



National Energy Board

Reasons for Decision

GHR-1-87

July 1987

**Review of Natural Gas Surplus
Determination Procedures**

National Energy Board

Reasons for Decision

In the Matter of

Review of Natural Gas Surplus Determination
Procedures

GHR-1-87

July 1987

© Minister of Supply and Services Canada 1987

Cat. No. NE22-1/1987-8E
ISBN 0-662-15608-0

This report is published separately in both official languages.

Copies are available on request from:

Regulatory Support Office
National Energy Board
473 Albert Street
Ottawa, Canada
K1A 0E5
(613) 998-7204

Printed in Canada

Ce rapport est publié séparément dans les deux langues officielles.

Exemplaires disponibles sur demande auprès du:

Bureau du soutien à la réglementation
Office national de l'énergie
473, rue Albert
Ottawa (Canada)
K1A 0E5
(613) 998-7204

Imprimé au Canada

Table of Contents

Summary	(iii)
1. Background	1
1.1 Introduction	1
1.2 The Board's Current Surplus Determination Procedures	3
2. Continuing Appropriateness of Existing Procedures	4
3. Alternative Surplus Determination Procedures	11
3.1 Suggested Modifications to Existing Procedures	11
3.1.1 Contractual Protection	11
3.1.2 Protection for Only Part of the Natural Gas Market	18
3.1.3 Modified R/P Procedure	20
3.1.4 Reserves Formula	21
3.1.5 Increasing the Number of Years of Protection for Canadian Requirements	22
3.1.6 Partially Refundable Export Levies with Cost-Benefit Analysis	23
3.2 Reliance on Market Forces	23
3.3 How Procedures Should Take into Account Requirements of Various End Users and Natural Gas Imports	30
3.4 Conditioning of Export Authorizations	32
3.5 Relevance of Provincial Tests	33
4. Decision	36
5. Disposition	41

Appendices

1. Board Letter Dated 6 February 1987	42
Hearing Order GHR-1-87	42
Board Letter Dated 31 March 1987	42
List of Interested Parties	42
2. Appearances	69
3. Abbreviations	72
4. Reference Publications	75
5. Definitions	76
6. The Legislative Basis for the Board's Gas Export Responsibilities	79
7. Evolution of the Board's Natural Gas Surplus Determination Procedures	80

Summary

(Note: This summary is provided solely for the convenience of the reader and does not constitute part of this decision or the reasons for it.)

One of the key responsibilities of the National Energy Board ("the Board") is to ensure that natural gas proposed to be exported is surplus to reasonably foreseeable Canadian requirements. The Board has discharged that responsibility by various means over the years.

In a hearing held in 1985, the Board reviewed the procedures it uses to determine natural gas surplus. In its Report dated April 1986 the Board announced new procedures based on the ratio of reserves to production (the R/P Ratio Procedure).

On 29 October 1986, at the close of the transition year specified in the 31 October 1985 *Agreement among the Governments of Canada, Alberta, British Columbia, and Saskatchewan on Natural Gas Markets and Prices*, the Minister of Energy, Mines and Resources wrote to the Chairman of the Board seeking the Board's advice on the implications of changing conditions in natural gas markets "and the action the Board is prepared to initiate in respect of its natural gas surplus determination procedures, to take account of a rapidly evolving market environment".

On 4 November 1986 the Chairman replied that the Board was prepared to undertake a comprehensive review.

This review was conducted by the Board in plenary session. Input from interested parties was by written submission and in the form of an oral hearing held in April and May 1987 in Ottawa, Calgary and Toronto.

The review centred upon two main questions:

- Whether the R/P Ratio Procedure continued to be appropriate in the light of recent changes in the Canadian natural gas market, and
- What alternative procedures should the Board consider.

The Board decided that the R/P Ratio Procedure is no longer appropriate for a number of reasons:

- i) The Board's surplus determination procedures should be consistent with the policy of market-determined prices for natural gas and with the extent to which this policy has been successfully implemented.
- ii) There have been changes in perception in the past year regarding the nature and extent of the protection required for the Canadian natural gas market.
- iii) It would now be anomalous and contrary to free market operation if the level of gas supply to Canadians were to be determined by other than market forces.
- iv) The R/P Ratio Procedure could lead to greater restrictions in export volumes than would be warranted by the public interest.

For similar reasons the Board rejected alternative procedures suggested to it by interested parties. These included modifications to the R/P Ratio Procedure, a return to the use of a Reserves Formula and Deliverability Appraisal, and increasing the number of years of protection for Canadian requirements.

The Board rejected the following alternatives as impractical, administratively difficult, incompatible with market-determined pricing, and/or beyond the Board's mandate:

- i) The Board issuing guidelines or setting standards for the length of distributors' contracts.
- ii) Relying on an offer mechanism whereby gas to be licensed for export would first have to be offered in the domestic marketplace.
- iii) Protecting only part of the domestic natural gas market.
- iv) Instituting partially refundable export levies.

The Board found merit in the suggestions it received that:

- i) objections to a natural gas export licence by domestic gas purchasers on the grounds that they were unable to contract for gas under similar terms and conditions, including price, be given considerable weight by the Board,
- ii) the Board should continue to monitor and publish reports on current and projected Canadian energy supply and demand and its judgments, about the current and future functioning of Canadian energy markets should play a role in its determination of whether natural gas proposed to be exported is surplus, and
- iii) the Board should continue to issue export licences only if it judges them to be in the public interest.

The current energy policy framework is based on the premise that the marketplace should determine the supply, demand and price for natural gas. The Board considers it appropriate that this premise also form the basis for its surplus determination procedures. However, there are a number of factors which could impede the market from adequately and fairly meeting Canadian energy requirements in the face of increased export demand.

The Board decided, therefore, to adopt a surplus determination procedure, which will be referred to as the Market-Based Procedure, which does not unduly interfere with the market when it is working to serve Canadian needs adequately and fairly, but which will provide for intervention by the Board whenever it finds that additional exports might cause the market to have difficulty in meeting reasonably foreseeable Canadian requirements.

The Market-Based Procedure

The Board will act in two ways to ensure that natural gas to be licensed for export is surplus to reasonably foreseeable Canadian requirements: one will be in the context of public hearings to

consider applications for licences to export natural gas; the other will be by monitoring Canadian energy markets on an ongoing basis.

A. Public Hearings

There are three components to the public hearings part of the Market-Based Procedure:

1) Complaints Procedure

In the public hearing process, the Board will make use of a complaints procedure to ensure that no Canadian user is in a position of not being able to obtain additional supplies of gas under contract on terms and conditions, including price, similar to those in the export arrangement.

If the Board finds merit in a complaint that Canadians have not been able to contract for gas on an equal basis, it may deny the application or defer issuing a final decision on it until an opportunity has been given for the situation to be rectified.

2) Export Impact Assessment

The Board will require applicants for export licences to file an impact assessment which will allow the Board to determine whether a proposed export is likely to cause Canadians difficulty in meeting their energy requirements at fair market prices.

3) Public Interest Determination

The Board will continue, as required by Section 83 of the Act, to have regard to all other factors it considers relevant in determining whether proposed export licences are in the national public interest. Among these factors would be the nature of the contractual arrangements; support by producers for the proposed export; recovery of the costs incurred; evidence that the export price would not be less than the price to Canadians; availability of pipeline space; evidence that the export was likely to result in net benefits to Canada; any relevant government policies; and any other relevant matters.

B. Ongoing Monitoring

There are two components to the ongoing monitoring of the Market-Based Procedure:

1) Assessment of Canadian Energy Supply and Demand

As part of its monitoring of the functioning of the marketplace the Board will continue to produce and publish at intervals of approximately two years its staff assessment: *Canadian Energy & Supply and Demand*, which was last issued in December 1986. This assessment considers, among other things, the evolving shares the energy market served by various energy forms - electricity, oil, natural gas, petroleum products, coal and renewables - over a projection period of some 20 years.

2) Natural Gas Market Assessment

Also on an ongoing basis, the Board will analyze natural gas supply, demand and prices and will periodically publish reports on its findings.

The focus of these reports will be narrower and shorter-term than the *Canadian Energy Supply and Demand* reports. A detailed assessment of the structure and functioning of natural gas markets will be provided. There will be coverage of recent developments and near-term prospects for natural gas markets and comments on competitive activity in the market, on pipeline utilization for Canadian and export purposes and on the quantity and quality of gas supply.

Concluding Observations

In the Board's view, the Market-Based Procedure is fully compatible with the market-oriented pricing régime. The setting aside of any predetermined amount of gas reserves by means of a surplus formula cannot help but interfere with the proper functioning of the market.

The Board's new Market-Based Procedure is not any less certain than its previous R/P Ratio Procedure. While a formula approach of any sort gives an aura of precision to the determination of surplus, it relies heavily on the ability to forecast accurately a large number of variables on both the supply and demand side of the equation.

The Board did not see the need for a period of transition to its new procedures. However, as is usually the case, the Board will evaluate the merits of any intervenor's request for additional time to prepare itself for dealing with an application.

Chapter 1

Background

1.1 Introduction

In 1985, the National Energy Board ("the Board") reviewed the procedures it uses to determine the quantity of natural gas surplus to reasonably foreseeable Canadian requirements and hence available for export. In its Report dated April 1986¹ the Board announced changes in these procedures, as set out in section 1.2 following.

On 29 October 1986, at the close of the transition year specified in the 31 October 1985 Agreement among the *Governments of Canada, Alberta, British Columbia, and Saskatchewan on Natural Gas Markets and Prices*, the Minister of Energy, Mines and Resources wrote to the Chairman of the Board seeking the Board's advice on the implications of changing conditions in natural gas markets "and the action the Board is prepared to initiate in respect of its natural gas surplus determination procedures, to take account of a rapidly evolving market environment".

On 4 November 1986 the Chairman replied (copies of both letters are included in Appendix 1) that the Board was prepared "in light of the implications of a rapidly evolving market environment ... to undertake a comprehensive review of the Board's established gas surplus procedures. The Chairman also stated that: "The Board, in conducting this review, would of course want to seek the views of all affected segments of the Canadian energy community. This can best be done through a public hearing, which would enable all interested parties to present and to be examined on their views.

On 18 December 1986 the Board wrote to interested parties (a copy of this letter is included in Appendix 1) informing them that the Board would conduct its review in plenary session, that input by interested parties would be by written submission, that an opportunity would be provided for an oral process as part of the review, and that for this purpose the Board would, pursuant to subsection 14(1) of the *National Energy Board Act*, assign one of its Members to preside at a public hearing. The Board subsequently assigned its Chairman, R. Priddle.

Attachment 2 to the Board's letter contained a list of six issues on which the Board sought the views of interested parties:

- “1. Do the National Energy Board's existing surplus determination procedures continue to be appropriate in the light of changes in the Canadian natural gas market since the Board last conducted a review of these procedures?
2. What alternative surplus determination procedures should the Board consider? Parties suggesting alternative procedures for satisfying Paragraph 83(a)² of the *National*

¹ Reasons for Decision in the Matter of Phase 1 The Surplus Determination Procedures Phase of the Gas Export Omnibus Hearing, 1985.

² See Appendix 6.

Energy Board Act should clearly explain the rationale for such procedures, how they would work, and the advantages and disadvantages of their proposals relative to the current procedures.

3. Would reliance on market forces to balance supply and demand of natural gas in Canada be an acceptable substitute for the Board's surplus determination procedures?
4. How should the Board's procedures take into account:
 - (i) the requirements of end users who are unable to switch readily to alternate fuels or who cannot or do not wish to contract directly with producers for their supply needs, and the lengths of contracts entered into on their behalf;
 - (ii) the requirements of end users, such as large volume gas consumers, who contract directly with producers, and the lengths of the contracts they enter into; and
 - (iii) gas imported into Canada, and the lengths of contracts under which it is imported?
5. Would it be appropriate for the Board to condition export authorizations to provide that any domestic shortages must be met by the holders of those authorizations before exports can proceed?
6. The two principal gas-producing provinces are expected to complete reviews of their own surplus tests by spring 1987. The Board will seek views on the relevance, to its surplus procedures, of the provincial tests if these reviews are available."

Subsequently, under cover of a letter dated 6 February 1987, the Board issued Hearing Order GHR-1-87 setting down for hearing the oral portion of the review.¹

On 31 March 1987 the Board wrote interested parties to request their views on the relevance, to its surplus determination procedures, of the Alberta Energy Resources Conservation Board Report 87-A. *Gas Supply Protection for Alberta: Policies and Procedures*, dated March 1987. (At the time of the hearing, the Province of British Columbia had not yet completed the review of its surplus determination procedures. Its decision was published in July 1987.) The Board's letter also provided notice to Participants of certain lines of questioning intended for the oral portion of the hearing.²

Some 100 parties indicated their interest in this review. Submissions were received from about 50 interested parties including companies, associations, individuals, provincial governments and government agencies. The Board also received several letters of comment.

¹ See Appendix 1.

² See Appendix 1.

The majority of submitters participated in the oral hearing which was held in Ottawa from 13 to 16 April, in Calgary from 21 to 24 April and in Toronto from 5 to 8 May 1987.¹

The Board would like to thank all interested parties for their submissions and letters, their participation in the oral hearing, and for their assistance to the Board in its review.

1.2 The Board's Current Surplus Determination Procedures

In its disposition of an application to export natural gas, the Board can issue a licence, subject to the approval of the Governor in Council, only if it has first satisfied itself that the quantity of gas to be exported is surplus after due allowance has been made for reasonably foreseeable Canadian requirements, having regard to the trends in the discovery of gas in Canada.² (The export of gas for a term of two years or less by order does not require either formal surplus determination or Governor in Council approval. Appendix 6 sets out the legislative basis under which the Board regulates natural gas exports.)

The Board's surplus determination procedures were last modified in April 1986. The procedure established at that time is based upon the ratio of reserves to production (the R/P Ratio Procedure). It incorporates estimates of annual additions to reserves, and forecasts of both Canadian demand and authorized exports. It also involves an assessment of future annual productive capacity (see Appendix 7).

The Board noted in its 1986 decision that it believed that the new market-sensitive pricing policy should, increasingly over time, assist in the balancing of supply and demand, and that it expected to be able to place increasing reliance in the future on the responsiveness of supply and demand to price and less reliance on the size of currently established reserves in protecting future Canadian requirements.

The Board also noted its view that its surplus determination procedures must be flexible and capable of responding to changing circumstances.

¹ See Appendix 2.

² Paragraph 83(a) of the NEB Act.

Chapter 2

Continuing Appropriateness of Existing Procedures

This chapter summarizes the views of parties and the Board on the first of the six questions posed to interested parties by the Board in Attachment 2 of its letter dated 18 December 1986.

This question was:

“Do the National Energy Board’s existing surplus determination procedures continue to be appropriate in the light of changes in the Canadian natural gas market since the Board conducted a review of these procedures?”

Parties were divided on the question of the continuing appropriateness of the R/P Ratio Procedure. The provinces of Manitoba and Quebec, all of the gas distribution companies which made submissions, CGA,¹ Waddell, and some other parties argued that the current procedures continue to be appropriate. Producer interests, most gas exporters, the provinces of Alberta and Saskatchewan, the major gas transmission pipelines, CCPA, IGUA, C-I-L, Polysar, Edge, and others were of the view that the current procedures were no longer appropriate. The Province of Ontario proposed certain modifications to the current procedures.² CAC and Canadian Geothermal argued that the current procedures did not give adequate protection and proposed a longer protection period.³ The Province of British Columbia took no position since it was awaiting the results of the review of its own surplus determination procedures.

