to the necessary rates. [320 U.S. 591, 623] I agree with the Court in not imposing a rule of prudent investment alone in determining the rate base. This leaves the Commission free, as I understand it, to use any available evidence for its finding of fair value, including both prudent investment and the cost of installing at the present time an efficient system for furnishing the needed utility service.

My disagreement with the Court arises primarily from its view that it makes no difference how the Commission reached the rate fixed so long as the result is fair and reasonable. For me the statutory command to the Commission is more explicit. Entirely aside from the constitutional problem of whether the Congress could validly delegate its rate making power to the Commission, in toto and without standards, it did legislate in the light of the relation of fair and reasonable to fair value and reasonable return. The Commission must therefore make its findings in observance of that relationship.

The Federal Power Commission did not, as I construe their action, disregard its statutory duty. They heard the evidence relating to historical and reproduction cost and to the reasonable rate of return and they appraised its weight. The evidence of reproduction cost was rejected as unpersuasive, but from the other evidence they found a rate base, which is to me a determination of fair value. On that base the earnings allowed seem fair and reasonable. So far as the Commission went in appraising the property employed in the service, I find nothing in the result which indicates confiscation, unfairness or unreasonableness. Good administration of rate making agencies under this method would avoid undue delay and render revaluations unnecessary except after violent fluctuations of price levels. Rate making under this method has been subjected to criticism. But until Congress changes the standards for the agencies, these rate making bodies should continue the conventional theory of rate [320 U.S. 591, 624] making. It will probably be simpler to improve present methods than to devise new ones.

But a major error, I think was committed in the disregard by the Commission of the investment in exploratory operations and other recognized capital costs. These were not considered by the Commission because they were charged to operating expenses by the company at a time when it was unregulated. Congress did not direct the Commission in rate making to deduct from the rate base capital investment which had been recovered during the unregulated period through excess earnings. In my view this part of the investment should no more have been disregarded in the rate base than any other capital investment which previously had been recovered and paid out in dividends or placed to surplus. Even if prudent investment throughout the life of the property is accepted as the formula for figuring the rate base, it seems to me illogical to throw out the admittedly prudent cost of part of the property because the earnings in the unregulated period had been sufficient to return the prudent cost to the investors over and above a reasonable return. What would the answer be under the theory of the Commission and the Court, if the only prudent investment in this utility had been the seventeen million capital charges which are now disallowed?

For the reasons heretofore stated, I should affirm the action of the Circuit Court of Appeals in returning the proceeding to the Commission for further consideration and should direct the Commission to accept the disallowed capital investment in determining the fair value for rate making purposes.

Mr. Justice FRANKFURTER, dissenting.

My brother JACKSON has analyzed with particularity the economic and social aspects of natural gas as well as [320 U.S. 591, 625] the difficulties which led to the enactment of the Natural Gas Act, especially those arising out of the abortive attempts of States to regulate natural gas utilities. The Natural Gas Act of 1938 should receive application in the light of this analysis, and Mr. Justice JACKSON has, I believe, drawn relevant inferences regarding the duty of the Federal Power Commission in fixing natural gas rates. His exposition seems to me unanswered, and I shall say only a few words to emphasize my basic agreement with him.

For our society the needs that are met by public utilities are as truly public services as the traditional governmental functions of police and justice. They are not less so when these services are rendered by private enterprise under governmental regulation. Who ultimately determines the ways of regulation, is the decisive aspect in the public supervision of privately-owned utilities. Foreshadowed nearly sixty years ago, Railroad Commission Cases (Stone v. Farmers' Loan & Trust Co.), 116 U.S. 307, 331 , 6 S.Ct. 334, 344, 388, 1191, it was decided more than fifty years ago that the final say under the

Constitution lies with the judiciary and not the legislature. Chicago, etc., R. Co. v. Minnesota , 134 U.S. 418 , 10 S.Ct. 462, 702.

While legal issues touching the proper distribution of governmental powers under the Constitution may always be raised, Congressional acquiescence to date in the doctrine of Chicago, etc., R. Co. v. Minnesota, supra, may fairly be claimed. But in any event that issue is not here in controversy. As pointed out in the opinions of my brethren, Congress has given only limited authority to the Federal Power Commission and made the exercise of that authority subject to judicial review. The Commission is authorized to fix rates chargeable for natural gas. But the rates that it can fix must be 'just and reasonable'. 5 of the Natural Gas Act, 15 U.S. C. 717d, 15 U.S.C.A. 717d. Instead of making the Commission's rate determinations final, Con- [320 U.S. 591, 626] gress specifically provided for court review of such orders. To be sure, 'the finding of the Commission as to the facts, if supported by substantial evidence' was made 'conclusive', 19 of the Act, 15 U.S.C. 717r; 15 U.S.C.A. 717r. But obedience of the requirement of Congress that rates be 'just and reasonable' is not an issue of fact of which the Commission's own determination is conclusive. Otherwise, there would be nothing for a court to review except questions of compliance with the procedural provisions of the Natural Gas Act. Congress might have seen fit so to cast its legislation. But it has not done so. It has committed to the administration of the Federal Power Commission the duty of applying standards of fair dealing and of reasonableness relevant to the purposes expressed by the Natural Gas Act. The requirement that rates must be 'just and reasonable' means just and reasonable in relation to appropriate standards. Otherwise Congress would have directed the Commission to fix such rates as in the judgment of the Commission are just and reasonable; it would not have also provided that such determinations by the Commission are subject to court review.

To what sources then are the Commission and the courts to go for ascertaining the standards relevant to the regulation of natural gas rates? It is at this point that Mr. Justice JACKSON'S analysis seems to me pertinent. There appear to be two alternatives. Either the fixing of natural gas rates must be left to the unguided discretion of the Commission so long as the rates it fixes do not reveal a glaringly had prophecy of the ability of a regulated utility to continue its service in the future. Or the Commission's rate orders must be founded on due consideration of all the elements of the public interest which the production and distribution of natural gas involve just because it is natural gas. These elements are reflected in the Natural Gas Act, if that Act be applied as an entirety. See, for [320 U.S. 591, 627] instance, 4(a)(b)(c)(d), 6, and 11, 15 U.S.C. 717c(a)(b)(c)(d), 717e, and 717j, 15 U.S.C.A. 717c(a-d), 717e, 717j. Of course the statute is not concerned with abstract theories of ratemaking. But its very foundation is the 'public interest', and the public interest is a texture of multiple strands. It includes more than contemporary investors and contemporary consumers. The needs to be served are not restricted to immediacy, and social as well as economic costs must be counted.

It will not do to say that it must all be left to the skill of experts. Expertise is a rational process and a rational process implies expressed reasons for judgment. It will little advance the public interest to substitute for the hodge-podge of the rule in Smyth v. Ames, 169 U.S. 466 , 18 S.Ct. 418, an encouragement of conscious obscurity or confusion in reaching a result, on the assumption that so long as the result appears harmless its basis is irrelevant. That may be an appropriate attitude when state action is challenged as unconstitutional. Cf. Driscoll v. Edison Light & Power Co., 307 U.S. 104 , 59 S.Ct. 715. But it is not to be assumed that it was the design of Congress to make the accommodation of the conflicting interests exposed in Mr. Justice JACKSON'S opinion the occasion for a blind clash of forces or a partial assessment of relevant factors, either before the Commission or here.

The objection to the Commission's action is not that the rates it granted were too low but that the range of its vision was too narrow. And since the issues before the Commission involved no less than the total public interest, the proceedings before it should not be judged by narrow conceptions of common law pleading. And so I conclude that the case should be returned to the Commission. In order to enable this Court to discharge its duty of reviewing the Commission's order, the Commission should set forth with explicitness the criteria by which it is guided [320 U.S. 591, 628] in determining that rates are 'just and reasonable', and it should determine the public interest that is in its keeping in the perspective of the considerations set forth by Mr. Justice JACKSON.

By Mr. Justice JACKSON.

Certainly the theory of the court below that ties rate-making to the fair-value-reproduction-cost formula should be overruled as in conflict with Federal Power Commission v. Natural Gas Pipeline Co.1 But the case should, I think, be the occasion for reconsideration of our rate-making doctrine as applied to natural gas and should be returned to the Commission for further consideration in the light thereof.

The Commission appears to have understood the effect of the two opinions in the Pipeline case to be at least authority and perhaps direction to fix natural gas rates by exclusive application of the 'prudent investment' rate base theory. This has no warrant in the opinion of the Chief Justice for the Court, however, which released the Commission from subservience to 'any single formula or combination of formulas' provided its order, 'viewed in its entirety, produces no arbitrary result.' 315 U.S. at page 586, 62 S.Ct. at page 743. The minority opinion I understood to advocate the 'prudent investment' theory as a sufficient guide in a natural gas case. The view was expressed in the court below that since this opinion was not expressly controverted it must have been approved. 2 I disclaim this im- [320 U.S. 591, 629] puted approval with some particularity, because I attach importance at the very beginning of federal regulation of the natural gas industry to approaching it as the performance of economic functions, not as the performance of legalistic rituals.

I.

Solutions of these cases must consider eccentricities of the industry which gives rise to them and also to the Act of Congress by which they are governed.

The heart of this problem is the elusive, exhaustible, and irreplaceable nature of natural gas itself. Given sufficient money, we can produce any desired amount of railroad, bus, or steamship transportation, or communications facilities, or capacity for generation of electric energy, or for the manufacture of gas of a kind. In the service of such utilities one customer has little concern with the amount taken by another, one's waste will not deprive another, a volume of service and be created equal to demand, and today's demands will not exhaust or lessen capacity to serve tomorrow. But the wealth of Midas and the wit of man cannot produce or reproduce a natural gas field. We cannot even reproduce the gas, for our manufactured product has only about half the heating value per unit of nature's own. 3

Natural gas in some quantity is produced in twenty-four states. It is consumed in only thirty-five states, and is [320 U.S. 591, 630] available only to about 7,600,000 consumers. 4 Its availability has been more localized than that of any other utility service because it has depended more on the caprice of nature.

The supply of the Hope Company is drawn from that old and rich and vanishing field that flanks the Appalachian mountains. Its center of production is Pennsylvania and West Virginia, with a fringe of lesser production in New York, Ohio, Kentucky, Tennessee, and the north end of Alabama. Oil was discovered in commercial quantities at a depth of only 69 1/2 feet near Titusville, Pennsylvania, in 1859. Its value then was about $ 16 per barrel. 5 The oil branch of the petroleum industry went forward at once, and with unprecedented speed. The area productive of oil and gas was roughed out by the drilling of over 19,000 'wildcat' wells, estimated to have cost over $222,000,000. Of these, over 18,000 or 94.9 per cent, were 'dry holes.' About five per cent, or 990 wells, made discoveries of commercial importance, 767 of them resulting chiefly in oil and 223 in gas only. 6 Prospecting for many years was a search for oil, and to strike gas was a misfortune. Waste during this period and even later is appalling. Gas was regarded as having no commercial value until about 1882, in which year the total yield was valued only at about $75,000.7 Since then, contrary to oil, which has become cheaper gas in this field has pretty steadily advanced in price.

While for many years natural gas had been distributed on a small scale for lighting,8 its acceptance was slow, [320 U.S. 591, 631] facilities for its utilization were primitive, and not until 1885 did it take on the appearance of a substantial industry. 9 Soon monopoly of production or markets developed. 10 To get gas from the mountain country, where it was largely found, to centers of population, where it was in demand, required very large investment. By ownership of such facilities a few corporate systems, each including several companies, controlled access to markets. Their purchases became the dominating factor in giving a market value to gas produced by many small operators. Hope is the market for over 300 such operators. By 1928 natural gas in the Appalachian field commanded an average price of 21.1 cents per m.c.f. at points of production and was bringing 45.7 cents at points of consumption. 11 The companies which controlled markets, however, did not rely on gas purchases alone. They acquired and held in fee or leasehold great acreage in territory proved by 'wildcat' drilling. These large marketing system companies as well as many small independent owners and operators have carried on the commercial development of proved territory. The development risks appear from the estimate that up to 1928, 312,318 proved area wells had been sunk in the Appalachian field of which 48,962, or 15.7 per cent, failed to produce oil or gas in commercial quantity. 12 [320 U.S. 591, 632] With the source of supply thus tapped to serve centers of large demand, like Pittsburgh, Buffalo, Cleveland, Youngstown, Akron, and other industrial communities, the distribution of natural gas fast became big business. Its advantages as a fuel and its price commended it, and the business yielded a handsome return. All was merry and the goose hung high for consumers and gas companies alike until about the time of the first. World War. Almost unnoticed by the consuming public, the whole Appalachian field passed its peak of production and started to decline. Pennsylvania, which to 1928 had given off about 38 per cent of the natural gas from this field, had its peak in 1905; Ohio, which had produced 14 per cent, had its peak in 1915; and West Virginia, greatest producer of all, with 45 per cent to its credit, reached its peak in 1917.13

Western New York and Eastern Ohio, on the fringe of the field, had some production but relied heavily on imports from Pennsylvania and West Virginia. Pennsylvania, a producing and exporting state, was a heavy consumer and supplemented her production with imports from West Virginia. West Virginia was a consuming state, but the lion's share of her production was exported. Thus the interest of the states in the North Appalachian supply was in conflict.

Competition among localities to share in the failing supply and the helplessness of state and local authorities in the presence of state lines and corporate complexities is a part of the background of federal intervention in the industry. 14 West Virginia took the boldest measure. It legislated a priority in its entire production in favor of its own inhabitants. That was frustrated by an injunc- [320 U.S. 591, 633] tion from this Court. 15 Throughout the region clashes in the courts and conflicting decisions evidenced public anxiety and confusion. It was held that the New York Public Service Commission did not have power to classify consumers and restrict their use of gas. 16 That Commission held that a company could not abandon a part of its territory and still serve the rest. 17 Some courts admonished the companies to take action to protect consumers. 18 Several courts held that companies, regardless of failing supply, must continue to take on customers, but such compulsory additions were finally held to be within the Public Service Commission's discretion. 19 There were attempts to throw up franchises and quit the service, and municipalities resorted to the courts with conflicting results. 20 Public service commissions of consuming states were handicapped, for they had no control of the supply. 21 [320 U.S. 591, 634] Shortages during World War I occasioned the first intervention in the natural gas industry by the Federal Government. Under Proclamation of President Wilson the United States Fuel Administrator took control, stopped extensions, classified consumers and established a priority for domestic over industrial use. 22 After the war federal control was abandoned. Some cities once served with natural gas became dependent upon mixed gas of reduced heating value and relatively higher price. 23

Utilization of natural gas of highest social as well as economic return is domestic use for cooking and water [320 U.S. 591, 635] heating, followed closely by use for space heating in homes. This is the true public utility aspect of the enterprise, and its preservation should be the first concern of regulation. Gas does the family cooking cheaper than any other fuel. 24 But its advantages do not end with dollars and cents cost. It is delivered without interruption at the meter as needed and is paid for after it is used. No money is tied up in a supply, and no space is used for storage. It requires no handling, creates no dust, and leaves no ash. It responds to thermostatic control. It ignites easily and immediately develops its maximum heating capacity. These incidental advantages make domestic life more liveable.

Industrial use is induced less by these qualities than by low cost in competition with other fuels. Of the gas exported from West Virginia by the Hope Company a very substantial part is used by industries. This wholesale use speeds exhaustion of supply and displaces other fuels. Coal miners and the coal industry, a large part of whose costs are wages, have complained of unfair competition from low-priced industrial gas produced with relatively little labor cost. 25

Gas rate structures generally have favored industrial users. In 1932, in Ohio, the average yield on gas for domestic consumption was 62.1 cents per m.c.f. and on in- [320 U.S. 591, 636] dustrial, 38.7. In Pennsylvania, the figures were 62.9 against 31.7. West Virginia showed the least spread, domestic consumers paying 36.6 cents; and industrial, 27.7.26 Although this spread is less than in other parts of the United States,27 it can hardly be said to be self-justifying. It certainly is a very great factor in hastening decline of the natural gas supply.

About the time of World War I there were occasional and short-lived efforts by some hard-pressed companies to reverse this discrimination and adopt graduated rates, giving a low rate to quantities adequate for domestic use and graduating it upward to discourage industrial use. 28 [320 U.S. 591, 637] These rates met opposition from industrial sources, of course, and since diminished revenues from industrial sources tended to increase the domestic price, they met little popular or commission favor. The fact is that neither the gas companies nor the consumers nor local regulatory bodies can be depended upon to conserve gas. Unless federal regulation will take account of conservation, its efforts seem, as in this case, actually to constitute a new threat to the life of the Appalachian supply.

II.

Congress in 1938 decided upon federal regulation of the industry. It did so after an exhaustive investigation of all aspects including failing supply and competition for the use of natural gas intensified by growing scarcity. 29 Pipelines from the Appalachian area to markets were in the control of a handful of holding company systems. 30 This created a highly concentrated control of the producers' market and of the consumers' supplies. While holding companies dominated both production and distribution they segregated those activities in separate [320 U.S. 591, 638] subsidiaries,31 the effect of which, if not the purpose, was to isolate some end of the business from the reach of any one state commission. The cost of natural gas to consumers moved steadily upwards over the years, out of proportion to prices of oil, which, except for the element of competition, is produced under somewhat comparable conditions. The public came to feel that the companies were exploiting the growing scarcity of local gas. The problems of this region had much to do with creating the demand for federal regulation.

The Natural Gas Act declared the natural gas business to be 'affected with a public interest,' and its regulation 'necessary in the public interest.' 32 Originally, and at the time this proceeding was commenced and tried, it also declared 'the intention of Congress that natural gas shall be sold in interstate commerce for resale for ultimate public consumption for domestic, commercial, industrial, or any other use at the lowest possible reasonable rate consistent with the maintenance of adequate service in the public interest.' 33 While this was later dropped, there is nothing to indicate that it was not and is not still an accurate statement of purpose of the Act. Extension or improvement of facilities may be ordered when 'necessary or desirable in the public interest,' abandonment of facilities may be ordered when the supply is 'depleted to the extent that the continuance of service is unwarranted, or that the present or future public convenience or necessity [320 U.S. 591, 639] permit' abandonment and certain extensions can only be made on finding of 'the present or future public convenience and necessity.' 34 The Commission is required to take account of the ultimate use of the gas. Thus it is given power to suspend new schedules as to rates, charges, and classification of services except where the schedules are for the sale of gas 'for resale for industrial use only,'35 which gives the companies greater freedom to increase rates on industrial gas than on domestic gas. More particularly, the Act expressly forbids any undue preference or advantage to any person or 'any unreasonable difference in rates ... either as between localities or as between classes of service.' 36 And the power of the Commission expressly includes that to determine the 'just and reasonable rate, charge, classification, rule, regulation, practice, or contract to be thereafter observed and in force.' 37

In view of the Court's opinion that the Commission in administering the Act may ignore discrimination, it is interesting that in reporting this Bill both the Senate and the House Committees on Interstate Commerce pointed out that in 1934, on a nationwide average the price of natural gas per m.c.f. was 74.6 cents for domestic use, 49.6 cents for commercial use, and 16.9 for industrial use. 38 I am not ready to think that supporters of a bill called attention to the striking fact that householders were being charged five times as much for their gas as industrial users only as a situation which the Bill would do nothing to remedy. On the other hand the Act gave to the Commission what the Court aptly describes as 'broad powers of regulation.' [320 U.S. 591, 640] III.

This proceeding was initiated by the Cities of Cleveland and Akron. They alleged that the price charged by Hope for natural gas 'for resale to domestic, commercial and small industrial consumers in Cleveland and elsewhere is excessive, unjust, unreasonable, greatly in excess of the price charged by Hope to nonaffiliated companies at wholesale for resale to domestic, commercial and small industrial consumers, and greatly in excess of the price charged by Hope to East Ohio for resale to certain favored industrial consumers in Ohio, and therefore is further unduly discriminatory between consumers and between classes of service' (italics supplied). The company answered admitting differences in prices to affiliated and nonaffiliated companies and justifying them by differences in conditions of delivery. As to the allegation that the contract price is 'greatly in excess of the price charged by Hope to East Ohio for resale to certain favored industrial consumers in Ohio,' Hope did not deny a price differential, but alleged that industrial gas was not sold to 'favored consumers' but was sold under contract and schedules filed with and approved by the Public Utilities Commission of Ohio, and that certain conditions of delivery made it not 'unduly discriminatory.'

The record shows that in 1940 Hope delivered for industrial consumption 36,523,792 m.c.f. and for domestic and commercial consumption, 50,343,652 m.c.f. I find no separate figure for domestic consumption. It served 43,767 domestic consumers directly, 511,521 through the East Ohio Gas Company, and 154,043 through the Peoples Natural Gas Company, both affiliates owned by the same parent. Its special contracts for industrial consumption, so far as appear, are confined to about a dozen big industries. [320 U.S. 591, 641] Hope is responsible for discrimination as exists in favor of these few industrial consumers. It controls both the resale price and use of industrial gas by virtue of the very interstate sales contracts over which the Commission is exercising its jurisdiction.

Hope's contract with East Ohio Company is an example. Hope agrees to deliver, and the Ohio Company to take, '(a) all natural gas requisite for the supply of the domestic consumers of the Ohio Company; (b) such amounts of natural gas as may be requisite to fulfill contracts made with the consent and approval of the Hope Company by the Ohio Company, or companies which it supplies with natural gas, for the sale of gas upon special terms and conditions for manufacturing purposes.' The Ohio company is required to read domestic customers' meters once a month and meters of industrial customers daily and to furnish all meter readings to Hope. The Hope Company is to have access to meters of all consumers and to all of the Ohio Company's accounts. The domestic consumers of the Ohio Company are to be fully supplied in preference to consumers purchasing for manufacturing purposes and 'Hope Company can be required to supply gas to be used for manufacturing purposes only where the same is sold under special contracts which have first been submitted to and approved in writing by the Hope Company and which expressly provide that natural gas will be supplied thereunder only in so far as the same is not necessary to meet the requirements of domestic consumers supplied through pipe lines of the Ohio Company.' This basic contract was supplemented from time to time, chiefly as to price. The last amendment was in a letter from Hope to East Ohio in 1937. It contained a special discount on industrial gas and a schedule of special industrial contracts, Hope reserving the right to make eliminations therefrom and agreeing that others might be added from time to [320 U.S. 591, 642] time with its approval in writing. It said, 'It is believed that the price concessions contained in this letter, while not based on our costs, are under certain conditions, to our mutual advantage in maintaining and building up the volumes of gas sold by us (italics supplied).'39

The Commission took no note of the charges of discrimination and made no disposition of the issue tendered on this point. It ordered a flat reduction in the price per m.c.f. of all gas delivered by Hope in interstate commerce. It made no limitation, condition, or provision as to what classes of consumers should get the benefit of the reduction. While the cities have accepted and are defending the reduction, it is my view that the discrimination of which they have complained is perpetuated and increased by the order of the Commission and that it violates the Act in so doing.

The Commission's opinion aptly characterizes its entire objective by saying that 'bona fide investment figures now become all-important in the regulation of rates.' It should be noted that the all-importance of this theory is not the result of any instruction from Congress. When the Bill to regulate gas was first before Congress it con- [320 U.S. 591, 643] tained the following: 'In determining just and reasonable rates the Commission shall fix such rate as will allow a fair return upon the actual legitimate prudent cost of the property used and useful for the service in question.' H.R. 5423, 74th Cong., 1st Sess. Title III, 312 (c). Congress rejected this language. See H.R. 5423, 213 (211(c)), and H.R. Rep. No. 1318, 74th Cong., 1st Sess. 30.

The Commission contends nevertheless that the 'all important' formula for finding a rate base is that of prudent investment. But it excluded from the investment base an amount actually and admittedly invested of some $17,000,000. It did so because it says that the Company recouped these expenditures from customers before the days of regulation from earnings above a fair return. But it would not apply all of such 'excess earnings' to reduce the rate base as one of the Commissioners suggested. The reason for applying excess earnings to reduce the investment base roughly from $69,000,000 to $52,000,000 but refusing to apply them to reduce it from that to some $18,000,000 is not found in a difference in the character of the earnings or in their reinvestment. The reason assigned is a difference in bookkeeping treatment many years before the Company was subject to regulation. The $17,000,000, reinvested chiefly in well drilling, was treated on the books as expense. (The Commission now requires that drilling costs be carried to capital account.) The allowed rate base thus actually was determined by the Company's bookkeeping, not its investment. This attributes a significance to formal classification in account keeping that seems inconsistent with rational rate regulation. 40 Of [320 U.S. 591, 644] course, the Commission would not and should not allow a rate base to be inflated by bookkeeping which had improperly capitalized expenses. I have doubts about resting public regulation upon any rule that is to be used or not depending on which side it favors. [320 U.S. 591, 645] The Company on the other hand, has not put its gas fields into its calculations on the present-value basis, although that, it contends, is the only lawful rule for finding a rate base. To do so would result in a rate higher than it has charged or proposes as a matter of good business to charge.

The case before us demonstrates the lack of rational relationship between conventional rate-base formulas and natural gas production and the extremities to which regulating bodies are brought by the effort to rationalize them. The Commission and the Company each stands on a different theory, and neither ventures to carry its theory to logical conclusion as applied to gas fields.

IV.

This order is under judicial review not because we interpose constitutional theories between a State and the business it seeks to regulate, but because Congress put upon the federal courts a duty toward administration of a new federal regulatory Act. If we are to hold that a given rate is reasonable just because the Commission has said it was reasonable, review becomes a costly, time-consuming pageant of no practical value to anyone. If on the other hand we are to bring judgment of our own to the task, we should for the guidance of the regulators and the regulated reveal something of the philosophy, be it legal or economic or social, which guides us. We need not be slaves to a formula but unless we can point out a rational way of reaching our conclusions they can only be accepted as resting on intuition or predilection. I must admit that I possess no instinct jby which to know the 'reasonable' from the 'unreasonable' in prices and must seek some conscious design for decision.

The Court sustains this order as reasonable, but what makes it so or what could possibly make it otherwise, [320 U.S. 591, 646] I cannot learn. It holds that: 'it is the result reached not the method employed which is controlling'; 'the fact that the method employed to reach that result may contain infirmities is not then important' and it is not 'important to this case to determine the various permissible ways in which any rate base on which the return is computed might be arrived at.' The Court does lean somewhat on considerations of capitalization and dividend history and requirements for dividends on outstanding stock. But I can give no real weight to that for it is generally and I think deservedly in discredit as any guide in rate cases. 41

Our books already contain so much talk of methods of rationalizing rates that we must appear ambiguous if we announce results without our working methods. We are confronted with regulation of a unique type of enterprise which I think requires considered rejection of much conventional utility doctrine and adoption of concepts of 'just and reasonable' rates and practices and of the 'public interest' that will take account of the peculiarities of the business.

The Court rejects the suggestions of this opinion. It says that the Committees in reporting the bill which became the Act said it provided 'for regulation along recognized and more or less standardized lines' and that there was 'nothing novel in its provisions.' So saying it sustains a rate calculated on a novel variation of a rate base theory which itself had at the time of enactment of the legislation been recognized only in dissenting opinions. Our difference seems to be between unconscious innovation,42 and the purposeful and deliberate innovation I [320 U.S. 591, 647] would make to meet the necessities of regulating the industry before us.

Hope's business has two components of quite divergent character. One, while not a conventional common-carrier undertaking, is essentially a transportation enterprise consisting of conveying gas from where it is produced to point of delivery to the buyer. This is a relatively routine operation not differing substantially from many other utility operations. The service is produced by an investment in compression and transmission facilities. Its risks are those of investing in a tested means of conveying a discovered supply of gas to a known market. A rate base calculated on the prudent investment formula would seem a reasonably satisfactory measure for fixing a return from that branch of the business whose service is roughly proportionate to the capital invested. But it has other consequences which must not be overlooked. It gives marketability and hence 'value' to gas owned by the company and gives the pipeline company a large power over the marketability and hence 'value' of the production of others.

The other part of the business-to reduce to possession an adequate supply of natural gas-is of opposite character, being more erratic and irregular and unpredictable in relation to investment than any phase of any other utility business. A thousand feet of gas captured and severed from real estate for delivery to consumers is recognized under our law as property of much the same nature as a ton of coal, a barrel of oil, or a yard of sand. The value to be allowed for it is the real battleground between the investor and consumer. It is from this part of the business that the chief difference between the parties as to a proper rate base arises.

It is necessary to a 'reasonable' price for gas that it be anchored to a rate base of any kind? Why did courts in the first place begin valuing 'rate bases' in order to 'value' something else? The method came into vogue [320 U.S. 591, 648] in fixing rates for transportation service which the public obtained from common carriers. The public received none of the carriers' physical property but did make some use of it. The carriage was often a monopoly so there were no open market criteria as to reasonableness. The 'value' or 'cost' of what was put to use in the service by the carrier was not a remote or irrelevant consideration in making such rates. Moreover the difficulty of appraising an intangible service was thought to be simplified if it could be related to physical property which was visible and measurable and the items of which might have market value. The court hoped to reason from the known to the unknown. But gas fields turn this method topsy turvy. Gas itself is tangible, possessible, and does have a market and a price in the field. The value of the rate base is more elusive than that of gas. It consists of intangibles-leaseholds and freeholds-operated and unoperated-of little use in themselves except as rights to reach and capture gas. Their value lies almost wholly in predictions of discovery, and of price of gas when captured, and bears little relation to cost of tools and supplies and labor to develop it. Gas is what Hope sells and it can be directly priced more reasonably and easily and accurately than the components of a rate base can be valued. Hence the reason for resort to a roundabout way of rate base price fixing does not exist in the case of gas in the field.

But if found, and by whatever method found, a rate base is little help in determining reasonableness of the price of gas. Appraisal of present value of these intangible rights to pursue fugitive gas depends on the value assigned to the gas when captured. The 'present fair value' rate base, generally in ill repute,43 is not even urged by the gas company for valuing its fields. [320 U.S. 591, 649] The prudent investment theory has relative merits in fixing rates for a utility which creates its service merely by its investment. The amount and quality of service rendered by the usual utility will, at least roughly, be measured by the amount of capital it puts into the enterprise. But it has no rational application where there is no such relationship between investment and capacity to serve. There is no such relationship between investment and amount of gas produced. Let us assume that Doe and Roe each produces in West

Virginia for delivery to Cleveland the same quantity of natural gas per day. Doe, however, through luck or foresight or whatever it takes, gets his gas from investing $50,000 in leases and drilling. Roe drilled poorer territory, got smaller wells, and has invested $250,000. Does anybody imagine that Roe can get or ought to get for his gas five times as much as Doe because he has spent five times as much? The service one renders to society in the gas business is measured by what he gets out of the ground, not by what he puts into it, and there is little more relation between the investment and the results than in a game of poker.

Two-thirds of the gas Hope handles it buys from about 340 independent producers. It is obvious that the principle of rate-making applied to Hope's own gas cannot be applied, and has not been applied, to the bulk of the gas Hope delivers. It is not probable that the investment of any two of these producers will bear the same ratio to their investments. The gas, however, all goes to the same use, has the same utilization value and the same ultimate price.

To regulate such an enterprise by undiscriminatingly transplanting any body of rate doctrine conceived and [320 U.S. 591, 650] adapted to the ordinary utility business can serve the 'public interest' as the Natural Gas Act requires, if at all, only by accident. Mr. Justice Brandeis, the pioneer juristic advocate of the prudent investment theory for man-made utilities, never, so far as I am able to discover, proposed its application to a natural gas case. On the other hand, dissenting in Commonwealth of Pennsylvania v. West Virginia, he reviewed the problems of gas supply and said, 'In no other field of public service regulation is the controlling body confronted with factors so baffling as in the natural gas industry, and in none is continuous supervision and control required in so high a degree.' 262 U.S. 553, 621 , 43 S.Ct. 658, 674, 32 A.L.R. 300. If natural gas rates are intelligently to be regulated we must fit our legal principles to the economy of the industry and not try to fit the industry to our books.

As our decisions stand the Commission was justified in believing that it was required to proceed by the rate base method even as to gas in the field. For this reason the Court may not merely wash its hands of the method and rationale of rate making. The fact is that this Court, with no discussion of its fitness, simply transferred the rate base method to the natural gas industry. It happened in Newark Natural Gas & Fuel Co. v. City of Newark, Ohio, 1917, 242 U.S. 405 , 37 S.Ct. 156, 157, Ann. Cas.1917B, 1025, in which the company wanted 25 cents per m.c.f., and under the Fourteenth Amendment challenged the reduction to 18 cents by ordinance. This Court sustained the reduction because the court below 'gave careful consideration to the questions of the value of the property ... at the time of the inquiry,' and whether the rate 'would be sufficient to provide a fair return on the value of the property.' The Court said this method was 'based upon principles thoroughly established by repeated secisions of this court,' citing many cases, not one of which involved natural gas or a comparable wasting natural resource. Then came issues as to state power to [320 U.S. 591, 651] regulate as affected by the commerce clause. Public Utilities Commission v. Landon, 1919, 249 U.S. 236 , 39 S.Ct. 268; Pennsylvania Gas Co. v. Public Service Commission, 1920, 252 U.S. 23 , 40 S.Ct. 279. These questions settled, the Court again was called upon in natural gas cases to consider state rate-making claimed to be invalid under the Fourteenth Amendment. United Fuel Gas Co. v. Railroad Commission of Kentucky, 1929, 278 U.S. 300 , 49 S.Ct. 150; United Fuel Gas Company v. Public Service Commission of West Virginia, 1929, 278 U.S. 322 , 49 S.Ct. 157. Then, as now, the differences were 'due chiefly to the difference in value ascribed by each to the gas rights and leaseholds.' 278 U.S. 300, 311 , 49 S.Ct. 150, 153. No one seems to have questioned that the rate base method must be pursued and the controversy was at what rate base must be used. Later the 'value' of gas in the field was questioned in determining the amount a regulated company should be allowed to pay an affiliate therefor-a state determination also reviewed under the Fourteenth Amendment. Dayton Power & Light Co. v. Public Utilities Commission of Ohio, 1934, 292 U.S. 290 , 54 S.Ct. 647; Columbus Gas & Fuel Co. v. Public Utilities Commission of Ohio, 1934, 292 U.S. 398 , 54 S.Ct. 763, 91 A.L.R. 1403. In both cases, one of which sustained, and one of which struck down a fixed rate the Court assumed the rate base method, as the legal way of testing reasonableness of natural gas prices fixed by public authority, without examining its real relevancy to the inquiry.