Those parties, essentially all the distribution companies and the Province of Quebec, who favoured retention of the R/P Ratio Procedure advanced the following main reasons for their view that it was still appropriate:

- (i) the R/P Ratio Procedure is flexible and capable of responding to changing circumstances;
- (ii) nothing of substance has changed in any unforeseen way since the Board’s April 1986 decision which would warrant changing the R/P Ratio Procedure - the changes that did occur were either anticipated during the Board’s last review or can readily be accommodated within the current procedure;

¹ See Appendix 3 for the abbreviations used in this report.

² See Section 3.1.3.

³ See Section 3.1.5.

- (iii) existing surplus determination procedures are not an impediment to further natural gas exports - less than 50 percent of licensed exports are flowing, some licences approved by the Board in 1983 have still not received U.S. regulatory approvals, and exports may be made under short-term orders which are not subject to a surplus test;
- (iv) the current procedures have not yet been tested over a sufficient period of time to assess their effectiveness - further change so soon after the changes made in April 1986 would create instability and weaken consumers' confidence in their long-term energy security;
- (v) 15 years of protection are needed in order that existing gas-burning equipment and transmission and distribution facilities can be amortized;
- (vi) the transition to market-sensitive pricing is not yet completed - existing contracts between distributors and TransCanada do not expire until the 1990s, and the producing provinces continue to influence prices through removal permits;
- (vii) the Ministries request that the Board review its procedures is not a directive that they be changed; parties noted that the Minister emphasized that it is not the intention of the Government of Canada to amend or interfere with the Board's responsibility to protect reasonably foreseeable requirements;
- (viii) reserves additions over the last three years have been less than production and are projected to decline - future reserves which will replace gas being exported will be of lower quality; more expensive to find, develop and transport; and located in remote, environmentally sensitive areas;
- (ix) the current procedure provides a good balance between the objectives of encouraging access for Canadian gas to export markets and maintaining an appropriate level of Canadian security of supply;
- (x) the current procedure balances the risks of forecasting errors with periodic reviews, and it is better to err on the side of overprotection than risk a supply shortfall;
- (xi) the R/P Ratio Procedure satisfies the requirements of the NEB Act that quantities to be exported not exceed the surplus remaining after due allowance has been made for the reasonably foreseeable requirements for use in Canada;
- (xii) long-term, secure supplies of energy at reasonable prices are fundamental to the Canadian economy and to the well-being of all Canadians - Canada's natural gas supplies could be rapidly depleted by the larger U.S. market in the absence of the current procedure which provides adequate protection and forewarning of any forthcoming problems in supply or price in time to take necessary corrective action;
- (xiii) the current procedure correctly takes into account deliverability which, rather than reserves, is the true determinant of supply to the market;

- (xiv) both the Western Accord¹ and the Agreement on Natural Gas Markets and Prices recognized the importance of energy security, which should not be compromised for access to export markets freer than that provided by the current procedure;
- (xv) a telephone survey of their industrial and commercial customers commissioned by Consumers' Gas and Union Gas showed that most want the government to protect Canadian natural gas requirements for 15 to 20 years into the future for all types of customers, and
- (xvi) the June 1986 report of the Pipeline Review Panel supports the current procedure.

Some parties who opposed the current procedure argued that it did not provide a long enough period of protection for Canadian requirements. These included Canada Geothermal, CAC and Sierra Club. Generally, their view was that natural gas is an essential, depleting, non-renewable resource, the export of which should be curtailed or stopped altogether.

Most parties, mainly the producer interests and the Provinces of Alberta and Saskatchewan, who opposed retention of the current procedure advanced the following main reasons for their position:

- (i) the current procedure does not allow for the significantly freer access to export markets anticipated in the October 1985 Agreement on Natural Gas Markets and Prices;²
- (ii) the current procedure is inconsistent with a market-sensitive pricing environment: it will distort the market by allowing and indeed encouraging domestic purchasers to buy gas on short-term contracts at lower prices than would apply to longer-term contracts, without concern for their future needs; force producers to provide free "backstopping" by maintaining an inefficient and costly inventory of reserves; and create situations in which such uncontracted reserves overhang the market and therefore depress prices in it;
- (iii) the current procedure will therefore lead to missed export opportunities and lower economic growth, employment and revenues for Canadians;
- (iv) the R/P Ratio Procedure relies on forecasts of annual reserves, reserves additions, productive capacity, exports and domestic demand; the protection it provides is

¹ *The Western Accord: Agreement between the Governments of Canada, Alberta, Saskatchewan, and British Columbia on Oil and Gas Pricing and Taxation*

² Paragraph 16 of the Agreement states:
 "The governments anticipate that reviews of surplus tests underway or shortly to be initiated by the National Energy Board and by the appropriate provincial authorities will result in significantly freer access to domestic and export markets and thus will contribute to the achievement of the market-oriented pricing system contemplated in the Agreement."

dependent on the accuracy of these forecasts; and it is not possible to forecast accurately;

- (v) the current procedure is not sufficiently compatible with the changes in the direction of freely-working interprovincial and international markets for Canadian gas which have taken place since April 1986, including:
 - the replacement in the Canadian interprovincial market of regulated prices by negotiated prices in shipper/distributor contracts;
 - the availability of direct sales of natural gas in those provinces where there is contract carriage on distributor systems and on the TransCanada system;
 - the resolution of the questions of double demand charges caused by the displacement of one volume by another, and of the equitable sharing of take-or-pay charges; and
 - the replacement of the adjacent-border price test for exports by more flexible, after-the-fact monitoring;
- (vi) the current procedures are time-consuming and unduly complex;
- (vii) the R/P Ratio Procedure does not recognize the self-correcting nature of a market-oriented pricing system under which prices will change with market conditions, thereby balancing supply and demand;
- (viii) the current procedure protects those users (e.g. industrial users or those with the capability to use two or more fuels) who either do not need protection at all, or who do not need 15 years of protection;
- (ix) the present procedure does not give adequate weight to the desire of parties to the October 1985 Agreement to place more reliance on contracting by putting the onus on those seeking long-term protection to contract for it;
- (x) the results of the present procedure are prone to distortion because of the swings in exploration activity even though the amount of reserves remaining to be discovered is unchanged;
- (xi) the R/P Ratio Procedure provides only limited protection because it does not provide any certainty that the gas which is set aside is or will be available to specific Canadian buyers in the future; for example, because of transportation constraints between regions;
- (xii) the distortion in domestic market price formation, caused by the availability of gas set aside by the present procedure but not under contract to any purchaser, will ultimately harm the economics of exploration and development, leading to a decline in reserves additions and more pronounced swings in price;

- (xiii) the current procedure does not relate to contracting practices, and is merely a mathematical determination which does not ensure that actual supply contracts are adequate nor provide any measure of relief in the event of supply failure;
- (xiv) the present procedure puts too much emphasis on security of supply without adequate consideration of the costs involved;
- (xv) the R/P Ratio Procedure has no mechanism available for future adjustment in the event the supply and demand forecasts adopted at a point in time, which depend on uncertain long-term price forecasts, turn out to be inaccurate - once a particular forecast has been adopted, the procedure loses its flexibility; and
- (xvi) the current test is restrictive and arbitrary, imposing unacceptable costs especially on small producers who seek to export gas.

Views of the Board

While the Board appreciates the concerns expressed by those favouring retention of the R/P Ratio Procedure, it does not accept that the R/P Ratio Procedure continues to be the best or only way to address these concerns.

The Board first addresses a number of specific issues raised by parties supporting the R/P Ratio Procedure and then focusses on the key question of the compatibility of the R/P Ratio Procedure with market-determined pricing. The specific issues are as follows:

- The Board recognizes that existing procedures are not impeding exports taking place under previously issued licences but surplus determination procedures are used in deciding whether to issue new licences for export in future years. The Board's procedures should not be predicated only on existing conditions.
- With regard to the suggestion that 15 years of protection are needed to amortize existing equipment and facilities, the Board notes that the value of existing equipment or the cost of replacing it is only one factor in Canadians' decisions on fuel use. The effect of exports on the time available to write down equipment is similarly only one factor to be taken into account in assessing the overall public interest
- The Board agrees with parties who pointed out that the transition to market-sensitive pricing is not yet completed because existing distributor contracts have some years to run and the producing provinces continue to seek to influence markets through removal permits.
- The Board also notes the concerns that reserves additions in recent years have been lower than production and that future reserves will be more expensive. The level of reserves additions is not surprising, given the decline in natural gas exploration. In the Board's view, this has resulted, primarily, from Canada's high reserves to production ratio due, in part, to the fall-off in gas export sales and revenues.

The change in domestic natural gas markets to allow market-oriented pricing, which had been initiated by the October 1985 Agreement among the governments of Canada and the main producing provinces pursuant to the Western Accord, came into effect on 1 November 1986. Under this new policy, natural gas prices, which for a dozen years had been set by governments, are being negotiated between buyers and sellers.

In its April 1986 decision on its surplus determination procedures, the Board stated its expectation that the new market-determined pricing policy should increasingly over time assist in the balancing of supply and demand and that the Board would be able to place increasing reliance in the future on the responsiveness of supply and demand to price.

In the Board's view, market-determined pricing means that natural gas prices should be allowed to vary in response to market forces, and, in turn, natural gas supply and demand should be free to adjust to changes in price. The Board's surplus determination procedures should be consistent with this policy and with the extent to which the policy has been successfully implemented.

Progress in implementing the market-determined pricing policy has been faster than could have been foreseen at the time of the Board's last review. Since the Board's April 1986 decision, the policy has generated a variety of new arrangements: prices to distributors under existing contracts have been renegotiated; distributors have entered into buy/sell arrangements on behalf of industrial and other large volume customers; direct sales by producers to large volume consumers have come to account for a significant part of the market; and prices to large volume consumers have also been lowered by means of competitive marketing programs. Competition in natural gas markets has increased as pipeline companies have been joined by direct purchasers, marketers who purchase gas for resale, and brokers involved in bringing buyers and sellers together.

These changes have been aided by regulatory decisions at both the federal and provincial levels. Access to transportation services on TransCanada's pipeline system was facilitated by the Board's May 1986 decision and further implemented by its May 1987 decision. Access to transportation services on the Westcoast pipeline was implemented by the Board's August 1986 decision. Provincial authorities have taken steps to open distribution systems to direct sales. Finally, producer provinces have changed their surplus tests, or have indicated their intention to do so, to make them more compatible with market determined pricing. The Board is impressed by the readiness with which all sectors of the industry have adapted to the new way of doing business.

The Board recognized in its April 1986 decision that the R/P Ratio Procedure included a margin of spare productive capacity over actual production during any period of export and that this could produce results in the Canadian gas market different from those which would result from an unfettered market.

It follows that the R/P Ratio Procedure might make Canadians economically worse off for two reasons:

- First, if the value of the R/P Ratio were set higher than that considered appropriate by individual producers, either
 - (i) producers, acting individually, would not maintain their reserves to production ratio at the regulated level causing the volume of export business and the size of the gas industry to be smaller than it would be if the industry could export using a market determined ratio, or
 - (ii) even if the industry could collectively decide upon a way to ensure that the R/P Ratio would always be at the regulated level, the overall cost of supplying gas would be higher to the extent that industry would be carrying more inventory than it would carry without the regulatory requirement.
- Second, implementing the R/P Ratio Procedure requires making assumptions about the future uncertain behaviour of supply, demand and prices. This problem, unfortunately, is inherent in any regulatory arrangement involving forecasts. As a consequence, there is a distinct probability of error in assessing whether a proposed export would violate the criterion. This implies the possibility of denying exports which it may turn out could have been allowed.

The Board notes that there have been changes in perception in the past year regarding the nature and extent of the protection required for the Canadian market. Many end users who account for a large proportion of domestic natural gas consumption no longer support the determination of surplus by formula. This includes industrial gas consumers and petrochemical firms some of which have no ready substitute for natural gas. The Board also notes that as their current contracts expire, distributors will be able to take increasing advantage of the market determined pricing regime.

The Board is cognizant of the considerable progress made towards the achievement of market-oriented pricing since it last reviewed its surplus determination procedures. Many areas of uncertainty have been cleared away. While the R/P Ratio Procedure had merits, it now appears to the Board that it would be anomalous and contrary to free market operation if the level of supply were to be determined by other than market forces.

For the same reasons, any procedure which would mandate excess productive capacity would not now be appropriate in light of the progress which has been made in implementing the policy of market determined pricing.

Chapter 3

Alternative Surplus Determination Procedures

This chapter summarizes parties' views and those of the Board on the other five questions posed by the Board, all of which relate to whether alternative or complementary procedures would better serve the Canadian public interest. The chapter also examines the question of the need for export volume regulation of any sort.

3.1 Suggested Modifications to Existing Procedures

The second question which the Board put to interested parties was:

“What alternative surplus determination procedures should the Board consider? Parties suggesting alternative Procedures for satisfying Paragraph 83(a)¹ of the National Energy Board Act should clearly explain the rationale for such procedures, how they would work, and the advantages and disadvantages of their proposals relative to the current procedures.”

The following alternative procedures were proposed:

- (i) contractual protection for all markets;
- (ii) formula protection for only the core market, contractual protection for other markets;
- (iii) a modified R/P procedure;
- (iv) a reserves formula;
- (v) increasing the number of years of protection for Canadian requirements; and
- (vi) partially refundable export levies with cost benefit analysis.

Each of these is discussed in turn.

3.1.1 Contractual Protection

Contractual protection was proposed by most producers, exporters and marketers, by Saskatchewan, and conditionally by CCPA, IGUA, and C-I-L.

There were some differences in how these parties saw a contractual approach working, but generally it would involve:

¹ See Appendix 6.

- (i) Canadian consumers' requirements being contracted directly or by natural gas distributors, perhaps with guidelines for natural gas distributors being established by provincial regulatory agencies or the Board;
- (ii) applicants for export licences providing the Board with evidence that they have under contract the gas which they propose to export;
- (iii) the Board holding public hearings on export licence applications;
- (iv) the Board issuing the export licence if it were in the public interest and if no objections were received from domestic gas purchasers that they were unable to contract for gas under competitive terms and conditions; and
- (v) the Board deferring issuing the export licence if reasonable objections were received so that domestic gas purchasers would have time to contract.

In addition, parties suggested that the Board continue to monitor and periodically publish reports on current and projected Canadian energy supply and demand. They viewed these reports as providing market information useful to both buyers and sellers of gas, as well as to governments and the public. Some parties, such as CPA and TransCanada, suggested that the results of the Board's monitoring also be used in the assessment of whether the volumes sought to be exported in individual export licence applications were surplus to Canadian requirements.

Parties expressed a variety of views as to the extent of information the Board would need on domestic contracts.

TransCanada and APMC were of the view the Board would need rather extensive information in order to be able to judge how much gas was under contract to the domestic market.

Producers and gas exporters, such as Alberta and Southern, suggested that the contracting practices of distributors and others need not be of concern to the Board, as it would be in each party's self-interest to keep under contract what they viewed as sufficient gas supplies for themselves or their customers. They took the view that the Board could place primary reliance on complaints received from any domestic gas buyer at the time an export application was heard to the effect that it was experiencing difficulty in obtaining gas under competitive terms and conditions. In their view, such reliance on complaints along with monitoring of natural gas markets by the Board would be sufficient.

Some parties, such as IPAC and SEPAC, saw an important role for provincial regulatory boards, either in consultation with the Board or independently. In their view, provincial boards should monitor the contracting practices of distributors or take various steps to ensure that sufficient gas supply is under contract to satisfy the longer-term requirements of core market customers. Quebec and others questioned whether provincial boards have the jurisdiction to do this under current legislation. IPAC and SEPAC suggested that the legislation should be changed, if necessary, to permit this to happen.

AEC suggested that the Board set a standard for the term of protection to be contracted by distributors for the core market and require distributors objecting to an export licence application to show that they had attempted in good faith to negotiate contracts that would meet the Board's standard.

Most parties recommending contractual protection proposed its immediate implementation, although some of these stated that they would not object to a short transition period provided it lasted no longer than about one year and did not involve deferring consideration of export applications. They argued that no transition period is required because the industry has been in transition since the Western Accord of March 1985 first indicated governments' agreement that a more flexible and market-oriented regime was required for the domestic pricing of natural gas. Furthermore, there would be no negative impact from an immediate adoption of the contracting approach because there is currently a large excess supply of gas in both Canada and the United States.

C-I-L proposed that the change to contractual protection begin as of 1 November 1988 to allow time for remaining obstacles to fully market-responsive conditions to be removed. Several parties, including TransCanada, agreed to 1 November 1988 as a reasonable date for the commencement of contractual protection, given that the gas contract year generally begins 1 November. TransCanada suggested that the Board use an actual R/P ratio, rather than forecast ratios, during the transition year, approving exports if the actual R/P ratio were above 15.

Distributors were generally of the view that they would require a longer transition period in order to permit existing contracts to be renegotiated and new contracts to be put in place. They noted that their existing contracts with TransCanada do not all terminate until the mid-1990s. Union Gas suggested it would require a transition period until roughly 1995. Consumers' Gas indicated that a transition period of a year would be far too short to put a new contracting regime in place.

CCPA suggested that the current procedures be phased out over an unspecified period as existing contracts between distributors and TransCanada expire or are renegotiated.

IGUA's position was that it supported contractual protection only if there were significant reductions in restrictions to transportation flexibility on transmission and distribution pipelines. In particular, it sought the assignability and transferability of rights to gas and transportation services if it turns out a party holding such rights no longer requires them.

Parties advocating the contractual approach argued that it would have the following main advantages:

- (i) it is compatible with market-sensitive pricing;
- (ii) it takes explicitly into account that prices can adjust to balance supply and demand;
- (iii) parties would be able to buy the degree of security of supply which they require, and the costs of maintaining security of supply would therefore be properly allocated;
- (iv) reserves dedicated for future use would be contracted to specific buyers rather than, as under the present system, being held without contract, thereby distorting the operation of the market;
- (v) contractual protection is easily understood and applied;
- (vi) the surplus available for export would vary with changes in supply and requirements;
- (vii) prices would provide appropriate market signals leading to optimum levels of exploration and development; and

- (viii) the ERCB decision on surplus determination procedures, coupled with Alberta policy on the contracting practices of Alberta gas distributors, has effectively implemented the contractual approach in Alberta.

Parties opposed to contractual protection argued this approach would have the following main disadvantages:

- (i) it would not satisfy Section 83 of the NEB Act which, some claimed, requires a volumetric surplus test;
- (ii) contractual protection would shift the onus of proof from the exporter, who currently has to demonstrate that the gas to be exported is surplus, onto consumers who would have to show the gas to be exported is not surplus;
- (iii) contracts do not provide security of supply because of clauses such as force majeure which allow supply to be interrupted, and because most producers refuse to include supply or deliverability guarantees in contracts;
- (iv) demand and supply may not be brought smoothly into balance by acceptable price changes because of continuing impediments to competitive markets;
- (v) individual companies contract for their own requirements which cannot be expected to coincide with the long-term national interest, particularly where companies need to buy cheaper short-term supplies in order for their products to be competitive, especially in American markets as their American competitors are buying gas on the spot market;
- (vi) the contractual approach places major or total reliance upon the ability of individual companies to make accurate long-term forecasts of the natural gas and end use product markets;
- (vii) distributors are uncertain about the size of their market because their customers may choose to switch back and forth between purchasing from them or directly from producers;
- (viii) the contractual approach relies on the working of a competitive market, but Alberta has reserved the right to use the removal permit process to prevent other provinces from allowing their core markets to contract directly with producers or on a short-term basis, and to ensure that Alberta natural gas is not sold outside Alberta at a price below what the Alberta government considers reasonable;
- (ix) the procedure under which gas buyers may object to the granting of an export licence on the grounds that they have been unable to contract for gas under competitive terms and conditions would prove to be unworkable because of difficulties in obtaining the related, necessarily detailed evidence and in showing equivalency between the objector's needs and the terms of the export. It could also place the Board in the position of having to judge the reasonableness of the criteria of provincial regulatory boards; and

- (x) the ERCB decided against implementing the contractual approach, even though Alberta has a much larger reserves to requirements ratio than the rest of Canada, it has the lowest transportation costs from the wellhead to the market, it has conditions in its removal permits ensuring Alberta's gas requirements will be met, and it has legislation permitting the diversion of gas to Albertans in the event of emergencies.

Consistency of Contractual Protection With Section 83

Although parties did not agree on whether contractual protection would or could satisfy Paragraph 83(a), they did generally agree that:

- (i) the Board must make its own judgment in satisfying itself that gas to be exported is surplus to reasonably foreseeable Canadian requirements; and
- (ii) the Board has a broad discretion as to how it does this, the only specific statutory requirement being that it must have regard to the trends in discovery of gas in Canada.

Distributors took the view that were the Board to rely solely on contracts, this would entail an abrogation of the Board's duty under Section 83 to satisfy itself that gas to be exported is surplus. They maintained that any mechanism which would remove or limit the exercise of discretion by the Board would be invalid. In particular, if the Board were to presume that gas not under contract to the domestic market was, therefore, surplus to reasonably foreseeable Canadian requirements, this would be an unlawful delegation to private contracting parties of the Board's obligation under Paragraph 83(a). Nor did distributors feel that the Board could presume that gas was surplus if during a licence hearing it received no complaints to the effect that Canadians were having difficulty in contracting for gas. Union Gas argued that the Board was compelled to make an actual calculation of reasonably foreseeable Canadian requirements in order to determine whether a proposed export was surplus.

Distributors also maintained that the Board could not satisfy Section 83 by following the suggestion of those parties who advocated a participatory role for provincial regulatory boards. They maintained this would be an improper and unlawful delegation of authority by the Board.

Producers and producer interests expressed the opposite view; namely, that the contracting approach involves no delegation whatsoever. They argued that the Board, in order to satisfy itself that gas is surplus, is not prohibited from relying upon whether contracts exist and what they contain, or from taking into account whatever other considerations the Board believes are relevant, including the activities of provincial boards. In so doing, the Board would be making its own decision based on all relevant evidence.

CPA argued that the Board can satisfy its statutory obligation under Section 83 by the contractual method of protection when this method is viewed in the context of the Board's overall monitoring of demand and supply and the public hearing process which arises in respect to any application for an export licence. CPA thus argued that the combination of contracts, the public hearing process, and monitoring by the Board would satisfy the requirements of Section 83.

The position of TransCanada was that to fulfill the requirements of Section 83 the Board would have to have, in addition to the mechanisms suggested by CPA, an awareness of the contracts in Canada and the degree to which those contracts represented current and reasonably foreseeable requirements in

Canada. Furthermore, it argued that the Board would also have to have regard to other relevant considerations whether or not they were presented at a hearing.

Offer Mechanism

Parties were asked by the Board to give their views on the practical usefulness of an "offer mechanism" for testing in the marketplace whether natural gas intended for export is surplus to Canadian needs on comparable terms and conditions. In such a procedure a party proposing to export natural gas would first offer it to domestic purchasers under similar terms and conditions, including price.

Alberta and Southern, CCPA, but few others found such a mechanism acceptable, although it was not their first choice. Edge suggested that an offer mechanism would be useful only for exports proposed to extend beyond the term of core market protection.

Ontario, Quebec, gas - distributors, CPA, IPAC, SEPAC, TransCanada, Westcoast and others opposed such a system. The main reasons for opposition were that the circumstances under which domestic users would want the gas could be different from those of a prospective importer; an offer mechanism could be difficult to administer; and export sales might be lost because of the delay involved in offering the gas to the domestic market.

Views of the Board

The Board notes that several variants of "the contractual approach" were proposed. A key theme common to these proposals was that consumers should take responsibility for securing gas to meet their future needs by means of contract rather than relying on the Board making allowance for their needs by means of a surplus formula. No party suggested that the Board have regard only to contracting to ensure that proposed exports were surplus to reasonably foreseeable Canadian requirements.

There was considerable discussion at the hearing about the security of supply afforded by different types of contracts. In the Board's view, a "best efforts" contract generally does not guarantee any particular level of supply. However, some parties suggested that gas purchasers could negotiate supply warranties under which producers would be obligated to provide supply from other sources if they were unable to deliver contracted volumes. In sum, the Board concludes that the security of supply provided by contracts will vary according to the risk purchasers are willing to bear, the prices they are willing to pay for additional security, and the state of the resource base and delivery capability.

The substantive elements of the contractual approach discussed at the hearing were:

- (i) the desirability of national guidelines or standards for contracts;
- (ii) the desirability of an offer mechanism;
- (iii) the desirability of a complaints procedure:

- (iv) the role of monitoring, and
- (v) other public interest aspects of licensing procedures.

The Board comments on each of these elements in turn.

(i) Desirability of National Guidelines or Standards

The Board views the suggestion that it issue guidelines or set standards for the length of distributors' contracts as being undesirable and beyond its mandate. In the Board's opinion, guidelines and standards would be incompatible with the concept of allowing the marketplace to function with a minimum amount of regulation.

No national guidelines or standards could encompass the variety of supply arrangements which would be mutually satisfactory to the contracting parties. There is no basis for determining a single ideal or most appropriate kind of contract. This will depend upon the particular circumstances of suppliers, distributors and individual purchasers. Each corporate entity best understands its own needs and must rely on its own judgment to make decisions about contract duration, acceptable risk and trade-off between price and security of supply.

Contracting practices have evolved over the years to suit the changing structure and economics of the industry. During the developing years, for example, buyers generally purchased gas under long-term reserves-based contracts to ensure the necessary supply to recover the costs of pipeline and other facility investments. More recently, there has been a growing trend toward short-term direct sales. It is conceivable that, as markets tighten, there will be a shift in commercial judgment toward longer-term arrangements. In general, under a market-sensitive pricing system, contracting practices can be expected to continue to evolve to suit changing circumstances and the exact nature of the contracts that will appear is difficult to predict.

(ii) Desirability of an Offer Mechanism

The Board shares the view of the majority of participants at the hearings that relying on an offer mechanism would be impracticable. It would require an applicant to notify a large number of potential domestic purchasers and would cause delays even when no domestic purchaser was available. These difficulties of identifying potentially interested purchasers would not arise with a complaints procedure.

(iii) Desirability of a Complaints Procedure

The Board finds merit in the suggestion that objections to a natural gas export licence by domestic gas purchasers on the grounds that they were unable to contract for gas under similar terms and conditions, including price, be given considerable weight by the Board. Similar terms and conditions must be interpreted to include price because price is an important factor determining Canadian requirements.

The Board does not agree with the contention that allowing gas buyers to object to the granting of a licence would be unworkable in practice or that it need impose an undue evidential burden on gas buyers. The onus would remain on the Applicant to satisfy the Board that the proposed export is surplus to reasonably foreseeable Canadian requirements.

(iv) The Role of Monitoring

The Board notes that the suggestion that it continue to monitor and periodically publish reports on current and projected Canadian energy supply and demand is consistent with its responsibilities under Part II of the NEB Act. The Board agrees that such reports would be useful to the parties to a natural gas export licence hearing. The Board also agrees that its judgments with regard to the current and future functioning of Canadian energy markets should play a role in its determination of whether natural gas to be exported is surplus.

(v) The Public Interest Aspect of Licensing Procedures

Some of the other components of the suggested contractual approach are already part of the practice of the Board in reviewing an export licence application. These include:

- (i) the requirement under the Board's Part VI Regulations that an Applicant for a natural gas export licence provide a summary of the quantities of gas under purchase contract and copies of each of the gas purchase contracts;
- (ii) the holding of a public hearing on natural gas export licence applications at which any objections to the issuance of a licence are heard and are subject to testing through cross-examination; and
- (iii) the Board issuing an export licence only if it judges it to be in the national public interest.

The Board finds these to be necessary components of its surplus determination procedures and its overall responsibilities under Section 83 of the NEB Act.

3.1.2 Protection for Only Part of the Natural Gas Market

Polysar and APMC proposed that the Board provide protection for only what was termed the core market.

Polysar suggested that the core market include those customers who are so small that they would not be expected to have the expertise to contract for their own needs. In its view the core market definition used by the ERCB, that is, all residential and commercial, and small industries using up to 2 PJ per year, is too broad. Polysar suggested that the cut-off point for small industrial firms be less than 2 PJ per year and that their access to alternative forms of energy be taken into account.

APMC did not propose a specific definition of the core market, although it was generally of the view that the Board could adopt an approach similar to that taken by the ERCB.

Other parties also commented on the definition of the core market. IPAC suggested the core market could include essential services such as hospitals, even if they were contracting directly. SEPAC suggested it include all residential and commercial requirements related to essential public services, and others willing to make a long-term commitment to stay in the core market. Some parties expressed their view that it would be difficult, if not impossible, to define adequately who should be included in the core market.

Polysar's proposal was that protection for the core market be accomplished either by a reserves formula (20Cl) or by an R/P 15 type of procedure applied only to the core market.

APMC proposed protection of core customers set on an aggregate basis at a level commensurate with the contracting practices of those supplying their requirements. It proposed this be accomplished as follows. First, the Board would set an interim level of protection for the core market, such as 15Cl, which it deemed appropriate. This would apply for about one year to allow time for provincial governments to establish their own policies for core market protection and/or for distributors to negotiate contracts to provide for core market protection. At the end of the interim period, the Board would adjust the level of protection of the core market depending on the policies developed by provincial governments and on contracting practices as they evolved.

APMC reasoned that this would minimize the market distortions which occur when consumers contract only for short-term supplies, while depending on mandated protection of a substantially longer term for their supply security. It proposed that eventually the protection of core customers might be abandoned in favour of contractual protection, but it did not favour the Board adopting contractual protection for core customers at this time.

IPAC stated that if the Board were not prepared to adopt the contractual approach, it would agree that the Board should follow the ERCB approach. It considered that two years would be reasonable as an interim period to allow action by provincial regulatory boards to set contracting requirements for distributors, after which the Board would redetermine its mandated protection for the core market.

The views of parties on protection for the core market are discussed further in section 3.3 later in this report.

Views of the Board

One major problem with any attempt to protect core market requirements is that it is very difficult to define the core market in a satisfactory manner.

The core market could be defined as the total load of a gas distributor. The rationale for this definition is that distribution utilities commingle gas sales having a variety of seasonal demand patterns in order to achieve an efficient load balance. The problem with this definition is that if it includes all gas transported by distributors, it would include almost all flowing gas. Thus, it would effectively encompass virtually the entire gas market, including those customers who indicated they do not require protection.

Alternatively, the core market could be defined to include those consumers unable to switch to alternative energy supplies. The problem with this definition is that given time and appropriate price signals, an increasing number of customers could eventually switch to other energy forms. Thus this concept of a core market becomes more elusive the longer the time horizon.

Even if the core market could be defined in a satisfactory manner, there would be no guarantee that core customers would, in practice, consume the reserves that were specifically set aside for their benefit. This is because such reserves could be contracted in whole or in part either by the core market through distribution companies, or by the non-core industrial market through direct sales. In effect, the non-core user could receive just as much protection as the core market. The result would be some average level of protection for the entire market, which would be lower than the level envisioned for the core market.