Under the weight of such precedents we cannot expect the Commission to initiate economically intelligent methods of fixing gas prices. But the Court now faces a new plan of federal regulation based on the power to fix the price at which gas shall be allowed to move in interstate commerce. I should now consider whether these rules devised under the Fourteenth Amendment are the exclusive tests of a just and reasonable rate under the federal statute, inviting reargument directed to that point [320 U.S. 591, 652] if necessary. As I see it now I would be prepared to hold that these rules do not apply to a natural gas case arising under the Natural Gas Act.

Such a holding would leave the Commission to fix the price of gas in the field as one would fix maximum prices of oil or milk or coal, or any other commodity. Such a price is not calculated to produce a fair return on the synthetic value of a rate base of any individual producer, and would not undertake to assure a fair return to any producer. The emphasis would shift from the producer to the product, which would be regulated with an eye to average or typical producing conditions in the field.

Such a price fixing process on economic lines would offer little temptation to the judiciary to become back seat drivers of the price fixing machine. The unfortunate effect of judicial intervention in this field is to divert the attention of those engaged in the process from what is economically wise to what is legally permissible. It is probable that price reductions would reach economically unwise and self-defeating limits before they would reach constitutional ones. Any constitutional problems growing out of price fixing are quite different than those that have heretofore been considered to inhere in rate making. A producer would have difficulty showing the invalidity of such a fixed price so long as he voluntarily continued to sell his product in interstate commerce. Should he withdraw and other authority be invoked to compel him to part with his property, a different problem would be presented.

Allowance in a rate to compensate for gas removed from gas lands, whether fixed as of point of production or as of point of delivery, probably best can be measured by a functional test applied to the whole industry. For good or ill we depend upon private enterprise to exploit these natural resources for public consumption. The function which an allowance for gas in the field should perform [320 U.S. 591, 653] for society in such circumstances is to be enough and no more than enough to induce private enterprise completely and efficiently to utilize gas resources, to acquire for public service any available gas or gas rights and to deliver gas at a rate and for uses which will be in the future as well as in the present public interest.

The Court fears that 'if we are now to tell the Commission to fix the rates so as to discourage particular uses, we would indeed be injecting into a rate case a 'novel' doctrine ....' With due deference I suggest that there is nothing novel in the idea that any change in price of a service or commodity reacts to encourage or discourage its use. The question is not whether such consequences will or will not follow; the question is whether effects must be suffered blindly or may be intelligently selected, whether price control shall have targets at which it deliberately aims or shall be handled like a gun in the hands of one who does not know it is loaded.

We should recognize 'price' for what it is-a tool, a means, an expedient. In public hands it has much the same economic effects as in private hands. Hope knew that a concession in industrial price would tend to build up its volume of sales. It used price as an expedient to that end. The Commission makes another cut in that same price but the Court thinks we should ignore the effect that it will have on exhaustion of supply. The fact is that in natural gas regulation price must be used to reconcile the private property right society has permitted to vest in an important natural resource with the claims of society upon it-price must draw a balance between wealth and welfare.

To carry this into techniques of inquiry is the task of the Commissioner rather than of the judge, and it certainly is no task to be solved by mere bookkeeping but requires the best economic talent available. There would doubtless be inquiry into the price gas is bringing in the [320 U.S. 591, 654] field, how far that price is established by arms' length bargaining and how far it may be influenced by agreements in restraint of trade or monopolistic influences. What must Hope really pay to get and to replace gas it delivers under this order? If it should get more or less than that for its own, how much and why? How far are such prices influenced by pipe line access to markets and if the consumers pay returns on the pipe lines how far should the increment they cause go to gas producers? East Ohio is itself a producer in Ohio.44 What do Ohio authorities require Ohio consumers to pay for gas in the field? Perhaps these are reasons why the Federal Government should put West Virginia gas at lower or at higher rates. If so what are they? Should East Ohio be required to exploit its half million acres of unoperated reserve in Ohio before West Virginia resources shall be supplied on a devalued basis of which that State complains and for which she threatens measures of self keep? What is gas worth in terms of other fuels it displaces?

A price cannot be fixed without considering its effect on the production of gas. Is it an incentive to continue to exploit vast unoperated reserves? Is it conducive to deep drilling tests the result of which we may know only after trial? Will it induce bringing gas from afar to supplement or even to substitute for Appalachian gas?45 Can it be had from distant fields as cheap or cheaper? If so, that competitive potentiality is certainly a relevant consideration. Wise regulation must also consider, as a private buyer would, what alternatives the producer has [320 U.S. 591, 655] if the price is not acceptable. Hope has intrastate business and domestic and industrial customers. What can it do by way of diverting its supply to intrastate sales? What can it do by way of disposing of its operated or reserve acreage to industrial concerns or other buyers? What can West Virginia do by way of conservation laws, severance or other taxation, if the regulated rate offends? It must be borne in mind that while West Virginia was prohibited from giving her own inhabitants a priority that discriminated against interstate commerce, we have never yet held that a good faith conservation act, applicable to her own, as well as to others, is not valid. In considering alternatives, it must be noted that federal regulation is very incomplete, expressly excluding regulation of 'production or gathering of natural gas,' and that the only present way to get the gas seems to be to call it forth by price inducements. It is plain that there is a downward economic limit on a safe and wise price.

But there is nothing in the law which compels a commission to fix a price at that 'value' which a company might give to its product by taking advantage of scarcity, or monopoly of supply. The very purpose of fixing maximum prices is to take away from the seller his opportunity to get all that otherwise the market would award him for his goods. This is a constitutional use of the power to fix maximum prices, Block v. Hirsh, 256 U.S. 135 , 41 S.Ct. 458, 16 A.L.R. 165; Marcus Brown Holding Co. v. Feldman, 256 U.S. 170 , 41 S.Ct. 465; International Harvester Co. v. Kentucky, 234 U.S. 216 , 34 S.Ct. 853; Highland v. Russell Car & Snow Plow Co., 279 U.S. 253 , 49 S.Ct. 314, just as the fixing of minimum prices of goods in interstate commerce is constitutional although it takes away from the buyer the advantage in bargaining which market conditions would give him. United States v. Darby, 312 U.S. 100, 657 , 61 S.Ct. 451, 132 A.L.R. 1430; Mulford v. Smith, 307 U.S. 38 , 59 S.Ct. 648; United States v. Rock Royal Co-operative, Inc., 307 U.S. 533 , 59 S.Ct. 993; Sunshine Anthracite Coal Co. v. Adkins, 310 U.S. 381 , 60 S.Ct. 907. The Commission has power to fix [320 U.S. 591, 656] a price that will be both maximum and minimum and it has the incidental right, and I think the duty, to choose the economic consequences it will promote or retard in production and also more importantly in consumption, to which I now turn.

If we assume that the reduction in company revenues is warranted we then come to the question of translating the allowed return into rates for consumers or classes of consumers. Here the Commission fixed a single rate for all gas delivered irrespective of its use despite the fact that Hope has established what amounts to two rates-a high one for domestic use and a lower one for industrial contracts. 46 The Commission can fix two prices for interstate gas as readily as one-a price for resale to domestic users and another for resale to industrial users. This is the pattern Hope itself has established in the very contracts over which the Commission is expressly given jurisdiction. Certainly the Act is broad enough to permit two prices to be fixed instead of one, if the concept of the 'public interest' is not unduly narrowed.

The Commission's concept of the public interest in natural gas cases which is carried today into the Court's opinion was first announced in the opinion of the minority in the Pipeline case. It enumerated only two 'phases of the public interest: (1) the investor interest; (2) the consumer interest,' which it emphasized to the exclusion of all others. 315 U.S. 575, 606 , 62 S.Ct. 736, 753. This will do well enough in dealing with railroads or utilities supplying manufactured gas, electric, power, a communications service or transportation, where utilization of facilities does not impair their future usefulness. Limitation of supply, however, brings into a natural gas case another phase of the public interest that to my mind overrides both the owner [320 U.S. 591, 657] and the consumer of that interest. Both producers and industrial consumers have served their immediate private interests at the expense of the long- range public interest. The public interest, of course, requires stopping unjust enrichment of the owner. But it also requires stopping unjust impoverishment of future generations. The public interest in the use by Hope's half million domestic consumers is quite a different one from the public interest in use by a baker's dozen of industries.

Prudent price fixing it seems to me must at the very threshold determine whether any part of an allowed return shall be permitted to be realized from sales of gas for resale for industrial use. Such use does tend to level out daily and seasonal peaks of domestic demand and to some extent permits a lower charge for domestic service. But is that a wise way of making gas cheaper when, in comparison with any substitute, gas is already a cheap fuel? The interstate sales contracts provide that at times when demand is so great that there is not enough gas to go around domestic users shall first be served. Should the operation of this preference await the day of actual shortage? Since the propriety of a preference seems conceded, should it not operate to prevent the coming of a shortage as well as to mitigate its effects? Should industrial use jeopardize tomorrow's service to householders any more than today's? If, however, it is decided to cheapen domestic use by resort to industrial sales, should they be limited to the few uses for which gas has special values or extend also to those who use it only because it is cheaper than competitive fuels? 47 And how much cheaper should indus- [320 U.S. 591, 658] trial gas sell than domestic gas, and how much advantage should it have over competitive fuels? If industrial gas is to contribute at all to lowering domestic rates, should it not be made to contribute the very maximum of which it is capable, that is, should not its price be the highest at which the desired volume of sales can be realized?

If I were to answer I should say that the household rate should be the lowest that can be fixed under commercial conditions that will conserve the supply for that use. The lowest probable rate for that purpose is not likely to speed exhaustion much, for it still will be high enough to induce economy, and use for that purpose has more nearly reached the saturation point. On the other hand the demand for industrial gas at present rates already appears to be increasing. To lower further the industrial rate is merely further to subsidize industrial consumption and speed depletion. The impact of the flat reduction [320 U.S. 591, 659] of rates ordered here admittedly will be to increase the industrial advantages of gas over competing fuels and to increase its use. I think this is not, and there is no finding by the Commission that it is, in the public interest.

There is no justification in this record for the present discrimination against domestic users of gas in favor of industrial users. It is one of the evils against which the Natural Gas Act was aimed by Congress and one of the evils complained of here by Cleveland and Akron. If Hope's revenues should be cut by some $3,600,000 the whole reduction is owing to domestic users. If it be considered wise to raise part of Hope's revenues by industrial purpose sales, the utmost possible revenue should be raised from the least consumption of gas. If competitive relationships to other fuels will permit, the industrial price should be substantially advanced, not for the benefit of the Company, but the increased revenues from the advance should be applied to reduce domestic rates. For in my opinion the 'public interest' requires that the great volume of gas now being put to uneconomic industrial use should either be saved for its more important future domestic use or the present domestic user should have the full benefit of its exchange value in reducing his present rates.

Of course the Commission's power directly to regulate does not extend to the fixing of rates at which the local company shall sell to consumers. Nor is such power required to accomplish the purpose. As already pointed out, the very contract the Commission is altering classifies the gas according to the purposes for which it is to be resold and provides differentials between the two classifications. It would only be necessary for the Commission to order that all gas supplied under paragraph (a) of Hope's contract with the East Ohio Company shall be [320 U.S. 591, 660] at a stated price fixed to give to domestic service the entire reduction herein and any further reductions that may prove possible by increasing industrial rates. It might further provide that gas delivered under paragraph (b) of the contract for industrial purposes to those industrial customers Hope has approved in writing shall be at such other figure as might be found consistent with the public interest as herein defined. It is too late in the day to contend that the authority of a regulatory commission does not extend to a consideration of public interests which it may not directly regulate and a conditioning of its orders for their protection. Interstate Commerce Commission v. Railway Labor Executives Ass'n, 315 U.S. 373 , 62 S.Ct. 717; United States v. Lowden, 308 U.S. 225 , 60 S.Ct. 248.

Whether the Commission will assert its apparently broad statutory authorization over prices and discriminations is, of course, its own affair, not ours. It is entitled to its own notion of the 'public interest' and its judgment of policy must prevail. However, where there is ground for thinking that views of this Court may have constrained the Commission to accept the rate-base method of decision and a particular single formula as 'all important' for a rate base, it is appropriate to make clear the reasons why I, at least, would not be so understood. The Commission is free to face up realistically to the nature and peculiarity of the resources in its control, to foster their duration in fixing price, and to consider future interests in addition to those of investors and present consumers. If we return this case it may accept or decline the proffered freedom. This problem presents the Commission an unprecedented opportunity if it will boldly make sound economic considerations, instead of legal and accounting theories, the foundation of federal policy. I would return the case to the Commission and thereby be clearly quit of what now may appear to be some responsibility for perpetrating a shortsighted pattern of natural gas regulation.

Footnotes

[Footnote 1] Hope produces about one-third of its annual gas requirements and purchases the rest under some 300 contracts.

[Footnote 2] These five companies are the East Ohio Gas Co., the Peoples Natural Gas Co., the River Gas Co., the Fayette County Gas Co., and the Manufacturers Light & Heat Co. The first three of these companies are, like Hope, subsidiaries of Standard Oil Co. (N.J.). East Ohio and River distribute gas in Ohio, the other three in Pennsylvania. Hope's approximate sales in m.c.f. for 1940 may be classified as follows:

Local West Virginia sales 11,000,000 East Ohio 40,000,000 Peoples 10,000,000 River 400,000 Fayette 860,000 Manufacturers 2,000,000

Hope's natural gas is processed by Hope Construction & Refining Co., an affiliate, for the extraction of gasoline and butane. Domestic Coke Corp., another affiliate, sells coke-oven gas to Hope for boiler fuel.

[Footnote 3] These required minimum reductions of 7õ per m.c.f. from the 36.5õ and 35.5õ rates previously charged East Ohio and Peoples, respectively, and 3õ per m.c.f. from the 31.5õ rate previously charged Fayette and Manufacturers.

[Footnote 4] The book reserve for interstate plant amounted at the end of 1938 to about $18,000,000 more than the amount determined by the Commission as the proper reserve requirement. The Commission also noted that 'twice in the past the company has transferred amounts aggregating $7,500,000 from the depreciation and depletion reserve to surplus. When these latter adjustments are taken into account, the excess becomes $25,500,000, which has been exacted from the ratepayers over and above the amount required to cover the consumption of property in the service rendered and thus to keep the investment unimpaired.' 44 P.U.R.,N.S., at page 22.

[Footnote 5] That contention was based on the fact that 'every single dollar in the depreciation and depletion reserves' was taken 'from gross operating revenues whose only source was the amounts charged customers in the past for natural gas. It is, therefore, a fact that the depreciation and depletion reserves have been contributed by the customers and do not represent any investment by Hope.' Id., 44 P.U.R.,N.S., at page 40. And see Railroad Commission v. Cumberland Tel. & T. Co., 212 U.S. 414, 424 , 425 S., 29 S.Ct. 357, 361, 362; 2 Bonbright, Valuation of Property (1937), p. 1139.

[Footnote 6] The Commission noted that the case was 'free from the usual complexities involved in the estimate of gas reserves because the geologists for the company and the Commission presented estimates of the remaining recoverable gas reserves which were about one per cent apart.' 44 P.U.R.,N.S., at pages 19, 20.

The Commission utilized the 'straight-line-basis' for determining the depreciation and depletion reserve requirements. It used estimates of the average service lives of the property by classes based in part on an inspection of the physical condition of the property. And studies were made of Hope's retirement experience and maintenance policies over the years. The average service lives of the various classes of property were converted into depreciation rates and then applied to the cost of the property to ascertain the portion of the cost which had expired in rendering the service.

The record in the present case shows that Hope is on the lookout for new sources of supply of natural gas and is contemplating an extension of its pipe line into Louisiana for that purpose. The Commission recognized in fixing the rates of depreciation that much material may be used again when various present sources of gas supply are exhausted, thus giving that property more than scrap value at the end of its present use.

[Footnote 7] See Uniform System of Accounts prescribed for Natural Gas Companies effective January 1, 1940, Account No. 332.1.

[Footnote 8] Sec. 6 of the Act comes the closest to supplying any definite criteria for rate making. It provides in subsection (a) that, 'The Commission may investigate the ascertain the actual legitimate cost of the property of every natural-gas company, the depreciation therein, and, when found necessary for rate-making purposes, other facts which bear on the determination of such cost or depreciation and the fair value of such property.' Subsection (b) provides that every natural-gas company on request shall file with the Commission a statement of the 'original cost' of its property and shall keep the Commission informed regarding the 'cost' of all additions, etc.

[Footnote 9] We recently stated that the meaning of the word 'value' is to be gathered 'from the purpose for which a valuation is being made. Thus the question in a valuation for rate making is how much a utility will be allowed to earn. The basic question in a valuation for reorganization purposes is how much the enterprise in all probability can earn.' Institutional Investors v. Chicago, M., St. P. & P.R. Co., 318 U.S. 523, 540 , 63 S.Ct. 727, 738.

[Footnote 10] Chief Justice Hughes said in that case (292 U.S. at pages 168, 169, 54 S.Ct. at page 665): 'If the predictions of service life were entirely accurate and retirements were made when and as these predictions were precisely fulfilled, the depreciation reserve would represent the consumption of capital, on a cost basis, according to the method which spreads that loss over the respective service periods. But if the amounts charged to operating expenses and credited to the account for depreciation reserve are excessive, to that extent subscribers for the telephone service are required to provide, in effect, capital contributions, not to make good losses incurred by the utility in the service rendered and thus to keep its investment unimpaired, but to secure additional plant and equipment upon which the utility expects a return.'

[Footnote 11] See Mr. Justice Brandeis (dissenting) in United Railways & Electric Co. v. West, 280 U.S. 234 , 259-288, 50 S.Ct. 123, 128-138, for an extended analysis of the problem.

[Footnote 12] It should be noted that the Act provides no specific rule governing depletion and depreciation. Sec. 9(a) merely states that the Commission 'may from time to time ascertain and determine, and by order fix, the proper and adequate rates of depreciation and amortization of the several classes of property of each natural-gas company used or useful in the production, transportation, or sale of natural gas.'

[Footnote 13] See Simonton, The Nature of the Interest of the Grantee Under an Oil and Gas Lease (1918), 25 W.Va.L.Quar. 295.

[Footnote 14] West Penn Power Co. v. Board of Review, 112 W.Va. 442, 164 S.E. 862.

[Footnote 15] W.Va.Rev.Code of 1943, ch. 11. Art. 13, 2a, 3a.

[Footnote 16] West Virginia suggests as a possible solution (1) that a 'going concern value' of the company's tangible assets be included in the rate base and (2) that the fair market value of gas delivered to customers be added to the outlay for operating expenses and taxes.

[Footnote 17] S.Doc. 92, Pt. 84-A, ch. XII, Final Report, Federal Trade Commission to the Senate pursuant to S.Res.No. 83, 70th Cong., 1st Sess.

[Footnote 18] S.Doc. 92, Pt. 84-A, chs. XII, XIII, op. cit., supra, note 17.

[Footnote 19] See Hearings on H.R. 11662, Subcommittee of House Committee on Interstate & Foreign Commerce, 74th Cong., 2d Sess.; Hearings on H.R. 4008, House Committee on Interstate & Foreign Commerce, 75th Cong., 1st Sess.

[Footnote 20] The power to investigate and ascertain the 'actual legitimate cost' of property (6), the requirement as to books and records (8), control over rates of depreciation (9), the requirements for periodic and special reports (10), the broad powers of investigation (14) are among the chief powers supporting the rate making function.

[Footnote 21] Apart from the grandfather clause contained in 7(c), there is the provision of 7(f) that a natural gas company may enlarge or extend its facilities with the 'service area' determined by the Commission without any further authorization.

[Footnote 22] See P.L. 117, approved July 7, 1943, 57 Stat. 383 containing an 'Interstate Compact to Conserve Oil and Gas' between Oklahoma, Texas, New Mexico, Illinois, Colorado, and Kansas.

[Footnote 23] As we have pointed out, 7(c) was amended by the Act of February 7, 1942, 56 Stat. 83, so as to require certificates of public convenience and necessity not only where the extensions were being made to markets in which natural gas was already being sold by another company but to other situations as well. Considerations of conservation entered into the proposal to give the Act that broader scope. H.Rep.No. 1290, 77th Cong. 1st Sess., pp. 2, 3. And see Annual Report, Federal Power Commission (1940) pp. 79, 80; Baum, The Federal Power Commission and State Utility Regulation (1942), p. 261.

The bill amending 7(c) originally contained a subsection (h) reading as follows: 'Nothing contained in this section shall be construed to affect the authority of a State within which natural gas is produced to authorize or require the construction or extension of facilities for the transportation and sale of such gas within such State: Provided, however, That the Commission, after a hearing upon complaint or upon its own motion, may by order forbid any intrastate construction or extension by any natural-gas company which it shall find will prevent such company from rendering adequate service to its customers in interstate or foreign commerce in territory already being served.' See Hearings on H.R. 5249, House Committee on Interstate & Foreign Commerce, 77th Cong., 1st Sess., pp. 7, 11, 21, 29, 32, 33. In explanation of its deletion the House Committee Report stated, pp. 4, 5: 'The increasingly important problems raised by the desire of several States to regulate the use of the natural gas produced therein in the interest of consumers within such States, as against the Federal power to regulate interstate commerce in the interest of both interstate and intrastate consumers, are deemed by the committee to warrant further intensive study and probably a more retailed and comprehensive plan for the handling thereof than that which would have been provided by the stricken subsection.'

[Footnote 24] We have noted that in the annual operating expenses of some $16, 000.000 the Commission included West Virginia and federal taxes. And in the net increase of $421,160 over 1940 operating expenses allowed by the Commission was some $80,000 for increased West Virginia property taxes. The adequacy of these amounts has not been challenged here.

[Footnote 25] The Commission included in the aggregate annual operating expenses which it allowed some $8,500,000 for gas purchased. It also allowed about $ 1,400,000 for natural gas production and about $600,000 for exploration and development.

It is suggested, however, that the Commission in ascertaining the cost of Hope's natural gas production plant proceeded contrary to 1(b) which provides that the Act shall not apply to 'the production or gathering of natural gas'. But such valuation, like the provisions for operating expenses, is essential to the rate-making function as customarily performed in this country. Cf. Smith, The Control of Power Rates in the United States and England (1932), 159 The Annals 101. Indeed 14(b) of the Act gives the Commission the power to 'determine the propriety and reasonableness of the inclusion in operating expenses, capital, or surplus of all delay rentals or other forms of rental or compensation for unoperated lands and leases.'

[Footnote 26] See note 25, supra.

[Footnote 27] The Commission has expressed doubts over its power to fix rates on 'direct sales to industries' from interstate pipelines as distinguished from 'sales for resale to the industrial customers of distributing companies.' Annual Report, Federal Power Commission (1940), p. 11.

[Footnote 28] Sec. 1(b) of the Act provides: 'The provisions of this Act shall apply to the transportation of natural gas in interstate commerce, to the sale in interstate commerce of natural gas for resale for ultimate public consumption for domestic, commercial, industrial, or any other use, and to natural-gas companies engaged in such transportation or sale, but shall not apply to any other transportation or sale of natural gas or to the local distribution of natural gas or to the facilities used for such distribution or to the production or gathering of natural gas.' And see 2(6), defining a 'natural-gas company', and H.Rep.No. 709, supra, pp. 2, 3.

[Footnote 29] The wasting-asset characteristic of the industry was recognized prior to the Act as requiring the inclusion of a depletion allowance among operating expenses. See Columbus Gas & Fuel Co. v. Public Utilities Commission, 292 U.S. 398, 404 , 405 S., 54 S.Ct. 763, 766, 767, 91 A.L.R. 1403. But no such theory of rate-making for natural gas companies as is now suggested emerged from the cases arising during the earlier period of regulation.

[Footnote 30] The Commission has been alert to the problems of conservation in its administration of the Act. It has indeed suggested that it might be wise to restrict the use of natural gas 'by functions rather than by areas.' Annual Report (1940) p. 79.

The Commission stated in that connection that natural gas was particularly adapted to certain industrial uses. But it added that the general use of such gas 'under boilers for the production of steam' is 'under most circumstances of very questionable social economy.' Ibid.

[Footnote 31] The argument is that 4(a) makes 'unlawful' the charging of any rate that is not just and reasonable. And 14(a) gives the Commission power to investigate any matter 'which it may find necessary or proper in order to determine whether any person has violated' any provision of the Act. Moreover, 5(b) gives the Commission power to investigate and determine the cost of production or transportation of natural gas in cases where it has 'no authority to establish a rate governing the transportation or sale of such natural gas.' And 17(c) directs the Commission to 'make available to the several State commissions such information and reports as may be of assistance in State regulation of natural-gas companies.' For a discussion of these points by the Commission see 44 P.U.R.,N.S., at pages 34, 35.

[Footnote 1] Natural Gas Act, 4(a), 52 Stat. 821, 822, 15 U.S.C. 717c(a), 15 U.S.C.A. 717c(a).

[Footnote 2] 52 Stat. 821, 824, 15 U.S.C. 717e, 15 U.S.C.A. 717e:

> '(a) The Commission may investigate and ascertain the actual legitimate cost of the property of every natural-gas company, the depreciation therein, and, when found necessary for rate-making purposes, other facts which bear on the determination of such cost or depreciation and the fair value of such property.

'(b) Every natural-gas company upon request shall file with the Commission an inventory of all or any part of its property and a statement of the original cost thereof, and shall keep the Commission informed regarding the cost of all additions, betterments, extensions, and new construction.'

[Footnote 3] 'Reproduction cost' has been variously defined, but for rate making purposes the most useful sense seems to be, the minimum amount necessary to create at the time of the inquiry a modern plant capable of rendering equivalent service. See I Bonbright, Valuation of Property (1937) 152. Reproduction cost as the cost of building a replica of an obsolescent plant is not of real significance.

'Prudent investment' is not defined by the Court. It may mean the sum originally put in the enterprise, either with or without additional amounts from excess earnings reinvested in the business.

[Footnote 4] It is of no more than bookkeeping significance whether the Commission allows a rate of return commensurate with the risk of the original investment or the lower rate based on current risk and a capitalization reflecting the established earning power of a successful company and the probable cost of duplicating its services. Cf. American T . & T. Co. v. United States, 299 U.S. 232 , 57 S.Ct. 170. But the latter is the traditional method.

[Footnote 1] 315 U.S. 575 , 62 S.Ct. 736.

[Footnote 2] Judge Dobie, dissenting below, pointed out that the majority opinion in the Pipeline case 'contains no express discussion of the Prudent Investment Theory' and that the concurring opinion contained a clear one, and said, 'It is difficult for me to believe that the majority of the Supreme Court, believing otherwise, would leave such a statement unchallenged.' (134 F.2d 287, 312.) The fact that two other Justices had as matter of record in our books long opposed the reproduction cost theory of rate bases and had commented favorably on the prudent investment theory may have influenced that conclusion. See opinion of Mr. Justice Frankfurter in Driscoll v. Edison Light & Power Co., 307 U.S. 104, 122 , 59 S.Ct. 715, 724, and my brief as Solicitor General in that case. It should be noted, however, that these statements were made, not in a natural gas case, but in an electric power case-a very important distinction, as I shall try to make plain.

[Footnote 3] Natural gas from the Appalachian field averages about 1050 to 1150 B.T.U. content, while by-product manufactured gas is about 530 to 540. Moody's Manual of Public Utilities (1943) 1350; Youngberg, Natural Gas (1930) 7.

[Footnote 4] Sen.Rep. No. 1162, 75th Cong., 1st Sess., 2.

[Footnote 5] Arnold and Kemnitzer, Petroleum in the United States and Possessions (1931) 78.

[Footnote 6] Id. at 62-63.

[Footnote 7] Id. at 61.

[Footnote 8] At Fredonia, New York, in 1821, natural gas was conveyed from a shallow well to some thirty people. The lighthouse at Barcelona Harbor, near what is now Westfield, New York, was at about that time and for many years afterward lighted by gas that issued from a crevice. Report on Utility Corporations by Federal Trade Commission, Sen.Doc. 92, Pt. 84-A, 70th Cong., 1st Sess., 8-9.

[Footnote 9] In that year Pennsylvania enacted 'An Act to provide for the incorporation and regulation of natural gas companies.' Penn.Laws 1885, No. 32, 15 P.S. 1981 et seq.

[Footnote 10] See Steptoe and Hoffheimer's Memorandum for Governor Cornwell of West Virginia (1917) 25 West Virginia Law Quarterly 257; see also Report on Utility Corporations by Federal Trade Commission, Sen.Doc. No. 92, Pt. 84-A, 70th Cong., 1st Sess.

[Footnote 11] Arnold and Kemnitzer, Petroleum in the United States and Possessions (1931) 73.

[Footnote 12] Id. at 63.

[Footnote 13] Id. at 64.

[Footnote 14] See Report on Utility Corporations by Federal Trade Commission, Sen.Doc. No. 92, Pt. 84-A, 70th Cong., 1st Sess.

[Footnote 15] Commonwealth of Pennsylvania v. West Virginia, 262 U.S. 553 , 43 S. Ct. 658, 32 A.L.R. 300. For conditions there which provoked this legislation, see 25 West Virginia Law Quarterly 257.

[Footnote 16] People ex rel. Pavilion Natural Gas Co. v. Public Service Commission, 188 App.Div. 36, 176 N.Y.S. 163.

[Footnote 17] Village of Falconer v. Pennsylvania Gas Company, 17 State Department Reports, N.Y., 407.

[Footnote 18] See, for example, Public Service Commission v. Iroquois Natural Gas Co., 108 Misc. 696, 178 N.Y.S. 24; Park Abbott Realty Co. v. Iroquois Natural Gas Co., 102 Misc. 266, 168 N.Y.S. 673; Public Service Commission v. Iroquois Natural Gas Co., 189 App.Div. 545, 179 N.Y.S. 230.

[Footnote 19] People ex rel. Pennsylvania Gas Co. v. Public Service Commission, 196 App.Div. 514, 189 N.Y.S. 478.

[Footnote 20] East Ohio Gas Co. v. Akron, 81 Ohio St. 33, 90 N.E. 40, 26 L.R.A., N.S., 92, 18 Ann.Cas. 332; Village of New-comerstown v. Consolidated Gas Co., 100 Ohio St. 494, 127 N.E. 414; Gress v. Village of Ft. Laramie, 100 Ohio St. 35, 125 N.E. 112, 8 A.L.R. 242; City of Jamestown v. Pennsylvania Gas Co., D.C., 263 F. 437; Id., D.C., 264 F. 1009. See, also, United Fuel Gas Co. v. Railroad Commission, 278 U.S. 300, 308 , 49 S.Ct. 150, 152.

[Footnote 21] The New York Public Service Commission said: 'While the transportation of natural gas through pipe lines from one state to another state is interstate commerce ..., Congress has not taken over the regulation of that particular industry. Indeed, it has expressly excepted it from the operation of the Interstate Commerce Commissions Law (Interstate Commerce Commissions Law, section 1). It is quite clear, therefore, that this Commission can not require a Pennsylvania corporation producing gas in Pennsylvania to transport it and deliver it in the State of New York, and that the Interstate Commerce Commission is likewise powerless. If there exists such a power, and it seems that there does, it is a power vested in Congress and by it not yet exercised. There is no available source of supply for the Crystal City Company at present except through purchasing from the Porter Gas Company. It is possible that this Commission might fix a price at which the Potter Gas Company should sell if it sold at all, but as the Commission can not require it to supply gas in the State of New York, the exercise of such a power to fix the price, if such power exists, would merely say, sell at this price or keep out of the State.' Lane v. Crystal City Gas Co., 8 New York Public Service Comm. Reports, Second District, 210, 212.

[Footnote 22] Proclamation by the President of September 16, 1918; Rules and Regulations of H. A. Garfield, Fuel Administrator, September 24, 1918.

[Footnote 23] For example, the Iroquois Gas Corporation which formerly served Buffalo, New York, with natural gas ranging from 1050 to 1150 b.t.u. per cu. ft., now mixes a by-product gas of between 530 and 540 b.t.u. in proportions to provide a mixed gas of about 900 b.t.u. per cu. ft. For space heating or water heating its charges range from 65 cents for the first m.c.f. per month to 55 cents for all above 25 m.c.f. per month. Moody's Manual of Public Utilities (1943) 1350.

[Footnote 24] The United States Fuel Administration made the following cooking value comparisons, based on tests made in the Department of Home Economics of Ohio State University:

Natural gas at 1.12 per M. is equivalent to coal at $6.50 per ton.

Natural gas at 2.00 per M. is equivalent to gasoline at 27õ per gal.

Natural gas at 2.20 per M. is equivalent to electricity at 3õ per k.w. h.

Natural gas at 2.40 per M. is equivalent to coal oil at 15õ per gal.

Use and Conservation of Natural Gas, issued by U.S. Fuel Administration (1918) 5.

[Footnote 25] See Brief on Behalf jof Legislation Imposing an Excise Tax on Natural Gas, submitted to N.R.A. by the United Mine Workers of America and the National Coal Association.

[Footnote 26] Brief of National Gas Association and United Mine Workers, supra, note 26, pp. 35, 36, compiled from Bureau of Mines Reports.

[Footnote 27] From the source quoted in the preceding note the spread elsewhere is shown to be:

State Industrial Domestic Illinois 29.2 1.678 Louisiana 10.4 59.7 Oklahoma 11.2 41.5 Texas 13.1 59.7 Alabama 17.8 1.227 Georgia 22.9 1.043

[Footnote 28] In Corning, New York, rates were initiated by the Crystal City Gas Company as follows: 70õ for the first 5,000 cu. ft. per month; 80õ from 5, 000 to 12,000; $1 for all over 12,000. The Public Service Commission rejected these rates and fixed a flat rate of 58õ per m.c.f. Lane v. Crystal City Gas Co., 8 New York Public Service Comm. Reports, Second District, 210.

The Pennsylvania Gas Company (National Fuel Gas Company group) also attempted a sliding scale rate for New York consumers, net per month as follows: First 5,000 feet, 35õ; second 5,000 feet, 45õ; third 5,000 feet, 50õ; all above 15,000, 55õ. This was eventually abandoned, however. The company's present scale in Pennsylvania appears to be reversed to the following net monthly rate; first 3 m.c.f., 75õ; next 4 m.c.f., 60õ; next 8 m.c.f., 55õ; over 15 m.c.f., 50õ. Moody's Manual of Public Utilities (1943) 1350. In New York it now serves a mixed gas.

For a study of effect of sliding scale rates in reducing consumption see 11 Proceedings of Natural Gas

Association of America (1919) 287.

[Footnote 29] See Report on Utility Corporations by Federal Trade Commission, Sen. Doc. 92, Pt. 84-A, 70th Cong., 1st Sess.