For a core market protection plan to work, it would be necessary to set aside specific designated reserves for the core market and to prevent non-core customers from accessing these reserves. Such a scheme would be extremely difficult to administer Canada-wide and would be inequitable to those producers who were required to set aside the designated reserves without necessarily having contracts for them. The only fair way to do this would be to directly require distributors to contract for those reserves they wanted to have set aside for them, but this is beyond the Board's jurisdiction.

In the Board's view, the core market concept, which originated in California and which is used in the Alberta surplus determination procedure, may have a place in intrastate or intraprovincial jurisdictional circumstances, but is not applicable for purposes of surplus determination on a national basis.

3.1.3 Modified R/P Procedure

Ontario proposed that the Board modify the R/P Ratio Procedure as follows:

- (i) if the actual R/P ratio reasonably exceeds 15 (17 was suggested as a guideline), the Board would not base new natural gas export licences on forecasts of future supply and demand, but would approve them if the applicant has the gas supply and markets under contract and if the export provides net benefits to Canada;
- (ii) if the actual R/P ratio is below 17, the Board would take into account supply and forecasts using its R/P 15 Ratio Procedure in addition to the considerations in (i) above, in determining whether to issue new licences;
- (iii) at any time that the actual R/P ratio is less than 17 the Board would call a hearing to consider if any existing export licences need to be adjusted to maintain the R/P ratio above 15; and
- (iv) at any time that the actual R/P ratio fell below 15 the Board would order that the adjustments determined to be necessary in (iii) above be made.

Ontario submitted that the modifications it was proposing would retain the level of security of supply provided by the current procedure while providing the industry with enhanced access to the export market. It would avoid limiting exports on the basis of a forecast which might be too conservative. Furthermore, it would provide all parties with a guideline on how adjustments to export licences would occur.

Consumers' Gas agreed with Ontario's proposal.

Views of the Board

If this modified R/P Ratio Procedure were adopted, licences permitting the export of natural gas in a future period could be perceived to be of uncertain value because of the incorporation of a formula based adjustment mechanism. In the Board's view, such a devaluation of export licences would not be in Canada's interest.

Adoption of this approach could harm Canada's commercial relationships with those natural gas export customers who are purchasing gas under long-term contracts in order to obtain longer-term security of supply. One consequence could be to reduce the benefits Canada derives from exporting natural gas under licence.

Finally, as previously noted, the Board is of the view that formula-based protection procedures are not appropriate in the current market context.

3.1.4 Reserves Formula

KannGaz recommended that the Board return to using a Reserves Formula and Deliverability Appraisal, modified as follows. The Reserves Formula would be based on a weighted average of 20 years of residential and commercial requirements, 10 years of firm industrial requirements, and nil on interruptible requirements. KannGaz recognized that it would be impossible to provide different levels of protection to different market segments.

The Deliverability Appraisal would be done for a forecast period of only 5 years.

KannGaz stated that any surplus determination involved a compromise between competing interests and that the main advantages of its approach were its simplicity and superiority in providing the public with a perception of protection.

Views of the Board

The Board has not changed its views, set out in its April 1986 report, on the appropriateness of a Reserves Formula. Although simple, a Reserves Formula is susceptible to being misunderstood, and could result in excessive inventory costs and foregone profitable exports. It gives no guidance with respect to feasible or desirable time profiles for new exports.

The Deliverability Appraisal, as previously used by the Board, was an exercise which predicted when future natural gas demand would likely exceed future Canadian gas

supply assuming a particular price track. This resulted in a crossover of supply and demand at a point in time, after which no further exports would be licensed.

However, in a market-determined pricing environment where prices adjust to changing market conditions, a crossover, with demand exceeding supply, cannot, in fact, occur; rather, supply will have to increase, demand decrease, or both adjust, to achieve a balance. Therefore, the crossover depicted in connection with the Board's former Deliverability Appraisal is not determinative in circumstances of market oriented pricing. This is not to suggest, however, that projections of future deliverability are not useful to warn of impending supply constraints.

3.1.5 Increasing the Number of Years of Protection for Canadian Requirements

CAC, Canada Geothermal, and the Sierra Club proposed increases in the number of years of protection for Canadian requirements. They did not define how the Board should change its procedures to accomplish this.

CAC proposed that Canadian requirements be protected for at least 30 years. It suggested that existing exports be phased out as soon as possible and that Canada's reserves be allocated to domestic markets. In CAC's view, natural gas is a vital depleting natural resource and energy supply security should be the prime consideration in surplus determination procedures. CAC concluded that the R/P Ratio Procedure does not provide sufficient protection.

Canada Geothermal proposed that a 50-year domestic conventional, non-frontier gas supply be established. It also suggested that cost-benefit analysis be applied to gas export applications.

The Sierra Club suggested the Board issue no new gas export permits and terminate existing authorizations within five years. It was concerned about the exhaustion of fossil fuels and the social, economic, political and environmental impacts such exhaustion could have. In its view, the objective should be to make Canada's fossil fuels serve domestic markets for as long as possible.

Views of the Board

The Board's export licensing procedures must attempt to balance the potentially conflicting objectives of long-term security of natural gas supply to Canadians on the one hand, and the increased benefits to Canada from larger export volumes on the other. If less restrictive surplus determination procedures resulted in more gas exports, and if future gas supplies were more difficult and expensive to find and develop, it could be that increasing exports will cause Canadians to rely on a potentially smaller and higher priced gas supply to meet their longer-term needs. Even so, allowing these greater exports to flow could be of greater net benefit to Canada over the long run, provided that the overall net gains from international trade exceeded the costs to consumers, who would pay more for their gas than they may have paid without the increased exports. In examining proposals to export natural gas, the Board seeks evidence from applicants and intervenors on the costs and benefits of allowing the proposed exports to take place. For these reasons, and for reasons given elsewhere in this report regarding formulaic approaches to surplus determination, the Board concludes

it is neither necessary nor appropriate to decide now to retain all remaining reserves for future use by Canadians or to set aside now a finite 50-year supply.

3.1.6 Partially Refundable Export Levies with Cost-Benefit Analysis

Southey proposed a system of partially refundable export levies along with the use of cost benefit analysis. In this proposal, a levy would be paid on all new exports which would be refundable in whole or in part if a shortage did not materialize within a given period of time.

Southey reasoned that such a procedure would provide an incentive for exporters to assess the probabilities of energy supplies being available and to share in the risks of a shortfall occurring.

Views of the Board

This proposal to institute a system of partially refundable export levies raises both jurisdictional and practical problems of implementation.

It is beyond the jurisdiction of the Board to design and administer a system of export levies on natural gas exports. The frame of reference for the present consideration of surplus determination procedures is the NEB Act as it now stands.

The practical difficulties are two-fold. First, such a scheme could be administratively difficult to establish and implement. Second, it would be difficult in practice to determine appropriate levels of export levies.

3.2 Reliance on Market Forces

The third issue on which the Board requested the views of interested parties was:

“Would reliance on market forces to balance supply and demand of natural gas in Canada be an acceptable substitute for the Board’s surplus determination procedures?”

Generally, those parties who proposed contractual protection preferred reliance on market forces, saying such reliance was acceptable and necessary.

Those favouring reliance on market forces reasoned as follows:

- (i) regulated market access, the alternative to relying on market forces, is not consistent with market-sensitive pricing because volumes prevented from being sold on export markets will distort prices on domestic markets;
- (ii) market forces operating through contractual arrangements can be relied on to provide security of gas supply, just as they are relied on to perform that function for virtually all other raw materials;
- (iii) distributors have the expertise necessary to contract for gas and can be relied on to serve the core market adequately;

- (iv) prices resulting from market forces unhindered by a surplus test will provide appropriate market signals, leading to optimum levels of exploration and development, increased benefits from exports, and the most equitable sharing of the costs of supply security;
- (v) sales to the domestic market will always be preferred to exports, in part because the domestic market is less risky and in part because it can be supplied without need for export licences or U.S. regulatory approvals;
- (vi) the core market will have security of supply because, as its alternative sources of energy are more costly, it will always be able to outbid the industrial market for natural gas;
- (vii) producers are willing to negotiate the inclusion of supply guarantees in contracts;
- (viii) it is only fair that, if domestic buyers have complete freedom to contract for supply, sellers should have the same freedom to sell gas to any market, including the export market;
- (ix) if U.S. customers do not have equal access to Canadian energy supply, Canadians may have difficulty obtaining access to the U.S. marketplace to sell their other goods and services; and
- (x) the Board should continue to remain in control of existing and new exports, and any party having difficulty in contracting for gas supply under competitive terms and conditions could seek a remedy from the Board.

While favouring the elimination of surplus tests, SEPAC suggested that a mechanism be established to permit small producers to bid competitively for new market opportunities in order that any bias based on corporate size be eliminated.

Edge suggested that the Board ought not to rely on market forces to balance supply and demand until provincial governments set guidelines for distributors on the duration of contracts needed to protect the security of supply of the core market and on the extent of spot purchases which could prudently be made for the core market, and until such a contract system was in place. Edge proposed that even then the Board should be prepared to supplement the market system to protect Canadian consumers, but only with the minimum intervention needed to meet the requirements of the NEB Act.

APMC favoured eventual reliance on market forces, but, as discussed above, proposed interim steps to allow time for provincial governments to set guidelines for the core market and for distributors to negotiate contracts in line with these guidelines. APMC urged the Board to put provincial governments on notice to this effect.

Those parties who favoured continuation of the Board's existing procedures or some other mandated surplus test were against reliance on market forces. They based their opposition on the following reasons:

- (i) reliance on market forces would not satisfy Section 83 of the NEB Act which requires that surplus be calculated based on estimates of supply and requirements. TransCanada argued that under Section 83 the Board must make a finding based on evidence that the gas which is to be licensed for export is surplus to reasonably foreseeable Canadian requirements, and that evidence that the gas to be exported has not been otherwise contracted merely demonstrates it is available for sale to any customer and does not establish that it is surplus to Canadian requirements;
- (ii) there still exist impediments to the operation of market forces, including:
 - (a) contracts entered into during the era of regulated prices;
 - (b) provincial removal permits which could be used to distort market prices, and conditions in these permits restricting access to alternate gas supply by distributors who are taking less than their contract volumes;
 - (c) differences in regulation between, and even within, jurisdictions;
 - (d) non-arm's length relationships between some participants in the market; and
 - (e) limited capacity to transport imported gas.
- (iii) market forces coexisted with NEB surplus determination procedures until the advent of administered pricing in the early 1970s, and presumably could do so again;
- (iv) the additional exports which would result would rapidly deplete Canadian reserves, shortening the period of gas supply adequacy for Canadians; even large price increases are unlikely to bring forth adequate additional supplies;
- (v) because in a competitive market, price adjusts to equate supply and demand, gas can be surplus to Canadian requirements only if the export price is higher than the domestic price;
- (vi) Section 83 requires that priority be given to Canadian requirements, but market forces do not give such priority;
- (vii) producers might favour sales to U.S. markets over sales to eastern Canada because differences in transmission costs might make netbacks from U.S. sales higher;
- (viii) Canadian taxpayers deserve protection because they were involved in financing the search for and development of Canada's inventory of gas reserves;
- (ix) changing from the current procedure would add to the uncertainty caused by unresolved issues related to gas transportation and distribution;
- (x) small Canadian distributors and end users may not be able to compete fairly with large American importers;
- (xi) the interests of private companies and the public may be divergent;

- (xii) the interest of contracting parties is not necessarily the same as that of consumers;
- (xiii) communities may be wholly dependent upon a single firm's contracting skills;
- (xiv) economic conditions facing a firm or a particular industry may limit the ability of companies to negotiate a long-term supply; and
- (xv) price increases to balance supply and demand may need to be large because supply may respond to price increases much more slowly than demand.

In order to assess the ability of the natural gas market to respond to supply variations, and to balance demand and supply, the Board asked distributors how much of their sales volume could be interrupted on short notice and the length of time such interruptions might continue.

Generally, distributors explained that this depended on the size of their sales to interruptible customers (who are subject to interruption of supply when such interruption is needed by the distributor to serve peak demands of other customers), the transportation and storage infrastructure for the alternative energy sources used by interruptible customers, and the capability of each customer's own equipment to utilize alternative energy sources.

The percentage of sales volume which could be switched immediately varied from about 1 percent for ICG (Man.) and Inland to 20 to 30 per cent for Consumers' Gas, Gaz Métro, and ICG (Ont.).

Most distributors indicated that their interruptible customers could sustain interruption for at most a few days because of constraints on transportation and storage of their alternative energy sources.

With regard to the potential for replacement of natural gas by other fuels in the longer term, Consumers' Gas indicated that if alternative fuels had a price advantage relative to natural gas in the order of 10 per cent and if there were sufficient lead time to make the necessary investments in infrastructure, then as much as 50 per cent of its sales could be permanently lost to other energy sources.

Consumers' Gas noted that Alberta is refusing to issue it removal permits for direct-purchase gas unless it takes the full volumes to which it is entitled under existing contracts. This is done even though its contracts with TransCanada require it to pay a demand charge even if it does not take gas. Consumers' Gas argued that Alberta is thus not currently allowing existing contracts to function, effectively preventing market forces from operating.

Views of the Board

The Board has carefully considered the opinions of parties on the fundamental question of whether market forces can be relied upon to make due allowance for reasonably foreseeable Canadian requirements. The Board first addresses a number of specific arguments made for and against reliance on market forces. It then addresses the major issue of whether market forces can always be relied upon to meet Canadian requirements adequately and fairly.

Concerning the argument that sales to the domestic market will always be preferred to exports, partly because the domestic market is less risky, the Board agrees that the domestic market lacks certain elements of risk encountered on the international market, but recognizes that under some conditions there could be preference for the export market.

Regarding the argument that the core market could secure its gas supply by outbidding the industrial market for gas, the Board agrees that the value of gas is higher to some users because their energy alternatives have higher prices, and they may well bid volumes of gas away from lower value uses.

The Board agrees, for reasons discussed below, with the argument that it should remain in control of export volumes and parties having difficulty in contracting could seek a remedy from the Board; however, its remedial role in domestic contracting difficulties must be related to its authority over export transactions.

There was a suggestion that the Board rely on market forces only where there exists a mechanism at the provincial level which specifies guidelines about contract duration and about the extent of reliance on spot purchases for the core market. In the Board's view, how provincial authorities regulate distributors' procurement practices is a matter independent of the Board's responsibility under Paragraph 83(a) of the Act.

The Board has considered the contention that the NEB Act requires calculation of a surplus based on estimates of supply and requirements, and it concludes that, while under Paragraph 83(a) the Board must satisfy itself that the gas to be exported is surplus to reasonably foreseeable Canadian requirements, the Act does not prescribe the manner in which the Board must so satisfy itself, and the Board has much latitude in this regard and is not restricted to the use of formulistic methods which result in statements of surplus in volumetric terms, whether real or apparent. The Board agrees that gas which is not now under contract is available for sale to any customer, and there could be Canadian requirements unforeseen in present contracts. The Board should provide the opportunity for Canadians to have priority access to volumes on terms and conditions, including price, no less favourable than those available to export customers.

The Board appreciates the concern that, left to the marketplace, exports might rapidly deplete Canadian reserves. The Board's view is that its role is to ensure that this does not happen and that its procedures must be such that it can foresee and prevent such a situation.

There was a concern that higher netbacks from export sales would cause producers to favour export markets. The Board agrees that producers will be attracted to those markets providing the highest netbacks. However, not all export markets necessarily provide higher netbacks. Moreover there are risks, impediments and limitations in export markets which producers do not face in domestic markets. Finally, to some extent the forces of competition will erode differences in netbacks available from different markets. Unless carefully monitored by the Board, non-arm's length transactions could favour export markets.

Regarding the issue of whether small Canadian customers could compete fairly with large U.S. ones, the Board observes that this depends upon whether there is sufficient competition in the marketplace. The Board agrees that, prior to authorizing an export, it has a role in ascertaining whether Canadians can buy gas proposed for export on similar terms and conditions, including price, as can the export customer.

On the issue of whether the interests of private companies and the public diverge, the Board examines this possibility in deciding upon whether each export application is in the public interest.

It was contended that reliance on market forces may require large price increases to bring about a balance between supply and demand. The Board acknowledges that under certain circumstances additional exports could have a large effect on domestic prices. However, this may not be a general outcome and, in the view of the Board, it is not the intent of Paragraph 83(a) to regulate the general level of Canadian natural gas prices. However, in examining whether a proposed export is in the public interest, the Board has regard to the costs and benefits associated with these price impacts and other relevant factors.

In its April 1986 Decision on surplus determination procedures the Board concluded that it could not rely on market forces alone to protect future Canadian gas requirements. The Board noted that several impediments existed which would hamper the ability of market forces to balance supply and demand. These impediments included, among others, the existence of long-term sales contracts between producers and transmission and distribution companies, restrictions on access to TransCanada and provincial gas removal permitting processes. The Board also noted that these impediments were expected to diminish in importance and that the gas market could be expected to become increasingly competitive over time.

In Chapter 2 of this report, the Board observed that the current energy policy framework is based on the premise that the marketplace should determine the supply, demand and price for natural gas. In these circumstances, the Board considers it appropriate that this premise also form the basis for its surplus determination procedures. This premise, of course, raises the question of the need for export volume regulation of any sort.

There is in the Board's view, a need for regulation at times when the market does not, for some reason, function adequately and fairly. The Board's main concern is that if the export market placed extraordinary demands on Canadian gas reserves, the market might experience difficulty for some period of time in meeting both Canadian and export demand adequately and fairly until adjustment is completed.

In a "perfect world" competitive forces would cause there to be one price for gas at the wellhead, equal to the cost of producing the most expensive unit of gas then being produced. The cost to end users would be this gas price plus the cost of transportation, and distribution. An additional export demand would require either a reduction in domestic demand or more reserves additions and productive capacity to be developed earlier in time than without this added demand. To the extent more supply were

required, if the cost of additional productive capacity increased with the amount produced, the gas price would increase with the increased export demand. As the gas price increased, supply would increase to meet the sum of domestic and export demand. As the gas price increased, users would conserve energy, or, if it was worthwhile, would switch some of their gas use into other energy forms. Producers would meet all remaining domestic and export demand at the new price. These changes in supply and demand would occur due to the voluntary behaviour of consumers and producers at non-discriminatory prices. If this process worked smoothly there would be no need for regulatory intervention to provide for Canadian requirements.

However, the Board does not believe that we live in such a "perfect world". There are four factors which could impede the market from adequately and fairly meeting Canadian energy requirements in the face of increased export demand.

First, supply and demand may adjust to price changes but with some lag. This lag could occur because it takes time to develop new supplies of gas or alternative energy forms and the capacity to deliver and use them. While there is evidence of flexibility in both supply and demand at the present time, the size of future export demand is not known now; therefore, the adequacy of this flexibility relative to any export demand the market may face requires ongoing regulatory scrutiny.

The second factor is that in a market-oriented energy economy, the level of Canadian gas requirements will vary depending in part upon the gas price. If there were influences operating in the Canadian gas market to keep gas prices higher to Canadians than to export customers (net of delivery), the level of Canadian gas consumption (i.e. "requirements") could be lower and that of export volumes higher than they would be if prices were nondiscriminatory. These influences could arise from at least three sources: non-arm's length transactions between Canadian exporters and U.S. importers, a large share of the domestic market being under the control of very few marketers, and the power of producing provinces to regulate the terms and conditions of gas removal from their provinces. While the Board cannot cure such potential difficulties in the functioning of natural gas markets, it can assess whether proposed exports are surplus to reasonably foreseeable Canadian requirements on the terms proposed and whether such exports are in the best interests of Canada.

The third factor is that in any international trade environment, foreign governments' energy policy and regulation are beyond Canada's control and these could affect Canadian export volumes or prices in ways that may influence whether Canadian requirements will be adequately and fairly met. In these circumstances, individual participants in the marketplace may not have the kind of collective response capability which a national institution has, and which it may be necessary to use in order to serve the public interest.

The fourth factor is that the ability to import gas is limited.

The Board concludes that it is appropriate to adopt surplus determination procedures which do not unduly interfere with the market when it is working to serve Canadian

needs adequately and fairly, but which will provide for intervention by the Board whenever it finds that additional exports might cause the market to have difficulty in meeting reasonably foreseeable Canadian requirements.

3.3 How Procedures Should Take into Account Requirements of Various End Users and Natural Gas Imports

The fourth question which the Board asked parties to address was:

“How should the Board’s procedures take into account:

- (i) the requirements (referred to below as "core") of end users who are unable to switch readily to alternate fuels or who cannot or do not wish to contract directly with producers for their supply needs, and the lengths of contracts entered into on their behalf;*
- (ii) the requirements (referred to below as "non-core") of end users, such as large volume as consumers, who contract directly with producers, and the lengths of the contracts they enter into, and*
- (iii) gas imported into Canada, and the lengths of contracts under which it is imported?”*

Requirements of Different Market Segments

Those parties who favoured continuation of the current procedures opposed different protection for the requirements of different market segments. (As discussed above, parties used the terms core and non-core to refer to different market segments, although they often did not define these terms precisely.) They cited the following main reasons for their position:

- (i) Section 83 of the NEB Act does not provide for any discrimination between different categories of Canadian requirements;
- (ii) it would be difficult, and some said impossible, to define adequately who is included in each category;
- (iii) if the Board set aside reserves for only the core market, then:
 - (a) customers moving from one category to another would affect the protection provided to the core market by these reserves; and
 - (b) in the event there were supply shortages to the non-core market, it would be impossible to deny it access to the reserves set aside for the core market because of the potential employment implications of such denial;
- (iv) the economic and efficient operation of distribution pipelines requires that there be gas available to be transported to interruptible customers because of the load-balancing attained through serving these customers;

- (v) evaluating each one of a large number of firms in the industrial sector to determine the category into which it should be placed would involve practical difficulties; and
- (vi) it would involve unnecessary and currently illegal interference in private contracts by provincial regulatory bodies.

Generally, those parties who proposed contractual protection also opposed the Board implementing different protection for the requirements of the core and non-core markets, preferring that all markets look to contracts for supply protection. They argued that distributors have the expertise to contract for the needs of the core market and that, if regulatory oversight of distributors' contracting practices were necessary, this would better be done at the provincial level because it is closer to the local markets.

IPAC suggested that even if different levels of core market protection resulted from differences in regulatory requirements among provinces, this should be accepted by the Board.

As discussed in section 3.1.2, Polysar and APMC proposed protection only for the core market.

Views of the Board

As discussed in the views of the Board in section 3.1.2, the Board is of the view that it would be impractical to attempt to provide any special measures at the national level to protect the requirements of the core market.

Natural Gas Imports

In the Board's current procedures, estimated Canadian demand is the Canadian demand expected to be satisfied by Canadian supply; i.e., it is net of imports.

Many of those parties who were advocating no change to the Board's current surplus determination procedures also suggested no change to the current treatment of gas imports.

A number of parties suggested that only contracted, and not spot, imports be taken into account. Union Gas suggested that long- and short-term imports be treated symmetrically with long- and short-term exports.

Several parties suggested that because natural gas imports into Canada are very small they should be ignored in the Board's procedures.

A number of parties suggested that imports be added to Canadian supply, rather than being subtracted from Canadian requirements. B.C. Hydro suggested that firm imports be included but not imports which may be curtailed or diverted.

Most of those advocating contractual protection suggested that under that proposal the Board need only monitor imports as part of its monitoring of supply and requirements.

C-I-L suggested that imports by distributors be monitored by provincial regulatory agencies for prudence, but that importers have the same right to voice concerns before the Board over new export authorizations as any other natural gas user.

Murphy Oil, which advocated contractual protection, proposed that if the Board were to maintain its current surplus procedures, then natural gas imports should be denied, with the exception of volumes required during emergency situations.

Views of the Board

With regard to natural gas imports, the Board is of the view that it is appropriate to continue to take them into account in assessing the prospects for Canadian energy supply and demand and the desirability of authorizing natural gas exports.

3.4 Conditioning of Export Authorizations

The fifth question on which the Board requested the views of interested parties was:

“Would it be appropriate for the Board to condition export authorizations to provide that any domestic shortages must be met by the holders of those authorizations before exports can proceed?”

APMC, producers, gas exporters, C-I-L and Edge opposed such a condition as being unnecessary because the Board has the power under the NEB Act and subject to Governor in Council approval to interrupt gas exports and because it would change the perception of the U.S. purchaser as to the risk of interruption, making it harder to sell gas. They argued that including such a condition in export licences would be an unnecessary irritant to U.S. importers.

Some parties suggested that if the Board decided to incorporate such a condition in export licences, it should exempt existing licences.

Ontario, Manitoba and distributors other than Union Gas favoured adding such a condition to licences. B.C. Hydro suggested it be added only to new licences.

Union Gas was of the view that it would be inappropriate to use such a condition as a substitute for a surplus test.

Alberta and Southern suggested that such a condition would be reasonable, provided that it is known in advance, that it require domestic purchasers to pay a reasonable price, and that each exporter is required to provide at most a proportionate share.

Several parties suggested the condition be analogous to the clause incorporated in Alberta removal permits which provides for any community, consumers, or public utility within the province to be served by the holder of a removal permit at a reasonable price on demand, if they are willing to take delivery at a point on the NOVA pipeline and if, in the opinion of the ERCB, they can reasonably be supplied by such permit holder.

APMC explained that this clause in Alberta removal permits was not intended for use in emergencies as these are covered by a separate provision in Alberta legislation. The clause in the removal permits was to ensure that those removing gas from the province had contracted with persons in Alberta requiring gas in order to avoid the duplication of transportation facilities within Alberta. It also explained that the clause had never had to be used.

TCPL Westcoast and B.C. Hydro suggested any gas shortages be shared by similar classes of customers in the U.S. and Canada, beginning with those on interruptible service.

Northwest opposed the use of such a condition, but was of the view that if the Board intended to redirect exports to Canadian markets in the future, fairness requires that this be indicated explicitly in export licences. Northwest also urged that core market consumers in the United States that were totally reliant on Canadian supplies be given equal protection with the Canadian core market.

Views of the Board

The Board agrees with those parties who viewed such a condition as potentially doing more harm than good. It could reduce the value of Canadian gas in export markets without adding to the Board's powers to deal with any domestic supply dislocations. The Board notes that, in part, the value of Canada's natural gas in export markets, and hence the benefits Canada receives from exporting natural gas, derives from its reputation as a secure source of supply.

3.5 Relevance of Provincial Tests

The sixth question on which the Board sought the views of interested parties was the relevance, to its surplus determination procedures, of provincial tests used by Alberta and British Columbia, both of which were being reviewed.

The results of Alberta's review were published in March 1987, at which time the Board requested views of the relevance to its procedure of the new Alberta test (see section 1.1).

The ERCB adopted a 15C1 reserves test for the core market which it defined as including residential, commercial and small (less than 2 PJ per year) industrial requirements. The test also made provision for the estimated contracted requirements of the non-core market.

The results of the B.C. review were not available, but during the hearing the BCPC filed a discussion paper on British Columbia's surplus procedures which had been issued by the province in January 1987.

Distributors generally opposed the Board's adopting a procedure analogous to Alberta's, for the following reasons:

- (i) It would not provide adequate protection for Canada as a whole.
- (ii) The national test should be more stringent because Alberta gas users have protection not available to other Canadians. This protection emanates from:
 - (a) a clause in Alberta removal permits which requires exporters of gas from Alberta to supply gas to Alberta residents at the direction of the ERCB;
 - (b) a provision in the *Alberta Gas Resources Preservation Act* which requires diversion of gas intended for markets outside Alberta to Alberta markets in the event of an emergency;

- (c) Alberta users are generally located closer to the gas fields than are gas users outside the province and this geographic fact provides Alberta users with the lowest costs for delivery; hence producers would obtain higher netbacks from sales to Alberta users than from sales at the same delivered prices to those outside Alberta; and
 - (d) Alberta gas users benefit from a larger resource base relative to their requirements than do other Canadians.
- (iii) The definition of the core market used by the ERCB for Alberta may not be appropriate elsewhere. The definition used in other provinces, such as Ontario which defines the core market as comprising those volumes (other than buy/sell volumes) sold by local distribution companies, may lead to the size of the core market varying over time as customers switch their purchases back and forth between local distribution companies and direct deals with producers.
 - (iv) Alberta gas users already have several years experience with direct sales under a market-sensitive pricing regime.

Distributors noted that Alberta had chosen to retain a mandated surplus test rather than adopt contractual protection. They also noted that the ERCB had advanced the following reasons for preferring a mandated surplus test:

- (i) it could provide a simple early warning system for changing demand-supply situations;
- (ii) it would likely improve the reliability of Alberta removal permits as perceived by extraprovincial purchasers;
- (iii) the contracting approach does not clearly differentiate in the protection for core and non-core users and therefore may be inconsistent with the Alberta government policy statement;
- (iv) the contracting approach would not likely be understood by the general public and its absence of visibility could be seen as an absence of protection of the public; and
- (v) the ERCB felt there was some question about complete reliance on the marketplace at a time when it is subject to many uncertainties.

Producers and marketers preferred that the Board adopt contractual protection rather than a mandated surplus test for the core market. They argued that a mandated test could distort the operation of the market unless it was accompanied by a directive from provincial governments to the effect that provincial regulatory boards require utilities to contract for the full quantity and term of the mandated test. They noted that because this has been done in Alberta the ERCB decision in their view effectively implemented the contracting approach. They also noted that even if the Board were to adopt the Alberta approach, federal jurisdiction does not extend to the contracting practices of provincial utilities.

As discussed above, APMC proposed that the Board adopt a procedure similar to that of the ERCB.

Views of the Board

At the time of the Board's hearing, Alberta was the only province to have its revised provincial surplus determination procedure in place. Alberta's procedure relies on a distinction between core and non-core markets. While provincial regulators may find this approach useful for regulation at the provincial level as discussed in section 3.1.2, it is the Board's view that it would be difficult to make this distinction operative at the national level. Therefore, the Board does not consider it appropriate to adopt the ERCB approach for national surplus determination.

Chapter 4

Decision

In Chapters 2 and 3 the Board has made findings on the continuing appropriateness of the existing surplus determination procedures and on the various alternative procedures suggested by the parties at the hearing.

With respect to the existing procedures, while the R/P Ratio Procedure has merits in some circumstances, it would now be anomalous and contrary to free market operation if the level of gas supply to Canadians were to be determined by other than market forces. For this reason, the Board finds the existing procedures to be no longer appropriate.

For reasons set forth in Chapter 3, the Board finds that the specific alternative procedures suggested by parties to the hearing are not suited to existing circumstances.