[Footnote 30] Four holding company systems control over 55 per cent of all natural gas transmission lines in the United States. They are Columbia Gas and Electric Corporation, Cities Service Co., Electric Bond and Share Co., and Standard Oil Co. of New Jersey. Columbia alone controls nearly 25 per cent, and fifteen companies account for over 80 per cent of the total. Report on Utility Corporations by Federal Trade Commission, Sen. Doc. 92, Pt. 84-A, 70th Cong., 1st Sess., 28.

In 1915, so it was reported to the Governor of West Virginia, 87 per cent of the total gas production of that state was under control of eight companies. Steptoe and Hoffheimer, Legislative Regulation of Natural Gas Supply in West Virginia, 17 West Virginia Law Quarterly 257, 260. Of these, three were subsidiaries of the Columbia system and others were subsidiaries of larger systems. In view of inter-system sales and interlocking interests it may be doubted whether there is much real competition among these companies.

[Footnote 31] This pattern with its effects on local regulatory efforts will be observed in our decisions. See United Fuel Gas Co. v. Railroad Commission, 278 U.S. 300 , 49 S.Ct. 150; United Fuel Gas Co. v. Public Service Commission, 278 U.S. 322 , 49 S.Ct. 157; Dayton Power & Light v. Public Utilities Commission, 292 U.S. 290 , 54 S.Ct. 647; Columbus Gas & Fuel Co. v. Public Utilities Commission, 292 U.S. 398 , 54 S.Ct. 763, 91 A.L.R. 1403, and the present case.

[Footnote 32] 15 U.S.C. 717(a), 15 U.S.C.A. 717(a). (Italics supplied throughout this paragraph.)

[Footnote 33] 7(c), 52 Stat. 825, 15 U.S.C.A. 717f(c).

[Footnote 34] 15 U.S.C. 717f, 15 U.S.C.A. 717f.

[Footnote 35] Id., 717c(e).

[Footnote 36] Id., 717c(b).

[Footnote 37] Id., 717d(a).

[Footnote 38] Sen. Rep. No. 1162, 75th Cong., 1st Sess. 2.

[Footnote 39] The list of East Ohio Gas Company's special industrial contracts thus expressly under Hope's control and their demands are as follows:

[Footnote 40] To make a fetish of mere accounting is to shield from examination the deeper causes, forces, movements, and conditions which should govern rates. Even as a recording of current transactions, bookkeeping is hardly an exact science. As a representation of the condition and trend of a business, it uses symbols of certainty to express values that actually are in constant flux. It may be said that in commercial or investment banking or any business extending credit success depends on knowing what not to believe in accounting. Few concerns go into bankruptcy or reorganization whose books do not show them solvent and often even profitable. If one cannot rely on accountancy accurately to disclose past or current conditions of a business, the fallacy of using it as a sole guide to future price policy ought to be apparent. However, our quest for certitude is so ardent that we pay an irrational reverence to a technique which uses symbols of certainty, even though experience again and again warns us that they are delusive. Few writers have ventured to challenge this American idolatry, but see Hamilton, Cost as a standard for Price, 4 Law and Contemporary Problems 321, 323-25. He observes that 'As the apostle would put it, accountancy is all things to all men. ... Its purpose determines the character of a system of accounts.' He analyzes the hypothetical character of accounting and says 'It was no eternal mold for pecuniary verities handed down from on high.

It was-like logic or algebra, or the device of analogy in the law-an ingenious contrivance of the human mind to serve a limited and practical purpose.' 'Accountancy is far from being a pecuniary expression of all that is industrial reality. It is an instrument, highly selective in its application, in the service of the institution of money making.'As to capital account he observes 'In an enterprise in lusty competition with others of its kind, survival is the thing and the system of accounts has its focus in solvency. ... Accordingly depreciation, obsolescence, and other factors which carry no immediate threat are matters of lesser concern and the capital account is likely to be regarded as a secondary phenomenon. ... But in an enterprise, such as a public utility, where continued survival seems assured, solvency is likely to be taken for granted. ... A persistent and ingenious attention is likely to be directed not so much to securing the upkeep of the physical property as to making it certain that capitalization fails in not one whit to give full recognition to every item that should go into the account.'

[Footnote 41] See 2 Bonbright, Valuation of Property (1937) 1112.

[Footnote 42] Bonbright says, '... the vice of traditional law lies, not in its adoption of excessively rigid concepts of value and rules of valuation, but rather in its tendency to permit shifts in meaning that are inept, or else that are ill-defined because the judges that make them will not openly admit that they are doing so.' Id., 1170.

[Footnote 43] 'The attempt to regulate rates by reference to a periodic or occasional reappraisal of the properties has now been tested long enough to confirm the worst fears of its critics. Unless its place is taken by some more promising scheme of rate control, the days of private ownership under government regulation may be numbered.' 2 Bonbright, Valuation of Property (1937) 1190.

[Footnote 44] East Ohio itself owns natural gas rights in 550,600 acres, 518,526 of which are reserved and 32,074 operated, by 375 wells. Moody's Manual of Public Utilities (1943) 5.

[Footnote 45] Hope has asked a certificate of convenience and necessity to lay 1140 miles of 22-inch pipeline from Hugoton gas fields in southwest Kansas to West Virginia to carry 285 million cu. ft. of natural gas per day. The cost was estimated at $51,000,000. Moody's Manual of Public Utilities (1943) 1760.

[Footnote 46] I find little information as to the rates for industries in the record and none at all in such usual sources as Moody's Manual.

[Footnote 47] The Federal Power Commission has touched upon the problem of conservation in connection with an application for a certificate permitting construction of a 1500-mile pipeline from southern Texas to New York City and says: 'The Natural Gas Act as presently drafted does not enable the Commission to treat fully the serious implications of such a problem. The question should be raised as to whether the proposed use of natural gas would not result in displacing a less valuable fuel and create hardships in the industry already supplying the market, while at the same time rapidly depleting the country's natural-gas reserves. Although, for a period of perhaps 20 years, the natural gas could be so priced as to appear to offer an apparent saving in fuel costs, this would mean simply that social costs which must eventually be paid had been ignored.

> 'Careful study of the entire problem may lead to the conclusion that use of natural gas should be restricted by functions rather than by areas. Thus, it is especially adapted to space and water heating in urban homes and other buildings and to the various industrial heat processes which require concentration of heat, flexibility of control, and uniformity of results. Industrial uses to which it appears particularly adapted include the treating and annealing of metals, the operation of kilns in the ceramic, cement, and lime industries, the manufacture of glass in its various forms, and use as a raw material in the chemical industry. General use of natural gas under boilers for the production of steam is, however, under most circumstances of very questionable social economy.' Twentieth Annual Report of the Federal Power Commission (1940) 79.

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National Energy Board

Office national de l'énergie

Reasons for Decision

TransCanada PipeLines Limited

RH-4-2001

June 2002

Cost of Capital

National Energy Board

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In the Matter of

TransCanada PipeLines Limited

Fair Return Application dated 6 June 2001

In respect of Cost of Capital matters

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Table of Contents

Recital and Appearances . . . iii

Abbreviations . . . vi

Glossary of Terms . . . viii

1. Introduction . . . 1
- 1.1 Overview of the Application . . . 1
- 1.2 Background . . . 1
- 1.3 TransCanada's Consolidated Business Activities . . . 3
- 1.4 List of Issues and Approach to Decision Making . . . 4

2. Legal Framework for Determining a Fair Return . . . 8
- 2.1 Just and Reasonable Tolls . . . 8
- 2.2 Legal Framework Regarding Determination of a Fair Return . . . 8
  - 2.2.1 TransCanada's Position . . . 8
  - 2.2.2 Other Parties' Positions . . . 9
- *Views of the Board* . . . 10

3. Business Risk and Investment Perspectives . . . 13
- 3.1 Overall Business Risk . . . 13
  - 3.1.1 Market Risk . . . 14
  - 3.1.2 Supply Risk . . . 18
  - 3.1.3 Regulatory Risk . . . 21
  - 3.1.4 Operating Risk . . . 23
  - 3.1.5 Other Aspects of Business Risks . . . 24
- *Views of the Board* . . . 24
- 3.2 Investment Perspectives and Financial Risk . . . 28
  - 3.2.1 Investment Perspectives and Financial Risk . . . 28
  - 3.2.2 Globalization of Financial Markets . . . 31
  - 3.2.3 Alternative Investments . . . 32
- *Views of the Board* . . . 34

4. Cost of Capital Issues . . . 37
- 4.1 After-Tax Weighted-Average Cost of Capital (ATWACC) Methodology . . . 37
  - 4.1.1 TransCanada . . . 37
  - 4.1.2 Regulatory Precedents . . . 40
  - 4.1.3 Other Parties' Positions . . . 41
- *Views of the Board* . . . 43

4.2 Rate of Return on Common Equity 45
4.2.1 TransCanada - Equivalence to ATWACC Proposal 45
4.2.2 TransCanada - Cost of Equity Estimates for ATWACC Sample 46
4.2.3 TransCanada - Change in Cost of Equity Analysis 48
4.2.4 CAPP and IGUA - Expert Witness Evidence 50
4.2.5 Mirant - Expert Witness Evidence 51
4.2.6 Other Parties' Positions 52
Views of the Board 53

4.3 Capital Structure 56
4.3.1 TransCanada's Position 57
4.3.2 Other Parties' Positions 57
Views of the Board 58

4.4 Debt 59
4.4.1 TransCanada's Position 59
Views of the Board 60

5. Effective Date for Changes in Cost of Capital 61
5.1 TransCanada's Position 61
5.2 Other Parties' Positions 61
Views of the Board 62

6. Disposition 64

List of Tables

4-1 TransCanada's Sample Firms' Average ATWACC - June Evidence 39
4-2 TransCanada's Sample Firms' Average ATWACC - November Evidence 40
4-3 Recommended Rate of Return on Common Equity and Selected Parameters 45
4-4 ATWACC Samples Cost of Equity Estimates - June Evidence 46
4-5 ATWACC Samples Cost of Equity Estimates - November Evidence 47

List of Figures

1-1 TransCanada's Gas Transmission Business 6
1-2 TransCanada's Power Business 7

List of Appendices

I Toll Order TG-3-2002 65

Recital and Appearances

IN THE MATTER OF the *National Energy Board Act* (the Act) and the Regulations made thereunder;

IN THE MATTER OF an application dated 6 June 2001 by TransCanada PipeLines Limited (TransCanada or the Applicant):

a) pursuant to subsection 21(1) of Part I of the Act for review and variance of the NEB RH-2-94 Decision and Order TG/TO-1-95 dated 16 March 1995 to allow for the determination of a fair return for the TransCanada mainline natural gas transmission system (Mainline) for the years 2001 and 2002;

b) pursuant to Part IV of the Act for an order determining the fair return to be included in the final tolls to be charged by TransCanada for, or in respect of, transportation services provided to customers on the Mainline between 1 January 2001 and 31 December 2002; and

c) pursuant to Part IV of the Act for an order disallowing any existing transportation tolls or portions thereof and fixing final just and reasonable tolls that TransCanada may charge for, or in respect of, transportation services provided to customers on the Mainline between 1 January 2001 and 31 December 2001; and

IN THE MATTER OF National Energy Board Hearing Order RH–4-2001 dated 26 July 2001.

HEARD in Calgary, Alberta on 27 and 28 February 2002, 1, 4, 5, 6, 7, 8, 11, 12, 13, 14, 15, 18, 19 and 20 March 2002 and 2, 3 and 4 April 2002;

BEFORE:

J.A. Snider	Presiding Member
R.J. Harrison	Member
J.S. Bulger	Member
J.-P. Théorêt	Member
D.W. Emes	Member

Appearances	**Company**	**Witnesses**
C.K. Yates, Q.C.	TransCanada PipeLines Limited	S. Brett
W.M. Moreland		R.K. Girling
		H.N. Kvisle
		G.S. Lackenbauer
		R.K. Gordon
		A. Jamal
		W.A. Langford
		G. Zwick
		M. Feldman
		P.R. Carpenter
		G.R. Schink
		A.L. Kolbe
		M.J. Vilbert

Appearances	Company	Witnesses
D.G. Davies N.J. Schultz	Canadian Association of Petroleum Producers	M. Romanow B.E. Frank G.L. Stringham R. Kaslik P.M.G. Nettleton M. Pinney A. Safir M.K. Berkowitz L.D. Booth J.D. McCormick H.W. Johnson
P.C.P. Thompson, Q.C.	Industrial Gas Users Association	R.R. Cooper P.L. Fournier
R. Power	Alliance Pipeline Ltd.	
C. Worthy	BP Canada Energy Company	
B. Czarnecki J.B. Ridley	Centra Gas Manitoba Inc.	H. Stephens
K. McKnight	Coral Energy Canada Inc.	
S. Day	El Paso Merchant Energy Canada	
G.M. Nettleton	Enbridge Consumers Gas	
R. Cohen	Foothills Pipe Lines Ltd.	
R.R. Moore	Imperial Oil Resources	
K. Miller	Mirant Canada Energy Marketing, Ltd.	M.P. Stauft M.A. Stedman J.H. Chua
S. Schulli	Nexen Marketing	
M.E. Bruton	PG&E Energy Trading, Canada Corporation	
M. Imbleau I. Quach	Société en commandite Gaz Métropolitain	
M. Verwegen	Union Gas Limited	

Appearances	Company	Witnesses
A. Haskey	Westcoast Energy Inc.	
C. Nykolyn	Alberta Department of Energy	
J.C. Turchin	Minister of Energy, Science and Technology for Ontario	
R. Richard	Procureur général du Québec	
L. Boychuk A. Ross	National Energy Board	

Abbreviations

ACCC	Australia Competition and Consumer Commission
Act (the) or NEB Act	*National Energy Board Act*
AEUB	Alberta Energy Utilities Board
AFUDC	Allowance for Funds Used During Construction
Alliance	Alliance Pipeline Ltd.
ATWACC	After-Tax Weighted-Average Cost of Capital
Bcf/d	billion cubic feet per day
Board (the)	National Energy Board
CAPM	Capital Assets Pricing Model
CAPP	Canadian Association of Petroleum Producers
CBM	coal-bed methane
Centra	Centra Gas Manitoba Inc.
CGA	Canadian Gas Association
Coral	Coral Energy Canada Inc.
CPUC	California Public Utilities Commission
DCF	discounted cash flow
ECAPM	Empirical Capital Assets Pricing Model
Enbridge	Enbridge Pipelines Inc.
ERP	equity risk premium
Foothills	Foothills Pipe Lines Ltd.
FT	Firm Transportation
GJ	gigajoule
IT	Interruptible Transportation
LDC	local distribution company
M&NP	Maritimes & Northeast Pipeline Management Ltd.
Mirant	Mirant Canada Energy Marketing, Ltd.
MMcf/d	million cubic feet per day

Moody's	Moody's Investors Service
MRP	market risk premium
NEB (the)	National Energy Board
OGEM	Office of Gas and Electricity Markets
Ontario	Minister of Energy, Science and Technology for Ontario
PG&E/ El Paso	PG&E Energy Trading, Canada Corporation and El Paso Merchant Energy Canada
Quebec	Procureur général du Québec
ROE	rate of return on common equity
STB	Surface Transportation Board (U.S.)
Tcf	trillion cubic feet
TransCanada, the Company	TransCanada PipeLines Limited
TTF	Tolls Task Force
U.S.	United States
Vector	Vector Pipeline Ltd.
WACC	Weighted-Average Cost of Capital
WCSB	Western Canada Sedimentary Basin

Glossary of Terms

Alberta System	TransCanada’s natural gas transmission system in Alberta (formerly NGTL)
B.C. System	TransCanada’s natural gas transmission system in British Columbia (formerly ANG)
basis point	one-hundredth of a percentage point, used in reference to interest rates or return on equity
beta	a measure of the relative volatility of the return of a company’s shares to the market average
bond rating	a quality rating assigned by rating agencies as an indication of creditworthiness
business risk	the risk attributed to the nature of a particular business activity (as distinct from financial risk)
Capital Assets Pricing Model (CAPM)	a method used to estimate the cost of equity capital by comparing the return and risk characteristics of an individual company’s shares to the market average
capital structure	the way in which a business is financed - generally expressed as a percentage breakdown of the types of capital employed
Comparable Earnings Test	a comparison of the returns earned by companies with similar investment risk to that of the regulated utility’s operations
cost of service	the total cost of providing service, including operating and maintenance expenses, depreciation, amortization, taxes, and return on rate base
cross-subsidization	the charging of tolls which favours one class of customers at the expense of another; the provision of financial support to a company’s non-regulated operations by its regulated operations, or vice-versa
deemed capital structure	a notional capital structure used for rate-making purposes that may differ from the company’s actual capital structure
Discounted Cash Flow (DCF) Model	a method used for estimating the cost of common equity based on the current dividend yield of the company’s shares and the expected future dividend growth rate
embedded cost of debt	the historical cost of long-term debt outstanding

Equity Risk Premium (ERP) Model	family of methods used for estimating the cost of common equity which includes the CAPM and ECAPM - based on the premise that an investment in common equity carries greater risk than an investment in either debt or preferred shares and, therefore, requires a higher return, or premium, over that required for bonds or preferred shares
financial leverage	the proportion of debt in relation to equity in a utility's capital structure - the higher the long-term debt, the greater the financial leverage - shareholders benefit from financial leverage to the extent that return on common equity exceeds the interest costs on long-term debt
financial risk	the risk inherent in a company's capital structure - financial risk increases as the proportion of debt increases in relation to shareholders' equity
hub	a pipeline interchange where multiple pipelines interconnect and form a market centre
interest coverage ratio	the number of times that net income for a given year, before interest expense and income taxes, covers the annual interest expense - this ratio is one measure of the creditworthiness of a company
investment risk	the total of a company's business and financial risk
load factor	the ratio of the average throughput requirement to the maximum throughput requirement for the same period, usually expressed over a year and as a percentage (see also utilization rate)
S&P Settlement	Mainline 2001 and 2002 Service and Pricing Settlement
Mainline	TransCanada's Mainline natural gas transmission system
market-to-book ratio	the ratio of the market price of a common share to its book value
netback	the effective price to the producer of natural gas, based on the downstream market price less any charges for delivering the gas to market
Part IV of the NEB Act	the part of the *National Energy Board Act* dealing with all matters relating to traffic, tolls, and tariffs of gas and oil pipelines under the Board's jurisdiction
rate base	the amount of investment on which a return is authorized to be earned - it typically includes plant in service plus an allowance for working capital
revenue requirement	the total cost of providing service, including operating and maintenance expenses, depreciation, amortization, taxes, and return on rate base

RH-1-2001	TransCanada's 2001 and 2002 Mainline S&P Settlement Proceeding
RH-1-70	TransCanada's Tolls Proceeding for tolls effective 1 January 1970
RH-1-84	TransCanada's Tolls Proceeding for tolls effective 1 August 1984
RH-2-94	Multi-Pipeline 1995 Cost of Capital Proceeding
RH-2-95	TransCanada's 1996 Incentive Settlement Proceeding
RH-3-82	TransCanada's Tolls Proceeding for tolls effective 1 August 1982
Test Year	a 12 month period used for rate-making purposes
Tolls Task Force (TTF)	a joint industry task force initiated by TransCanada - its membership is comprised of a wide cross-section of the natural gas industry, including representatives of the producing, marketing, brokering and pipeline segments of the industry, provincial governments and local distribution and industrial end-use customers
utilization rate	system throughput divided by 100% pipeline design capacity (see also load factor)

Chapter 1

Introduction

1.1 Overview of the Application

On 6 June 2001, TransCanada PipeLines Limited (TransCanada or the Company) filed its 2001 and 2002 Fair Return Application (Fair Return Application) with the National Energy Board (the Board or the NEB). TransCanada requested that the Board determine a fair return on capital to be included in the calculation of 2001 and 2002 tolls for TransCanada's Canadian mainline natural gas transmission system (Mainline), as well as establish final tolls for 2001.

TransCanada submitted that its currently-approved return, based on a deemed capital structure of 30% common equity and the rate of return on common equity (ROE) resulting from the RH-2-94 Formula (i.e., 9.61% for 2001 and 9.53% for 2002), underestimates the fair return for TransCanada's Mainline and should, therefore, not be applied to the Mainline, effective 1 January 2001.

Instead, TransCanada proposed that the Board determine the Mainline's cost of capital for 2001 and 2002 utilizing an After-Tax Weighted-Average Cost of Capital (ATWACC) methodology. TransCanada sought approval of an ATWACC of 7.5%, adjusted in each of 2001 and 2002 for the difference between the market cost of debt and the embedded cost of debt of the Company (i.e., an ATWACC of 8.24% for 2001).[1] TransCanada submitted that a 7.5% ATWACC is justified by the level of business risk faced by the Mainline, and by the need for TransCanada to be able to raise funds on reasonable terms and conditions and maintain its financial integrity.

In the event that the Board declines to approve the proposed ATWACC methodology, TransCanada requested that the Board establish an ROE of 12.50% on a deemed equity component of 40% for the years 2001 and 2002, which is approximately equivalent to an ATWACC of 7.5%. If approved, TransCanada's request would increase the Mainline's 2001 Cost of Service by approximately $265 million, resulting in an approximate increase in the Eastern Zone Toll of 13 cents/GJ.

1.2 Background

Prior to 1995, the Board generally approved pipeline tolls on an annual cost of service forward test year basis. The cost of service is made up of four basic component groups: operating expenses; depreciation; taxes (including income taxes); and capital costs (rate of return requirements). The return on rate base is a major component of cost of service.

In 1994/95, the Board held the Multi-Pipeline Cost of Capital proceeding (RH-2-94) where it determined that business risk should be reflected in capital structure and approved appropriate deemed

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[1] Future ATWACC references are prior to any adjustment for the difference between the current market and the Mainline's embedded cost of debt, since comparisons with other companies were made at the market cost of debt. It should be noted that the actual adjusted ATWACC that TransCanada sought to have approved for 2001 was 8.24%.

common-equity ratios for specific companies. The Board also approved an ROE for a benchmark low-risk pipeline, based primarily on the Equity Risk Premium (ERP) methodology. The result was an ROE of 12.25% for the benchmark pipeline for the 1995 Test Year. Finally, the Board adopted a formula for adjusting the ROE on an annual basis (RH-2-94 Formula).

The RH-2-94 Formula is based on the following calculation. From the upcoming test year bond yield forecast, the Board subtracts the bond yield forecast used in the immediately preceding year. The difference is then multiplied by 0.75 to determine the adjustment to the ROE. The product is then added to the ROE approved for the preceding test year. Prior to 1997, the resulting ROE was rounded to the nearest 25 basis points. Commencing in 1997, the ROE resulting from the RH-2-94 Formula has not been rounded.

The RH-2-94 upcoming year bond yield forecast is determined by examining the November issue of *Consensus Forecasts* (published by Consensus Economics, Inc.) of the current year, and averaging the 3-months-out and 12-months-out forecasts of 10-year Government of Canada bond yields. To this figure is added the average spread between 10-year and 30-year Government of Canada bond yields, as calculated by averaging the published daily yield in the National Post throughout October of the current year.

The ROEs resulting from the RH-2-94 Formula have been as follows: 11.25% in 1996; 10.67% in 1997; 10.21% in 1998; 9.58% in 1999; 9.90% in 2000, 9.61% in 2001; and 9.53% in 2002.

During the 1996-1999 period, TransCanada's tolls were approved by the Board based on the terms of the Incentive Cost Recovery and Revenue Sharing Settlement (Incentive Agreement). The Incentive Agreement was a negotiated settlement between TransCanada and its stakeholders and incorporated a deemed common equity component of 30% and the ROEs resulting from the RH-2-94 Formula. The Incentive Agreement expired on 31 December 1999.

For the 2000 Test Year, the Board approved tolls for TransCanada, based on a one-year negotiated settlement, which incorporated the RH-2-94 Formula ROE on a deemed common equity component of 30%.

Prior to the start of 2001, TransCanada filed an application for interim tolls, to take effect 1 January 2001. The proposed interim tolls were based on the Revenue Requirement that was approved by the Board for 2000 and a forecast of Firm Transportation (FT) volume determinants for 2001. At that time, TransCanada indicated that it was in discussions with its stakeholders on a range of matters, including tolls for 2001, and that a delay in filing its 2001 tolls application would benefit the negotiating process. The Board subsequently approved interim tolls effective 1 February 2001 at the levels proposed by TransCanada.

On 3 May 2001, TransCanada filed its 2001 and 2002 Tolls and Tariff Application based on the terms of the two-year Mainline Service and Pricing Settlement (S&P Settlement). The S&P Settlement established a toll methodology and tariff provisions to be applicable for 2001 and 2002, and the components of the revenue requirement (other than cost of capital) to be used in the calculation of final tolls for 2001. The Board subsequently set that application down for an oral hearing (RH-1-2001), which took place between 18 September 2001 and 2 October 2001. On 15 November 2001, the Board issued its RH-1-2001 Decision approving the application and the terms of the S&P Settlement. In addition, the

Board indicated that the existing interim tolls would be extended into the 2002 Test Year pending a final decision on TransCanada's Fair Return Application.

On 6 June 2001, TransCanada filed its Fair Return Application with the Board. On 26 July 2001, the Board issued Hearing Order RH-4-2001 - Directions on Procedure. An oral procedural conference was held on 19 September 2001. The Board subsequently issued an amended Hearing Order which provided for an oral hearing to commence on 18 February 2002.

On 10 January 2002, the Board amended the RH-4-2001 Timetable of Events to extend certain deadlines concerning the filing of evidence and information requests and to postpone the start of the hearing to 19 February 2002.

On 15 February 2002, the Board decided to postpone the start of the oral hearing to allow sufficient time for intervenors to consider the Written Additional Reply Evidence filed by TransCanada. The oral hearing started on 27 February 2002, with the evidentiary portion concluding on 20 March 2002. Final Argument took place on 2 and 3 April 2002, with Reply Argument on 4 April 2002.

1.3 TransCanada's Consolidated Business Activities

In this proceeding, the Board is required to make decisions on cost of capital matters for TransCanada's Mainline, which is only one component of TransCanada's overall business enterprise. Although cost of capital is considered within the context of the Mainline as a stand-alone entity, in reality it is often necessary to consider factors which pertain to the consolidated entity. For example, many financial indicators (e.g., credit ratings, raw beta estimates) are only available for the consolidated entity and often provide the best estimates as to what these indicators would be for the Mainline as a stand-alone entity. For this reason, it is useful to provide an overview of the range of TransCanada's current business activities.

TransCanada's Consolidated Business Structure

TransCanada's current business interests consist mainly of gas transmission assets and electric power generating assets. In 2001, the revenues from continuing operations of the transmission segment were approximately $3.9 billion (74% of the total), compared with revenues from the power segment of approximately $1.4 billion (26% of the total).

The transmission segment of TransCanada's business includes the operation of the Mainline, the Alberta System and the B.C. System. It also includes TransCanada's investments in other natural gas pipelines located in Canada and the U.S. Figure 1-1 shows the location and provides certain key facts concerning these pipelines.

The power segment of TransCanada's business includes the construction, ownership, operation and management of power plants; the marketing of electricity; and the provision of electricity account services to energy and industrial customers. This segment operates in Canada and the northern tier of the U.S. Figure 1-2 shows the location and provides certain key facts concerning these facilities.

TransCanada's Mainline

The Mainline consists of approximately 14,900 kilometres of pipeline system which transports natural gas from the Alberta/Saskatchewan border eastward and connects with other natural gas pipelines in Canada as well as U.S. pipelines. In 2001, the Mainline accounted for approximately 47% of net earnings from TransCanada's transmission businesses.

TransCanada offers various natural gas transportation and hub services. The majority of gas is transported under FT contracts. Other transportation services include Interruptible Transportation (IT), Short-term Firm Transportation and Storage Transportation services. Hub services include Parking and Loan services and Multiple Handshake services.

1.4 List of Issues and Approach to Decision Making

In its amended RH-4-2001 Hearing Order - Directions on Procedure issued on 5 October 2001 (AO-1-RH-4-2001), the Board identified the following List of Issues.

1. Is the Rate of Return on Common Equity (ROE) formula, established by the Board in its RH-2-94 Decision, still appropriate for determining TransCanada's ROE?

2. Is the After-Tax Weighted-Average Cost of Capital (ATWACC) methodology an appropriate regulatory approach to determining cost of capital?

3. In the event the Board decides to adopt the ATWACC methodology, what is the appropriate ATWACC for TransCanada?

4. In the event the Board declines to adopt the ATWACC methodology and it is determined that the ROE formula is no longer suitable:

    a) What would be an appropriate methodology for determining return on capital and capital structure for TransCanada?

    b) In applying the above-determined methodology, what would be an appropriate return on capital and capital structure for TransCanada?

5. What is the appropriate effective date for changes to TransCanada's cost of capital?

After having considered the evidence adduced in the RH-4-2001 proceeding, the Board concluded that the following decision-making approach to the issues would be appropriate:

- review the legal framework regarding the determination of a fair return;

- consider the evidence relating to business risk, financial risk and investment perspectives as these matters impact on cost of capital;

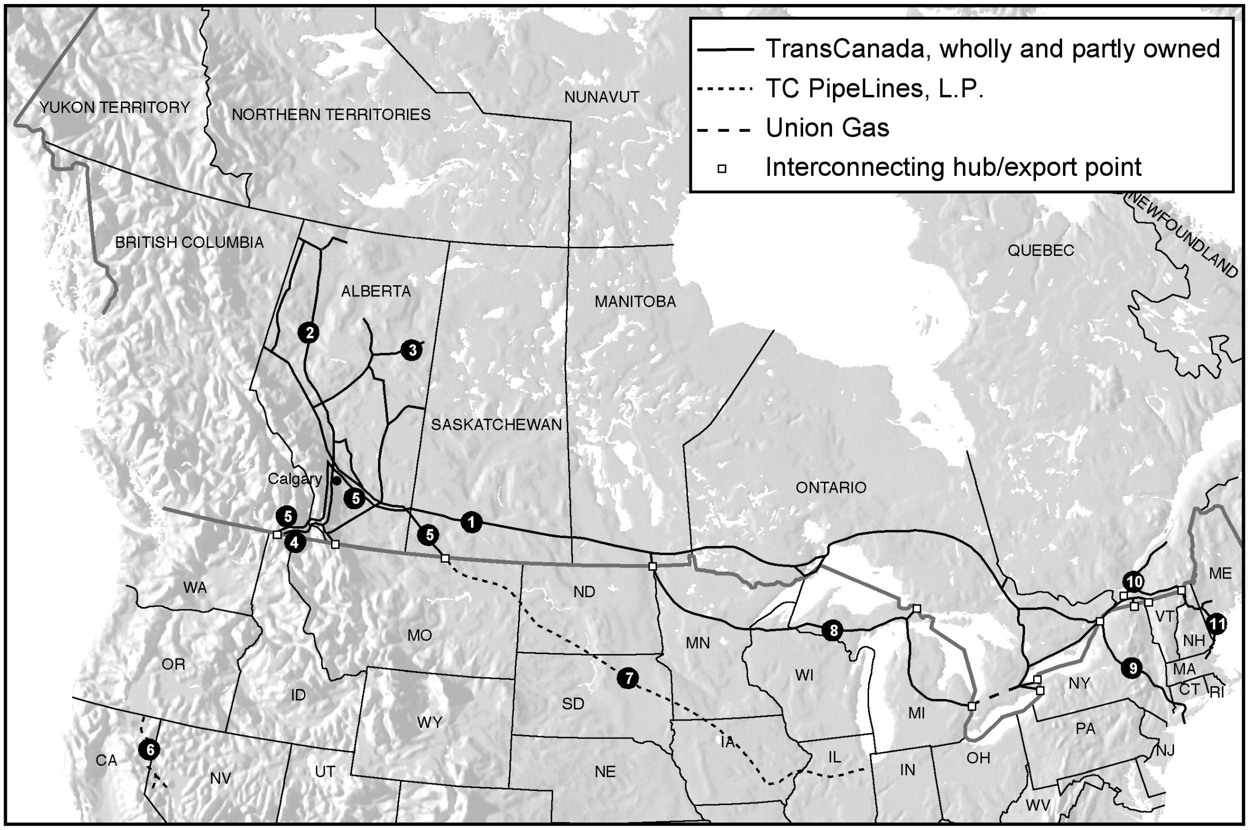
- consider the appropriateness of the applied-for ATWACC methodology (Issue 2);

- assess the Mainline’s cost of capital under the various methodologies considered appropriate (Issues 1, 3 and 4); and

- make a determination of the appropriate effective date for any changes to TransCanada’s approved cost of capital (Issue 5).

Accordingly, these Reasons for Decision have been structured to reflect these decision-making steps.