The Board has decided that it is appropriate to adopt surplus determination procedures which do not unduly interfere with the market when it is working to serve Canadian needs adequately and fairly, but which will provide for the intervention by the Board whenever it finds that additional exports might cause the market to have difficulty in meeting reasonably foreseeable Canadian requirements.

The Market-Based Procedure

The new procedure, which will be referred to as the Market-Based Procedure, is founded on the premise that the marketplace will generally operate in such a way that Canadian requirements for natural gas will be met at fair market prices.

The Board will act in two ways to ensure that natural gas to be licensed for export is surplus to reasonably foreseeable Canadian requirements: one will be in the context of public hearings to consider applications to export natural gas; the other will be by monitoring Canadian energy markets on an ongoing basis.

A. *Public Hearings*

During public hearings to consider applications for licences to export natural gas, the Board's assessment as to whether the market is functioning in a satisfactory way will consist of three main components:

- 1) Complaints Procedure
- 2) Export Impact Assessment
- 3) Public Interest Determination.

B. *Ongoing Monitoring*

The Board's ongoing monitoring will consist of two main components:

- 1) Assessment of Canadian Energy Supply and Demand
- 2) Natural Gas Market Assessment.

Each of these components is detailed below.

A. *Public Hearings*

The Board is required, by statute, to hold a public hearing on applications to export natural gas for periods longer than two years. Exports for periods not exceeding two years can be authorized by order without need for a public hearing.

Before issuing a licence to export natural gas, the Board is required, by Paragraph 83(a) of the Act, to find that the proposed export is surplus to reasonably foreseeable Canadian needs. The Board will use a complaints procedure to assist it in deciding whether the proposed export is surplus.

1) *Complaints Procedure*

The inclusion of a complaints mechanism in the new surplus determination procedures is based on the principle that gas should not be authorized for export if Canadian users have not had an opportunity to buy gas for their needs on terms and conditions similar to those of the proposed export. Applicants for export licences will have to be prepared to address any concerns on this score which may be identified in the complaints procedure which is described below.

When an application for export is filed with the Board, interested parties will have an opportunity to examine the various elements of the proposal. It will be open to domestic users of natural gas to come forward and object to the export on the grounds that they cannot obtain additional supplies of gas under contract on terms and conditions, including price, similar to those in the export proposal. If objections are filed with the Board, the Complainants and the Applicant may attempt to resolve outstanding differences. Indeed, the Board itself may decide not to set down an export application for hearing until parties have been given an opportunity to attempt to cure any complaints.

At the public hearing, the Board will consider the merits of the application together with any outstanding complaints. The Board will hear evidence from all affected parties on relevant matters including information on the efforts of Complainants to contract for gas and on the ability and willingness of Applicants to meet the needs of the Complainants. Much might hinge on the equivalence of the contractual terms in the export arrangement and those sought by the Complainants. It is unlikely these terms will be identical in every respect and, in determining whether terms and conditions are similar, the Board will have regard, in particular, to any differences in the costs to an Applicant of selling to the export customer as compared to selling to the Complainants.

If after completion of the public hearing there are no outstanding complaints which the Board finds to be valid, the Board may conclude, subject to the results of the export impact assessment (see (2)), that the Canadian market is adequately supplied and may determine that the proposed export is surplus to reasonably foreseeable Canadian requirements. If, on the other hand, outstanding valid complaints of Canadian users have not been resolved, the Board may either deny the application or defer issuing a final decision on it until a further opportunity has been given for the situation to be rectified.

2) *Export Impact Assessment*

Applicants for licences to export natural gas will be required to submit an assessment of the impact of their export proposal on Canadian energy and natural gas markets. This impact assessment will be considered at the public hearing convened to examine the application.

The purpose of the impact assessment will be to allow the Board to determine whether a proposed export is likely to cause Canadians difficulty in meeting their energy requirements at fair market prices.

The nature of the export impact assessment, whether quantitative or qualitative, will depend upon the size and significance of the proposed export. The extent and detail of the analysis should be commensurate with the size of the proposed export.

In dealing with the ability of the Canadian gas producing sector to satisfy Canadian needs, given the proposed export, Applicants will be expected to analyze the relevant geological, engineering, economic and institutional factors influencing gas supply. These factors may include the following: exploration and development costs; levels of drilling activity; the trend in reserves additions relative to drilling effort; the size, location and potential production characteristics of gas pools; transportation requirements from wellhead to market and the feasibility of any new transportation facilities required.

In addressing any need for Canadian gas users to adjust their energy consumption patterns by means of energy conservation or switching to alternative fuels, Applicants will be expected to assess the following factors: the scope for additional conservation; the price of gas relative to other energy forms; the fuel switching capability of Canadian gas users; and any lags in conservation and fuel-switching and the expected costs involved.

Applicants will also be expected to address the impact of their proposed exports on future natural gas prices. Given the uncertainty associated with future values of key factors underlying natural gas supply and demand, such as world oil prices, Applicants will be expected to do the impact assessment using a reasonable range of values for those factors.

The burden of proof will rest with the Applicant to satisfy the Board that the proposed export is surplus. The hearing process will provide all parties with an opportunity to test the Applicant's evidence and to present evidence supporting or opposing the export proposal.

3) Public Interest Determination

In addition to using the complaints procedure and export impact assessment outlined above to ascertain that gas proposed to be exported is surplus, the Board will continue, as required by Section 83 of the Act, to have regard to all other factors it considers relevant in determining whether proposed exports are in the national public interest.

Among factors the Board will consider will be evidence that the gas proposed to be exported is under contract and full details of the nature of the supply and sales arrangements as well as copies of executed contracts; evidence of producers' support for the proposed export; evidence on the status of permits to remove gas from the producing province involved; evidence that export volumes will be taken; evidence that the export revenues will fully recover the costs to Canada incurred in making the export and that the export price will not be less than the price to Canadians for similar service; evidence on the availability of pipeline space, on the need to build additional pipeline and other

facilities in Canada and in the importing country, and on the likelihood and timing of Canadian need for any of the facilities constructed in Canada upon termination of the export and the impact of such repatriated use upon the economics of the proposed export; and information on any relevant government policies or positions.

This listing of factors the Board may regard as relevant is illustrative rather than exhaustive. It is intended to indicate the kind of matters the Board will consider in assessing whether the export proposal is in the national public interest. The onus will be on the Applicant to so persuade the Board.

As stated in its April 1986 Report, the Board continues to see a role for cost-benefit analysis in assessing any trade-off between security of supply and benefits from export and in determining whether there are net benefits to Canada. Thus, cost-benefit analysis will continue to be an important tool of the Board in assuring itself that proposed exports are in the public interest.

B. Ongoing Monitoring

1) Assessment of Canadian Energy Supply and Demand

The Board will monitor Canadian energy markets so as to be alert to any difficulties for Canadians in adjusting to changes in natural gas supply and demand.

The NEB Act requires the Board to keep under review the outlook for Canadian supply of all major energy commodities, including electricity, oil and natural gas and their by-products and the demand for Canadian energy in Canada and abroad. As part of this function the Board, since its inception, has prepared and maintained forecasts of energy supply and demand and has, from time to time, published related reports after obtaining the views of provincial governments, industry and other interested parties. The latest of these reports, dated October 1986, was issued in December 1986. The Board intends that this study be updated in 1988. Such assessments will continue to be produced and published at intervals of approximately two years.

Among matters to be analyzed will be the evolving shares of the energy market served by the various energy forms and the implications for the adjustment of the natural gas market in light of the market-oriented pricing regime.

2) Natural Gas Market Assessment

As a second part of its ongoing monitoring, the Board will analyse natural gas supply, demand and prices and will periodically publish reports on its findings.

The focus of these reports will be narrower and shorter-term than that of the above-mentioned total energy reports. A detailed assessment of the structure and functioning of natural gas markets will be provided. There will be coverage of recent developments and near-term prospects for natural gas markets and comments on competitive activity in the market, on pipeline utilization for Canadian and export purposes and on the quantity and quality of gas supply.

Concluding Observations

The Board makes the following observations with respect to its new Market-Based Procedure for surplus determination:

- 1) It is, in the Board's view, the only procedure which is fully compatible with market-determined pricing. The setting aside of any predetermined amount of gas reserves by means of a surplus formula cannot help but interfere with the proper functioning of the market. In discharging its regulatory responsibilities, the Board is conscious of the need to encourage, rather than impede, the proper functioning of energy markets.
- 2) The Board's new Market-Based Procedure is not any less certain than its previous R/P Ratio Procedure. While a formula approach of any sort gives an aura of precision to the determination of surplus, it relies heavily on the ability to forecast accurately a large number of variables on both the supply and demand side of the equation.
- 3) While the Board has found that the setting of guidelines or standards at the national level for the length of distributors' contracts is undesirable or beyond its mandate, this does not imply a judgment by the Board as to the desirability or otherwise of provincial authorities taking positions as to the lengths of contract they believe prudent for their gas users.
- 4) The Board believes there are safeguards against extraordinary demands being suddenly placed on Canadian supply by the export market. Chief among these safeguards are the limitations imposed by existing pipeline capacity, and the time needed for public hearings of applications to export gas or to construct additional pipeline facilities in Canada or the United States.
- 5) The Board does not see the need for a period of transition to its new procedures. However, as is usually the case, the Board will evaluate the merits of any intervenor's request for additional time to prepare itself for dealing with an application.

Chapter 5

Disposition

The foregoing chapters set forth our Reasons for Decision and our Decision in the matter of Review of Natural Gas Surplus Determination Procedures.

R. Priddle
Chairman

R.F. Brooks
Vice-Chairman

L.M. Thur
Associate Vice-Chairman

A.D. Hunt
Associate Vice-Chairman

J. Farmer
Member

J.R. Jenkins
Member

R.B. Horner, Q.C.
Member

W.G. Stewart
Member

A.B. Gilmour
Member

Ottawa, Ontario
July 1987

Appendix 1
Board Letter Dated 6 February 1987
Hearing Order GHR-1-87
Board Letter Dated 31 March 1987
List of Interested Parties

Board Letter Dated 6 February 1987

File No.: 1539-10
6 February 1987

To: Interested Parties
Review of Natural Gas Surplus Determination Procedures

Re: Natural Gas Surplus Determination Procedures

On 18 December 1986 the Board wrote to you (a copy of the Board's letter is attached as Appendix A to the attached Hearing Order) to inform you that the Board will be reviewing its natural gas surplus determination procedures. In its letter the Board stated that as part of its review an opportunity would be provided for an oral process, and that details of the oral process would be provided at a later date.

These details are incorporated in the attached Hearing Order and Directions on Procedure.

The Board's letter also stated that the Secretary would issue a list of parties who had notified him by 30 January 1987 of their intention to make a submission on the subject matter of this proceeding.

This list is Appendix B to the attached Hearing Order.

Yours truly

J.S. Klenavic
Secretary

Attachment:
Hearing Order GHR-1-87

Hearing Order GHR-1-87
DIRECTIONS ON PROCEDURE
REVIEW OF NATURAL GAS SURPLUS
DETERMINATION PROCEDURES

The National Energy Board ("the Board") decided in December 1986, pursuant to Part VI and subsection 20(3) of the *National Energy Board Act* ("the Act"), to review the procedures it uses to determine the surplus of natural gas available for export. Attached as Appendix A hereto is a copy of the Board's letter dated 18 December 1986 and the Attachments thereto, outlining the background to this matter. The Board directs as follows:

Hearing

1. As part of its review the Board will, pursuant to subsection 14(1) of the Act, hold the oral portion of the hearing commencing in the Board's Hearing Room, 473 Albert Street, Ottawa, Ontario on Monday, 13 April 1987 at 9:00 a.m. and continuing in the Delta Bow Valley Hotel, 209-4th Ave S.E., Calgary, Alberta on Tuesday, 21 April 1987 at 9:00 am. The Board will not sit on 17 and 20 April, nor after 12:30 p.m. on 16 and 24 April.

The oral portion of the hearing will continue on 4 May 1987 in Calgary or Ottawa, as required.

2. Parties will have had the opportunity prior to the oral portion of the hearing to make written submissions to the Board on the issues listed in Attachment 2 to the Board's letter dated 18 December 1986 and to ask questions arising from the submissions by serving written information requests.

The purpose of the oral portion of the hearing will be to allow an opportunity for cross-examination of parties' positions as set forth in their written submissions.

While the Board does not wish to receive additional direct evidence or submissions after the scheduled dates for submissions (27 February) and for responses to information requests (27 March), the Board will allow parties at the hearing to make a short opening statement. In addition, the Board would be prepared to receive the views of parties on the relevance of the reviews of provincial surplus tests if these reviews are available.

Upon completion of the oral portion of the hearing, the Board will receive written argument on a date to be determined.

3. The Board will, if necessary, issue further directions concerning the oral portion of the hearing after it has reviewed parties' written submissions.

Intention to Participate/Simultaneous Interpretation

4. Parties wishing to participate in the oral portion of the hearing should inform the Secretary of the Board in writing by 27 February 1987:

- (a) whether they wish to present witnesses and/or cross-examine, and, for each, in which location(s) referred to in paragraph 1; and
- (b) which official language they intend to use.

The Secretary will issue an order of appearances for witnesses and for cross-examination for each location shortly after 27 February 1987. If it appears that both languages will be used, simultaneous interpretation will be provided.

Public Viewing

5. A copy of all documentation in this matter will be available for viewing in the Board's Library, Room 962, 473 Albert Street, Ottawa, Ontario and its office in Calgary, Alberta at 4500-16th Avenue, N.W.

Service to Parties

6. The Board will serve a copy of these Directions on Procedure on those parties listed in Appendix B.

Filing and Service Requirements

7. If documents are required to be filed or served at the oral portion of the hearing, parties shall provide thirty-five (35) copies to the Board and one (1) copy to other parties.
8. If documents are required to be filed or served fewer than four (4) days prior to the commencement of the oral portion of the hearing, parties shall also bring to the hearing a sufficient number of copies of the documents for use by the Board and other parties.

General

9. All parties are asked to quote Hearing Order No. GHR-1-87 when corresponding with the Board in this matter.
10. These Directions supplement the draft *NEB Rules of Practice and Procedure*.
11. For information on this hearing or the procedures governing the hearing, contact Ms. Lynne Alsford, Regulatory Support Officer, at (613) 998-7130.

J.S. Klenavic,
Secretary

Appendix A -The Board's letter dated 18 December 1986.
Appendix B -List of Interested Parties

Appendix A to Order GHR-1-87

File No.: 1539-10
18 December 1986

TO: See list attached

Re: Natural Gas Surplus Determination Procedures

The National Energy Board last reviewed its natural gas export licensing procedures in 1985. In its Report dated April, 1986¹ the Board announced changes in these procedures.

On 29 October 1986 the Minister of Energy, Mines and Resources wrote to the Chairman of the Board seeking the Board's advice on the implications of changing conditions in natural gas markets "and the action the Board is prepared to initiate in respect of its natural gas surplus determination procedures, to take account of a rapidly evolving market environment".

On 4 November 1986 the Chairman of the Board replied (copies of both letters are attached as Attachment 1) that the Board was prepared "in light of the implications of a rapidly evolving market environment... to undertake a comprehensive review of the Board's established gas surplus procedures". The Chairman also stated that: "The Board, in conducting this review, would of course want to seek the views of all affected segments of the Canadian energy community. This can best be done through a public hearing, which would enable all interested parties to present and to be examined on their views".

The Board will conduct its review of surplus determination procedures in plenary session. Input by interested parties will be by written submission. An opportunity will be provided for an oral process as part of this review. For this purpose, the Board will, pursuant to sub-section 14(1) of the Act, assign one of its Members to preside at a public session, likely in April, 1987. Details on the oral process will be provided at a later time.

At this time the Board directs as follows:

- 1) Any party wishing to make a submission on the subject matter of this proceeding shall so notify the Secretary of the Board by 30 January 1987. Shortly thereafter the Secretary will issue a list of such parties.
- 2) A list of issues the Board would like addressed by interested parties is attached as Attachment 2.
- 3) Submissions are to be filed with the Secretary and served on all interested parties by 27 February 1987. Thirty-five copies are required by the Board; only one copy need be provided to each interested party.

¹ Reasons for Decision in the Matter of Phase 1 The Surplus Determination Procedures Phase of the Gas Export Omnibus Hearing, 1985.

- 4) If parties wish to ask questions arising from the submissions, they should serve their information requests on all parties and file them with the Secretary (35 copies) by 13 March 1987. Replies to such requests should be filed with the Secretary (35 copies) and served on all parties by 27 March 1987.
- 5) The Board will arrange for publication of a notice of this review.
- 6) Further information on this review may be obtained from the Board by contacting Ms. Lynne Alsford, Regulatory Support Officer, at 998-7130.

Yours truly,

J.S. Klenavic
Secretary

Attachments:

1. Letter from Minister dated 29 October 1986 and reply from Board dated 4 November 1986.
2. List of Issues.
3. List of addressees.

**Attachment 1 to the Board's Letter
Dated 18 December 1986**

October 29, 1986

Mr. Roland Priddle
Chairman
National Energy Board
473 Albert Street
Ottawa, Ontario
K1A 0E5

Dear Mr. Priddle:

I am writing to you concerning implementation of the Agreement on Natural Gas Markets and Prices.

As the end of the transition year approaches, I am impressed and encouraged by the progress that has been made in achieving the goal of a flexible and more market-oriented pricing regime for Canadian natural gas. I know that this progress is due to the tremendous co-operative efforts of the industry, governments and regulators.

The Agreement on Natural Gas Markets and Prices is intended to create a pricing regime and a market environment that are fair to producers and consumers now and in the foreseeable future. I believe it is incumbent on governments and our regulatory agencies to ensure that the principles of the Agreement are observed.

As you are aware, a keystone of the Agreement is enhanced access for Canadian producers to natural gas markets. Because access to markets involves the export of natural gas from Canada, I believe there is an important role for the National Energy Board to continue to play in ensuring that this fundamental tenet finds expression.

With regard to natural gas exports, I am aware that Section 83 of the *National Energy Board Act* requires the Board to satisfy itself that natural gas to be exported does not exceed the surplus remaining after due allowance has been made for the reasonably foreseeable requirements for use in Canada.

In its May 1986 Reasons for Decision on Surplus Determination Procedures, the Board expressed its intention to continue a flexible approach to the matter of natural gas export licensing. The Reasons for Decision specifically noted that "...the Board is of the view that its surplus determination procedures must be flexible and be capable of adapting to changing market conditions".

In my view, conditions in the Canadian natural gas market have indeed changed in even the short time since the National Energy Board last conducted a review of its surplus determination procedures. In particular, I have noted the growth of short-term, best-efforts direct sales to domestic consumers; imports of natural gas from the United States; and, most recently, the renegotiation and producing province approval of pricing provisions in the long-term system gas contracts supplying the Canadian market.

In addition, I have received representations from certain large volume gas consumers, proposing to contract directly with producers, indicating they neither need nor expect the explicit supply protection inherent in the Board's surplus test.

Finally, I am aware that the Province of Alberta has requested the Energy Resources Conservation Board to review provincial surplus determination procedures, pursuant to the Agreement on Natural Gas Markets and Prices. British Columbia has also committed to a review of its surplus determination procedures.

In light of these circumstances, could you advise me, pursuant to Section 22 of the *National Energy Board Act*, of the implications of these changing conditions and the action the Board is prepared to initiate in respect of its natural gas surplus determination procedures, to take account of a rapidly evolving market environment?

In closing, I would like to express my appreciation to you and the other members of the National Energy Board for your efforts to carry out your responsibilities in keeping with the spirit of the Agreement.

Yours sincerely,

Marcel Masse

4 November 1986

The Honourable Marcel Masse, P.C., M.P.
Minister of Energy, Mines and Resources
580 Booth Street
Ottawa, Ontario
K1A 0E4

Dear Mr. Masse:

The National Energy Board's Gas Export Surplus Determination Procedures

The Board has given immediate consideration to your letter of October 29, 1986.

We have no hesitation in advising you that, in light of the implications of a rapidly evolving market environment, we are prepared to undertake a comprehensive review of the Board's established gas surplus procedures.

The Board, in conducting this review, would of course want to seek the views of all affected segments of the Canadian energy community. This can best be done through a public hearing, which would enable all interested parties to present and to be examined on their views.

In identifying the areas in which to seek opinion and evidence, the Board will make specific reference to the considerations mentioned in your letter.

Our initial thought is that it would be best if results of any reviews of surplus tests by the appropriate provincial authorities could be available before the Board completes its hearing.

With this in mind, we will proceed with our review as expeditiously as possible, keeping in mind the need to give interested parties adequate time to develop their positions.

Meanwhile, some gas export applications are now before the Board and several more are expected. Decisions on any of these requiring an early response should not be delayed by our review of gas surplus procedures.

Yours sincerely,

R. Priddle

Attachment 2 to the Board's Letter Dated 18 December 1986

List of Issues

This Attachment outlines a number of issues with respect to the Board's natural gas surplus determination procedures which interested parties are invited to address.

The legislative basis of the Board's responsibilities in this area is contained in Section 83 of the *National Energy Board Act*, which states in part:

“On an application for a licence, the Board shall have regard to all considerations that appear to it to be relevant and, without limiting the generality of the foregoing, the Board shall

- (a) *satisfy itself that the quantity of gas to be exported does not exceed the surplus remaining after due allowance has been made for the reasonably foreseeable requirements for use in Canada having regard, in the case of an application to export...gas, to the trends in the discovery of...gas in Canada.”*

The Board last reviewed the procedures it uses to determine natural gas surplus in a hearing held in November and December of 1985. The Board's decision was made public in its report dated April 1986.¹

At the time of the 1985 hearing, deregulation had been announced but had not yet occurred. Since then the situation has evolved rapidly and, in the light of the new market environment, the Board is re-examining the appropriateness of its procedures.

The Board seeks the views of interested parties on the following questions.

1. Do the National Energy Board's existing surplus determination procedures continue to be appropriate in the light of changes in the Canadian natural gas market since the Board last conducted a review of these procedures?
2. What alternative surplus determination procedures should the Board consider? Parties suggesting alternative procedures for satisfying Paragraph 83(a) of the *National Energy Board Act* should clearly explain the rationale for such procedures, how they would work, and the advantages and disadvantages of their proposals relative to the current procedures.
3. Would reliance on market forces to balance supply and demand of natural gas in Canada be an acceptable substitute for the Board's surplus determination procedures?
4. How should the Board's procedures take into account:

¹ National Energy Board Reasons for Decision in the Matter of Phase 1 the Surplus Determination Procedures Phase of the Gas Export Omnibus Hearing, 1985. Copies of this report are available on request from: Regulatory Support Office, National Energy Board, 473 Albert Street, Ottawa, Ontario, Canada, K1A 0E5, (613) 998-7204.

- (i) the requirements of end users who are unable to switch readily to alternate fuels or who cannot or do not wish to contract directly with producers for their supply needs, and the lengths of contracts entered into on their behalf;
 - (ii) the requirements of end users, such as large volume gas consumers, who contract directly with producers, and the lengths of the contracts they enter into; and
 - (iii) gas imported into Canada, and the lengths of contracts under which it is imported?
5. Would it be appropriate for the Board to condition export authorizations to provide that any domestic shortages must be met by the holders of those authorizations before exports can proceed?
6. The two principal gas-producing provinces are expected to complete reviews of their own surplus tests by spring 1987. The Board will seek views on the relevance, to its surplus procedures, of the provincial tests if these reviews are available.

**Attachment 3 to the Board's Letter Dated
18 December 1986**

List of Addressees

Natural Gas Licence Holders

Alberta and Southern Gas Co. Ltd.

Canadian-Montana Pipe Line Company

Columbia Gas Development of Canada Ltd.

Consolidated Natural Gas Limited

ICG Transmission Holdings Ltd.

KannGaz Producers Ltd.

Niagara Gas Transmission Limited

Pan-Alberta Gas Ltd.

ProGas Limited

Shell Canada Limited

Sulpetro Limited

Tenneco LNG Inc.

TransCanada PipeLines Limited

Transcontinental Gas Pipe Line Corporation

Union Gas Limited

Westcoast Transmission Company Limited

Governments

Province of British Columbia

Attorney General

Minister of Energy, Mines and Petroleum Resources

British Columbia Petroleum Corporation

British Columbia Utilities Commission

Province of Alberta
Alberta Energy and Natural Resources
Alberta Energy Resources Conservation Board
Alberta Petroleum Marketing Commission

Province of Saskatchewan
Attorney General
Minister of Energy and Mines

Province of Manitoba
Attorney General
Minister of Energy and Mines

Province of Ontario
Attorney General
Ministry of Energy
Ontario Energy Board

Province of Quebec
Procureur général du Québec
Ministère de l'énergie et des ressources
Régie de l'électricité et du gaz

Province of New Brunswick
Attorney General
Minister of Natural Resources
Energy Secretariat

Province of Nova Scotia
Office of the Deputy-Minister of Mines and Energy

Government of Newfoundland and Labrador
Attorney General
Minister of Mines and Energy

Province of Prince Edward Island
Minister of Justice and Attorney General
Minister of Energy and Forestry

Northwest Territories
Department of Justice and Public Services
Energy, Mines and Resources Secretariat

Yukon Territory
Department of Justice

Associations

Canadian Chemical Producers' Association

Canadian Electrical Association
Canadian Gas Association
Canadian Manufacturers' Association
Canadian Petroleum Association
Consumers' Association of Canada
Independent Petroleum Association of Canada
Industrial Gas Users Association
Native Canadian Petroleum Association
Ontario Mining Association
Ontario Natural Gas Association
Small Producers and Explorers Association of Canada

Other Interested Parties

Amoco Canada Petroleum Limited
Anderson Exploration Ltd.
B.F. Goodrich Canada Inc.
B.P. Resources Canada Limited
Bonanza Resources Ltd.
Bonus Gas Processors Corp.
Border Gas Import
Boundary Gas, Inc.
Bralorne Resources Limited
Brampton Brick Limited
Brenda Marketing Inc.
British Columbia Hydro and Power Authority
British Columbia Sugar Refining Company Limited

Brymore Gas (Canada) Inc.

Canada Geothermal Oil Ltd.

Canadian Energy Research Institute

Canadian General-Tower Limited

Canadian Mist Distillers Limited

Canadian Gypsum Company Limited

Canadian Hunter Exploration Ltd.

Canadian Western Natural Gas Company Limited

Canterra Energy Ltd.

Carlyle Energy Ltd.

Chevron Canada Ltd.

Chevron Resources Ltd.

Cigas Products

Columbia Gas Limited

Cominco

Committee for a Coherent Energy Policy

Consumers Glass Company Limited and Consumers Packaging Inc.

Cyanamid Canada Inc.

Czar Resources Ltd.

Diamond Shamrock Exploration of Canada Ltd.

Dome Petroleum Limited

Domglas Inc.

Domtar Inc.

Economic Council of Canada

Energy Probe

Esso Resources Canada Limited
Foothills Pipe Lines (Yukon) Ltd.
Fort Nelson Gas Ltd.
Fraser Inc.
Gaz Métropolitain, inc.
Goodyear Canada Inc.
Greater Winnipeg Gas Company
Gulf Canada Resources, Inc.
Home Oil Company Limited
Husky Oil Operations, Limited
ICG Resources Ltd.
ICG Utilities (Canada) Ltd.
ICG Utilities (Manitoba) Ltd.
ICG Utilities (Ontario) Ltd.
Imperial Oil Limited
Inland Natural Gas Co. Ltd.
Inter-City Gas Corporation
Joseph E. Seagram & Sons, Limited
Kern River Gas Supply Corporation
Kern River Gas Transmission Company
KM Gas Company
Lake Ontario Steel Company Ltd.
MacMillan Bathurst Inc.
Molson Ontario Breweries Limited
Mobil Oil Canada, Ltd.

Murphy Oil Company Ltd.
Natural Gas Pipeline Company of America
Natgas Canada Inc.
Natural Resource Gas Limited
Nitrochem Inc.
Norcen Energy Resources Limited
Northridge Petroleum Marketing Inc.
Northern Border Pipeline Company
Northwest Alaskan Pipeline Company
Northwest Pipeline Corporation
NOVA, AN ALBERTA CORPORATION
Nova Scotia Resources Limited
Ocelot Industries Ltd.
PacGas Limited
PanArctic Oils Ltd.
PanCanadian Petroleum Limited
Panther Marketing Ltd.
Petro-Canada Inc.
PetroGas Processing Ltd.
Petromont Inc.
Proctor & Gamble Inc.
Petrosar
Poco Petroleums Ltd.
Polar Gas Ltd.
Polysar Limited

PPG Canada Inc.

PSR Ventures Gas Inc.

QNS Paper Company

Redpath Sugars

Sable Gas Systems

Saskatchewan Power Corporation

Sea Pines Petroleum Ltd.

Shell Canada Products Limited

Shell Canada Resources Ltd.

Société Québécoise d'initiatives pétrolières (SOQUIP)

Soloway, Wright, Houston, Greenberg, O'Grady, Morin (on behalf of Tennessee Gas Pipeline Company, A Division of Tenneco Inc. and MidWestern Gas Transmission Company)

Stone Petroleum Ltd.

Suncor, Incorporated

Texaco Canada Resources Ltd.

Texas Eastern Transmission Corporation

The Consumers' Gas Company Ltd.

The Canadian Salt Company Limited

The Beaver Wood Fibre Company, Limited

Toronto District Heating Corporation

TriCentrol Oils Limited

Turbo Resources Limited

Ultramar Canada, Incorporated

Union Carbide Canada Limited

Vector Energy Systems Ltd.

Venture Gas Project

Vermont Gas Systems, Inc.

Western Gas Marketing Ltd.

Appendix B
To Order GHR-1-87

List Of Interested Parties

(For list of interested parties see below)

Board Letter Dated 31 March 1987

File No.: 1539-10
31 March 1987

To: Interested Parties
Review of Natural Gas Surplus Determination Procedures

Re: Further Directions Concerning the Oral Portion of the Hearing

Further to Paragraph 3 of Hearing Order GHR-1-87, the Board wishes to advise parties of the following.

1. Names and Qualifications of Witnesses

Would parties intending to present witnesses at the hearing please file the names and qualifications of their witnesses by 8 April if they have not already done so.

2. Location of Toronto Sitings

The Toronto portion of the hearing will begin at 9:00 a.m. on Tuesday 5 May in the Carleton Hall room of the Lakeshore Inn and Conference Centre, 2000 Lakeshore Blvd. West.

3. Use of Time at Hearings

Although the Board's objective is, of course, to give every interested party a full and fair opportunity to be heard and to examine others, it also wishes to make best use of every party's time.

This means that in order to ensure that the proceedings relate to matters relevant to the concept of determining gas surplus to Canadian requirements in a free energy-market environment, any evidence or cross-examination which does not appear to be relevant to the issues raised in the Board's communications with interested parties will be discouraged.