Figure 1-1
TransCanada's Gas Transmission Business



Saskatchewan, Manitoba, Ontario, Quebec

1. **Canadian Mainline**
   (100% TransCanada)
   Length: 14,900 km
   2001 Throughput: 6.7 Bcf/d

Alberta

2. **Alberta System**
   (100% TransCanada)
   Length: 22,500 km
   2001 Throughput: 11.1 Bcf/d

3. **TransCanada PipeLine Ventures Limited Partnership**
   (100% TransCanada)
   Length: 137 km
   2001 Throughput: 0.2 Bcf/d

British Columbia

4. **British Columbia System**
   (100% TransCanada)
   Length: 180 km
   2001 Throughput: 1.1 Bcf/d

British Columbia, Alberta, Saskatchewan

5. **Foothills Pipe Lines Ltd.**
   (50% ownership Foothills Pipe Lines Ltd.; TransCanada: 69.5%Saskatchewan segment; 74.5% Alberta segment; 74.5% B.C. segment)
   Length: 1,040 km
   2001 Throughput: 3.1 Bcf/d

Oregon, California, Nevada

6. **Tuscarora Gas Transmission Company**
   (1% TransCanada directly; 16.4% indirectly through TC PipeLines, LP)
   Length: 369 km
   2001 Throughput: 0.1 Bcf/d

Montana, North Dakota, South Dakota, Minnesota, Iowa, Illinois, Indiana

7. **Northern Border Pipeline Company**
   (10% TransCanada indirectly through TC PipeLines, LP)
   Length: 2,010 km
   2001 Throughput: 2.3 Bcf/d

Minnesota, Wisconsin, Michigan

8. **Great Lakes Gas Transmission Limited Partnership**
   (50% TransCanada)
   Length: 3,387 km
   2001 Throughput: 2.2 Bcf/d

New York, Connecticut

9. **Iroquois Gas Transmission System**
   (40.96% TransCanada)
   Length: 604 km
   2001 Throughput: 0.9 Bcf/d

Quebec

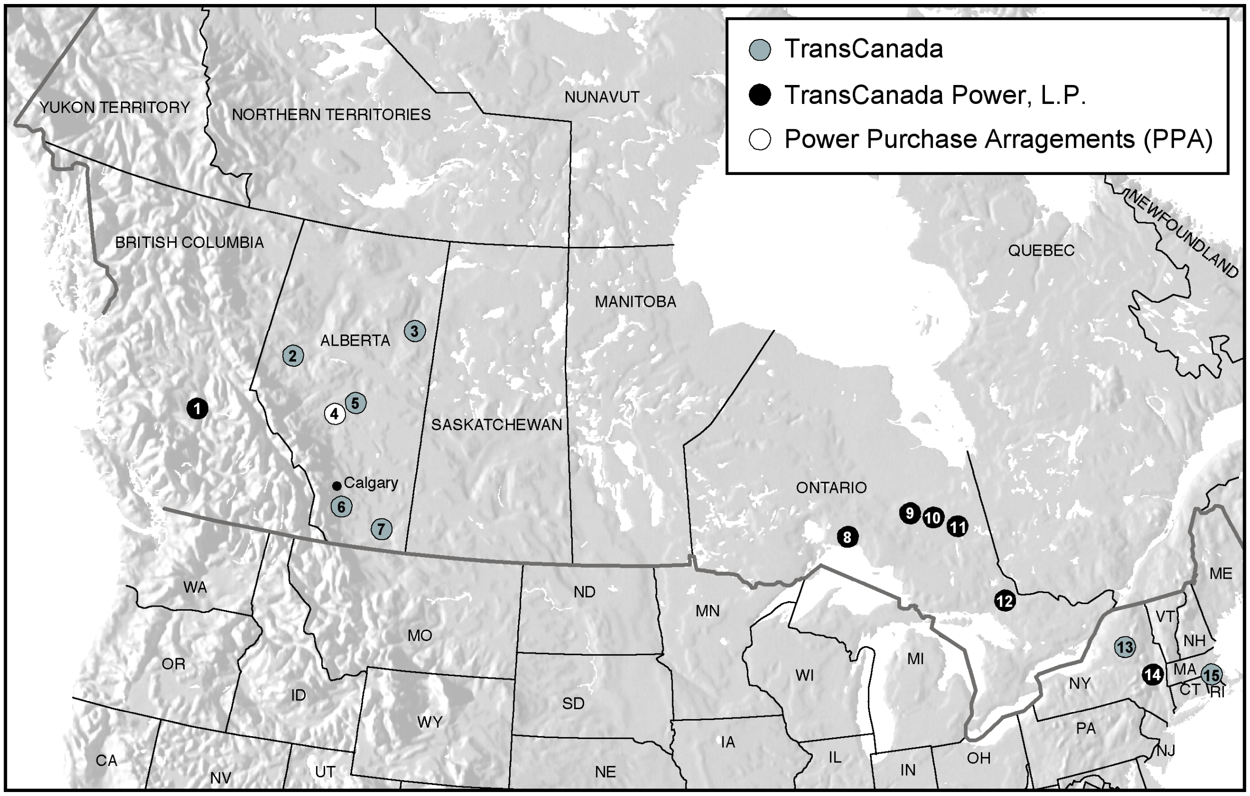
10. **Trans Québec and Maritimes Pipeline Inc.**
    (50% TransCanada)
    Length: 572 km
    2001 Throughput: 0.4 Bcf/d

Maine, New Hampshire

11. **Portland Natural Gas Transmission System**
    (33.29% TransCanada)
    Length: 471 km
    2001 Throughput: 0.1 Bcf/d

Source: TransCanada's 2001 Annual Report

Figure 1-2
TransCanada's Power Business



British Columbia

1. **Williams Lake***
   MW: 66
   Configuration: biomass
   Fuel: wood waste
   In-Service Date: April 1993

Alberta

2. **Bear Creek***
   (under construction)
   MW: 80
   Configuration: combined cycle cogeneration
   Fuel: natural gas and wood waste
   In-Service Date: Winter 2002

3. **MacKay River***
   (under construction)
   MW: 165
   Configuration: cogeneration
   Fuel: natural gas and produced gas
   In-Service Date: Fall 2003

4. **Sundance A***
   MW: 560
   Acquired: August 2000
   Effective Date: January 2001

   Sundance B
   (50% TransCanada)
   MW: 706
   Acquired: December 2001
   Effective Date: December 2001

5. **Redwater***
   MW: 40
   Configuration: cogeneration
   Fuel: natural gas and regeneration gas
   In-Service Date: December 2001

6. **Carseland***
   MW: 80
   Configuration: cogeneration
   Fuel: waste heat and natural gas
   In-Service Date: December 2001

7. **Cancarb***
   MW: 27
   Configuration: waste heat recovery
   Fuel: waste heat and natural gas
   In-Service Date: January 2001

Ontario

8. **Nipigon***
   MW: 40
   Configuration: enhanced combined cycle
   Fuel: waste heat and natural gas
   In-Service Date: May 1992

9. **Calstock***
   MW: 35
   Configuration: enhanced biomass
   Fuel: waste wood and waste heat
   In-Service Date: October 2000

10. **Kapuskasing***
    MW: 40
    Configuration: enhanced combined cycle
    Fuel: waste heat and natural gas
    In-Service Date: March 1997

11. **Tunis***
    MW: 43
    Configuration: enhanced combined cycle
    Fuel: waste heat and natural gas
    In-Service Date: January 1995

12. **North Bay***
    MW: 40
    Configuration: enhanced combined cycle
    Fuel: waste heat and natural gas
    In-Service Date: March 1997

New York

13. **Curtis Palmer***
    MW: 60
    Configuration: hydroelectrc
    Fuel: water
    In-Service Date: Curtis – 1910 (restored in 1985), Palmer – 1985

14. **Castleton***
    MW: 64
    Configuration: combined cycle cogeneration
    Fuel: natural gas and #2 fuel oil
    In-Service Date: March 1992

Rhode Island

15. **Ocean State***
    MW: 560
    Configuration: combined cycle
    Fuel: natural gas and #2 fuel oil
    In-Service Date: Unit 1 – 1990, Unit 2 – 1991

* TCPL Owns 100%
Source: TransCanada's 2001 Annual Report

Chapter 2

Legal Framework for Determining a Fair Return

2.1 Just and Reasonable Tolls

The Board's mandate when approving tolls is set out in Section 62 of the *National Energy Board Act* (NEB Act).

> All tolls shall be just and reasonable, and shall always, under substantially similar circumstances and conditions with respect to all traffic of the same description carried over the same route, be charged equally to all persons at the same rate.

In discharging this mandate, the Board determines the method and the factors to be considered in its assessment of whether tolls are just and reasonable on a case-by-case basis. Minimum information filing requirements to support a tolls application are reflected in Part X of the Board's *Guidelines for Filing Requirements, 22 February 1995*.

In its Fair Return Application, TransCanada asserted that the currently-approved return underestimates its cost of capital and is therefore unfair and does not result in tolls that are just and reasonable.

2.2 Legal Framework Regarding Determination of a Fair Return

At issue in this case is the determination of a fair return that will result in tolls that are just and reasonable.

Several parties cited jurisprudence regarding judicial interpretation of what constitutes a fair return.

2.2.1 TransCanada's Position

TransCanada cited three cases[1] to support its contention that a fair return is one that would meet the following two criteria:

- The company will be allowed as large a return on the capital invested in its enterprise as it would expect to receive if it were investing the same amount in other investments possessing an attractiveness, stability and certainty equal to that of the company's enterprise.

- The return should be reasonably sufficient to assure confidence in the financial integrity of the utility, and should be adequate, under efficient and economical management, to

[1] *Northwestern Utilities Ltd.* v. *Edmonton (City of)*, [1929] S.C.R. 186 (Northwestern Utilities); *Bluefield Water Works and Improvement Co.* v. *Public Utility Commission of West Virginia*, 262 U.S. 679 (1923); *Federal Power Commission* v. *Hope Natural Gas Company*, 320 U.S. 591 (1944).

maintain and support its credit and enable it to raise money on reasonable terms and conditions.

In respect of the role of the regulator, TransCanada referred the Board to the Northwestern Utilities case where the court stated: “[t]he duty of the Board [of Public Utility Commissioners of Alberta] was to fix fair and reasonable rates; rates which under the circumstances, would be fair to the consumer on the one hand, and which, on the other hand, would secure to the company a fair return for the capital invested”.

In Final Argument, TransCanada acknowledged that the determination of a fair return by the Board involves considerations relating to the pipeline and the customer. TransCanada also conceded that the amount of increase in the return is a relevant factor in determining what is fair.

2.2.2 Other Parties’ Positions

The Canadian Association of Petroleum Producers (CAPP) cited the BC Electric[1] case in which the Supreme Court of Canada had to interpret the “fair and reasonable” standard in terms of rates and return. In CAPP’s view, “[f]airness at its most basic level in relation to setting tolls comes down to an institutional arrangement by which the regulator has the legal responsibility to establish tolls that allow the utility the opportunity to recover its reasonable costs, including a reasonable return, incurred in providing the utility service and equally to prevent the utility from extracting monopoly profits at the expense of the customers of the utility service.”

The Canadian Gas Association (CGA) relied upon the interpretation of a fair return as enunciated in the Northwestern Utilities case and submitted: “in determining the appropriate allowed return on equity (ROE), fairness to ratepayers must always be balanced with fairness to shareholders.”

In the Industrial Gas Users Association’s (IGUA) view, the legal principle involved is that “TransCanada is entitled to a reasonable return; no more, no less.”

Centra Gas Manitoba Inc. (Centra) also relied upon the Northwestern Utilities case but emphasized the aspect that balance must be achieved between the fairness to shippers and the interests of the investors. Centra suggested that the Board’s mandate is to ensure resulting tolls are just and reasonable. In Centra’s view, the potential toll impact resulting from TransCanada’s proposal would be unfair to shippers and result in unjust and unreasonable tolls.

The Minister of Energy, Science and Technology for Ontario (Ontario) cited the Northwestern Utilities case and emphasized that a fair return to the Company on the one hand must be balanced against rates that are fair to the consumer on the other hand. Ontario also cited the Trans Mountain Pipe Line Co. case[2] to support the proposition that the Board has extremely wide discretion in the appropriate method and factors to be utilized in determining just and reasonable tolls.

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1 *British Columbia Electric Railway Co.* v. *British Columbia (Public Utilities Commission)*, [1960] S.C.R. 837.

2 *Trans Mountain Pipe Line Co.* v. *Canada (National Energy Board)*, [1979] 2 F.C. 118 at 121.

Views of the Board

In considering the legal framework associated with the determination of a fair return in the present case, the Board has looked to both prior judicial and Board consideration of the issue.

At the outset, the Board is mindful that it has no statutory obligation to specifically consider and establish a rate of return for companies it regulates. While the Board must establish tolls that are "just and reasonable", it has been established that:

> [The Board's] power in that respect is not trammelled or fettered by statutory rules or directions as to how that function is to be carried out or how the purpose is to be achieved. In particular, there are no statutory directions that, in considering whether tolls that a pipeline company proposes to charge are just and reasonable, the Board must adopt any particular accounting approach or device or that it must do so by determining cost of service and a rate base and fixing a fair return thereon.[1]

Indeed, the Board has previously determined tolls to be just and reasonable without specific identification of a rate of return on capital deployed in the enterprise.[2]

However, it has been the practice of the Board, in setting tolls, to establish a revenue requirement based upon the costs expected to be incurred in respect of regulated activities. In setting "cost based" tolls, and determining that they are just and reasonable, one cost that has been considered by the Board is the cost of capital - being the cost to the enterprise of deploying both debt and equity capital to its regulated activities.

In respect of the substantive principles to be considered in the determination of a fair return, the Board notes that the jurisprudence referred to by parties has previously been considered by the Board. Indeed, as early as the first proceeding under Part IV of the NEB Act, the RH-1-70 proceeding in respect of tolls to be charged by TransCanada, the Board quoted extensively from, considered and relied upon the jurisprudence referred to by parties in the present case.[3] In its December 1971 Decision,[4] the Board concluded as follows in respect of the framework for consideration of an appropriate rate of return for TransCanada:

> The Board is of the opinion that in respect of rate regulation, its powers and responsibilities include on the one hand a responsibility to prevent exploitation of monopolistic opportunity to charge excessive prices, and

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1 *British Columbia Hydro and Power Authority* v. *Westcoast Transmission Co.*, [1981] 2 F.C. 646 at 656 (C.A.).

2 National Energy Board correspondence of 15 June 2000 and Order TO-3-2000 approving an incentive toll settlement for Enbridge Pipelines Inc. for the years 2000 to 2004.

3 National Energy Board AO-1-RH-1-70 Reasons for Decision re. Trans-Canada Pipe Lines Limited (Tolls Application - Phase 1), 19 December 1971 at 6-6 to 6-9.

4 AO-1-RH-1-70 Reasons for Decision at 7-5 to 7-6.

> equally include on the other hand the responsibility so to conduct the regulatory function that the regulated enterprise has the opportunity to recover its reasonable expenses, and to earn a reasonable return on capital usefully employed in providing utility service. Further, it holds that to be reasonable such return should be comparable with the return available from the application of the capital to other enterprises of like risk. The Board accepts that, with qualifications, the rate of return is the concept perhaps most commonly used to project for some future period the ratio of return which has been found appropriate for the capital employed usefully by a regulated enterprise in providing utility service in a defined test period. The expectation is that, pending major changes, that ratio will provide a return, notwithstanding changes in the amount of capital invested, which will be fair both from the viewpoint of the customers and from the viewpoint of present and prospective investors.
>
> ...
>
> Maintenance of the financial integrity of the Applicant's regulated activities is a central concern in the determination of a fair and reasonable return on rate base. While this must necessarily reflect the cost of servicing the embedded debt and equity, in the present circumstances in which the Company is expanding and has already received a certificate of public convenience and necessity for the installation of facilities costing about $240 million, the capital attraction aspect of financial integrity has been given major weight in the Board's deliberations.

The principles referred to in the Board's RH-1-70 Decision suggest that a fair return ought to have the following attributes. Specifically, a fair or reasonable rate of return should:

- be comparable to the return available from the application of the invested capital to other enterprises of like risk (the comparable earnings standard);

- enable the financial integrity of the regulated enterprise to be maintained and permit incremental capital to be attracted to the enterprise on reasonable terms and conditions (the financial integrity and capital attraction standards); and

- achieve fairness both from the viewpoint of the customers and from the viewpoint of present and prospective investors (appropriate balance of customer and investor interests).

These principles are reflected in the application of the various accepted methodologies used to estimate the cost of capital, such as the Equity Risk Premium approach employed by the Board in the RH-2-94 Decision. The Board is of the view that these principles remain appropriate in the present case.

In respect of the appropriate balance of customer and investor interests, the Board notes that customer interest in rate of return matters relates most directly to the impact the approved return will have on tolls. The Board is of the view that the impact of the rate of return on tolls is a relevant factor in the determination of a fair return.

The Board is of the view that the determination of a fair return in accordance with these principles will, in conjunction with other aspects of the Mainline's revenue requirement, result in tolls that are just and reasonable.

Chapter 3

Business Risk and Investment Perspectives

3.1 Overall Business Risk

A key determinant of the cost of capital is the analysis of business risk related to a pipeline. This analysis is typically divided into an assessment of market risk, supply risk, regulatory risk and operating risk. In the *Views of the Board* in Section 3.1.6, the impact on business risk stemming from pipe-on-pipe competition is addressed separately. However, in presenting the views of parties, the impacts of pipe-on-pipe competition are discussed within market, supply, and regulatory risk to reflect how parties addressed this aspect of business risk.

Business risk has traditionally been reflected in the establishment of a deemed common equity ratio in a pipeline's capital structure. The business risk of the Mainline was last assessed by the Board in the RH-2-94 proceeding when the Board concluded that the Mainline was a low-risk pipeline and that a 30% deemed common equity ratio was appropriate at the time.

Overall Business Risk Assessment

TransCanada expressed the view that the business risk of the Mainline has increased significantly since 1994 and that it will continue to increase as the Canadian pipeline industry moves further along the path of competition from the traditional regulatory compact. TransCanada submitted that, since 1994, the Mainline's market, supply and regulatory risks have all escalated and that the Mainline now faces unprecedented competition for supply and market, with little or no ability to respond.

TransCanada submitted that it is the level of firm service contracts that ultimately determines the impact of the risks that the pipeline bears, and expressed the view that the Mainline's market, supply, operating, and regulatory risks could be mitigated by having long-term firm contracts with creditworthy shippers. It noted that the Mainline's average remaining firm contract term has declined from eight years in 1994 to five years in 2001 and that, by the end of 2000, 1.7 Bcf/d (48 10^6m^3/d) of the Mainline's 7.3 Bcf/d (207 10^6m^3/d) capacity had expired. TransCanada also noted that an additional 3.2 Bcf/d (91 10^6m^3/d) of contracted capacity will be coming up for renewal in the next five years.

CAPP expressed the view that the Mainline's business risk has not increased appreciably. CAPP continues to view the Mainline as a regulated monopoly transporter, and argued that there is approximately 6 Bcf/d (170 10^6m^3/d) of gas that is captive to the Mainline. CAPP further submitted that the risks arising from competition have not increased significantly and remain low.

CGA submitted that unbundling and competition have increased the benefits to customers, but have created uncertainty amongst investors. It claimed that, while competitive pressures may have reduced operating and administrative costs, those same pressures result in increased business risks and increase the cost of capital. CGA further submitted that analysts have concluded that the business risks faced by the Mainline are dramatically different and higher than those faced seven years ago and, as investors become more aware of these risks, they will expect higher returns.

IGUA submitted that cost recovery is fundamental to the assessment of business risk. Accordingly, the question is whether the risk that TransCanada will fail to obtain a full return of capital and a return on capital has materially changed. IGUA further submitted that the greatest weight should be accorded to short-term business risks as these risks can be more reliably assessed than long-term business risks, which become increasingly uncertain and speculative with time. IGUA concluded that there is no factual basis for suggesting that business risks have increased because TransCanada acknowledges that its short-term business risks remain unchanged.

Mirant Canada Energy Marketing, Ltd. (Mirant) submitted that business risk is related to the prospects for long-run cost recovery. Mirant expressed the view that long-run cost recovery is driven by supply and demand fundamentals and that these fundamentals have not changed.

Ontario submitted that there have been elements of risk reduction that TransCanada failed to address within its Fair Return Application. These elements include the increased probability that Arctic sources of supply could be connected to the Mainline, the fact that the Mainline now has a lengthy and sustained record of competing effectively in U.S. markets, and the emergence of natural gas as the fuel of choice for electricity generation. Ontario contended that these elements of risk reduction offset entirely TransCanada's increased business risk.

3.1.1 Market Risk

TransCanada's Position

Natural Gas Demand

TransCanada estimated that domestic Canadian gas demand will increase by 2.8 Bcf/d (78 10^6m^3/d) to reach nearly 11 Bcf/d (312 10^6m^3/d) by 2010. Canadian markets directly connected to the Mainline were expected to grow by about 900 MMcf/d (26 10^6m^3/d) by 2010. TransCanada projected total U.S. gas demand in the lower 48 states to increase by 16.5 Bcf/d (467 10^6m^3/d) to reach 76.7 Bcf/d (2 173 10^6m^3/d) or 28 Tcf (793 10^9m^3/d) per year by 2010. Demand growth in U.S. markets served by the Mainline was projected to increase over the same period by 3.6 Bcf/d (102 10^6m^3/d) in the Midwest and 2.7 Bcf/d (76 10^6m^3/d) in the Northeast.

While TransCanada expected growth in the markets it serves, it indicated that its share of the larger market is not guaranteed and that it will face significant competition to serve new demand requirements. In addition, TransCanada pointed to the potential for demand growth to switch to alternative fuels and noted that some of the incremental demand may be met by liquified natural gas (LNG) imports. TransCanada therefore disagreed with the view that it does not face increased business risk because its markets are expected to grow in the future. However, it agreed that, in most cases, the market would accept all of the gas that the Mainline is able to deliver.

TransCanada submitted that the issue of business risk relates to whether there is any uncertainty in demand and supply growth, and whether its ability to attract additional transportation volumes, or expand in the future, will be affected by this uncertainty. TransCanada expressed the view that the future demand growth for natural gas in TransCanada's markets is highly uncertain, particularly as it relates to gas-fired power generation. TransCanada submitted that demand uncertainty could affect the prospects for and timing of Arctic gas projects.

Impact of Competition

TransCanada submitted that it is now exposed to greater competition and that its market share is being eroded. The presence of new pipelines from both new and existing supply basins, and expanded pipelines from traditional U.S. basins, all contribute to the increased level of competition and risk faced by the Mainline.

TransCanada submitted that the effects of competition are very difficult to predict and that the Mainline faces considerable risk in the future. TransCanada claimed that regulated entities experiencing competition face two constraints on the rates they can charge. First, their rates are constrained by regulation; and second, their rates are limited by those of their competitors. TransCanada argued that this is a systemic problem that can leave regulated entities unable to earn their cost of capital for substantial periods.

TransCanada noted that approximately 50% of the Mainline’s capacity has been designed for export to the U.S., where it faces incremental competition from Alliance Pipeline Ltd. (Alliance) and Maritimes & Northeast Management Pipeline Ltd. (M&NP). With respect to the domestic market, TransCanada submitted that the Vector Pipeline Ltd. (Vector) has reduced the domestic market that is captive to the Mainline and that it could be further reduced by the proposed Cartier Pipeline. TransCanada claimed that its competitive situation is exacerbated by the fact that several of its large shippers, such as local distribution companies (LDCs), are also sponsors of competing pipelines. Further TransCanada noted that, in the near term, most of the opportunity for contract non-renewal rests with the Eastern LDCs.

TransCanada disagreed with parties who argued that the risk from Alliance has been realized since Alliance is operating at capacity. TransCanada claimed that an expansion of Alliance is a credible risk to the Mainline. TransCanada indicated that the Mainline’s utilization rate is lower than it would have been without Alliance and that, with the lower utilization rates, the resulting higher tolls may make it more economic for competitors to construct additional capacity from the Western Canada Sedimentary Basin (WCSB).

TransCanada acknowledged that, to the extent it could keep its tolls competitive with Alliance and Vector, the likelihood of an expansion of competing systems would be reduced. Should TransCanada’s Fair Return Application be approved, the combined Alberta System and Mainline toll to deliver natural gas to the Eastern Zone would be 7 to 10 cents higher than the comparable Alliance/Vector toll on a spot basis. However, due to the shorter contractual commitment required and the potential for its toll to decrease with increasing throughput, TransCanada believed that its toll would remain competitive.

TransCanada expressed the view that an increase to its return is consistent with the concept of competitive tolls and submitted that it has been artificially enhancing the competitiveness of the Mainline by selling the use of capacity for less than cost. TransCanada argued that the long-run sustainability of the Mainline requires tolls to be sufficient to recover all costs, including the cost of capital.

TransCanada noted that there have been clear benefits to producers, governments and the economy resulting from competition, such as the presence of additional pipeline capacity and the resulting price connectivity. However, it suggested that competition had increased its cost of capital and that this increase was a reasonable price for shippers to pay in light of the benefits.

Other Parties' Positions

Natural Gas Demand

CAPP noted there was general agreement that the demand for natural gas in North America is strong and growing. It noted that TransCanada projects North American demand to increase by 20 Bcf/d (567 10^6m^3/d) by 2010. CAPP expressed the view that the market works and that increasing demand will cause new natural gas supplies to be developed.

CAPP suggested that the North American pipeline network will remain well utilized into the future. In particular, CAPP noted the increased reliance of North American gas markets on pipelines coming from Canada. CAPP suggested that more pipeline capacity will be needed to meet the growing demand in the long-term. CAPP also suggested that the Mainline is well positioned to serve that demand and to share in the growth of the market.

IGUA submitted that the demand for natural gas is strong and continues to increase. IGUA indicated that there is considerable opportunity for increases in Mainline throughput due to incremental demand growth in Eastern and Northeast markets. IGUA expressed the view that power generation markets in Eastern Canada and the U.S. Northeast are expected to grow considerably and this is expected to have a sizable impact on the demand for western supplies.

Impact of Competition

CAPP compared the competitive risks that TransCanada claimed it is currently facing with those it claimed to be facing in 1994 and argued that the risks arising from competition remain low and have not increased significantly. CAPP noted that, in 1994, TransCanada claimed it was facing increased competition in the markets it serves, particularly in Eastern Canada and the U.S. Northeast. CAPP submitted that TransCanada was also seeking compensation in 1994 for the risk of increased competition and for the potential that it might lose significant load to competing regulated systems. CAPP also submitted that TransCanada had identified in 1994 the potential that it could face out-of-corridor competition from pipelines serving Eastern Canadian markets from the WCSB.

CAPP submitted that the Mainline is to be compensated for risk bearing and not for risk realization. CAPP argued that the only material change to the risks identified by TransCanada in 1994 was that one of the risks, the risk of losing load to out-of-corridor competition, has been realized. CAPP submitted that, in itself, the realization of this risk should not be used to increase the equity thickness in the Mainline's deemed capital structure. It suggested that when the Board approved a 30% equity ratio for the Mainline as compensation for its then prospective risks in 1994, the risks included the risk of increased competition and the risk of loss of load to competitors like Alliance and Vector.

CAPP submitted that TransCanada controls over 80% of the capacity leaving the WCSB and that there is a benefit to TransCanada in having this ownership interest. CAPP suggested that TransCanada was playing "ring around the rosy" by seeking to expand one pipeline, thereby increasing the risk of its other pipelines, and seeking to recover higher returns as a reward for the increased risk. In this connection, CAPP noted that TransCanada competed for the expansion opportunity that was captured by Alliance and submitted that TransCanada would still be seeking an increase to its cost of capital had it succeeded with its Viking Voyageur Project.

IGUA submitted that changes that have occurred since 1994 do not represent a significant change to the risk facing the Mainline. IGUA noted that the expansion of the market for pipeline services has resulted in some non-renewals and the creation of some excess capacity. As a result, IT and secondary capacity is now readily available. However, IGUA submitted that the existence of shorter contract terms does not change the Mainline’s market risk since the underlying market for natural gas remains relatively positive.

IGUA submitted that measures taken by TransCanada to mitigate its risks must be included in an assessment of the Mainline’s business risk. In this respect, IGUA submitted that the acquisition of the Alberta and B.C. Systems, the overall diversity of the Mainline, and TransCanada’s control of more than 80% of the ex-Alberta capacity should operate to mitigate risks associated with increased pipeline competition.

Mirant submitted that, in light of TransCanada’s market power, its ability to recover its costs is not at risk because of increased competition. Mirant cited TransCanada’s ability to increase its prices significantly over a short period without suffering any revenue loss as evidence of its market power. Mirant submitted that the existence of competition does not mean that TransCanada's prices are constrained by that competition. Mirant concluded that the long-run risk of under-utilization for TransCanada is not really an issue because of TransCanada’s ability to recover its costs by increasing its prices to captive customers.

Mirant disagreed with TransCanada’s claim that, as more pipelines are being built, it faces increased competition and greater risk. Mirant submitted that this ignores the market growth that the new pipelines are designed to accommodate. Mirant also disputed TransCanada’s claim that the proposed Independence and Millennium pipelines would increase the level of competition for the Mainline, as these pipelines would tend to reduce competitive pressures in markets served by the Mainline.

Mirant submitted that, given the current supply and demand fundamentals, there is virtually no probability that TransCanada will ever be under-utilized to the point where it has difficulty recovering its costs. Mirant further submitted that there is nothing in the market or regulatory structure that will lead to systematic building of excess capacity. Further, Mirant noted that facility additions are still subject to regulatory scrutiny to guard against market failure, and that there has been no significant change to the regulatory requirements for the approval of pipeline facilities.

Ontario submitted that one of the risks that TransCanada identified as having increased since RH-2-94, the risk of competition to move gas into the Eastern Canadian market from the WCSB, was previously identified and has been already accounted for in the Board’s RH-2-94 Decision. With respect to the risk of declining levels of FT contracts, Ontario submitted that it was taken into consideration in RH-2-94 and that the average contract term was actually longer than previously forecast. Ontario expressed the view that the toll increases resulting from TransCanada's request in this proceeding would place an extraordinary burden on TransCanada's shippers and make the Mainline significantly less competitive, leading to further reductions in Mainline volumes and yet higher tolls.

3.1.2 Supply Risk

TransCanada's Position

TransCanada submitted that its supply risk has increased because the Mainline must now compete for gas supply, as capacity expansions have resulted in take-away capacity exceeding available supply. TransCanada expressed the view that its ability to compete for supply is severely constrained by its position as the swing pipeline from the WCSB and submitted that the impact of having to compete for supply has been exacerbated by the performance of the WCSB.

Total Supply

TransCanada stated that the supply fundamentals in the WCSB have changed significantly over the last 10 years and that its supply risk has increased since 1994. Although the overall outlook for the WCSB remains positive, the increase in production has been accompanied by increased decline rates (from 8% in 1990 to 20% in 2000), decreased initial well productivity (from an average of 0.53 MMcf/d [15.0 10^3m^3/d] in 1990 to an average of 0.32 MMcf/d [9.1 10^3m^3/d] in 2000) and a decline in the reserves-to-production ratio or reserve life (from 20 years in 1990 to 9 years in 2000). As further evidence of the level of maturity of the WCSB as a supply basin, TransCanada stated that from 1991 to 1993 the drilling of 6000 wells grew production by 3.2 Bcf/d (91 10^6m^3/d), while from 1998 to 2000 the drilling of 20 000 wells grew production by only 1.1 Bcf/d (31 10^6m^3/d).

TransCanada based its outlook for the WCSB on an estimated ultimate potential reserve of 306 Tcf (8 669 10^9m^3/d) and on supply performance achieved over the past several years. Under this scenario, supply from the WCSB is expected to increase and peak at 19.6 Bcf/d (555 10^6m^3/d) in 2010 and 2011. TransCanada submitted that this outlook reflected a move over time by the industry to drill in the deeper, more costly, parts of the WCSB.

With respect to other sources of supply, such as coal-bed methane (CBM) from the WCSB or gas supplies from the Arctic, TransCanada developed what it considered a reasonable forecast given current knowledge. TransCanada's forecast assumed that CBM production from the WCSB will reach 0.5 Bcf/d (14 10^6m^3/d) by 2010 and 2.9 Bcf/d (82 10^6m^3/d) by 2025. As for Arctic supply sources, TransCanada foresaw supply from Alaska reaching 4.4 Bcf/d (125 10^6m^3/d) by 2017 and supply from the Mackenzie Delta reaching 1.8 Bcf/d (51 10^6m^3/d) by 2017. TransCanada submitted that it is well-positioned to transport Arctic gas, but noted that it faces competition from alternative proposals, such as a bullet line from Alaska to Chicago.

Competition for Gas Supply

TransCanada noted that it faces competition for gas supply from two main areas. The first is the competition between intra-basin and ex-Alberta requirements. The second is the competition among pipelines serving ex-Alberta requirements.

TransCanada indicated that, since 1990, gas demand in Western Canada has increased from 3.4 Bcf/d (96 10^6m^3/d) to 4.5 Bcf/d (127 10^6m^3/d) and that this rate of growth is expected to double over the next five years due to oil sands, electricity and other projects. This results in a reduction of gas supply available to the Mainline and other ex-Alberta pipelines.

With respect to ex-Alberta pipeline competition, TransCanada indicated that, since 1994, ex-Alberta pipeline capacity has increased by 3.4 Bcf/d (96 10^6m^3/d), resulting in increased competition for WCSB supply. TransCanada submitted that demand growth in markets not directly served by the Mainline, such as the Pacific Northwest and California, is generating a significant amount of competition for supply from the WCSB.

TransCanada submitted that the Mainline is the swing pipeline from the WCSB and that it will remain so, at least in the medium term, until refill is achieved. TransCanada indicated that available gas from the WCSB will first be allocated to firm contract holders on various pipelines, with the remaining gas sequenced based on the netbacks to the WCSB. TransCanada noted that the Mainline's major markets in Eastern Canada and the U.S. Northeast are farther from the WCSB than the markets served by competing pipelines from the basin. TransCanada submitted that relatively higher tolls reduce the netback available on the Mainline, relative to those expected on competing pipelines from the WCSB.

Throughput Forecast

TransCanada expressed the view that other pipelines leaving the WCSB will fill before it does, because of the existence of long-term contracts on competing pipelines and of generally lower netbacks available on the Mainline. In developing its supply forecast, TransCanada assumed that other pipelines would typically fill to 95% and that remaining available supply would flow on the Mainline.

TransCanada did not present its throughput forecast in the form of total throughput or capacity utilization. Rather, it was presented in the form of the number of years which would be required for the Mainline to achieve refill. Refill was defined as 95% of capacity. Multiple scenarios were developed, with the main variables being WCSB supply growth (ranging from 100 MMcf/d [2.8 10^6m^3/d] per year to 500 MMcf/d [14.2 10^6m^3/d] per year) and intra-Alberta demand growth (ranging from 70 MMcf/d [2.0 10^6m^3/d/] per year to 300 MMcf/d [8.5 10^6m^3/d/y] per year). The forecast also assumed that a maximum of 0.7 Bcf/d (20 10^6m^3/d) of CBM in 2022 and 1.4 Bcf/d (40 10^6m^3/d) of Arctic gas in 2012 would flow on the Mainline.

Under TransCanada's Base Case (i.e., growth in WCSB supply of 300 MMcf/d [8.5 10^6m^3/d] per year and Western Canada demand growth of 180 MMcf/d [5.1 10^6m^3/d] per year), the Mainline does not refill to 95% of capacity. Under TransCanada's nine most probable cases, the Mainline reaches 95% utilization in four of the cases within 8 to 13 years. Overall, TransCanada submitted that there is a substantial probability that the Mainline will not refill to the 95% level and that its utilization rate will remain unreasonably low, potentially affecting its ability to recover its investment in the long run. Although TransCanada defined refill as 95% utilization, it noted that it is reasonably comfortable operating within an 82% to 92% utilization range.

Other Parties' Positions

Total Supply

CAPP relied on projections published by the Energy Information Administration (EIA) and the NEB to paint a more optimistic outlook for the WCSB. CAPP noted that natural gas markets are currently volatile and, therefore, it may be some time before a more consistent supply response is observed. Nonetheless, CAPP suggested that, historically, the WCSB has proven itself numerous times and has met new performance levels over time, in response to market signals. CAPP pointed out that, since 1994, production from the WCSB has increased by 3.5 Bcf/d (99 10^6m^3/d) to reach the current level of approximately 17 Bcf/d (482 10^6m^3/d), which is in line with what had been forecast by the NEB in its December 1994 Supply and Demand Report. In addition, CAPP indicated that the industry is starting to move into the costlier, deeper natural gas areas of the WCSB, which require more lead-time. CAPP noted that CBM production is already occurring and submitted that TransCanada is well placed to transport future supplies from the Arctic.

IGUA relied on the Board's assessment of current and future supply potential to conclude that there was nothing in the future supply outlook which could reasonably be found to constitute a significant change in circumstances from those prevailing in 1994.

Ontario suggested that TransCanada's risk of having to rely on one basin as its source of supply has diminished since 1994. Ontario submitted that there is a higher probability of developing Arctic supplies and, therefore, the probability of TransCanada connecting to these new sources of supply is greater now than in 1994.

Le Procureur général du Québec (Quebec) submitted that TransCanada's supply risk has not changed significantly from 1994, given current forecasts of total WCSB production combined with the probability that new forms of gas production will offset any drop in production from conventional sources.

Competition for Gas Supply

CAPP argued that there has always been competition amongst a few pipelines for supply from the WCSB. CAPP indicated that, during RH-2-94, TransCanada was in competition with Alberta Natural Gas Company Ltd (ANG - now TransCanada's B.C. System), Foothills Pipe Lines Ltd. (Foothills) and Westcoast to transport gas from the WCSB. While the most recent addition from the WCSB has been due to Alliance, CAPP indicated that the B.C. System and Foothills remain the Mainline's two largest competitors on a volumetric basis, just as they were in 1994. CAPP submitted that approximately 6 Bcf/d (170 10^6m^3/d) of gas supply is captive to the Mainline.

CAPP noted that the Mainline has excess capacity and that TransCanada has previously indicated that such capacity will give it a competitive advantage in the future and that it is well positioned to take on additional supply. CAPP suggested that some excess capacity is a good thing for the industry, including TransCanada, as it ensures that the price of natural gas in Western Canada reflects the North American price, which in turn stimulates the development of supply.

IGUA noted that only the introduction of Alliance has prevented TransCanada from achieving a near monopoly of ex-Alberta infrastructure. IGUA did not consider that the addition of Alliance, which accounts for approximately 11% of total Alberta production of marketable pipeline gas, represents a serious threat to TransCanada's control of ex-Alberta pipeline capacity. IGUA noted that TransCanada is planning to increase the takeaway capacity from Alberta by expanding its Alberta and B.C. Systems to serve markets in the Pacific Northwest and California. IGUA submitted that this will exacerbate the situation of excess capacity from Alberta and reduce the amount of incremental production that will be available to flow on the Mainline.

Mirant noted that TransCanada's own evaluation of overall supply and market demand indicated that by 2012, the markets on both ends of the Mainline were projected to increase by amounts greater than what the whole Mainline system is today. Mirant did not consider plausible that there could be such significant incremental supply and demand at each end of the Mainline, while TransCanada would experience substantial excess capacity.

Throughput Forecast

CAPP submitted that TransCanada's throughput forecast was based on a premise that pipeline utilization is driven by the level of long-term firm contracts and that other pipelines leaving the basin will run in aggregate at 95% load factor because they are fully contracted. CAPP disputed this assumption and indicated that the historic norm for these pipelines has been approximately 90%. CAPP indicated that the only time that the take-away capacity has approached the 95% level of utilization in the last 20 years was during the three years when the basin was disconnected from North American pricing. CAPP noted that TransCanada has indicated that it does not want to see a return to those days and that it is comfortable operating within an 82% to 92% utilization range.

CAPP submitted that, due to the above-mentioned assumption, TransCanada's throughput forecast understates the utilization of the Mainline. CAPP noted that the utilization of the Mainline for 2001 was 84%, while the throughput study had forecast 74% utilization. CAPP also noted that the throughput study ignores the large volumes of IT service on the Mainline. Finally CAPP noted that other markets, such as California, have at times been the swing market.

Mirant submitted that TransCanada's throughput forecast underestimates the future utilization of the Mainline because it assumes that the Mainline will not be able to compete effectively against other ex-Alberta pipelines. The forecast also assumes that the Mainline will attract only 1.4 Bcf/d (40 10^6m^3/d) out of a projected 6 Bcf/d (170 10^6m^3/d) of Northern gas. Nonetheless, Mirant suggested that even if TransCanada's throughput forecast was correct, the Mainline's competitive position will keep improving over the forecast period since throughput is forecast to increase.

3.1.3 Regulatory Risk

TransCanada's Position

TransCanada submitted that the regulatory paradigm has changed and, as a result, it faces significantly increased competition. TransCanada stated that in 1994 it was subject to the traditional regulatory compact under which it was provided with an effective long-term franchise and the opportunity to recover all prudently incurred costs, including return of and on invested capital.

TransCanada argued that increased competition means increased risk. It noted that, while the regulatory regime will remain constant over the 2001-2002 test period so that the impact of contract non-renewals will not be visited on TransCanada, the risk that the regime could change is there in the long term. TransCanada suggested that the evolution to a competitive market where there may be winners and losers gives rise to the prospect of it being one of the losers.

TransCanada cited the approvals of Alliance and Vector, as well as some bypass pipelines to the Alberta System, as evidence of a move away from the traditional regulatory compact to a model where there is direct competition between pipelines. TransCanada suggested that recent Board decisions have been consistent with the view that the public interest is served by restructuring the pipeline industry from a monopoly to a competitive market. TransCanada claimed that it is now at greater risk of having to compete against NEB-approved greenfield pipelines and expansions for both existing and incremental supply and markets. TransCanada submitted that, under the traditional regulatory model, the certification of facility additions involved a public process with the requirement that an economic feasibility test be met to ensure the facilities would be used and useful. TransCanada indicated that the new paradigm of constructing pipeline capacity in advance of supply was not apparent at the time of the RH-2-94 hearing.

TransCanada submitted that there is evidence of uncertainty in the regulatory model to be applied to TransCanada in the future. It dismissed suggestions by intervenors that it should address changes in the regulatory model once future regulatory proceedings have resolved that uncertainty. TransCanada indicated that one must consider whether investors in TransCanada believe that the regulatory model to be applied to the Mainline will remain unchanged beyond 2002.

Other Parties' Positions

CAPP submitted that the current regulatory compact has remained unchanged since 1994. It viewed the primary features of the traditional regulatory model, such as cost of service protection, deferral accounts and rolled-in pipeline costs for expansions, as limiting the level of business risk faced by the Mainline.

With respect to the certification of pipeline facilities, CAPP submitted that the Board authorized Alliance and Vector on the basis that new capacity was needed to meet long-term market requirements and that there was sufficient long-term supply available. While the rate of supply growth may have been slower than expected, CAPP indicated that all the capacity will be needed in the longer term. CAPP noted that the NEB has not exposed TransCanada to any revenue impact from non-renewals arising from the construction of the additional capacity. CAPP further suggested that, in RH-1-2001, the Board indicated that any change in this policy will be made prospectively, taking into account all aspects of the regulatory model in a comprehensive manner, the appropriate balance between risk and reward, and the tools required for risk management. With respect to TransCanada's future business and regulatory model, CAPP suggested that TransCanada does not intend to alter the Mainline's risk profile post 2002.

IGUA submitted that the traditional regulatory compact remains unchanged and that TransCanada continues to be shielded from all risks associated with the under-utilization of pipeline capacity. It argued that TransCanada continues to be provided with an opportunity to recover all prudently incurred costs.

IGUA submitted that there is no basis to suggest that the Board will exercise its public interest mandate in a manner that will eventually lead to the complete offloading of the Mainline. IGUA further submitted that TransCanada will continue to have a full and complete opportunity to be heard when the Board considers applications for the construction of incremental pipeline facilities.

IGUA suggested that a reassessment of TransCanada's overall long-term business risks is untimely and premature because TransCanada's new business and regulatory model is on the horizon.

Coral Energy Canada Inc. (Coral) submitted that the Board's RH-1-2001 Decision made it clear that, absent imprudence on the part of TransCanada, no costs associated with system under-utilization will be visited on shareholders. Coral therefore disagrees with TransCanada's assertion that it is at greater risk from a regulatory perspective than it was in 1994.

Mirant disputed TransCanada's notion of franchise and noted that TransCanada competes with numerous other pipelines in both the WCSB and downstream markets. In Mirant's view, the purpose of regulation is not to protect TransCanada, but to protect toll-payers from TransCanada's market power. Prices are regulated at a cost-based level that mimics a competitive market outcome, and pipelines are given a reasonable opportunity to recover their prudently incurred costs. Therefore, TransCanada has never had the protection it claims to have lost and the true regulatory compact remains in place.

Mirant submitted that there have been no fundamental changes to the certification of pipeline facilities since 1994 and that there is no reason to believe that the certification process will lead to the construction of facilities not required by the market. Mirant argued that market participants are in a good position to make accurate judgments about the adequacy of supply and demand.

PG&E Energy Trading, Canada Corporation and El Paso Merchant Energy Canada (PG&E/El Paso) submitted that no change to the cost of capital methodology, or increase to the Mainline's allowed rate of return, is warranted because the Board determined in RH-1-2001 that it will continue to allocate the full cost of the pipeline to shippers using the traditional cost of service methodology.

Ontario disagreed with TransCanada's view that the regulatory compact provided the Mainline with a long-term franchise to ship natural gas from the WCSB to Eastern Canadian markets. Ontario submitted that, in the RH-2-94 proceeding, TransCanada requested that the Board include, in its assessment of business risk, the prospects of competition from the WCSB to transport gas to Eastern Canada. Ontario expressed the view that TransCanada does not face a measurable increase in regulatory risk as it continually earns its approved return on equity. While the regulatory framework may be different in the future, Ontario suggested that it would not be fair to compensate TransCanada in the interim for a risk of future regulatory risk.

3.1.4 Operating Risk

TransCanada stated that operating risk, which includes physical risk, refers to the technical and operational factors which may cause the pipeline to fail to operate as planned. TransCanada submitted that there have not been any material changes to its operating risk since 1994 and contended that the Mainline continues to operate in a safe and efficient manner.

TransCanada conceded that its operating risk may have decreased slightly due to the fact that it is operating at less than a 100% load factor, as suggested by CAPP, but indicated that this is offset by an increase in risk to the security of the Mainline.

IGUA agreed with TransCanada that there have been no significant changes to TransCanada's operating risk since 1994.

3.1.5 Other Aspects of Business Risks

Depreciation

CAPP submitted that, if the matter of supply was really as uncertain as TransCanada maintained, then it raises the issue of the appropriate level of depreciation rates. CAPP suggested that TransCanada negotiated higher depreciation rates for 2001 and 2002, in part on the premise that changing supply and market conditions created uncertainty in terms of the recovery of capital. CAPP noted that TransCanada indicated that it might bring forward a depreciation study and request a further increase in depreciation rates post 2002. CAPP contended that TransCanada is seeking double recovery by requesting an increase in its return now and potentially in its depreciation rates later, to reflect the same uncertainty.

IGUA submitted that it is the depreciation rate which operates to mitigate TransCanada's short-term risk of failing to obtain a full return of capital, and that the Mainline's S&P Settlement, which increased the depreciation rates for the 2001 and 2002 Test Years, precludes TransCanada from seeking increases in its equity return component for those years.

TransCanada acknowledged that a higher depreciation rate could justify a lower return. TransCanada argued that if it was in a position where its depreciation rate allowed cost recovery over the terms of the outstanding contracts, then that would be something of relevance in determining return. TransCanada disagreed with the suggestion that its negotiated depreciation rate increases in 2001 and 2002 should preclude the Board from determining a fair return to the Mainline.

Views of the Board

Business risk represents the risk attributed to the nature of a particular business. It is made up of all the risks to which the income-earning capability of an asset is exposed. The assessment of business risk needs to extend over the economic life of an asset and should not be limited to risk factors that could arise within a given test year. With respect to the Mainline, potential sources of short, medium and long-term risk therefore need to be considered.

The Board last assessed the Mainline's business risk as part of the RH-2-94 proceeding. Since that time, the natural gas pipeline industry has continued to evolve. While many of the changes that have taken place since 1994 were contemplated at the time of the RH-2-94 hearing and reflected in the Board's previous assessment of the Mainline's business risk, the weight that specific risk factors should be given may have changed and may need to be re-examined in light of this evolution. For example, the Board is of the view that, while the prospect of increased pipe-on-pipe competition was recognized in RH-2-94, this source of risk should be given more weight in assessing the Mainline's prospective business risk in light of a change in the probability of expansions of existing pipelines.

The evidence indicates that the Mainline is exposed to five main sources of business risk, which are pipe-on-pipe competition risk, market risk, supply risk, regulatory risk, and operating risk. These five sources of business risk are discussed in turn.

Pipe-on-Pipe Competition Risk

Pipe-on-pipe competition, which occurs both at the supply and market ends of pipeline systems, refers to direct competition for customers between pipelines. Directly, pipe-on-pipe competition impacts business risk by providing customers with alternative options to ship gas. Indirectly, it affects business risk by affecting market and supply risk.

One of the most significant changes to take place since 1994 has been an increase in competition for customers amongst pipelines, both out of the Mainline’s supply basin and into its market areas. The entry of new pipelines, as well as capacity additions on previously existing pipelines, has resulted in a market structure that has been described as “competition amongst the few”. The move towards a more competitive pipeline infrastructure implies an increase in business risk, although not all pipelines are necessarily affected to the same degree. At the time of the various decisions approving new pipelines, the Board recognized that these decisions would have the effect of increasing pipe-on-pipe competition and, in the near term, given the lumpiness of pipeline investment, could result in some temporary offloading from other pipelines’ systems, necessitating a period of time for refill. These benefits of competition were judged to outweigh this concern and to enhance the overall public interest.

In the Board's view, there has been no “new paradigm of constructing pipeline capacity in advance of supply” as suggested by one of TransCanada's witnesses. Although some of the factors assessed by the Board have reflected the natural evolution of the pipeline industry and the integration of competitive forces into the Board's decision making, the Board continues to assess each application in accordance with well-established principles and on the basis of the evidence before it. Upon a careful reading of the decisions approving new pipeline additions since 1994, it is clear that the Board has not adopted, as a “paradigm” that new pipeline capacity should be constructed in advance of supply nor has it approved any application solely on the basis that it would provide a competitive alternative to TransCanada.

For various reasons (e.g., lower producer netbacks relative to those achieved on competing pipelines, timing of FT contract expiry), the current situation of excess capacity from the WCSB has had a particularly notable impact on contracted firm capacity and throughput of the Mainline. Excess capacity has also acted as an incentive for some shippers to rely on short-term service, such as IT, instead of FT. Since 1994, the average outstanding FT contract term on the Mainline has been reduced from 8 years to 5 years in 2001.

The risk arising from the Mainline’s increased exposure to competition is, however, mitigated by a number of factors. The Mainline is the largest pipeline leaving the WCSB and a substantial portion of its customers (both end-users and producers) are captive and are expected to remain captive to the Mainline for the foreseeable future. TransCanada has increased its ownership interest in pipelines leaving the WCSB, which would tend to reinforce its market power. In this respect, the Board notes that a substantial share of capacity addition leaving the WCSB was constructed by pipelines in which TransCanada has an ownership interest. As the Mainline is depreciated, a lower absolute return on rate base will provide further flexibility in meeting the challenges of competition. As well, having some excess capacity may provide the Mainline with a competitive advantage for capturing incremental supply and may allow it to achieve throughput levels in excess of contracted capacity through the provision of short-term discretionary services. Overall, the Board is of the view that the Mainline is well-positioned to compete effectively and considers that long-term supply and demand fundamentals provide a reasonable opportunity for increased throughput on the Mainline.

To date, TransCanada's earnings have not been affected by the excess capacity or increased pipe-on-pipe competition since the Mainline has been allowed to increase its tolls with the result that it has earned its full Revenue Requirement. Nonetheless, there is some uncertainty over the Mainline's future ability to attract sufficient gas volumes, which could have an impact on its earnings. Specifically, the Mainline's ability to recover its full cost of service would be put in jeopardy if its throughput declined to a point where the resulting tolls exceeded what the market could bear. While there is no indication that such an outcome is to be expected, the possibility that it may happen appears to have increased since 1994. Accordingly, the Board is of the view that there has been an increase in pipe-on-pipe competition since 1994, which acts to increase the Mainline's prospective business risk.

<u>Market Risk</u>

Market risk may be defined as the risk that the Mainline's income-earning capability could be affected by the market demand for natural gas. It is affected both by the overall size of the gas market and by the market share achieved by the Mainline.

The level of competition in downstream markets for gas has increased, suggesting that there has been an increase in the Mainline's risk related to competition for market share. The change in market risk associated with competition for market share is already reflected in the Board's assessment of pipe-on-pipe competition risk.

North American demand for natural gas has increased and growth is forecast to be strong, particularly with respect to gas demand for electricity generation. Although other pipelines, existing or potential, may bring gas into areas served by the Mainline, the Board notes that TransCanada accepts that the downstream market can generally absorb all the gas that the Mainline can deliver. While there is uncertainty with respect to future demand growth, the market for natural gas in markets served by the Mainline is, in the Board's view, significantly more robust than was forecast in 1994, suggesting a reduction in the Mainline's risk related to the overall market for gas.

<u>Supply Risk</u>

Supply risk may be defined as the risk that availability of supply could impact on the Mainline's income-earning capability. Supply risk relates to the physical availability of natural gas.

In the Board's view, the overall supply of conventional gas from the WCSB will be a key determinant of the Mainline's future utilization rate. Since 1994, growing North American market demand has supported the growth in the supply of conventional natural gas from the WCSB and has led to supply capacity additions. Recently, however, the pace of supply growth has been more modest and has been accompanied by higher decline rates, lower initial production, and a reduction in reserve-to-production ratios. While many expect ongoing supply growth from the WCSB, some consider the recent drilling results to be an indication that the WCSB is maturing and that further growth may be more difficult to achieve. The Board also notes that the growth in intra-Alberta demand is forecast to remain quite robust, which will generally reduce the amount of supply available to all pipelines leaving the WCSB.

These factors are partially mitigated by an increase in the probability of development of frontier resources, as shown by the renewed interest in Arctic gas supplies from the Mackenzie Delta and Alaska, and the recent development of unconventional resources (e.g., CBM) from the WCSB. In 1994, TransCanada considered that it had only one supply basin (i.e., the WCSB) to draw on, given that frontier basins were expected to remain beyond reach. In this proceeding, the Board notes that TransCanada forecast that both Arctic gas and CBM will come on stream within the next 10 years.

On balance, it is the Board's view that uncertainty over the future growth potential of the WCSB and the increased intra-Alberta demand for gas suggests that, since 1994, there has been a modest increase in the degree of gas supply risk to which the Mainline is exposed.

<u>Regulatory Risk</u>

Regulatory risk is the risk to the income-earning capability of the assets that arises due to the method of regulation of the company. While the regulatory model has evolved and will continue to evolve and adapt to the changing needs of the pipeline industry and of its stakeholders, there is nothing to suggest that the Board will alter its approach of considering significant changes to the regulatory framework only on the basis of a comprehensive, balanced and prospective examination of all relevant factors. Although the regulatory regime has permitted increased competition, there has been no indication that it has increased the possibility that prudently incurred costs will not be recovered. For example, there has been an annual true-up through deferral accounts to collect real costs as incurred and the cost of under-utilized capacity has been borne by shippers. As a result, the Board is of the view that the regulatory model continues to provide the Mainline with a reasonable opportunity to recover its prudently incurred costs. In the Board's view, there has not been any significant change in the Mainline's overall regulatory risk.

The Board does not expect that the way in which TransCanada conducts its Mainline business will remain unchanged. The world in which the Mainline operates continues to evolve and the Board expects that TransCanada's management will be proactive in recognizing new sources of risk arising from this evolution and in finding means to mitigate such risk. In this respect, the Board is aware that TransCanada and its stakeholders are currently discussing a new business and regulatory model for the Mainline. The Board considers that it may be appropriate to re-assess the Mainline's prospective business risk resulting from any new regulatory framework, jointly with the consideration of proposed Tariff amendments.

Operating Risk

Operating risk is the risk to the income-earning capability that arises from technical and operational factors. The Board agrees with TransCanada that, while there may have been a slight reduction in operating risk due to the fact that Mainline is presently operating at a lower utilization rate, it would be offset by an increase in risk to the security of the Mainline.

Depreciation

The Board views the issues of cost of capital and depreciation as being related, but as addressing different factors. The primary goal of a depreciation rate is to reflect the assessment of the economic life of an asset. Business risk, which is a key determinant of cost of capital, addresses the probability that the utility may not be able to recover its prudently incurred costs over the economic life of the asset, whatever that economic life may be.

In RH-1-2001, the Board approved a modest increase in the Mainline's composite depreciation rate. This increase, however, did not materially change the assessed economic life of the Mainline and, in the Board's view, its impact on business risk and cost of capital is negligible.

Summary

Overall, the Board concludes that the level of business risk facing the Mainline has increased since 1994, although it remains low. The increased business risk primarily reflects an increase in the risk resulting from pipe-on-pipe competition and increased supply risk. Other sources of risk have not changed materially.

3.2 Investment Perspectives and Financial Risk

3.2.1 Investment Perspectives and Financial Risk

TransCanada's Position

From the perspective of TransCanada, a fair return is the competitive market return required to induce investment by TransCanada in its existing Mainline, in expansions of that system, in pipeline projects, and in TransCanada by both debt and equity investors. From the perspective of existing and potential investors, TransCanada stated that a fair return on the Mainline is required to encourage them to retain their existing investment in TransCanada and to provide new equity capital to TransCanada.

TransCanada stated that its ability to compete for capital and for expansion opportunities depends on a fair return to investors of the Company. If the return on an investment in TransCanada is less than the return on other investments of similar risk in the global marketplace, then TransCanada will be unable to attract capital on reasonable terms and conditions.

TransCanada argued that the combination of increased business risk, high leverage and low profitability leaves it with less capacity to make new commitments without overextending the Company.

TransCanada contended that a reduction of financial risk as well as greater profitability would increase the capacity of the Company to undertake significant incremental obligations. TransCanada suggested that the imminent northern pipeline opportunities exemplify the issue. TransCanada stated that competition for equity sponsorship is intense and that a northern pipeline project would involve very large capital expenditures, which would require strong credit and capital attraction capability. TransCanada submitted that for it to be able to participate fairly in the competition, it needs to have immediate access to capital markets on terms comparable to its competitors.

TransCanada indicated that there is no doubt it can raise capital at the present time but that the fairness issue relates to the price of doing so.

TransCanada defined investment risk as the total risk profile of a business which takes into account both the risk arising from the income-generating economic activity of the company (business risk) and the amount of leverage in the corporate capital structure (financial risk). TransCanada suggested that financial theory and corporate reality agree that an enterprise with relatively low business risk can be highly levered (i.e., carry a greater proportion of fixed obligations) and nonetheless generate an acceptable overall investment risk. As business risk increases, the level of acceptable leverage decreases, and the firm will be able to utilize less debt and other fixed obligations if it is to remain attractive from an overall investment risk perspective.

TransCanada indicated that it is currently rated A-mid by two credit rating agencies (Moody's Investors Service and Dominion Bond Rating Service) and A-minus by a third (Standard & Poor's). TransCanada stated that it has been able to maintain an "A" credit rating with high financial risk in the past because of its low business risk and that it must be able to maintain a solid "A" credit rating so that it can continue to attract capital on reasonable terms. However, TransCanada submitted that increased business risk on the Mainline will, over time, require a reduction in financial risk and an increase in interest coverage.

TransCanada indicated that it can no longer expect to enjoy the latitude with respect to interest coverage requirements that it has received in the past. TransCanada submitted that an interest coverage ratio below 2.0x would not justify an "A" rating in light of the Mainline's business risks going forward. However, in a response to a Board information request, TransCanada indicated that the 2.0x minimum is a judgement call. TransCanada also indicated that, in its view, it can retain an "A" credit rating with higher financial risk than that of most "A" grade credits.

In its evidence on Investment Perspectives, TransCanada contended that the Mainline's approved return is low relative to its other corporate investment opportunities and that it provides a disincentive to invest even in maintenance capital. In this regard, TransCanada stated that "If maintenance capital for the Mainline were considered as a stand-alone incremental investment, it would not be undertaken by TransCanada in the present cost of capital environment."

In response to a question from the Board, Mr. Kvisle, TransCanada's Chief Executive Officer, was asked if there was an inconsistency between the above statement and the Board's first Goal which is that NEB regulated facilities should be safe and perceived to be safe. Mr. Kvisle gave his assurance that the standards of safety and security of the Mainline will be maintained to at least their present level.

Other Parties' Positions

CAPP identified a number of positive signals that, in its view, suggest that TransCanada is earning its cost of capital and that its financial integrity is a non-issue for the purpose of this proceeding. These signals include: TransCanada's share price has more than doubled from its low prices in early 2000 to a level where the market-to-book ratio is now about 1.8x; TransCanada's shares have been recommended by brokerage analysts as a "top pick"; TransCanada has been able to maintain a solid "A" bond rating; the spreads at which TransCanada's debt instruments are trading have narrowed; and TransCanada has increased its dividend.

CAPP indicated that TransCanada's last public equity issue was in 1996, its last debt issue was in 1999 and that the Mainline has no financing needs in 2001, 2002, or the foreseeable future. CAPP argued that if TransCanada had a current requirement to raise money, it could do so on reasonable terms and conditions. CAPP suggested that because TransCanada has now shed its unproductive, unregulated businesses, its balance sheet has improved, and its ability to attract both debt and equity has been significantly enhanced.

CGA noted that debt coverage ratios have always affected the debt rating of a utility and are important determinants of access to, and cost of, capital. CGA argued that interest rate driven reductions in equity returns have been significantly more rapid than the declines in embedded costs of debt. As a result, the interest coverage ratios for Canadian utilities have been squeezed, which has led to a reduction in financing flexibility. As an example, CGA pointed to TransCanada's coverage ratio which had declined to 1.6x in 2000. CGA argued that, given the Mainline's business risk going forward, an interest coverage below 2.0x will no longer justify an "A" credit rating and will cause a significant number of institutional investors to sell TransCanada's outstanding debentures.

IGUA submitted that TransCanada's share price performance, the related market-to-book ratio, analyst recommendations, TransCanada's quarterly and annual reports to shareholders and its favourable credit rating, which has endured notwithstanding the disastrous events of 1999, separately and in combination should readily lead the Board to conclude that investors currently accept as reasonable the return on equity capital which the traditional methodology produces.

Centra noted that TransCanada was able to strategically position itself by divesting its unregulated businesses and operations that were causing serious balance sheet concerns. As a result, Centra contended that TransCanada currently possesses a very high credit rating. Centra also noted that TransCanada's share prices have doubled, the Company remains healthy, it has a market-to-book value of 1.8x, and it is a "top pick" share, which are all positive signals from the investors for 2001 and 2002.

Ontario contended that TransCanada's credit rating is stable and has been for years. Ontario noted that TransCanada's senior debentures are rated as "A" and are not being discounted by the market. As well, TransCanada's Mainline interest coverage, which dropped in 1998 and 1999, has now recovered to historic levels. Ontario noted Mr. Kvisle's statement that TransCanada's credit rating is more likely to be increased than decreased.

Quebec concluded that the recommendations of several high profile financial analysts, which are based on TransCanada's financial health, the stability of its credit rating, the value of its shares on the stock exchange, and its ability to borrow at preferred rates, suggest that TransCanada's shares are a very good investment.

3.2.2 Globalization of Financial Markets

TransCanada's Position

TransCanada suggested that significant changes in investor behaviour and capital markets have taken place since the Board's RH-2-94 Decision, particularly over the past two years. TransCanada noted that at the time of the RH-2-94 Decision, Canadian institutional and retail investors were essentially trapped into investing in Canada. However, since then, the use of synthetic structures to circumvent pension fund and Registered Retirement Savings Plan (RRSP) foreign investment limits, the subsequent increase in those limits permitted by the Federal Government, the increase in and access to information on U.S. stocks available on the internet and the significant increase in the ease of access and decrease in cost of trading U.S. securities, together with the dismal performance of the Canadian dollar, have all caused much greater interest and activity in U.S. stocks by Canadian institutional and retail investors.

TransCanada suggested that investors have choice and will look for the highest level of return vis-à-vis a given level of risk. Given the globalization of capital markets, TransCanada suggested that it is no longer appropriate to confine the estimate of a Canadian company's cost of capital to a Canadian context, because the Canadian economy and financial markets have become North American in context.

Other Parties' Positions

CAPP contended that it is not appropriate to consider the expectations of U.S. investors when discussing capital markets relative to TransCanada. While CAPP acknowledged that the Canadian and U.S. economies are linked, it argued that the Canadian and U.S. capital markets are not as fully integrated as TransCanada contends. CAPP suggested that for pipelines in particular, one of the differences between the two markets that has a significant effect is the different regulatory regimes. CAPP noted that over 85% of TransCanada's common shares are held by Canadians. CAPP claimed that because of withholding taxes and the absence of dividend tax credits, there is little foreign interest in a dividend yield play like TransCanada. CAPP submitted that Canadian stock market returns are currently, and have always been, lower than U.S. stock market returns. CAPP concluded that the Board's focus should remain on the expectations of the Canadian market.

CGA argued that because of globalization, the cost of capital for utilities, including TransCanada, cannot be determined accurately by looking only to the Canadian financial markets.

IGUA questioned whether the globalization in North American capital markets, on which TransCanada relies, constitutes a significant change in circumstances from those that prevailed when RH-2-94 was decided.

Mirant pointed out the small proportion of U.S. shareholders in TransCanada and noted that U.S. investors are disadvantaged when purchasing shares of TransCanada because of higher taxation of dividends and withholding taxes. These factors supported the view that Canadian market measures continue to be appropriate for the Mainline. Mirant acknowledged that the Canadian market is influenced by global market forces, but submitted that Canadian government rates already reflect this influence.

3.2.3 Alternative Investments

TransCanada's Position

In its Fair Return Application, TransCanada suggested that it is now apparent that investors require a higher return than that provided by the RH-2-94 Formula, and that the market presents alternative investments of similar risk that return significantly more.

TransCanada submitted that it is making investments today that have significantly higher expected returns than the Mainline, with business risks that are equal or less. TransCanada claimed that its power investments are expected to earn internal rates of return at, or above, the 7.5% ATWACC that TransCanada sought in its Fair Return Application. In this regard, TransCanada argued that its proposed ATWACC of 7.5% is 50 basis points less than the expected return on capital from its Curtis-Palmer hydro-electric investment, which TransCanada viewed as being of similar risk.

As examples of investments made by others in the pipeline sector, TransCanada noted that Alliance and M&NP both earn higher returns on capital than the Mainline and argued that these pipelines have lower business risks.

TransCanada noted that in the case of Alliance, the 12% rate of return on common equity was negotiated with shippers who signed 15-year contracts with renewal provisions. At the time that the 12% return was negotiated, the RH-2-94 Formula prescribed 11.25%. When Alliance went into service, the RH-2-94 Formula prescribed 9.90%.

TransCanada noted that M&NP was granted a 13% return on common equity for five years with the specific proviso that if circumstances changed in those five years, any interested party could request a change in the financial structure or the rate of return. TransCanada submitted that the overall risk of M&NP is lower than that of the Mainline because an investor in M&NP can expect significantly lower revenue variability than an investor in the Mainline due to the long-term contracts that underpin M&NP.

TransCanada claimed that, although oil pipelines have historically been allowed higher equity ratios than gas pipelines because of a perception of higher business risk, the risks of the Mainline and Enbridge Pipelines Inc.'s (Enbridge) system are very similar today and therefore warrant similar returns. TransCanada submitted that both TransCanada and Enbridge rely on the geological sustainability of the WCSB, neither system enjoys long-term contractual underpinning, and both face competition from other systems. TransCanada argued that Enbridge is the best example of an investment of similar risk that receives a significantly higher return than the Mainline and noted that its proposed ATWACC of 7.5% is within 15 basis points of the achieved return of Enbridge in 2001.

TransCanada noted that U.S. pipeline companies have higher allowed rates of return on equity and higher equity ratios than Canadian pipeline companies, including TransCanada. TransCanada acknowledged that most U.S. pipelines are subject to greater risk than TransCanada due to the fact that the competitive environment is more advanced in the U.S. than it is in Canada. TransCanada, however, submitted that U.S. pipelines have more control over their competitive destiny, since they were given tools in advance of competition. TransCanada contended that investors look at all of these factors when making investment decisions, and submitted that, on balance, many U.S. pipelines present a much more attractive risk/reward proposition than the Mainline does.

Other Parties' Positions

CAPP submitted that, in 1997, Alliance faced higher business risks than the Mainline and was willing to take on greater business risk than the Mainline. CAPP contended that these additional risks included construction cost risk, interest rate risk, throughput risk, shipper default risk, and significant start-up operating risk. CAPP noted that the risk associated with construction costs came home to roost and resulted in a reduction in the ROE from 12.0% to 11.25% for 15 years. For these reasons, CAPP argued that Alliance was able to negotiate a slightly higher return than that provided by the RH-2-94 Formula.

CAPP observed that while the Board awarded M&NP a 13% ROE on a 25% equity ratio for five years, it noted that the Board specifically referred to the substantially different circumstances facing M&NP at the time. These differences included the fact that it was a greenfield pipeline, its only sources of gas were new and untested fields, and it was serving an untested market in Canada. CAPP suggested these are clearly different circumstances than were facing the Mainline in 1997 and accordingly justified a higher return.

CAPP argued that the Mainline and U.S. pipelines are subject to significantly different business and regulatory frameworks, and these differences have an impact on the cost of capital. CAPP noted that U.S. pipelines take volume risk, are exposed to unutilized capacity cost risk, are exposed to take-or-pay cost risks, do not have annual true-up of their rates, and are exposed to regulatory lag. The Mainline, on the other hand, has no volume risk and unutilized capacity risk, tolls are trued up every year, and regulatory lag is not an issue.

CGA submitted that the Board's approved ROE must be set so that Canadian utilities are as attractive to Canadian investors as U.S. utilities are to Canadian and American investors.

IGUA submitted that TransCanada's contention that the Board should treat the corporation as an investor in the Mainline is unsupportable. IGUA contended that under the "stand-alone" principle, diversified investment opportunities are beyond the scope of the pipeline's business activities and are irrelevant. In addition, IGUA argued that TransCanada's position that its alternate investment opportunities be considered should be disregarded since this position is self-serving and lacks the requisite degree of independence. Rather, the Board should consider the perspective of arm's length debt and equity investors contemplating investing in a stand-alone NEB-regulated pipeline operated by an owner whose focus is confined to pipeline business activities.

Coral submitted that Alliance and M&NP do not have the same risk profile as the Mainline. Coral also noted that in both of these cases the equity returns were negotiated, not prescribed by the Board or any other regulator, and that the returns were negotiated by the sponsors largely with themselves in a situation where the sponsors had a lot of bargaining power. Coral argued that U.S. pipelines operate under a completely different business model than TransCanada and so are not comparable at all. In addition, Coral contended that the returns awarded by the Federal Energy Regulatory Commission (FERC) do not suggest anything about what is an appropriate return for TransCanada.

Mirant suggested that Alliance and M&NP are not of similar risk to the Mainline and noted that these two pipelines negotiated their equity returns with their shippers. As a result, Mirant suggested that these pipelines should not be considered as comparable investments to TransCanada. Mirant disagreed with the notion that Canadian and U.S. pipelines are comparable and noted that they operate under different business models and that the FERC's approach to cost of capital is different from the Board's approach.

Ontario adopted the arguments put forth by CAPP with respect to TransCanada's comparison of the Mainline to Alliance and M&NP. In addition, Ontario suggested that Alliance's use of new technology to transport gas at much higher pressure further increases Alliance's risk.

Views of the Board

Investment Perspectives

The Board is of the view that TransCanada's current financial position is strong and that the Mainline's ability to attract capital on reasonable terms and conditions is not in jeopardy. The Board also notes that TransCanada itself indicated that there is no doubt it can raise capital at the present time. In this regard, the Board also notes Mr. Kvisle's statement that he believes TransCanada's current credit rating is more likely to be upgraded than downgraded.

Financial Risk

Financial risk is the risk inherent in a company's capital structure. Financial risk increases as the proportion of debt increases in relation to shareholders' equity because debt interest and repayment obligations must be met irrespective of the overall profitability of the business.

The Board views interest coverage ratios as just one factor in assessing the Mainline's ability to meet its financial obligations and was not persuaded by TransCanada's claim that it must maintain an interest coverage ratio of at least 2.0x in order to maintain its "A" credit rating. The Board notes Moody's statement:

> The most fundamental requirement for accurately assessing credit quality is cash flow analysis. In general, the greater the stability and predictability of an issuer's future cash flow relative to claims on that cash flow, the stronger an issuer's credit quality, the lower the expected loss associated with its debt securities, and the higher its rating.[1]

The Board is of the view that the Mainline will be able to maintain its stable and predictable cash flows in the future.

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[1] Moody's Investors Service - Special Comment - Financial Ratio Medians for Global Investment Grade Corporations - January 2001, page 6.

Globalization of Financial Markets

The Board acknowledges the continued trend towards globalization of capital markets. However, the Board is persuaded that Canadian market data continue to be the most relevant benchmark in assessing the cost of capital for Canadian pipelines. In particular, the Board notes that less than 15% of TransCanada's common shares are held by foreign investors outside of Canada, almost all of which are held in Canadian portfolios of U.S. money managers.

Alternative Investments

The Board notes some disagreement between parties regarding the appropriateness of considering investment alternatives internally available to the corporation, as opposed to investment alternatives generally available to third party investors. In this respect, the Board is of the view that the relative risk and potential return associated with alternative uses of capital by the corporation may be a relevant consideration in assessing the Mainline's cost of capital. However, in this instance, the evidence provided was limited, due to confidentiality concerns, and its nature did not allow parties to test the claims made by TransCanada with respect to the relative business risk and cost of capital associated with these projects. The Board therefore gave little weight to this evidence.

The Board does not consider the evidence pertaining to comparisons of the Mainline with Alliance, M&NP and Enbridge to be particularly meaningful in establishing a fair return for the Mainline. The Board notes that TransCanada's evidence on relative business risk only considered certain factors and ignored several others. More importantly, the returns achieved by these pipelines reflect a different risk-reward environment and different circumstances. A more meaningful comparison would require a thorough assessment of the relative business risks of each pipeline as well as an estimation of what each pipeline's cost of capital might be absent differences in circumstances.

In the Board's view, the evidence does not support TransCanada's argument that the higher returns on U.S. pipelines make them such attractive investment opportunities that TransCanada will face difficulties in accessing capital for its Mainline operations. Neither TransCanada's share price performance since 2000, nor the views expressed by investment analysts, support the contention that the Mainline's overall return has encouraged, or is encouraging, investment in TransCanada to migrate to U.S. pipelines. The mere existence of higher returns is not sufficient to conclude that U.S. pipelines will become the investment of choice for investors who otherwise would invest in TransCanada. Any discussion on alternate investment opportunities should include an assessment of the similarities and differences of those alternatives and the impact that existing differences are likely to have on investment decisions. In that context, the Board notes that the higher level of risks facing U.S. pipelines and the different risk-reward business models on which they operate may well be a disincentive for certain investors. Further, the Board accepts the evidence that, due to more favourable tax treatment of dividend income, comparison with returns available on U.S. pipelines may be of limited relevance to the typical investor in TransCanada, who is Canadian.

Security and Safety

The Board's first goal is that NEB-regulated facilities should be safe and perceived to be safe. In its evidence, TransCanada had stated that if maintenance capital were considered as a stand-alone investment, it would not be undertaken in the present cost of capital environment. With respect to the possible inconsistency between the Board's goal and this evidence, the Board notes TransCanada's assurance that the standards of safety and security of the Mainline will be maintained to at least their current level and expects TransCanada to act accordingly.

Chapter 4

Cost of Capital Issues

4.1 After-Tax Weighted-Average Cost of Capital (ATWACC) Methodology

TransCanada requested that the Board adopt the ATWACC methodology and submitted that ATWACC is the appropriate means to determine a fair return for the Mainline. TransCanada sponsored the evidence of Drs. Kolbe and Vilbert, who relied on the ATWACC methodology and recommended an ATWACC of 7.5% for the Mainline.

TransCanada indicated that the ATWACC methodology is routinely used by businesses operating in non-regulated environments as a tool to evaluate investments and submitted that use of the ATWACC methodology in a regulatory setting is justified by a move towards a more competitive pipeline environment.

ATWACC is more commonly referred to as the Weighted Average Cost of Capital (WACC). ATWACC is a weighted average of the required returns for each source of capital (i.e., common equity, debt, preferred equity). The ATWACC is regularly used in capital budgeting and in the calculation of applicable discount rates in respect of investment opportunities.

In the context of this application, TransCanada relied on the estimated ATWACC of various comparable companies to assess the Mainline's cost of capital. The ATWACC methodology is therefore a "top-down" approach, since comparisons are done on a weighted average cost of capital basis. This contrasts with the traditional "bottom-up" approach, in which comparisons are done for the various sources of capital.

4.1.1 TransCanada

Justification for the ATWACC Approach

Drs. Kolbe and Vilbert submitted that the overall cost of capital should be the key to determining a fair rate of return. Drs. Kolbe and Vilbert maintained that the cost of equity capital is influenced by leverage, and that using the ATWACC approach would improve the likelihood of accurately estimating the cost of equity that goes with a given capital structure. Dr. Kolbe expressed the view that the ATWACC approach is more in accord with the modern understanding of how capital markets work, that it reduces the chance of mistakes, that it gives companies the incentive to minimize the overall cost of capital to customers (i.e., that the approach is self-enforcing), and that it saves regulatory resources. He submitted that the ATWACC approach would automatically ensure consistency between the cost of equity and the capital structure used to calculate it. Dr. Kolbe also submitted that, in the absence of pure plays, the traditional "bottom-up" approach creates more difficulty than the ATWACC approach, since the traditional approach requires that both a cost of equity and a capital structure be decided, often without reference to companies solely in the business in question.

Drs. Kolbe and Vilbert suggested that there are multiple minimum-cost capital structures. They pointed to non-interest costs associated with debt, such as the risk of financial distress and the loss of flexibility, to support the view that additional debt beyond a modest level does not carry benefits large enough to offset its costs. The fact that companies in the same industry display widely varying capital structures, often with the most profitable firms having the least debt, was used as support for their opinion that there is a broad middle-range of capital structure where the precise level of debt has little impact (i.e., that the ATWACC is flat over a broad middle range of capital structures).

Drs. Kolbe and Vilbert noted that it is not possible to measure the middle range precisely, but that the best evidence on its location for a line of business comes from the observed range of a non-distressed sample of firms within that line of business.

Estimates of the Mainline's ATWACC

Because there are no samples of pure-play pipeline gas transmission companies, Drs. Kolbe and Vilbert relied on three benchmark samples. Dr. Vilbert used a sample of Canadian-regulated utilities (excluding TransCanada), a sample of U.S. companies that own regulated natural gas pipelines, and a sample of U.S. gas local distribution companies (LDCs). He also reported results for a sub-sample of Canadian regulated utilities with operations in the natural gas industry. In selecting the firms for his samples, Dr. Vilbert applied a series of screens intended to ensure that the sample firms provided a close match to the risks that TransCanada faces in its Mainline gas transmission business. For example, firms in his U.S. gas transmission sample had to derive at least 10% of their total revenues from pipeline operations.

Dr. Vilbert then evaluated the market-value capital structures of the companies in his sample. Dr. Vilbert relied on 5-year averages for his ERP analysis and on single-point estimates for his Discounted Cash Flow (DCF) methodology. This analysis included an assessment of each of the firms' cost of common equity (the approach and models are described in Section 4.2.2), and an assessment of the firms' market cost of debt and preferred shares. Dr. Vilbert estimated the market cost of debt for A-rated utility bonds to be 7.12% in his June Evidence, and 6.71% in his November Evidence. In estimating the cost of capital for each of the firms in his sample, Dr. Vilbert relied on TransCanada's estimated marginal tax rate of 41.7% in his June Evidence (applicable for 2001), and 38.3% in his November Evidence (applicable for 2002).

The average estimated ATWACC for each of Dr. Vilbert's samples are summarized in Table 4.1 (June Evidence) and Table 4.2 (November Evidence). The average market-value common equity ratio (5 year average) of the sample, along with the sample sizes, are also shown for reference. In his June Evidence, Dr. Vilbert focussed on the results based on the short-term ECAPM (2%) and the long-term ECAPM (0.75%), and concluded that the overall cost of capital (ATWACC) point estimate for each of his three samples was 6.75% for the Canadian Utility sample, 7.75% for the U.S. Gas Transmission sample, and 7.25% for the U.S. Gas LDC sample (see Table 4.1).

Dr. Kolbe submitted that the ATWACC estimated for Dr. Vilbert's Canadian Utility sample underestimates the Mainline's cost of capital, as it does not reflect the move towards a more competitive environment. He also submitted that pipelines are of greater business risk than LDCs, and concluded that the Mainline's ATWACC is in the range of 7.25% to 7.75%, with a midpoint of 7.5%.

Dr. Kolbe submitted that the 7.5% ATWACC should be adjusted to reflect the difference between the embedded and market cost of debt and preferred shares for the Mainline. He estimated this adjustment at 74 basis points for 2001, which was based on the Mainline's actual level of funded debt, as opposed to the applied-for deemed capital structure. This adjustment resulted in a recommendation of an ATWACC of 8.24% to be recovered in tolls.

Table 4-1
TransCanada's Sample Firms' Average ATWACC - June Evidence

Sample Average (%)	Canadian Utility Sample				U.S. Gas Transmission Sample		U.S. Gas LDC Sample	
	Full Sample		Gas Sub-Sample					
	All[1]	25 BP[2]	All[1]	25 BP[2]	All[1]	25 BP[2]	All[1]	25 BP[2]
Short-Term Rates								
CAPM	6.4	6.4	6.4	6.4	7.1	7.5	6.4	6.6
ECAPM (1%)	6.6	6.6	6.6	6.6	7.4	7.7	6.7	6.9
ECAPM (2%)	6.8	6.8	6.8	6.8	7.7	8.0	7.1	7.2
ECAPM (3%)	7.0	7.0	7.0	7.0	7.9	8.2	7.4	7.6
Long-Term Rates								
CAPM	6.6	6.6	6.6	6.6	7.3	7.3	6.7	6.8
ECAPM (0.75%)	6.8	6.8	6.7	6.7	7.6	7.6	7.0	7.1
ECAPM (1.75%)	6.9	6.9	6.9	6.9	7.8	7.8	7.3	7.4
Dr. Vilbert's Mid-Point Estimate	N/A	6.75	N/A	6.75	N/A	7.75	N/A	7.25
Common Equity Ratio								
Average:	45	-	45	-	62	-	60	-
Range:	30-62	-	30-62	-	52-71	-	40-72	-
Sample Size								
Short-Term Rate	8	8	5	5	7	5	9	7
Long- Term Rate	8	8	5	5	7	7	9	8

1 Average of all companies in the sample.
2 Average of those companies whose cost of equity estimated by the CAPM is larger than their cost of debt plus 25 basis points.

In his November Evidence, Dr. Vilbert gave primary weight to long-term estimates, and concluded that the overall cost of capital point estimate for each of his three samples was 6.5% for the Canadian Utility sample, 7.5% for the U.S. Gas Transmission sample, and 7.0% for the U.S. Gas LDC sample (see Table 4.2). These numbers led Dr. Kolbe to reduce his estimate of the Mainline's ATWACC by 0.25% to 7.25%. As a result of a decline in interest rates, the amplitude of the adjustment to reflect the difference between the embedded and market costs of debt and preferred shares for the Mainline increased to 96 basis points for 2001, resulting in an adjusted ATWACC of 8.21%.

Although Dr. Kolbe revised his estimate of the Mainline's ATWACC between his June and November Evidence, he submitted that the Board should not make adjustments to the allowed rate of return for changes in the cost of capital that may have taken place since the original filing, as it would retroactively deny compensation for the cost of capital investors required as the rate period began.

Table 4-2
TransCanada's Sample Firms' Average ATWACC - November Evidence

Sample Average (%)	Canadian Utility Sample				U.S. Gas Transmission Pipeline Sample		U.S. Gas LDC Sample	
	Full Sample		Gas Sub-Sample					
	All[1]	25 BP[2]	All[1]	25 BP[2]	All[1]	25 BP[2]	All[1]	25 BP[2]
Short-Term Rates								
CAPM	5.3	5.6	5.3	5.7	6.2	6.8	5.3	6.2
ECAPM (1%)	5.6	5.8	5.6	5.9	6.5	7.0	5.7	6.5
ECAPM (2%)	5.8	6.0	5.8	6.2	6.8	7.2	6.1	6.9
ECAPM (3%)	6.1	6.2	6.1	6.4	7.1	7.4	6.6	7.2
Long-Term Rates								
CAPM	6.3	6.3	6.2	6.2	7.4	7.4	6.7	6.8
ECAPM (0.75%)	6.4	6.4	6.4	6.4	7.6	7.6	7.0	7.1
ECAPM (1.75%)	6.7	6.7	6.7	6.7	7.9	7.9	7.4	7.6
Dr. Vilbert's Mid-Point Estimate	N/A	6.5	N/A	6.5	N/A	7.5	N/A	7
Common Equity Ratio								
Average:	46	-	44	-	63	-	66	-
Range:	32-61	-	32-61	-	52-72	-	52-73	-
Sample Size								
Short-Term Rate	8	2	5	1	7	4	7	1
Long- Term Rate	8	8	5	5	7	7	7	6

1 Average of all companies in the sample.
2 Average of those companies whose cost of equity estimated by the CAPM is larger than their cost of debt plus 25 basis points.

4.1.2 Regulatory Precedents

TransCanada acknowledged that no regulatory body in North America has, to date, adopted an ATWACC methodology as a means to determine the cost of capital of a regulated utility. Dr. Kolbe indicated that he previously recommended the approach on at least two occasions: to the Alberta Energy and Utilities Board (AEUB) regarding TransAlta Utilities Corporation (TransAlta) ; and to the California Public Utilities Commission (CPUC) regarding Pacific Gas and Electric Company.

The AEUB, in its Decision U99099 regarding TransAlta, decided to rely primarily on traditional methodologies, but adopted the ATWACC approach as a subordinate methodology. However, the AEUB declined to use market-value weights, as recommended by Drs. Kolbe and Vilbert, and relied instead on book-value weights in its calculation of ATWACC.

The CPUC, in its Decision 99-06-057 concerning Pacific Gas and Electric Company, declined to adopt the ATWACC methodology and expressed the view that the evidence presented did not give it confidence that ATWACC was more accurate or useful than other methods with which it was comfortable.

TransCanada noted that the U.S. Surface Transportation Board (STB) uses the ATWACC methodology to determine a benchmark that defines a notional healthy railway operating without regulation, as required by Congress. This benchmark, in turn, is used to evaluate the health of the U.S. railway industry. The STB also uses ATWACC occasionally when adjudicating disputes between shippers and carriers to assist in the determination of a discount rate and to determine an opportunity cost in settling abandonment disputes.

While the STB uses the ATWACC methodology to establish a benchmark, CAPP pointed out that the STB does not use ATWACC for rate setting, since the STB no longer establishes rates for railways.

In response to an undertaking given during the cross-examination of Drs. Kolbe and Vilbert, TransCanada filed documents regarding the use of the ATWACC methodology by regulators in Australia and the United Kingdom.

The Australia Competition and Consumer Commission (ACCC) uses a variation of ATWACC to calculate rate of return. TransCanada acknowledged that the ATWACC methodology used by the ACCC differs from that proposed by Drs. Kolbe and Vilbert. In particular, the ACCC makes explicit adjustment for the effect of the Australian dividend tax credit. CAPP pointed out that the ACCC explicitly addresses capital structure, recognizes the tax-deductibility of debt, and uses the ATWACC approach as part of a multi-year price cap regulatory scheme. IGUA submitted that the ATWACC used by the ACCC appears to be calculated as a derivative of an approach analogous to the traditional methodology.

The Office of Gas and Electricity Markets (OGEM) in the United Kingdom regulates on the basis of price controls rather than rate of return on rate base. TransCanada indicated that the OGEM nonetheless considers rate of return standards in establishing prices. Dr. Kolbe submitted that a variation of the ATWACC approach was used for this task, primarily as a check on rates of return.

4.1.3 Other Parties' Positions

CAPP and IGUA jointly sponsored the evidence of Drs. Booth and Berkowitz, who submitted that there are no advantages to the ATWACC approach and that it is based on an incorrect assumption that the ATWACC is constant over a broad middle range of capital structures. They argued that the ATWACC approach buries the contentious issue of the fair return on equity, and expressed the view that the establishment of a capital structure is important and should reflect the regulated utility's level of business risk. Drs. Booth and Berkowitz submitted that the ATWACC approach requires a large number of contentious estimations (i.e., estimating the cost of debt, cost of preferred shares, corporate tax rate, market value capital structure and cost of equity).

CAPP noted that the average equity thickness of the samples selected by Dr. Vilbert to be used as benchmarks was significantly higher than the 30% equity component traditionally used by the Mainline. CAPP also suggested that the use of market-value weights in ATWACC calculations is circular, because stock price increases result in increases in the equity market weight and in the estimated ATWACC.

CAPP submitted that the ATWACC approach is not appropriate for setting the Mainline's cost of capital as too much discretion over the Mainline's capital structure is left to the management of the pipeline. CAPP expressed the opinion that the ROE resulting from the ATWACC methodology would be unreasonably high relative to the risks faced by the Mainline. CAPP pointed out that TransCanada's

ATWACC proposal does not address how to adjust, on a yearly basis, the differences between the embedded cost of debt and the market cost of debt without a proceeding.

CAPP suggested that the ATWACC proposal is inconsistent with the concept of flow-through income taxes and that it would require changes to the treatment of Allowance for Funds Used During Construction (AFUDC), to the method of using deferral accounts, and to the reporting of information through the Board's Surveillance Reports. In this respect, TransCanada acknowledged that the ATWACC approach would involve a different treatment of AFUDC, but submitted that the adjustment was minor and should not warrant rejection of the ATWACC methodology. TransCanada disputed CAPP's concern with respect to the consistency of ATWACC with flow-through taxes.

CAPP viewed the traditional cost of capital approach as being more appropriate than the ATWACC approach, as it is simpler to apply, transparent and explicitly addresses capital structure and return on equity.

IGUA recommended that the Board reject the ATWACC approach. In the alternative, IGUA submitted that the ATWACC approach should be introduced gradually and that the specific ATWACC level should be derived from the application of the traditional methodology.

IGUA submitted that the assumption that ATWACC may be flat over a broad range of capital structure is debatable and is less likely to hold if the companies being compared are not of identical risk. IGUA also submitted that, in the absence of a sample of pure-play pipelines, adequate data to calculate an accurate ATWACC for the Mainline does not exist, and suggested that the use of sample groups of companies which are dissimilar to the Mainline in terms of business activity and equity thickness lead to excessive estimates of cost of capital. IGUA expressed concerns with the use of market-value weights in light of fluctuations in the market prices of equity and noted that ATWACC requires more steps than the traditional methodology. IGUA echoed CAPP's concern with respect to income tax allowances under ATWACC. IGUA submitted that it would not be in the public interest for the Board to abandon its mandate to determine an appropriate capital structure and ROE for the Mainline.

Mirant sponsored the evidence of Dr. Chua, who submitted that the ATWACC approach proposed by TransCanada would produce less reliable estimates of the cost of capital than the ERP approach. Dr. Chua noted that TransCanada's Fair Return Application relied on the unproven assumption that there is a flat ATWACC over a broad-range of capital structures, and that absent such a relationship, the claim of consistency between the estimated cost of equity and capital structure is not valid. Dr. Chua also noted that, if there is a U-shaped curvature in the relationship between ATWACC and capital structure, then only sample firms with comparable capital structures would produce unbiased estimates of the cost of capital. He suggested that the need to estimate the market cost of debt for each sample firm results in a potential estimation error that is not present with the ERP approach.

Dr. Chua indicated that, under the ATWACC approach, sample firms should be comparable in terms of business risk, taxation, compensation of managers, investment opportunities, levels of free cash flow, and probability of default, whereas the ERP approach only requires comparability in terms of systematic risk. Dr. Chua also indicated that switching from the ERP approach to the ATWACC approach has the potential to create an incentive to increase leverage. Finally, Dr. Chua submitted that the U.S. gas transmission firms do not have business risks comparable to that of the Mainline.

Both Ontario and Centra submitted that the proposed ATWACC methodology should be denied. In the event the Board adopted the ATWACC methodology, Ontario and Centra recommended an ATWACC of 6.0%, which represents the mid-point estimate for Dr. Vilbert's Canadian Utility sample, as calculated in his November Evidence.

Ontario submitted that the adoption of ATWACC would remove the Board's regulatory oversight of the capital structure of the regulated utility, yet offer no demonstrable benefit in return. Ontario expressed the view that the ATWACC approach is not simpler than the traditional approach and requires a significant level of judgement and data. Ontario pointed to the differences in estimated ATWACC between TransCanada's June and November Evidence in support of the view that the ATWACC approach appears to be quite fluid.

Quebec submitted that the use of the ATWACC methodology should be denied, and noted that in practice, the ATWACC approach is used mainly to assess the internal return on long-term projects in an attempt to determine their value as an investment, not to establish the return for regulated companies.

Views of the Board

Regulatory Precedent

The fact that regulators have never endorsed a particular method of regulation should not lead automatically to its rejection. Indeed, it is through the incorporation of innovative approaches to regulation that the Board has evolved over time to accommodate the changing structure and operation of pipelines in Canada. Nevertheless, before adopting a change from a traditional approach, it is important that the Board examine the components, assumptions and results of any proposed new approach. Not only must the new methodology meet the tests set out in legislation and jurisprudence, it should be seen to be a better alternative.

With respect to the proposed ATWACC methodology for determining a fair return, the Board would ideally liked to have seen its acceptance by some of TransCanada's stakeholders. This would have given the Board some comfort that the ATWACC concept and its application to TransCanada's tolls were understood by and acceptable to at least some of those parties impacted by TransCanada's tolls. As discussed in other sections of these Reasons for Decision, this was not the case and no intervenor supported TransCanada's ATWACC proposal. The opposition came from many sectors of TransCanada's stakeholders including producers, shippers, end-users, and two provincial governments.

In summary, in the Board's view, the lack of regulatory precedent is not a barrier to the adoption of a new approach to regulation. However, in the absence of such precedent and in the absence of any support from stakeholders for the proposed change, the Board's analysis of the proposal should show a clear benefit to be derived from the new approach when compared with previous acceptable approaches.

TransCanada's ATWACC Methodology

The Board has carefully considered the evidence provided with respect to the appropriateness of using the ATWACC methodology in determining the cost of capital for the Mainline and has not been persuaded that the approach offers significant advantages.

The evidence provided did not persuade the Board that the range of capital structures over which the ATWACC may be assumed to be essentially flat is likely to be broad with respect to the long-haul Canadian gas transmission industry. All but two firms contained in TransCanada's ATWACC samples had an equity thickness far in excess of that currently deemed for the Mainline or observed in the consolidated balance sheet of TransCanada. Absent compelling evidence to the contrary, which was not presented, the Board considers that such divergences are more likely reflective of differences in business risk or investment circumstances rather than providing support for the view that there is a broad range over which the ATWACC is flat.

The Board is concerned that TransCanada has not provided a practical means to adjust for differences in business risk between the Mainline and the firms in the ATWACC samples. The Board is cognizant of the fact that sample firms are seldom perfectly comparable. Nevertheless, every effort should be made to identify differences and attempt to quantify how such differences impact the estimated cost of capital. Unlike the traditional approach which explicitly acknowledges differences in relative risk through the establishment of a deemed capital structure, the ATWACC methodology proposed by TransCanada is not as transparent and appears more likely to magnify the impact on cost of capital estimates stemming from differences in business risk. This concern is particularly applicable to the firms contained in the U.S. Gas Transmission sample. The firms in this sample derive the bulk of their revenues from lines of business, such as energy commodities and energy services, that are generally considered to be substantially riskier than natural gas pipeline operations. Therefore, the Board has little confidence that these firms' estimated cost of capital is reflective of the cost of capital associated with their pipeline operations, or that of the Mainline.

The Board also considers that sample firms should face comparable investment circumstances to ensure they face similar cost-minimizing incentives in adopting their capital structure. In this respect, the Board has not been persuaded that significant reliance on U.S. firms would be appropriate, even if they were of similar business risk. This concern remains despite the primary reliance of TransCanada's expert witness on Canadian parameters in estimating the market cost of debt, cost of equity and applicable income taxes for both his Canadian and U.S. samples. Simply applying Canadian parameters to U.S. firms does not adequately recognize the fact that these firms potentially face substantially dissimilar investment circumstances and thus cost of capital. To a lesser extent, this concern also applies to certain firms in the Canadian Utility ATWACC sample.

In the context of this application, which is limited to establishing a fair return for the Mainline, the Board is of the view that there would be limited value in using the ATWACC approach as a check on the appropriateness of the awarded returns. Should a party be interested in performing such a comparison, it could easily be computed by combining the Board's allowed return on equity and capital structure to an estimate of the market cost of debt and tax rate. Similarly, TransCanada's ability to rely on the ATWACC methodology as a means to assess potential investments is not affected by the Board's rejection of the ATWACC methodology for establishing a fair return for the Mainline.

In the Board’s view, any impacts of the proposed ATWACC methodology on matters such as the booking of AFUDC and the calculation of flow-through taxes would be minor and were not a factor in the Board’s rejection of the ATWACC methodology.

4.2 Rate of Return on Common Equity

Several witnesses made recommendations with respect to the cost of equity capital for the Mainline. These estimates, along with selected parameters, are summarized in Table 4.3.

Table 4-3
Recommended Rate of Return on Common Equity and Selected Parameters

	TransCanada				**CAPP/ IGUA**	**Mirant**	**RH-2-94 Formula**	
	Vilbert/Kolbe		**Schink**		**Booth/ Berkowitz**	**Chua (2002)**	**2001**	**2002**
	Application	**Additional Evidence**	**Application**	**Additional Evidence**				
Return on Equity	12.50[2]	12.50[2]	12.5	12.25	8.5	8.28-9.25	9.6	9.5
Risk-free rate:								
Long Canada	5.95	5.85	-	-	6.00	5.63	5.73	5.63
Short Canada	5.00	3.40	-	-	-	-	-	-
Short U.S.[3]	-	-	5.08	5.02	-	-	-	-
Market Risk Premium:								
Long Canada	6.00	6.00	-	-	4.50	6.00	N/S[1]	N/S[1]
Short Canada	7.00	7.00	-	-	-	-	-	-
Short U.S.[3]	-	-	N/S[1]	N/S[1]	-	-	-	-
Beta Coefficient[4]	0.58 0.55 0.40	0.50 0.58 0.35	0.74	0.6	0.41-0.60	0.44	N/S[1]	N/S[1]
Implied Risk Premium								
Long Canada	6.55[2]	6.65[2]	-	-	2.50	2.65-3.62	3.88	3.90
Short Canada	7.50[2]	9.10[2]	-	-	-	-	-	-
Short U.S.[3]	-	-	7.42	7.23	-	-	-	-

1 Not specified.
2 Levels shown are applicable only to a capital structure of 40% equity/60% debt.
3 Dr. Schink’s benchmark of the risk-free rate is more appropriately referred to as the “long-run expected short-term U.S. 90-day Treasury rate”.
4 These series of numbers for Dr. Vilbert refer to the average for each of his samples (i.e., Canadian Utilities, U.S. Gas Transmission Companies, and U.S. Gas LDCs).

4.2.1 TransCanada - Equivalence to ATWACC Proposal

TransCanada’s alternative proposal for an ROE of 12.50% on a common equity ratio of 40% was derived from and is equivalent to its ATWACC proposal. Specifically, an ATWACC of 7.5% is equivalent to an ROE of 12.52% on a 40% common equity ratio (TransCanada’s applied-for deemed capital structure). It is also equivalent to an ROE of 15.35% on a 30% common equity ratio (the Mainline's previously-approved capital structure), or to a 9.61% ROE (the ROE resulting from RH-2-94 Formula for 2001) on a 61.3% common equity ratio.

Drs. Kolbe and Vilbert submitted that, whether or not the Board adopts the proposed ATWACC methodology, it nonetheless needs to adjust the Mainline's ROE to reflect differences in leverage between the market-value capital structures and costs of equity of their sample companies and the Mainline's deemed capital structure. Drs. Kolbe and Vilbert criticized the ROE estimates of Drs. Booth and Berkowitz and of Dr. Chua for failing to perform such an adjustment. Drs. Kolbe and Vilbert indicated that, under the assumption that the corporate tax advantage of debt had its maximum possible value, the minimum ROEs that would reflect a consistency to their samples is 11.72% on a 30% deemed common equity ratio, and 10.57% on a 40% deemed common equity ratio.

4.2.2 TransCanada - Cost of Equity Estimates for ATWACC Sample

As an input in estimating the ATWACC of the firms in his samples, Dr. Vilbert provided estimates of the cost of equity capital for the firms in the ATWACC samples. Dr. Vilbert relied primarily on the ERP approach, although he also relied on the DCF methodology as a secondary approach for his U.S. samples. The estimates of the cost of equity capital for the ATWACC samples are summarized in Table 4.4 (June Evidence) and Table 4.5 (November Evidence). These tables present the average cost of equity estimated for each ATWACC sample.

Table 4-4
ATWACC Samples Cost of Equity Estimates - June Evidence

Sample Average (%)	Canadian Utility Sample				U.S. Gas Transmission Sample		U.S. Gas LDC Sample	
	Full Sample		Gas Sub-Sample					
	All[1]	25 BP[2]	All[1]	25 BP[2]	All[1]	25 BP[2]	All[1]	25 BP[2]
Equity Risk Premium								
Short-Term Rates								
CAPM	9.1	9.1	9.2	9.2	8.9	9.5	7.8	8.2
ECAPM (1%)	9.5	9.5	9.6	9.6	9.3	9.8	8.4	8.7
ECAPM (2%)	9.9	9.9	10.0	10.0	9.8	10.2	9.0	9.3
ECAPM (3%)	10.3	10.3	10.4	10.4	10.2	10.6	9.6	9.8
Long-Term Rates								
CAPM	9.4	9.4	9.5	9.5	9.3	9.3	8.4	8.5
ECAPM (0.75%)	9.8	9.8	9.8	9.8	9.6	9.6	8.8	8.9
ECAPM (1.75%)	10.2	10.2	10.2	10.2	10.0	10.0	9.4	9.5
Discounted Cash Flow								
Simple DCF	-	-	-	-	15.2	-	10.9	-
Multi Stage (5 Yrs)	-	-	-	-	15.2	-	11.1	-
Multi-Stage (3-5 Yrs)	-	-	-	-	13.0	-	9.0	-

1 Average of all companies in the sample.
2 Average of those companies whose cost of equity estimated by the CAPM is larger than their cost of debt plus 25 basis points.

Table 4-5
ATWACC Samples Cost of Equity Estimates - November Evidence

Sample Average (%)	Canadian Utility Sample				U.S. Gas Transmission Sample		U.S. Gas LDC Sample	
	Full Sample		Gas Sub-Sample					
	All[1]	25 BP[2]	All[1]	25 BP[2]	All[1]	25 BP[2]	All[1]	25 BP[2]
Equity Risk Premium								
Short-Term Rates								
CAPM	6.6	7.1	6.6	7.2	7.5	8.4	5.8	7.3
ECAPM (1%)	7.1	7.6	7.1	7.7	7.9	8.7	6.5	7.7
ECAPM (2%)	7.7	8.1	7.7	8.1	8.3	9.0	7.1	8.2
ECAPM (3%)	8.2	8.5	8.2	8.6	8.7	9.3	7.8	8.6
Long-Term Rates								
CAPM	8.6	8.6	8.6	8.6	9.3	9.3	7.9	8.1
ECAPM (0.75%)	9.0	9.0	9.0	9.0	9.7	9.7	8.4	8.6
ECAPM (1.75%)	9.5	9.5	9.5	9.5	10.1	10.1	9.1	9.2
Discounted Cash Flow								
Simple DCF	-	-	-	-	16.4	-	10.6	-
Multi Stage (5 Yrs)	-	-	-	-	16.3	-	10.6	-
Multi-Stage (3-5 Yrs)	-	-	-	-	12.7	-	9.7	-

1 Average of all companies in the sample.
2 Average of those companies whose cost of equity estimated by the CAPM is larger than their cost of debt plus 25 basis points.

Equity Risk Premium (ERP) Analysis

Dr. Vilbert's ERP analysis relied on both short-term and long-term benchmarks for the risk-free rate. In both cases, Dr. Vilbert relied on forecasts of Canadian Government Bonds. His short-term risk-free rate was estimated at 5.00% in his June Evidence and at 3.40% in his November Evidence. His long-term risk-free rate was estimated at 5.95% in his June Evidence and at 5.85% in his November Evidence. In all cases, the estimates included a 40 basis point adjustment to compensate partially for the increase in the yield spread between Government and corporate bond yields.

Dr. Vilbert estimated the market risk premium (MRP) based primarily upon the average realized value for the Canadian market since 1924. He submitted that long periods should be used in estimating MRP because stocks are volatile, and that the results from any short period are likely to substantially over or underestimate the MRP that investors actually require. He used an MRP of 7.0% for the short-term risk-free rate version of his analysis, and an MRP of 6.0% for the long-term version.

Dr. Vilbert relied on estimates of beta as a measure of the systematic risk of a stock. For his Canadian sample, Dr. Vilbert used regression analysis to estimate his beta coefficients. To reflect the extra sensitivity to the bond market of companies regulated with book-value rate bases, Dr. Vilbert used the two-factor model proposed by Dr. Kolbe. Unlike the traditional single-factor model, this approach takes into consideration movements in the bond markets. In his June Evidence, Dr. Vilbert performed his regressions over the April 1995 through March 2000 period. Although he expressed the view that regressions performed over later periods are unreliable, his November Evidence relied on regressions performed over the November 1996 through October 2001 period. The "raw" betas resulting from the various regressions were adjusted using the *Merrill Lynch* adjustment formula to compensate for the interest rate sensitivity of companies regulated on the basis of original cost rate base.

For his U.S. samples, Dr. Vilbert relied on estimates of beta published by Value Line, Inc (*Value Line*). The *Value Line* estimates are adjusted betas, so that Dr. Vilbert reversed the adjustment process to obtain unadjusted values. Dr. Vilbert did not use adjusted betas for his U.S. samples because these companies do not exhibit the same degree of interest rate sensitivity as the companies in his Canadian sample.

Dr. Vilbert relied on two models in his ERP analysis. One of the models used was the classic Capital Assets Pricing Model (CAPM). Dr. Vilbert also relied on a model which he labelled the Empirical Capital Assets Pricing Model (ECAPM). The use of the ECAPM was justified by the view that research has shown that the CAPM tends to overstate the actual sensitivity of the cost of equity capital to beta (i.e., stocks with a low beta have a higher cost of equity than predicted by the CAPM). For the short-term risk-free rate models, Dr. Vilbert estimated three versions of the ECAPM, with adjustment coefficients of 1, 2 and 3%, respectively. For the long-term risk-free rate models, he estimated two versions with adjustment coefficient values of 0.75% and 1.75%.

Discounted Cash Flow (DCF) Analysis

Dr. Vilbert provided estimates of the cost of equity capital based on the DCF model. He indicated that the DCF's strong assumptions caused him to view the DCF method as inherently less reliable than the ERP approach. The DCF estimates were presented primarily as a check on the value provided by the ERP approach (see Tables 4.4 and 4.5).

Dr. Vilbert did not present DCF estimates for his Canadian sample, due to the unavailability of earning growth forecasts. He presented DCF estimates for his two U.S. samples, and considered that the results were more reliable for the U.S. Gas LDC sample than for the U.S. Gas Transmission sample. Three versions of the DCF were performed, based on various assumptions regarding earning growth forecasts.

4.2.3 TransCanada - Change in Cost of Equity Analysis

TransCanada sponsored the evidence of Dr. Schink. Dr. Schink was asked to assess the continued viability of the RH-2-94 Formula and to quantify changes in the cost of equity capital which may have taken place since 1995.

Dr. Schink used a variety of approaches in arriving at his conclusion that the cost of equity capital for the Mainline was in the range of 12.00% to 13.00% for 2001 and 2002, with a mid-point estimate of 12.50%. In his November Evidence, he revised this range to 11.75% to 12.75%, with a mid-point of 12.25%.

Viability of the RH-2-94 Formula

Dr. Schink submitted that the RH-2-94 Formula does not generate reasonable results because it presumes parallel movements between Canadian equity and debt markets, and that such parallel movements have not occurred since 1995. Dr. Schink also submitted that the RH-2-94 Formula incorrectly assumes that there is a direct and constant linkage between changes in the yields of long-term Government of Canada bonds and the cost of equity capital for TransCanada. Dr. Schink stated that the RH-2-94 Formula produces inappropriately low ROE estimates as a result of two unanticipated financial market events which have occurred since 1995. The first event is the collapse or flattening of the Canadian and U.S. yield curves, due to an anomalous but persistent decrease in long-term government bond yields relative to short-term yields. The second event is a modification in Canadian monetary policy that has resulted in a shift in the relationship between Canadian and U.S. Government bond yields. Dr. Schink submitted that these events have made it inappropriate to use long-term Canadian Government bond yields in the context of the RH-2-94 Formula.

Change in Cost of Equity Capital Since 1995

Risk-Free Rate

Based on the factors that led him to conclude that the RH-2-94 Formula does not generate reasonable results, and on his belief that U.S. Government bond yields are a reliable proxy for global market conditions, Dr. Schink proposed that the Board rely on the "long-run expected values for the U.S. Government 90-day Treasury bond yield", as a proxy of the risk-free rate. This benchmark is calculated by taking the average of what the U.S. 90-Day Treasury bond yield is forecast to be over a period of approximately 10 years. The forecasts are based on the consensus forecast published by *Blue Chip Economic Indicators*. Dr. Schink estimated that this risk-free rate was 5.02% in 1995. In his June Evidence, he assessed this risk-free rate at 5.08% for 2001 and 2002, which he revised to 5.02% in his November Evidence.

Alternative to the RH-2-94 Formula

By substituting his benchmark of the risk-free rate in the RH-2-94 Formula, but keeping other aspects unchanged, Dr. Schink produced estimates of the Mainline's cost of equity of 12.59% for 2001 and 12.35% for 2002 (an average of 12.46%) in his June Evidence. In his November Evidence, these estimates were revised to 12.60% for 2001 and 11.83% for 2002 (an average of 12.22%).

Equity Risk Premium (ERP)

Dr. Schink's used an equity risk premium-based methodology to analyse changes in the cost of equity capital which have taken place since 1995. Dr. Schink submitted that the ROE of 12.25% for 1995 that resulted from the RH-2-94 Decision was an appropriate starting point. By subtracting his risk-free rate from the 1995 RH-2-94 ROE of 12.25%, he submitted that the implied ERP for 1995 was 7.23%. He then estimated the 2001 risk-free rate at 5.08%, and concluded that the ROE for 2001 would be 12.31%, assuming that the ERP for TransCanada had not changed since 1995.

Dr. Schink relied on stock market returns since 1995 to conclude that there is no evidence to suggest that MRP had declined since 1995. He further expressed the view that TransCanada's coefficient of relative risk (i.e., its beta) had likely increased from 0.632 in 1995 to 0.74 in 2001. He relied on the beta coefficient implied by the RH-2-94 Decision to estimate TransCanada's 1995 beta. For 2001, he averaged published estimates of beta for TransCanada from *Value Line* and *Merrill Lynch*. Overall, he concluded that the Mainline's ERP had increased by 50 basis points since 1995, and arrived at an ROE of 12.81% in his June Evidence, which he rounded to 12.75%.

In his November Evidence, Dr. Schink retained the 50 basis point "risk-adder" in his estimate of the Mainline's risk premium, despite a decline in the estimates of beta published by *Value Line* and *Merrill*

Lynch for TransCanada (average of 0.60). Based on a risk-free rate estimate of 5.02%, he arrived at a return estimate of 12.5%.

Secondary Analyses

Dr. Schink used regression analysis based on the CAPM and two multi-factor models: a version of the Fama-French model and the Arbitrage Pricing Theory (APT) model. He used U.S. parameters for all the variables, including the use of his benchmark of the risk-free rate. Regressions were performed for four samples: the FERC's U.S. gas pipeline proxy group; Canadian publicly-traded energy pipelines (including TransCanada); a group of low-risk, high-dividend Canadian mutual funds; and a group of low-risk, high-dividend U.S. mutual funds. Regressions were performed over two periods, ending respectively in December 1995 and December 2000. The start date was either 1986 or 1987, depending on the proxy group.

To avoid generating a downwardly-biased estimate of beta, Dr. Schink used a series of shift variables for periods when unexpected bad news for TransCanada occurred. Dr. Schink declined to re-estimate the regressions for TransCanada without the use of shift variables on the grounds that the variables were an integral part of the analysis and that regression results would be meaningless in their absence.

Dr. Schink submitted the results from these regressions indicated that the cost of capital for TransCanada and for comparable investment opportunities had risen between 1995 and 2001.

Tertiary Analyses

Dr. Schink compared the average annual returns of Canadian and U.S. low risk income mutual funds over the 1990-1994 and the 1995-2000 periods. He submitted that this comparable earnings analysis confirmed that there has been an increase in the cost of equity capital since 1995.

4.2.4 CAPP and IGUA - Expert Witness Evidence

CAPP and IGUA jointly sponsored the evidence of Drs. Booth and Berkowitz. While CAPP and IGUA's primary position was to support the continuation of the RH-2-94 Formula, Drs. Booth and Berkowitz presented cost of equity evidence as an alternative proposal. Their alternative recommendation was for an ROE of 8.50%, which represents an ERP of 250 basis points over their forecast of long-term Canada bonds.

In arriving at this estimate, they gave equal weight to the classic CAPM model and their multi-factor model, which is based on the Fama-French framework. Their recommended ROE of 8.50% included a premium to reflect flotation costs and to account for any under-estimation that might have resulted from not fully incorporating the events of 11 September 2001.

Classic CAPM

Drs. Booth and Berkowitz relied on a forecast of long-Canada bonds of 6.0% as their benchmark of the risk-free rate. They adopted an MRP estimate of 450 basis points, which was primarily derived by estimating the average Canadian MRP over long-Canada bonds since 1956. MRPs were estimated using arithmetic averages, geometric averages, and ordinary least square regressions. They increased their historical assessment of Canadian MRP by 50 basis points to reflect, in part, the greater estimates of MRP in the U.S.

Drs. Booth and Berkowitz analysed the variability of accounting ROEs of regulated utilities, relative to that of other Canadian firms and concluded that regulated firms were less risky than the market. They used two approaches to estimate a beta factor for TransCanada: regression analysis and their instrumental model for estimating beta. They adjusted the regressed betas towards 0.52, which represents Drs. Booth and Berkowitz's estimate of the regression tendency of utilities' betas, or their long-run average value. The regressions resulted in a mid-point estimate of 0.41, while their instrumental model yielded an estimate of 0.60. They used this range to arrive at a CAPM-based estimate of the cost of equity capital ranging from 7.85% to 8.70%.

Multi-Factor Model

Drs. Booth and Berkowitz also relied on a multi-factor model, which uses both the difference between the returns on the TSE 300 and 30-day Treasury Bills, and the spread between the return on long-term Canada bonds and the short-term Treasury Bills as explanatory variables. The model resulted in an estimate of the cost of equity capital of 7.56%.

Critique of TransCanada's Expert Witness Evidence

Drs. Booth and Berkowitz submitted that Dr. Vilbert's application of the *Merrill Lynch* adjustment formula to his estimate of beta was inappropriate and resulted in higher estimates of ERPs. Nevertheless, Drs. Booth and Berkowitz noted that both their estimated cost of equity (i.e., 8.50%) and the ROE resulting from the RH-2-94 Formula fall within the range of cost of equity estimated by Dr. Vilbert.

Drs. Booth and Berkowitz submitted that there is no Canadian evidence to support the use of the ECAPM, which they viewed as another mechanism employed by Dr.Vilbert to inflate his cost of equity estimates. They questioned Dr. Vilbert's estimates of Canadian MRPs, due to his sole reliance on arithmetic-mean returns and to his use of data preceding the creation of the TSE 300 in 1956.

4.2.5 Mirant - Expert Witness Evidence

Mirant supported the continuation of the RH-2-94 Formula and sponsored the evidence of Dr. Chua. Dr. Chua did not estimate the Mainline cost of equity capital; rather, he presented estimates of an upper-bound for the Mainline's cost of equity capital. In his analysis, Dr. Chua used an ERP approach based on long-term Canada bonds and relied on estimates of various coefficients that were publicly available. Dr. Chua provided estimates only for 2002.

Dr. Chua adopted the risk-free rate of 5.63% resulting from the RH-2-94 Formula. He relied on Dr. Vilbert's estimate of the MRP of 6.0% over long-term bonds. He used Dr. Vilbert's highest estimate of raw beta for TransCanada, which was regressed over the April 1995 through March 2000 period. That estimate of 0.40 was adjusted towards 0.453 to reflect the previous estimate of Drs. Booth and Berkowitz's mean-reverting value. Dr. Chua considered beta estimated for the consolidated operations of TransCanada as an upper bound for the Mainline, in light of TransCanada's involvement over the 1995-2000 period in lines of business that were riskier than the Mainline. Combining these parameters, he arrived at an upper-bound estimate for the Mainline's cost of equity of 8.28%, based on the CAPM; and an upper-bound of 9.25%, based on the ECAPM (1.75%).

Dr. Chua rejected the use of the *Merrill Lynch* adjustment to the estimates of beta for the Mainline. He submitted that the general view that beta tend toward 1.0 as firms diversify is not applicable to the Mainline.

4.2.6 Other Parties' Positions

CAPP rejected Dr. Schink's suggestion to rely on the "long-run expected values for the U.S. Government 90-day Treasury bond yield" and expressed the view that long-term interest rates were more reliable. CAPP suggested that it is not appropriate to use U.S. interest rates for a Canadian pipeline, as the capital market conditions for pipelines were quite different in each country. CAPP submitted that stock returns and interest rates are correlated, and that it is therefore appropriate to base pipelines' returns on such a relationship. CAPP pointed to TransCanada's market-to-book ratio as evidence that the ROE levels resulting from the RH-2-94 Formula are adequate.

CGA echoed the views of TransCanada, particularly those of Dr. Schink, and submitted that the RH-2-94 Formula no longer provides a fair and equitable return for gas utilities due to its narrow focus on government bond yields and to technical changes in bond and equity markets. CGA suggested that the ROE should be established independently of the type of regulation under which the particular utility operates, the approach used should produce fair and equitable results for a broad range of circumstances, and the rate-setting process should be efficient with predictable, timely results. CGA expressed the opinion that a utility's return should be established independently of the parent company's business activities or investments. In addition, CGA submitted that a regulated utility should have the ability to develop and implement growth plans in a competitive environment and should receive similar returns as non-regulated companies with similar risk, that its ROE should be such that the utility is financially healthy and able to attract the capital required for the continued safe and reliable delivery of natural gas, and that its ROE should be set so that Canadian utilities are attractive to both Canadian and U.S. investors.

IGUA submitted that the RH-2-94 Formula remains appropriate for determining the Mainline's ROE. IGUA viewed the methodology as well-established and well-understood and noted that other regulators have adopted similar methodologies. IGUA expressed the view that regulated entities subject to such methodologies have all been able to attract sufficient capital on reasonable terms. In the event the Board determines that the RH-2-94 Formula is no longer suitable for the Mainline, IGUA endorsed the recommendations of Drs. Booth and Berkowitz for an ROE of 8.50 %.

Centra noted that substantial toll increases in 2001 and 2002 have already taken place and that further increases would be unfair to shippers and would result in tolls that would be unjust and unreasonable.

Mirant relied on the evidence of Dr. Chua to support the view that the RH-2-94 Formula still produces an appropriate ROE for the Mainline, and may possibly overestimate the Mainline's cost of capital.

Ontario expressed the view that the RH-2-94 Formula provides a fair return for the Mainline for the 2001 and 2002 Test Years. In support of this position, Ontario pointed to various indicators, such as TransCanada's current debt ratings and share prices. Ontario contrasted the actual toll increase between

November 1998 and February 2001 (assuming TransCanada's Fair Return Application is approved) with the inflation rate over the same period in support of the view that the resulting tolls would be unfair and unreasonable.

Quebec submitted that TransCanada did not demonstrate that the RH-2-94 Formula was inappropriate and recommended that the RH-2-94 Formula continue to be used for the Mainline. Quebec pointed to empirical evidence, such as financial analysts' recommendations, to support the view that the ROE resulting from the RH-2-94 Formula remains adequate.

Views of the Board

Having carefully considered all of the evidence relating to rate of return on common equity, the Board has concluded that the RH-2-94 Formula continues to yield returns that are appropriate for the Mainline. In arriving at this conclusion, the Board gave primary weight to the evidence related to ERP analysis.

Equity Risk Premium

Risk-Free Rate

The Board is of the view that the use of short-term interest rate benchmarks would be unreliable due to their high degree of volatility. Their volatility would result in cost of equity estimates that could vary greatly, even within a test year. The Board also rejects the use of the "long-run expected values for the U.S. Government 90-day Treasury bond yield," which was proposed by Dr. Schink, for reasons discussed below.

The Board relied on a forecast of long-term Canada bonds as the benchmark of the risk-free rate. Specifically, the Board used the upcoming-year bond forecast resulting from the RH-2-94 Formula for 2001 and 2002[1] (i.e., 5.73% for 2001 and 5.63% for 2002). The Board notes that none of the forecasts of long-Canada bond yields presented by expert witnesses were materially different from those estimated by the RH-2-94 Formula. With respect to Dr. Vilbert's estimate, most of the difference resulted from an adjustment made to reflect the increase in the yield spread between Government and corporate bond yields. The Board is not persuaded that this adjustment is appropriate, as the risk-free rate need not reflect a rate at which corporations can borrow. The Board also notes that TransCanada adopted the rates resulting from the RH-2-94 Decision as its forecast of 30-year long-term Canada bonds.

Equity Risk Premium

At the time of the RH-2-94 Decision, the Board expressed the view that the ERP for the market as a whole was 450 to 500 basis points and that a reasonable all-inclusive ERP for the benchmark pipeline was 300 basis points. Several factors, such as a decline in interest rates and reduced barriers to international investments, suggest that the current level of ERP would be higher than it was in 1995. Specifically, the Board is of the view

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[1] The 2001 bond forecast is based on the November 2000 issue of Consensus Forecasts and the October 2000 bond spread. The 2002 bond forecast is based on the November 2001 issue of Consensus Forecasts and the October 2001 bond spread (see Section 1.2).

that the ERP for the market as a whole currently is 550 to 600 basis points, and that there has been a commensurate increase in the Mainline's ERP. That being said, the all inclusive ERP resulting from the application of the RH-2-94 Formula has increased to 388 basis points for 2001 and to 390 basis points for 2002. Without necessarily endorsing the various assumptions made by TransCanada's expert witness, the Board notes that the ERP and the ROE resulting from the RH-2-94 Formula fall well within the range of those estimated by Dr. Vilbert for his Canadian Sample in his June Evidence and generally exceed those estimated in his November Evidence. In the Board's view, this provides a strong confirmation that the ROEs resulting from the RH-2-94 Formula represent a reasonable estimate of the cost of equity capital for the Mainline.

<u>Discounted Cash Flow</u>

The Board considers that the small amount of evidence relating to the DCF methodology that was presented is not sufficiently reliable or meaningful to be given any weight. In this regard, the Board reiterates the view it expressed in RH-2-94 that, although the DCF test is theoretically sound, its usefulness is limited because of certain practical difficulties.

<u>Expert Witness Evidence</u>

Drs. Kolbe and Vilbert

The Board is of the opinion that the differences in leverage between the Mainline and the firms in Dr. Vilbert's samples are likely reflective of differences in business risk or in investment circumstances. As such, it would be inappropriate to adjust the Mainline's return on equity to reflect the differences in leverage, as proposed by Drs. Kolbe and Vilbert, regardless of the magnitude that any such adjustment would have. Section 4.3 of these Reasons for Decision addresses the appropriate deemed capital structure for the Mainline.

With respect to the assessment of the cost of equity for the firms in Dr. Vilbert's samples, the Board notes that the choice of the time period in beta regressions, the use of the two-factor model in beta regressions, the use of the *Merrill Lynch* adjustment formula, and the reliance on ECAPM, are all steps that lead to increases in the estimated cost of equity capital. The Board has not been persuaded that the use of all of these adjustments is simultaneously justified.

Dr. Schink

With respect to Dr. Schink's evidence, the Board acknowledges that there has been a flattening of the Canadian yield curve, both in absolute terms and relative to yields in the U.S. Nevertheless, there was no evidence to suggest that the reduction in Canadian Government bond yields is expected to be a temporary phenomenon or that it resulted from market failures. Therefore, the Board considers that changes in the bond market are likely to have resulted in changes in the cost of equity capital for the Mainline.

As a result of a certain substitutability between the bond and equity markets, it is generally recognized that the cost of equity capital is influenced by expected bond returns. It is also recognized that, in any one time period, realized bond and equity returns are likely to fluctuate in opposite directions or be of different orders of magnitude, due in large part to the impact of business cycles. The observation of such divergence does not, however, represent meaningful evidence that the cost of equity capital is unaffected by changes in expected bond returns.

In light of the long economic life of pipeline assets, it is reasonable to conclude that return expectations are primarily influenced by long-term, as opposed to short-term, expected bond yields. Finally, since the vast majority of investors in TransCanada are Canadian, expected Canadian Government bond yields are a more relevant benchmark than U.S. bond yields in assessing the Mainline's cost of equity. The Board therefore rejects the use of the "long-run expected short-term U.S. 90-day Treasury rate" as a benchmark of the risk-free rate.

The Board also believes that the ROE levels recommended by Dr. Schink would not fall within a reasonable range, even had the Board accepted Dr. Schink's benchmark of the risk-free rate. In the Board's view, an analysis of relative changes in the cost of equity capital between two periods may only be relevant if there can be confidence that the resulting absolute levels would also be supported by the methodologies used in estimating the relative changes. In this respect, the Board notes that Dr. Schink's recommended ROE implies an ERP for the mainline that is in excess of most reasonable assessments of the ERP for the market as a whole. Such an implication is inconsistent with the Board's view that the Mainline is a substantially less risky investment than the market as a whole.

With respect to Dr. Schink's secondary and tertiary analyses, the Board notes that the results are primarily driven by an increase in realized returns experienced over a period that is simply too short to be indicative of any meaningful change in expected returns. In addition, the Board has reservations with respect to the comparability of the proxy groups, the reliance on multi-factor models, the sole reliance on U.S. data, and the lack of any information to quantify the impact and assess the appropriateness of using shift variables. In particular, the use of mutual funds in the proxy groups was considered inadequate because mutual funds are more comparable to the market as a whole rather than to pipelines.

Drs. Booth, Berkowitz and Chua

The Board considers that the MRP for the market as a whole proposed by Drs. Booth and Berkowitz falls outside a range that would be considered reasonable at this point in time. The evidence in this regard did not specify the relative weight that each of the estimation techniques (arithmetic averages, geometric averages, and ordinary least square regressions) had been given in arriving at the MRP estimate. Further, presenting MRP estimates over alternative time periods would have been helpful in assessing the reasonableness of the period chosen by the witnesses.

The Board has reservations with respect to the proposed adjustment of regressed beta towards their mean-reverting tendency, which was proposed by Drs. Booth, Berkowitz and Chua. The estimates of this tendency have fluctuated over a wide range in recent years, which suggests that currently calculated levels are too unstable to be presumed to represent a meaningful assessment of any mean-reverting tendency that may exist.

The Board considers that the multi-factor cost of equity model and the instrumental model for estimating beta that were advanced by Drs. Booth and Berkowitz have not been tested over a sufficiently long period to be confidently relied upon in a regulatory context at the present.

Conclusion

The Board is of the view that the RH-2-94 Formula is well established and understood by interested parties, that it is transparent and that it continues to provide ROEs that are appropriate for the Mainline.

Decision

The Board has decided that the rate of return on common equity resulting from the RH-2-94 Decision should continue to apply to the Mainline. The Board therefore approves an ROE for the Mainline of 9.61% for 2001 and of 9.53 % for 2002.

4.3 Capital Structure

As a result of a large-scale diversification program embarked upon by TransCanada in 1980, there was a need to deem a capital structure for toll-making purposes for the Mainline. At the time, TransCanada applied for, and the Board approved in its RH-2-80 Decision, a deemed common equity ratio for the Mainline of 30%.

In RH-3-82, the Board outlined three main factors that it considered would govern the appropriateness of the common equity ratio for rate-making purposes: business risks of the utility; maintenance of an appropriate level of equity versus debt; and consideration of the level of equity financing attributed to the utility versus non-utility operations. In that proceeding, the Board approved a deemed common equity ratio of 28% for the Mainline.

In RH-1-84, the Board approved an increase in TransCanada's deemed common equity ratio from 28% to 30% and indicated that the increase had regard to the level of business risk and the improvement in the balance of equity financing implicitly underpinning the Company's non-utility operations.

In the period 1985 through 1994, the Mainline's deemed common equity ratio was maintained at 30%.

In RH-2-94, the Board expressed support for the general principle that the determination of a pipeline's capital structure starts with an analysis of its business risk. The Board also indicated that the determination of business risk must necessarily involve a high degree of judgement, and the analysis is best expressed qualitatively. In its decision on the appropriate level of common equity for the Mainline, the Board took into account business and financial risk factors and concluded that the Mainline was a low-risk pipeline and that its risks had not increased since the last time capital structure had been assessed (i.e., RH-4-93 - 1994 Tolls Application). Accordingly, the Board maintained the Mainline's deemed common equity ratio at 30%.

4.3.1 TransCanada's Position

In the event that the Board declines to adopt the ATWACC methodology, TransCanada requested that the Board approve a common equity ratio of 40% for rate-making purposes. TransCanada indicated that this deemed capital structure would represent a reasonable capital structure for the Mainline if it were a stand-alone entity. TransCanada also indicated that alternate equity ratios around 40% would also represent reasonable capital structures for rate-making purposes, provided the overall rate of return was adjusted.

TransCanada contended that, under the deemed common equity regulatory approach, it has retained the flexibility to determine its consolidated capital structure. Since 1999, TransCanada indicated that its consolidated equity ratio has increased from 28% to 35%. TransCanada indicated that its consolidated equity ratio at 31 December 2001 (i.e., 35%) included common equity (33%) and perpetual preferred shares (2%). TransCanada indicated that its current consolidated capital structure is within the bounds of reasonableness when taking into account the Company's consolidated business risk.

In response to intervenors' concerns over cross-subsidization of non-utility operations, TransCanada referred to the Board's RH-2-94 Decision. In RH-2-94, the Board expressed the view that it was not convinced that evidence regarding a consolidated equity ratio which is different than a deemed ratio necessarily indicates the existence of cross-subsidization. Further, the Board expressed the view that the primary issue is whether or not the financing of the non-jurisdictional assets results in higher debt costs to the NEB-regulated pipeline. TransCanada argued that there is no evidence of such impact in this case.

4.3.2 Other Parties' Positions

In CAPP's view, it is essential that the Board determine a specific deemed common equity ratio if tolls are to be judged to be just and reasonable. CAPP expressed the view that the Mainline's appropriate deemed common equity ratio for the 2001 and 2002 test period is 30%. This view is based on CAPP's assessment of the changes in TransCanada's business risk since 1995, regard for financial risk factors (which in its view were all positive), and regard for the levels of common equity with which the consolidated entity operated in the late 1990s, and the events which have led to increases in the consolidated common equity ratio to its current level.

CAPP suggested that TransCanada has been operating either, or both, the Mainline and the Alberta System with less than the deemed common equity ratio attributed to them, which resulted in the cross subsidization of the company's non-utility operation. In support of this view, CAPP pointed to the Board's RH-2-82 Decision, in which the Board outlined three main factors that it considered governed the appropriateness of the common equity ratio for rate-making purposes. One of these factors related to maintaining an appropriate balance to the equity financing attributed to the Utility through the deeming process, and that portion of the actual consolidated financing which is left to implicitly underpin the Company's non-utility operations.

CAPP submitted that TransCanada's current consolidated capital structure suggested that a 30% common equity ratio is appropriate for the Mainline. CAPP noted that, in 1999, the Company's consolidated equity ratio was 26%. Following the divestiture of TransCanada's midstream and international businesses, it has since increased to the low 30% range. CAPP noted that TransCanada considers its current consolidated capital structure to be reasonable, and argued that granting a common equity ratio of 40%, or even 35%, for the Mainline (which comprises approximately 50% of the consolidated entity) would imply the Mainline is significantly riskier that TransCanada's other businesses, which in CAPP's view is not the case.

IGUA submitted that the Board should give greater weight to short-term changes (rather than long-term changes) in business risks when considering changes in TransCanada's deemed common equity ratio. Since TransCanada acknowledged that its short-term business risks have not increased, IGUA submitted that the appropriate level of the deemed common equity ratio is 30% for TransCanada for 2001 and 2002.

Mirant submitted that TransCanada's current deemed common equity ratio of 30% should be maintained or reduced. Mirant suggested that, if the Board was inclined to increase TransCanada's deemed common equity ratio, it should consider the relationship between any new deemed common equity ratio and TransCanada's actual consolidated common equity ratio. Mirant submitted that the effect of deeming an equity ratio, when the deemed equity ratio is less than the actual consolidated equity ratio, is to prevent cross-subsidization of higher-risk ventures. Mirant noted that in this case, TransCanada has applied for a deemed equity ratio that is far above its actual consolidated equity ratio. Mirant submitted that inclusion of a higher deemed equity ratio in tolls should be accompanied by a commensurate increase in TransCanada's actual consolidated equity ratio. In other words, the Company's actual consolidated equity ratio should be an upper bound on any deemed equity ratio that is used for rate-making purposes.

Finally, Mirant indicated that if the Board does consider increasing TransCanada's deemed common equity ratio, it should not limit itself to relatively large increments of 5%. Instead, Mirant suggested that increments of as little as 1% should be considered appropriate due to the resulting impact on the total return and its corresponding impact on the level of tolls.

Ontario maintained that, overall, business risks for TransCanada have not increased since 1995. As well, Ontario identified various positive financial indicators that have reduced TransCanada's business risks. Accordingly, Ontario submitted that TransCanada's current deemed common equity ratio of 30% remains appropriate.

All other parties who opposed TransCanada's Application supported the continuation of a 30% deemed common equity ratio for TransCanada.

Views of the Board

The Mainline forms part of the overall business operations of TransCanada and, as such, is not financed separately from the corporation as a whole. As a result, there is no specific capital structure attached to the Mainline and a capital structure must be deemed for rate-making purposes. In determining the appropriate capital structure, the Board has had regard to the level of business risk faced by the Mainline, the ability of TransCanada to raise capital on reasonable terms and conditions based on the Mainline, and the overall fairness of the tolls which would result from the determination.

As described in Chapter 3 of these Reasons for Decision, the Board has concluded that the level of business risk facing the Mainline has increased since 1995, although it remains low. This conclusion resulted from the increase in pipe-on-pipe competition risk and supply risk. Further, TransCanada's financial position is presently strong and its ability to attract capital for the Mainline on reasonable terms and conditions is not in jeopardy. However, in light of the increased business risk, it would be appropriate to decrease the Mainline's financial risk by decreasing its reliance on debt financing and increasing its deemed common equity component. In the Board's view, an appropriate increase in the deemed common equity component is from 30% to 33%. This change will result in interest coverage ratios for the Mainline in 2001 and 2002 that exceed those experienced in the last 12 years.

While the Board has reached this conclusion on the basis of the evidence presented to it with respect to the business risk faced by the Mainline, the Board notes that its view of the appropriate deemed common equity component for the Mainline in light of its business risk appears consistent with TransCanada's view of the appropriate capital structure for the consolidated operations. In particular, the Board notes that there was no evidence adduced to suggest that the Mainline operations are riskier than the consolidated operations. In fact, the Mainline may be less risky.

Since 1999, the Board notes that TransCanada has increased its consolidated common equity ratio. At the end of 2001, TransCanada's consolidated common equity ratio stood at 33% compared with 31% in 2000. While TransCanada indicated that its consolidated equity ratio at 31 December 2001 was 35%, this calculation included 2% capital arising from perpetual preferred shares. The Board does not consider that perpetual preferred shares have liability and reward attributes which are comparable to common equity. The Board has therefore excluded perpetual preferred shares from its definition of the deemed common equity ratio.

In light of the above, the Board is of the view that it would be appropriate to increase the Mainline's deemed common equity ratio from 30% to 33%. The Board notes that this increase will raise the Mainline's annual cost of service and tolls by approximately 2%. The Board has determined that the toll increase is warranted by the prospective business risk facing the Mainline and that it will not impose an undue burden on shippers.

Decision

The Board approves an increase in the Mainline's deemed common equity ratio from 30% to 33%.

4.4 Debt

4.4.1 TransCanada's Position

TransCanada indicated that for 2001, the Mainline's funded debt would amount to $6,302,367,000, or 68.38% of the Mainline's capitalization and that the average cost of this debt would be 8.97%. This debt is made up of First Mortgage Pipe Line Bonds, Debentures, Medium Term Notes, Junior Subordinated Debentures.

No intervenor contested TransCanada's cost of debt assessment.

Views of the Board

The Board is of the view that a capital structure including 67% debt would be appropriate for the Mainline. The Board is also of the view that the estimated cost of debt of 8.97% for 2001 is appropriate.

The Board notes that the Mainline's level of funded debt exceeds the level of debt approved for 2001. The Mainline's capitalization therefore includes a certain level of pre-funded debt. Unlike unfunded debt which is appropriately costed at ongoing short-term interest rates (e.g., rates on Bankers' Acceptances), the Board is of the view that pre-funded debt should be assumed to have a cost equal to the average cost of the Mainline's funded debt (i.e., 8.97%).

Decision

The Board approves a percentage of debt in the Mainline's capital structure of 67%. The Board also approves a cost of funded debt and pre-funded debt of 8.97% for 2001.

Chapter 5

Effective Date for Changes in Cost of Capital

5.1 TransCanada's Position

TransCanada is of the view that the appropriate effective date for any changes to its approved cost of capital or capital structure is 1 January 2001, for several reasons.

First, TransCanada submitted that, effective 1 January 2001, its fair return exceeded the 9.61% ROE on a 30% common equity ratio. TransCanada argued that, if the ROE Formula is broken, it was broken on 31 December 2000 which was the day when the previous final tolls expired. Similarly, TransCanada contended that, if the Mainline is exposed to long-term risk that justifies a higher return, that risk existed on 1 January 2001. As a result, TransCanada argued that it would be unfair, opportunistic and conceptually unsound, to set the effective date for any change in return at a date later than 1 January 2001.

Second, TransCanada argued that it cannot be faulted for the delay in adjudication of the return issue. TransCanada noted that it sought to reach a settlement with all of its stakeholders in respect to all of the issues relating to the 2001 and 2002 tolls. A settlement was reached with most stakeholders on all matters other than cost of capital in April 2001. TransCanada undertook not to file its Fair Return Application until the S&P Settlement was concluded and, therefore, it could not be filed until June 2001.

Third, TransCanada claimed that an effective date later than 1 January 2001 would reward a strategy of delaying litigation.

Fourth, TransCanada opposed the proposition that it should wait until after the implementation of a new business and regulatory model before seeking any change to its return. TransCanada acknowledged that the S&P Settlement addresses short-term risk, but suggested that it does nothing for long-term risk. TransCanada claimed that investors still deserve to be compensated for the long-term risks during any period in which the investment is held, including the 2001 and 2002 Test Years.

Finally, TransCanada argued that any perceived issues of rate shock that might arise from the fact that the regulatory process will not have run its course until mid-2002 can be handled through an interim revenue adjustment process. In this regard, TransCanada contended that what it is proposing is not a retroactive toll but rather a retrospective toll. TransCanada indicated that it would submit a proposal to the Tolls Task Force and to the Board with respect to a possible amortization of any adjustments in return in order to prevent rate shock.

5.2 Other Parties' Positions

CAPP indicated that it had reached a prior agreement with TransCanada to split off the cost of capital issue from the S&P Settlement, such that cost of capital would be litigated separately and would apply for the period commencing 1 January 2001.

IGUA submitted that the Board's RH-2-94 Decision and the resulting Order are mandatory and require that TransCanada's return be adjusted annually using the RH-2-94 Formula. IGUA suggested that, if TransCanada wanted its cost of capital for the 2001 Test Year determined in a different manner, it should have filed an application before the Board published the RH-2-94 ROE for the 2001 Test Year in its 8 December 2000 letter. IGUA argued that TransCanada cannot blame others for the duration of negotiations and for the fact that it did not file its Fair Return Application until 6 June 2001. IGUA submitted that a retroactive increase for 2001 would adversely affect the atmosphere for negotiations pertaining to the new business model. In conclusion, IGUA submitted that the effective date of any changes should be no earlier than 1 January 2002.

Centra argued that TransCanada must accept responsibility for its decision to delay the filing of its Fair Return Application to 6 June 2001. In Centra's view, an effective date back to 1 January 2001 would be retroactive rate-making and would result in tolls that are not just and reasonable. Centra submitted that a fair effective date for any changes to the cost of capital would be 1 January 2002.

Coral submitted that an effective date of 1 January 2001 is unreasonable due to the fact that TransCanada filed its Fair Return Application on 6 June 2001, several months after the requested effective date. Coral expressed concerns over the impact a retroactive toll recovery could have on shippers and submitted that any changes should be made effective as of the date of the Board's Decision in RH-4-2001.

Mirant is of the view that 1 January 2002 would be an appropriate effective date. Mirant argued that a 2001 effective date would not be consistent with the Board's practice of establishing tolls for one year periods based on a calendar year, and would amount to a mid-year change.

PG&E/El Paso expressed concerns with the commercial impracticality of implementing a change in the cost of capital that would create an upward adjustment of tolls at least 16 months after the beginning of the toll period under review. PG&E/El Paso had concerns with the ability of shippers to reasonably withstand an increase that compresses the entire toll impact of 2001/2002 into the short period remaining in 2002 following this decision. PG&E/El Paso suggested that the appropriate effective date for any changes should be the date of the Board's Decision in RH-4-2001.

Ontario submitted that any rate-making changes resulting from any changes to the Mainline's cost of capital should not be retroactive. Based on the date of filing and the complexity of the Fair Return Application, Ontario argued that TransCanada could not reasonably have expected the conclusion of the hearing and a Board decision until 2002 and expressed the view that no change to the Company's cost of capital should go into effect prior to 1 January 2002.

Views of the Board

The Board would normally expect an applicant to file a cost of capital application early enough to allow it to review the application and issue a decision prior to the commencement of, or early into, the applicable test year.

The Board notes that the Fair Return Application was filed almost six months into the first of two test years. Nevertheless, the Board is persuaded, given the circumstances in this particular instance, that TransCanada's delay in filing its Fair Return Application was justified, given stakeholders desire to negotiate the S&P Settlement. The Board is satisfied that TransCanada requested interim tolls effective 1 January 2001 with the full expectation that it would litigate its cost of capital for 2001 and 2002.

The Board is cognizant that interim tolls have been in place for some 18 months and that there may be a need to adjust for the difference between interim and final tolls in a manner that minimizes or prevents rate shock. In this regard, the Board notes TransCanada's commitment to submit a proposal to the Tolls Task Force.

Decision

The Board has decided that changes to TransCanada's cost of capital shall be effective 1 January 2001.

Chapter 6

Disposition

The foregoing chapters together with Order No. TG-3-2002 constitute our Decisions and Reasons for Decision in respect of the Fair Return Application heard by the Board in the RH-4-2001 proceeding.

The Board is of the view that the decisions reached in RH-4-2001 are consistent with the principles set out in Chapter 2 of these Reasons for Decision and will result in a fair return for the Mainline. Further, the Board is satisfied that these decisions, in combination with the Tolls and Tariff provisions approved in the RH-1-2001 Proceeding, will result in tolls that are just and reasonable, and that are not unduly discriminatory for the 2001 and 2002 Test Years.

J.A. Snider
Presiding Member

R.J. Harrison
Member

J.S. Bulger
Member

J.-P. Théorêt
Member

D.W. Emes
Member

Calgary, Alberta
June 2002

Appendix I

Toll Order TG-3-2002

ORDER TG-3-2002

IN THE MATTER OF *the National Energy Board Act* (the Act) and the regulations made thereunder;

AND IN THE MATTER OF an application filed with the National Energy Board (the Board) under File 4200-T001-16 by TransCanada PipeLines Limited (TransCanada) for certain orders respecting tolls specified in a tariff pursuant to subsection 21 (1) of Part I and Sections 59, 60, 64 and 65 of Part IV of the Act.

BEFORE the Board on 30 May 2002.

WHEREAS, on 13 December 2000, the Board issued Interim Toll Order TGI-4-2000 for interim tolls to be effective 1 January 2001;

AND WHEREAS, on 19 December 2000, the Board rescinded Interim Toll Order TGI-4-2000 and issued Interim Toll Order TGI-6-2000 which set interim tolls effective 1 January 2001 at the level in effect during 2000 pending consideration of interested parties comments on the appropriate level of interim tolls;

AND WHEREAS, on 25 January 2001, after considering parties' comments, the Board issued an amending Interim Toll Order AO-1-TGI-6-2000 which set interim tolls at TransCanada's originally proposed level to be effective 1 February 2001;

AND WHEREAS the Board issued a further amending Interim Toll Order AO-2-TGI-6-2000 (in conjunction with the release of the RH-1-2001 Reasons for Decision in November 2001) which ordered the continuance of interim tolls pending the final disposition of the RH-4-2001 Proceeding;

AND WHEREAS, on 28 March 2002, the Board issued a further amending Interim Toll Order AO-3-TGI-6-2000 which permits TransCanada to charge the currently-approved interim tolls for a period into 2002 pending the final disposition of TransCanada's yet to be filed 2002 Tolls Application;

AND WHEREAS TransCanada filed its 2001 and 2002 Fair Return Application (RH-4-2001) dated 6 June 2001 for:

a) review and variance of the NEB RH-2-94 Decision and Order TG/TO-1-95 dated 16 March 1995 to allow for the determination of a fair return for TransCanada's Mainline for the years 2001 and 2002;

b) an order determining the fair return to be included in final tolls to be charged by TransCanada for or in respect of transportation services provided to customers on the Mainline between 1 January 2001 and 31 December 2002;

c) an order disallowing any existing transportation tolls or portions thereof and fixing final just and reasonable tolls that TransCanada may charge for or in respect of transportation services provided to customers on the Mainline between 1 January 2001 and 31 December 2001;

AND WHEREAS the Board issued Hearing Order RH-4-2001- Directions on Procedure on 26 July 2001 and amended Hearing Order AO-1-RH-4-2001 on 5 October 2001;

AND WHEREAS an oral public hearing was held in Calgary, Alberta between 27 February 2002 and 4 April 2002 during which time the Board heard the evidence and argument presented by TransCanada and RH-4-2001 Parties;

AND WHEREAS the Board's decisions on the Fair Return Application are set out in its Reasons for Decision dated June 2002, and in this Order; and

AND WHEREAS the Board has considered the evidence and submissions, and has found that the tolls that will result from decisions in RH-4-2001 and this Order are just and reasonable and not unduly discriminatory.

THEREFORE, IT IS ORDERED, pursuant to Part I and Part IV of the Act, that:

1. TransCanada's rate of return on common equity shall continue to be based on the RH-2-94 Formula methodology.

2. The Board approves an increase in the Mainline's deemed common equity ratio from 30% to 33%.

3. The Board approves a percentage of debt in the Mainline's deemed capital structure of 67%. The Board also approves a cost of funded debt and pre-funded debt of 8.97% for 2001.

4. The effective date for reflecting all changes in cost of capital for rate-making purposes will be 1 January 2001.

5. Any variance between the approved 2001 Revenue Requirement and the amounts collected pursuant to interim tolls shall be deferred and disposed of in future tolls.

6. TransCanada shall forthwith prepare and submit to the Board for approval, revised schedules and final toll calculations for the 2001 Test Year based on the RH-1-2001 and RH-4-2001 Decisions.

NATIONAL ENERGY BOARD

Michel L. Mantha
Secretary

RH-2-2004
Phase II TCPL Chapter II

National Energy Board | Office national de l'énergie

Reasons for Decision

TransCanada PipeLines Limited

RH-2-2004

Phase II

April 2005

Cost of Capital

Canada

Chapter 2

Legal Framework for Determining a Fair Return

In addition to the matters set out in the List of Issues for this proceeding, the methodology that the Board ought to employ in order to determine an appropriate capital structure for the Mainline was also the subject of considerable discussion in the hearing.

Position of TransCanada

TransCanada submitted that, as a matter of law, the Board is required to determine the cost of equity capital for the Mainline for 2004 using the comparable investment, capital attraction and financial integrity standards, which together comprise the fair return standard. TransCanada cited the *Northwestern Utilities Limited v. City of Edmonton,*[9] *Bluefield Waterworks & Improvement Co. v. Public Service Commission of West Virginia et al.*[10] and *Federal Power Commission v. Hope Natural Gas*[11] cases as establishing this standard.

TransCanada argued that the fair return standard does not apply narrowly to either the rate of return on equity nor to the deemed equity component of a utility's capital structure; instead it applies to the total return on capital invested. Thus, in TransCanada's view, the Board's determination of a fair return on equity capital must involve consideration of evidence pertaining to the overall equity return. This is required by the fair return standard as articulated in *Northwestern Utilities (1929)*, and was endorsed by the Federal Court of Appeal decision in *TransCanada v. NEB*[12] and the Board in its RH-1-1970 Reasons for Decision[13].

While TransCanada's evidence pertaining to total return was primarily based on the ATWACC methodology (derived from the after-tax ROE and after-tax market cost of debt), TransCanada also discussed two other forms of total return: the total equity return (the dollar amount resulting from the product of the common equity ratio, the ROE and the rate base) and the rate of return on rate base (in this instance, calculated using after-tax ROE and before-tax embedded cost of debt).

TransCanada also expressed the view that the Board should approach its consideration of the evidence from a clean slate and not limit itself to the changes in business risk since it last assessed the Mainline's cost of capital (that is, in RH-4-2001, which pertained to the 2001 and 2002 Test Years).

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9 *Northwestern Utilities Limited v. City of Edmonton,* [1929] S.C.R. 186 [hereinafter *Northwestern Utilities (1929)*]

10 Bluefield *Waterworks & Improvement Co. v. Public Service Commission of West Virginia et al.* 262 U.S. 679 (1923) [hereinafter *Bluefield*]

11 Federal *Power Commission v. Hope Natural Gas* 320 U.S. 591 (1944) [hereinafter *Hope*]

12 *TransCanada v. NEB, supra* note 8

13 National Energy Board RH-1-70 Reasons for Decision, Trans-Canada Pipe Lines Limited (Tolls Application – Phase I), December 1971 [hereinafter RH-1-70]

Position of Intervenors

CAPP

CAPP argued that there were two distinct methodologies before the Board in this proceeding, the first being the Board's traditional framework and the other being the approach put forward by TransCanada, which focuses on a total return framework.

CAPP noted that the traditional framework was used by the Board in the RH-2-94 Reasons for Decision and was subsequently confirmed by the Board in RH-4-2001. CAPP favoured the Board's traditional approach, stating that such an approach involved a separate determination of a return on equity and of a capital structure. It argued that once the Board has followed its traditional approach, it simply produces an arithmetic result to arrive at the total return. CAPP expressed the view that there is no separate determination of a fair return and cited the Federal Court of Appeal in *TransCanada v. NEB* in support of this proposition.

The starting point under the traditional framework for establishing capital structure, in CAPP's submission, is an analysis of business risk, which typically looks at changes in business risk since the last time cost of capital was assessed. CAPP argued that the Board may also look at other factors such as the pipeline's financing requirements, the pipeline's size and its ability to access capital and that these factors are afforded some weight by the Board.

In CAPP's view, the RH-4-2001 Decision should serve as the baseline and the Board should assess what changes of significance, if any, have occurred since 2001. CAPP submitted that TransCanada should have to prove whether any such changes justify a change in capital structure. While the Board's findings should be limited to changes of significance since 2001, CAPP acknowledged that the Board could look at changes prior to 2001. However, CAPP reiterated the point that the most relevant evidence in this proceeding is that evidence which points to changes that have occurred since 2001.

CAPP argued that the capital structure could not be backed out of the total return and that the essence of TransCanada's total return comparisons approach is problematic because any actual comparative analysis involves businesses for which there is both return on equity information and capital structure information. CAPP argued that this approach is flawed because, to arrive at total return, one must make a finding on the return on equity, which is not an issue in this case, as TransCanada chose not to file an application for review of the ROE stemming from the RH-2-94 Formula.

Finally, CAPP submitted that what constitutes a fair return is a matter of opinion for the Board and not a matter of law or jurisdiction. In CAPP's view, the Board is entitled to bring its own judgment, experience and expertise to bear on the question of what constitutes a fair return.

IGUA

It was submitted by the Industrial Gas Users Association (IGUA) that this case was unusual because not all the elements of cost of capital were at issue. According to IGUA, the traditional methodology involves a separate determination of the return on equity and the equity ratio. The mathematical product of the return on equity and the equity ratio is then included as the equity return component of the revenue requirement and used to produce just and reasonable tolls.

IGUA referred to the RH-2-94 Decision, wherein the Board held that the capital structure set in that hearing would endure for an extended period of years, and more importantly, that the Board would consider a reassessment of capital structure on an individual basis, in the event of a significant change in business risk, in corporate structure or in corporate financial fundamentals. It argued that the re-examination mechanism established by the Board in 1994 has never been set aside in any subsequent decision and that it applies as a matter of principle today. IGUA contended that the traditional methodology that the Board applies calls for a party seeking a re-examination of capital structure to satisfy a significant change of circumstances test to obtain the relief that it seeks. IGUA further argued that this test exists and cannot be eliminated, without a motion to vary and set aside that feature of the RH-2-94 Decision, which has not been done in this case.

IGUA supported CAPP's suggestion that this case is simply an attempt to vary the Board's RH-4-2001 Decision and that TransCanada is trying to do indirectly what it could not do directly. IGUA submitted that in the RH-4-2001 Decision, the Board rejected the total return approach for determining the return component of just and reasonable tolls proposed by TransCanada, and also rejected that approach as a check for reasonableness on the traditional methodology.

Finally, IGUA argued that it is more appropriate for the Board to look at significant changes in business risk if the request for a change in capital structure occurs shortly after the last decision on the matter. A clean slate approach is only appropriate if the Board is dealing with a case that is occurring a substantial period of time after the ratios were initially established.

Coral

Coral Energy Canada Inc. (Coral) did not make submissions regarding which methodology the Board should employ in determining TransCanada's capital structure. Coral acknowledged that as a practical matter, it acceded to TransCanada's position that the Board should employ the clean-slate methodology but noted that this should not be taken as a concession that Coral had to do so or as disagreement with the submissions for CAPP or IGUA on that point.

Ontario

The Minister of Energy for the Province of Ontario (Ontario) raised a number of legal principles for the Board to consider in relation to TransCanada's application. Among them, Ontario submitted that the Act contains no provision that requires the Board to determine a utility's rate of return on capital; the Act requires only that all tolls be just and reasonable. Ontario cited the Federal Court of Appeal in *TransCanada v. NEB* in support of its submission that the Board's authority to determine just and reasonable tolls is not limited by any statutory direction; instead it is guided by its own judgment. Ontario also stated that customers and consumers have an interest in ensuring that the Mainline's costs are not overstated.

It was noted by Ontario that the Board has adopted a cost of service methodology, although it was open to the Board to choose one of many approaches. Ontario argued that, having chosen this approach, the Board must faithfully determine the Mainline's costs. In cost of capital proceedings, the Board is entitled to estimate the cost of capital, including the deemed equity level of the Mainline and the Mainline's overall return on capital, on the basis of the evidence before it and its own judgment.

Views of the Board

As discussed in Chapter 1, the Mainline's 2004 ROE has already been established through the application of the RH-2-94 Formula and is not at issue in this proceeding. Determining the appropriate capital structure for the Mainline is the central issue within this proceeding; however, the central legal issue is whether the Board is legally compelled to employ a specific methodology in arriving at its determination of an appropriate capital structure for the Mainline. The submissions of parties concerning the Board's legal obligations in establishing the Mainline's capital structure raised points relating to four factors: the Act's requirement for just and reasonable tolls; cost of service regulation; the fair return standard; and the methodology to be used to determine capital structure.

Just and Reasonable Tolls

Any consideration of tolls must commence with an examination of the Board's mandate as set out in section 62 of the Act:

> All tolls shall be just and reasonable, and shall always, under substantially similar circumstances and conditions with respect to all traffic of the same description carried over the same route, be charged equally to all persons at the same rate.

The methodology that the Board must employ in setting just and reasonable tolls is not prescribed by law, nor is there any statutory obligation requiring the Board to specifically consider and establish a rate of return for the companies it regulates. The Federal Court of Appeal in *TransCanada v. NEB* held that while the Board has, for the Mainline, traditionally applied a cost of service methodology from which just and reasonable tolls are derived, the Board may adopt a different methodology for determining tolls.[14] This finding affirms a similar principle found in two previous decisions of that same Court.[15]

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14 *TransCanada v. NEB, supra* note 8 at paras. 29 and 30

15 The Court specifically affirmed its previous decision in *B.C. Hydro* (*infra* note 18) and, by doing so, also affirmed the same finding it made in *Trans Mountain* (*infra* note 16)

In *Trans Mountain Pipe Line Company v. National Energy Board et al.,*[16] the Federal Court of Appeal found that the method to be used and the factors to be considered in determining tolls:

> must be left to the discretion of the Board which possesses in that field an expertise that judges do not normally have. If, as it has clearly done in this case, the Board addresses its mind to the right question, namely, the justness and reasonableness of the tolls, and does not base its decision on clearly irrelevant considerations, it does not commit an error of law merely because it assesses the justness and reasonableness of the tolls in a manner different from that which the Court would have adopted.[17]

The broad authority of the Board was also set out in *B.C. Hydro and Power Authority v. Westcoast Transmission Company Ltd. et al*.[18] In that case, the Court noted that the regulatory system established by Part IV of the *National Energy Board Act* differs from the situation in *Northwestern Utilities (1929)* where there were specific statutory directions to the Public Utilities Board contained in the *Gas Utilities Act*. Thurlow C.J. in *B.C. Hydro* went on to state:

> There are no like provisions in Part IV of the National Energy Board Act. Under it, tolls are to be just and reasonable and may be charged only as specified in a tariff that has been filed with the Board and is in effect. The Board is given authority in the broadest of terms to make orders with respect to all matters relating to them. Plainly, the Board has authority to make orders designed to ensure that the tolls to be charged by a pipeline company will be just and reasonable. But its power in that respect is not trammelled or fettered by statutory rules or directions as to how that function is to be carried out or how the purpose is to be achieved. In particular, there are no statutory directions that, in considering whether tolls that a pipeline company proposes to charge are just and reasonable, the Board must adopt any particular accounting approach or device or that it must do so by determining cost of service and a rate base and fixing a fair return thereon.[19]

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16 *Trans Mountain Pipe Line Company v. National Energy Board et al.,* [1979] 2 F.C. 118 [hereinafter Trans Mountain]

17 *Ibid*. at para. 9

18 *B.C. Hydro and Power Authority v. Westcoast Transmission Company Ltd. et al.,* [1981] 2 F.C. 646 (C.A.) [hereinafter *B.C. Hydro*]

19 *Ibid*. at pp. 655-656

Cost of Service Regulation

It has been the Board's practice since its first rate hearing, RH-1-70, to utilize a forward test year cost of service approach to set tolls for the Mainline. This approach involves estimating the costs to be incurred by the Mainline over a future period, known as a test year. In order to recover its approved costs, the Board permits TransCanada to charge the Mainline's customers tolls. These tolls should provide TransCanada with sufficient revenue to recover the Mainline's prudently incurred costs, including its cost of capital, while at the same time "fairly allocating charges to users in relation to the costs and benefits of different services."[20]

The Federal Court of Appeal in *TransCanada v. NEB* noted that once the Board adopted the cost of service methodology "it had to faithfully determine the Mainline's costs based upon the evidence and its own sound judgment."[21] As the Court also pointed out, the largest component of the Mainline's costs is its cost of capital, which is included in the Mainline's cost of service.[22]

Rothstein J.A. in *TransCanada v. NEB* described the cost of capital to a utility this way:

> The cost of capital to a utility is equivalent to the aggregate return on investment investors require in order to keep their capital invested in the utility and to invest new capital in the utility. That return will be made in the form of interest on debt and dividends and capital appreciation on equity. Usually, that return is expressed as the rate of return investors require on their debt or equity investments.[23]

Under the Board's traditional approach, once the Board has established a rate of return on equity and debt, the two numbers are consolidated into a composite rate of return on capital, based upon the relative amounts of debt and equity in the capital structure. The Board constructs for each pipeline a capital structure, which reflects the amount of debt and equity the pipeline needs to finance its prudently incurred costs. This assessment is made with the assistance of expert evidence. In order to account for the greater or lesser risk attributed to an individual pipeline, the equity component of the capital structure is adjusted. The higher the risk attributed to a pipeline, the greater the required equity component of its capital structure. This is so, because equity serves as support for debt,

20 *TransCanada v. NEB, supra* note 8 at para. 5

21 *Ibid*. at para. 32

22 *Ibid*. at para. 5

23 *Ibid*. at para. 6

whose repayment is most often fixed. A higher level of equity provides comfort to debt lenders by improving the likelihood that their investment will be recovered in the event the corporation cannot meet its financial obligations.

Fair Return Standard

A number of parties cited case law, in addition to those cases already discussed in these Views of the Board, in their arguments regarding the determination of the cost of capital and the overall return. *Northwestern Utilities (1929)*, *Bluefield* and *Hope* are the leading cases with respect to the fair return standard. For ease of reference, the relevant passages are reproduced herein.

In *Northwestern Utilities (1929)* Lamont J. of the Supreme Court of Canada held that:

> The duty of the Board was to fix fair and reasonable rates; rates which, under the circumstances, would be fair to the consumer on the one hand, and which, on the other hand, would secure to the company a fair return for the capital invested. By a fair return is meant that the company will be allowed as large a return on the capital invested in its enterprise (which will be net to the company) as it would receive if it were investing the same amount in other securities possessing an attractiveness, stability and certainty equal to that of the company's enterprise.[24]

In *Bluefield*, the US Supreme Court stated:

> The company contends that the rate of return is too low and confiscatory. What annual rate will constitute just compensation depends upon many circumstances, and must be determined by the exercise of a fair and enlightened judgment, having regard to all relevant facts. A public utility is entitled to such rates as will permit it to earn a return on the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties; but it has no constitutional right to profits such as are realized or anticipated in highly profitable enterprises or speculative ventures. The return should be reasonably sufficient to assure confidence in the financial soundness of the utility and should be adequate, under efficient and economical management, to maintain and support its credit

24 *Northwestern Utilities (1929), supra* note 9 at pp. 192-193

> and enable it to raise the money necessary for the proper discharge of its public duties. A rate of return may be reasonable at one time and become too high or too low by changes affecting opportunities for investment, the money market and business conditions generally.[25]

Finally, in *Hope,* the US Supreme Court stated:

> We held in *Federal Power Commission v. Natural Gas Pipeline Co.*, that the Commission was not bound to the use of any single formula or combination of formulae in determining rates. Its ratemaking function, moreover, involves the making of "pragmatic adjustments." And when the Commission's order is challenged in the courts, the question is whether that order "viewed in its entirety" meets the requirements of the Act. Under the statutory standard of "just and reasonable" it is the result reached not the method employed which is controlling. It is not theory but the impact of the rate order which counts. If the total effect of the rate order cannot be said to be unjust and unreasonable, judicial inquiry under the Act is at an end. The fact that the method employed to reach that result may contain infirmities is not then important. Moreover, the Commission's order does not become suspect by reason of the fact that it is challenged. It is the product of expert judgment which carries a presumption of validity. And he who would upset the rate order under the Act carries the heavy burden of making a convincing showing that it is invalid because it is unjust and unreasonable in its consequences.
>
> The rate-making process under the Act, i.e., the fixing of "just and reasonable" rates, involves a balancing of the investor and the consumer interests. Thus we stated in the Natural Gas Pipeline Co. Case that "regulation does not insure that the business shall produce net revenues". But such considerations aside, the investor interest has a legitimate concern with the financial integrity of the company whose rates are being regulated. From the investor or company point of view it is important that there be enough revenue not only for operating expenses but also for the capital costs of the business. These include service on the debt and dividends on the stock. By that standard the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital. The conditions

25 *Bluefield, supra* note 10 at pp. 692-693

> under which more or less might be allowed are not important here. Nor is it important to this case to determine the various permissible ways in which any rate base on which the return is computed might be arrived at.[26] [citations omitted]

RH-1-70 was the first proceeding under Part IV of the Act in respect of tolls to be charged by TransCanada. In that Decision, the Board quoted extensively from, considered and relied upon these cases. The Board concluded as follows in respect of the framework for consideration of an appropriate rate of return for TransCanada:

> The Board is of the opinion that in respect of rate regulation, its powers and responsibilities include on the one hand a responsibility to prevent exploitation of monopolistic opportunity to charge excessive prices, and equally include on the other hand the responsibility so to conduct the regulatory function that the regulated enterprise has the opportunity to recover its reasonable expenses, and to earn a reasonable return on capital usefully employed in providing utility service. Further, it holds that to be reasonable such return should be comparable with the return available from the application of the capital to other enterprises of like risk. The Board accepts that, with qualifications, the rate of return is the concept perhaps most commonly used to project for some future period the ratio of return which has been found appropriate for the capital employed usefully by a regulated enterprise in providing utility service in a defined test period.[27]

In the RH-4-2001 Reasons for Decision, the Board set out what it viewed as the attributes which a fair return ought to have. One of the elements referred to was the appropriate balance of customer and investor interests. The Board went on to state that customer interest in rate of return matters relates most directly to the impact the approved return will have on tolls, and found this to be a relevant factor in the determination of a fair return.[28] In the RH-R-1-2002 Decision regarding TransCanada's application for review of RH-4-2001, the Board reiterated its view that the balance of interests between consumers and investors in the utility could be taken into account.[29] On appeal of this point, the Federal Court of Appeal in *TransCanada v. NEB* agreed with TransCanada's argument that the required rate of return on equity must be determined solely on the basis of the Mainline's cost of equity capital. The Court found that the impact of

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26 *Hope, supra* note 11 at pp. 602-603

27 RH-1-70, *supra* note 13 at p. 7-5

28 RH-4-2001, *supra* note 4 at pp. 11-12

29 RH-R-1-2002, *supra* note 5 at p. 1

any resulting toll increases on customers is not a relevant consideration in that determination.[30] While consumers have an interest in ensuring that the Mainline's costs are not overstated and therefore may provide evidence, it must pertain to the costs of the Mainline. The Court noted that the Board could take increases in tolls into account in considering whether the tolls should be phased in over time to ameliorate any rate shock. The Court went on to find that there was no evidence that the Board took the impact on consumers into account in making its determination of the Mainline's return on equity[31] and the appeal was denied. The Board confirmed, in its 19 November 2004 ruling on a TransCanada motion (see Appendix III), that it would not give weight to any evidence pertaining to the impact of tolls on customers in making the determinations to be made in Phase II.

The Board is of the view that the fair return standard can be articulated by having reference to three particular requirements. Specifically, a fair or reasonable return on capital should:

- be comparable to the return available from the application of the invested capital to other enterprises of like risk (the comparable investment standard);
- enable the financial integrity of the regulated enterprise to be maintained (the financial integrity standard); and
- permit incremental capital to be attracted to the enterprise on reasonable terms and conditions (the capital attraction standard).

In the Board's view, the determination of a fair return in accordance with these enunciated standards will, when combined with other aspects for the Mainline's revenue requirement, result in tolls that are just and reasonable.

Methodology to Determine Capital Structure

The preceding discussion sets out the framework for the Board's consideration of the cost of capital issues. Different views were presented regarding which approach should be used in establishing the equity thickness, and to what determinations the fair return standard would apply.

IGUA argued that the RH-2-94 Decision includes a reassessment mechanism, based on criterion of significant change in business risk, which continues to apply. IGUA further argued that a motion to vary and set aside this feature of the RH-2-94 Decision was required but was not done in this case. In the Board's view, the wording in the RH-2-94 Decision established an expectation or desire on the part of the Board that

30 *TransCanada v. NEB, supra* note 8 at paras. 35-36

31 *Ibid.* at para. 37

the capital structure decision would endure for a period of years. The Decision further indicates that the Board would be prepared to consider a reassessment of capital structure in the event of a significant change in business risk, in corporate structure or in corporate financial fundamentals. In the Board's view, the wording of the RH-2-94 Decision was not an attempt to establish a standard that, if not met, would preclude an applicant from filing an application, but rather was an indication of when the Board believed it would be appropriate to reconsider the matter. Further, the Board determined in its rulings prior to the oral portion of this hearing that it would not limit the examination of the capital structure issues to any particular methodology. Thus, in the Board's view, a motion to vary the RH-2-94 Decision was not necessary.

TransCanada argued that the Board should make its determination on capital structure by examining the total return, as the Board must, as a matter of law, establish a fair overall return for the Mainline and it is to the overall return that the fair return standard applies. From that finding, the Board can determine the Mainline's equity component. Included in this approach is TransCanada's argument that the Board ought not to limit itself to examining changes in business risk since the last time the Mainline had its cost of capital assessed by the Board, in this case, in 2001, but rather should apply a clean-slate approach.

Many of the intervenors agreed that the Board is required to provide TransCanada a fair return, but disputed TransCanada's contention that the Board is obligated to look at the overall return when setting the Mainline's capital structure. Instead, the intervenors favoured the Board's traditional approach, wherein the Board first sets a return on equity and then undertakes an assessment of business and financial risks facing the pipeline. This type of assessment typically looks at how each component of business risk has changed since the last time business risk was assessed. The final step in this approach involves the establishment of a capital structure or a common equity ratio that, when combined with the ROE, will result in an overall return commensurate with the level of business risk facing the investment. Some intervenors referred to this as a purely arithmetic function.

While some parties seemed somewhat entrenched early on in this proceeding regarding whether it was proper for a party on the opposing side to present its case according to a particular methodology, most seemed to recognize, as the hearing progressed, that the law did not prohibit the other approach. The arguments tended to focus on which approach would be more appropriate for the Board to use in coming to a decision on capital structure. Other than establishing that the return awarded to the company must meet the fair return standard, the case law provides no assistance on how this must be done.

The Board agrees with CAPP and others that historically the Board has examined the elements that go into determining total return separately rather than looking at specific evidence regarding overall return. In the RH-2-94 Multi-Pipeline Cost of Capital Decision, the Board established the ROE for a benchmark pipeline to be applied to all pipelines in that hearing. It then determined that any risk differentials between the pipelines could be accounted for by adjusting the common equity ratio.[32] To do this, it started with an analysis of each pipeline's business risk and then examined factors such as financing requirements, the pipeline's size and its ability to access financial markets.[33]

In RH-4-2001, the Board considered but rejected TransCanada's ATWACC proposal. The Board held that its assessment of how the Mainline's business risk had changed since the consideration in the RH-2-94 Proceeding justified an increase in the Mainline's common equity ratio. The Board found in RH-4-2001, as it had in RH-1-70, that the determinations made were consistent with the legal principles set out therein, which included the fair return standard, and found that the decisions would result in a fair return for the Mainline.

The Board also agrees with TransCanada that the case law establishes that it is the overall return on capital to the company which ought to meet the comparable investment, financial integrity and capital attraction requirements of the fair return standard. However, this does not, in the Board's view, require that the Board make the necessary determinations solely by means of examining evidence on overall return.

Similarly, while it is open to the Board to look at changes in business risk since a previous decision to establish an equity thickness for the Mainline, it is also not restricted to this approach. When the Board utilizes the traditional methodology, it ensures that each element that goes into the determination of the overall return is reasonable. It then uses its judgment to ensure that the resulting return is a fair return in accordance with the legal requirements. To this extent, the return on capital is not simply an arithmetic determination of various elements. The Board must always apply its judgment to ensure the return on capital is fair.

In short, as indicated by the Federal Court of Appeal in *TransCanada v. NEB,* when the Board employs a cost of service methodology, it must faithfully determine the Mainline's costs based on the evidence and its own sound judgment.[34] Beyond that, the Board is not required in law to subscribe to any particular methodology.

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32 RH-2-94, *supra* note 1 at p. 6

33 *Ibid*. at p. 25

34 *TransCanada v. NEB*, *supra* note 8 at para. 32

Thus, the Board is neither limited to considering evidence pertaining to significant changes since it last established the Mainline's capital structure, nor is it compelled to give weight to particular evidence pertaining to overall return. The Board must consider all the evidence placed before it, decide what weight that evidence should be given and apply its judgment in making the required decisions. In doing so, the Board must satisfy itself that these decisions are consistent with the Act's requirement for just and reasonable tolls and that, since the Mainline operates under cost of service regulation, the return on capital to the company meets the fair return standard. In this hearing, the Board must apply its judgment to satisfy itself that the approved common equity ratio, when combined with the Mainline's ROE of 9.56 percent, will result in a fair return on equity for TransCanada in 2004.

What weight a specific piece of evidence or methodology should be given is a matter of judgment. In the following chapters of these Reasons for Decision, the Board has summarized the evidence and position of parties and expressed views concerning the weight that such evidence ought to be afforded in making the various determinations to be made in Phase II.