It also means that the Board will seek to complete the hearing of all parties in the allotted time available at the various locations - 13 to 16 April in Ottawa, 21 to 24 April in Calgary, and 5 to 8 May in Toronto.

To this end, it is intended to sit extended hours (see paragraph 4 below) and to keep breaks short - 15 minutes for coffee and 90 minutes for lunch.

4. Hearing Hours

The hearing hours will be as follows:

Ottawa

13 April	9:00 a.m. to 6:00 p.m.
14 & 15 April	8:30 a.m. to 6:00 p.m.
16 April	8:30 a.m. to 12:30 p.m.

Calgary

21 April	9:00 a.m. to 6:00 p.m.
22 & 23 April	8:30 a.m. to 6:00 p.m.
24 April	8:30 a.m. to 12:30 p.m.

Toronto

5 May	9:00 a.m. to 6:00 p.m.
6, 7 & 8 May	8:30 a.m. to 6:00 p.m.

In addition, evening sittings will be held if necessary.

5. Views on Relevance of Alberta Energy Resources Conservation Board Decision

Further to item 6 of Attachment 2 to the Board's letter dated 18 December 1986, the Board requests parties to address their views on the relevance, to its surplus determination procedures, of the Alberta Energy Resources Conservation Board Report 87- *A Gas Supply Protection for Alberta: Policies and Procedures* dated March 1987, as part of their short opening statement or, if their views are lengthy, to file them at the hearing at the time of their opening statement.

6. Lines of Questioning

The purpose of this section is to give participants notice of certain lines of questioning intended for the oral portion of the hearing.

Without prejudice to Board consideration of any particular option, the Board will be particularly interested in exploring at the hearing a number of areas.

The Contracting Approach

The Board sees three main issues related to this approach:

- the likely adequacy of contracts to reflect and serve Canadian needs;
- whether it would be in the public interest to assume that any gas not committed in contracts is available for export; and
- whether contracts - especially long-term ones-would affect the ability of market mechanisms to balance supply and demand.

Some considerations relating to each of these three general issues are outlined below.

1. Adequacy of Contracts to Reflect and Serve Canadian Needs
 - (a) Are there institutional barriers posed by Canadian governments, regulators or existing contractual arrangements to the negotiation of new or amended contracts to reflect and serve Canadian needs?
 - (b) What security do contracts provide that producers will be able to supply contracted volumes, and over what time period? Is a new approach to long-term gas contracting in Canada required, involving, for example, more precise obligations on producers to supply and on consumers to take the gas in question?
 - (c) Is there economic justification for a security of supply premium for long-term contractual supply? If so, can it be expected that such a premium would be built into the contractual arrangements?
 - (d) Some customers may switch back and forth between contract coverage and spot purchases, with resulting uncertainty about the predictability of domestic requirements for long-term contracted supply. Is this an issue which should be of concern?
 - (e) What recourse should be available to long-term customers who are unable to contract adequate supply at market prices?
2. The Public Interest in Exporting Volumes Not Contracted for Domestic Use
 - (a) Should volumes which are not contracted for domestic use be licensed without further reference to surplus procedures?
 - (b) Should the Board take any steps to make sure that given quantities of gas are not contracted both to export and to domestic use?
 - (c) Should it be necessary for surplus determination purposes to demonstrate that the export price would recover all associated costs in Canada including user costs? (User costs are the additional costs of having to rely on more expensive gas for domestic needs sooner with exports than without.)
3. Impact of Contractual Approach on Market Mechanisms
 - (a) Could the U.S. market outbid the Canadian market for Canadian gas? Under what conditions could this occur? What would be the implications for the contracting approach to Canadian gas export licensing?
 - (b) Is it likely that the duration of contracts and the pricing and volume provisions would be sufficiently flexible that the market will efficiently balance supply and demand over time?

The Surplus Test Approach

The main issue raised by surplus tests is their effectiveness in providing for reasonably foreseeable Canadian needs. The key question is whether the volume management implicit in physical surplus

criteria would affect domestic gas pricing and the ability of market mechanisms to efficiently balance supply and demand over the longer term.

4. Effectiveness Considerations

- (a) Is it possible to forecast domestic supply and demand accurately enough to determine the correct volume of allowable exports?
- (b) What is the influence of mandated surplus on domestic market prices?
- (c) Is a mandated surplus logically consistent with market-sensitive pricing?
- (d) Do surplus tests carry the risk of preventing export sales which would benefit Canada, after making allowance for the longer term consequences on domestic demand and costs?
- (e) Could mandated surplus requirements sufficiently impair the profitability of gas production as to jeopardize longer-term adequacy of supply?
- (f) What would be the practical usefulness of an offer mechanism for testing in the market place whether gas intended for export is surplus to Canadian needs on comparable terms and conditions?
- (g) How do surplus procedures affect the distribution of costs between consumers and producers for assuring long-term security of supply? Who should bear the costs of assuring long-term security of supply?

Yours truly,

J.S. Klenavic,
Secretary

List Of Interested Parties

AEC Oil and Gas Company a Division of Alberta Energy Company Ltd.

Alberta and Southern Gas Co. Ltd.

Alberta Northeast Gas, Limited; Boundary Gas, Inc.; and Ocean State Power

Alberta Petroleum Marketing Commission

Alcan Wire and Cable

Amoco Canada Petroleum Company Ltd.

Atcor Ltd.

BASF Canada Inc.

Bayeside Dyeing & Finishing Co. Ltd.

British Columbia Hydro and Power Authority

British Columbia Petroleum Corporation

C-I-L Inc.

C.G. Edge & Associates Inc.

Canada Cement Lafarge Ltd.

Canada Geothermal Oil Ltd. and Native Canadian Petroleum Association

Canadian Chemical Producers' Association

Canadian Gas Association

Canadian-Montana Pipe Line Company

Canadian Petroleum Association

Canadian Western Natural Gas Company Limited and Northwestern Utilities Limited

Cliffs of Canada Limited

Cobi Foods Inc.

Cominco Chemicals & Fertilizers

Consolidated Natural Gas Limited and Consoligas Management Ltd.

Consumers' Association of Canada

Cooper Tools

Cornwall Chemicals Limited

Dome Petroleum Limited

Eldorado Resources Limited

Ellwood Robinson Limited

Environmental Resource Centre

Esso Resources Canada Limited

Falconbridge Limited

Foothills Pipe Lines (Yukon) Ltd.

Gaz Métropolitain, inc.

Government of Saskatchewan, Department of Energy and Mines

Greater Winnipeg Gas Company and ICG Utilities (Manitoba) Ltd.

Gulf Canada Corporation

ICG Transmission Holdings Ltd.

ICG Utilities (Ontario) Ltd.

Independent Petroleum Association of Canada

Industrial Gas Users Association

Inland Natural Gas Co. Ltd.

Judicial Action

KannGaz Producers Ltd.

Lake Ontario Cement Limited

Laurentian Hospital

Laurentian University

F.G. Marsh

Mead Johnson Canada

Midwestern Gas Transmission Company and Tennessee Gas Pipeline Company, A Division of Tenneco Inc.

Miller Paving Limited

Minister of Energy for Ontario

Ministry of Energy, Mines and Petroleum Resources of the Province of British Columbia

Mobil Oil Canada, Ltd.

Murphy Oil Company Ltd.

Northern Border Pipeline Company

Northern Natural Gas Company

Northwest Pipeline Corporation, Northwest Alaskan Pipeline Company and Kern River Gas Supply Corporation

NOVA, AN ALBERTA CORPORATION

Ocelot Industries Ltd.

Ontario Hydro

Ontario Natural Gas Association

Pan-Alberta Gas Ltd.

Paperboard Industries Corporation

Partenaires "Znaniiecki" Partners

Petro-Canada Inc.

Pfizer Canada Inc.

Polysar Limited

Porcupine and Area Mines Manager's Group

Procureur général du Québec

ProGas Limited

Province of Manitoba, Minister of Energy and Mines

Province of Nova Scotia, Department of Mines and Energy

PSR Gas Ventures Inc.

Rohm and Haas Canada Inc.

St. Joseph's General Hospital

St. Marys Paper Inc.

Saskatchewan Power Corporation

Shell Canada Limited

Small Explorers and Producers Association of Canada

C. Southey and A.K Enamul Hague

Steetley Industries Limited

Sulpetro Limited and Sulpetro Gas Enterprises Inc.

The Algoma Steel Corporation, Limited

The Consumers' Gas Company Ltd.

The Sierra Club of Western Canada

TransCanada Pipelines Limited

Union Gas Limited

Universal Explorations Ltd.

Ian Waddell, M.P.

Warren Bitulithic Limited

Washington Natural Gas

Westcoast Transmission Company Limited

Woodings - Railcar Limited

John Yu

Appendix 2 Appearances

G.N. Addy	Canadian Chemical Producers Association
J. H. Farrell	Canadian Gas Association
C.K Yates	Canadian Petroleum Association
B.F. Willson J. Yales	Consumers' Association of Canada
A.S. Hollingworth J.A. Snider	Independent Petroleum Association of Canada
P.C.P. Thompson, Q.C.	Industrial Gas Users Association
P.E. Pinnington	Ontario Natural Gas Association
R.E. MacLennan	Small Explorers and Producers Association of Canada
P.H. Davies	AEC Oil and Gas Company, a Division of Alberta Energy Company Ltd.
M.A. Putman, Q.C.	Alberta and Southern Gas Co. Ltd.
D. Arneson	Amoco Canada Petroleum Company Ltd.
L.F. Hindle	British Columbia Hydro and Power Authority
C.G. Edge	C.G. Edge & Associates
F.E. Wolf	Canada Geothermal Oil Ltd. and Native Canadian Petroleum Association
C.K Sheard	Canadian Western Natural Gas Company Limited and Northwestern Utilities Limited
K.F. Miller	Consolidated Natural Gas Limited and Consoligas Management Ltd.
J.H. Farrell	The Consumers' Gas Company Ltd.
N. Harburn	Dome Petroleum Limited
L.C. Lalonde M. Lassonde	Gaz Métropolitain, inc.
J.D. Brett	Greater Winnipeg Gas Company and ICG Utilities (Manitoba) Ltd.

M.E. Bruton	Gulf Canada Corporation
J.D. Brett	ICG Transmission Holdings Ltd.
J.H. Smellie	ICG Utilities (Ontario) Ltd.
D.M. Masuhara	Inland Natural Gas Co. Ltd., Columbia Natural Gas Limited and Fort Nelson Gas Ltd.
J. Horte	KannGaz Producers Ltd.
F.M. Saville, Q.C.	Mobil Oil Canada, Ltd.
R.P. McLean A. Fradsham J.R. Smith	Murphy Oil Company Ltd.
E.B. McDougall	Northern Border Pipeline Company
C.R. Rich D.K. Watkiss	Northwest Pipeline Corporation, Northwest Alaskan Pipeline Company and Kern River Gas Supply Corporation
J. Hopwood, Q.C.	NOVA, AN ALBERTA CORPORATION
F.R. Foran T.J. Ebbels	Pan-Alberta Gas Ltd.
T.M. Hughes	Polysar Limited
N.W. McPheeters	ProGas Limited
R.W. Riegert	Shell Canada Limited
R.B. Cohen M.A. Brown	TransCanada PipeLines Limited
G. Pratte	Union Gas Limited
J. Mercier D.J. Buchanan	Universal Explorations Ltd.
E.B. McDougall	Washington Natural Gas Company
J. Lutes	Westcoast Transmission Company Limited
A. Znaniiecki B. Znaniiecki	Partenaires "Znaniiecki" Partners

W.M. Smith
S. McAllister

Alberta Petroleum Marketing Commission

M.M. Moseley

British Columbia Petroleum Corporation

E.J. Smith
P.D. Morris
C. McCue

Minister of Energy for Ontario

J. Giroux

Procureur général du Québec

N.D. Shende, Q.C.

Province of Manitoba, Minister of Energy and Mines

R. Graw
J. Morel

National Energy Board

Appendix 3 Abbreviations

Parties

(a) Associations

"CAC"	Consumers' Association of Canada
"CCPA"	Canadian Chemical Producers Association
"CGA"	Canadian Gas Association
"CPA"	Canadian Petroleum Association
"IGUA"	Industrial Gas Users Association
"IPAC"	Independent Petroleum Association of Canada
"ONGA"	Ontario Natural Gas Association
"SEPAAC"	Small Explorers and Producers Association of Canada

(b) Companies

"AEC"	AEC Oil and Gas Company, A Division of Alberta Energy Company Ltd.
"Alberta and Southern"	Alberta and Southern Gas Co. Ltd.
"BC Hydro"	British Columbia Hydro and Power Authority
"C-I-L"	C-I-L Inc.
"Canada Geothermal"	Canada Geothermal Oil Ltd. and Native Canadian Petroleum Association
"Consolidated"	Consolidated Natural Gas Limited
"Consumers' Gas"	The Consumers' Gas Company Ltd.
"Dome"	Dome Petroleum Limited
"Edge"	C.G. Edge & Associates Inc.
"Gaz Métro"	Gaz Métropolitain, inc.

"ICG (Man.)"	ICG Utilities (Manitoba) Ltd., Greater Winnipeg Gas Company, and ICG Transmission Holdings Ltd.
"ICG (Ont.)"	ICG Utilities (Ontario) Ltd.
"Inland"	Inland Natural Gas Co. Ltd., Columbia Gas Limited and Fort Nelson Gas Ltd.
"KannGaz"	KannGaz Producers Ltd.
"Mobil"	Mobil Oil Canada, Ltd.
"Murphy Oil"	Murphy Oil Company Ltd.
"Northern Border"	Northern Border Pipeline Company
"Northwest"	Northwest Pipeline Corporation, Northwest Alaskan Pipeline Company and Kern River Gas Supply Corporation
"NOVA"	NOVA, AN ALBERTA CORPORATION and Foothills Pipe Lines (Yukon) Ltd.
"Ocelot"	Ocelot Industries Ltd.
"Pan-Alberta"	Pan-Alberta Gas Ltd.
"Petro-Canada"	Petro-Canada Inc.
"Polysar"	Polysar Limited
"ProGas"	ProGas Limited
"Sask. Power"	Saskatchewan Power Corporation
"Shell"	Shell Canada Limited
"Sulpetro"	Sulpetro Limited
"Transcanada"	TransCanada Pipelines limited
"Union Gas"	Union Gas Limited
"Universal"	Universal Explorations Ltd.
"Westcoast"	Westcoast Transmission Company Limited

(c) Other Interested Parties

"St. Joseph's"	St. Joseph's General Hospital
----------------	-------------------------------

"Sierra Club"	The Sierra Club of Western Canada
"Southey"	C. Southey and A.K Enamul Haque
"Waddell"	Ian Waddell, M.P.

(d) Governments or Government Agencies

"APMC"	Alberta Petroleum Marketing Commission
BCPC"	British Columbia Petroleum Corporation
"British Columbia"	British Columbia, Province of (Ministry of Energy, Mines and Petroleum Resources)
"ERCB"	Alberta Energy Resources Conservation Board
"Manitoba"	Manitoba, Province of (Ministry of Energy and Mines)
"NEB" or "the Board"	National Energy Board
"Nova Scotia"	Nova Scotia, Province of (Ministry of Mines and Energy)
"Ontario"	Ontario, Province of (Ministry of Energy)
"Quebec"	Québec, Province du (Procureur général)
"Saskatchewan"	Saskatchewan, Province of (Ministry of Energy and Mines)

Terms

15A1 or 20A1	A reserves test, with reserves set aside equal to 15 or 20 times the current year requirements of all domestic markets.
15C1 or 20C1	A reserves test applied to the core market only, with reserves set aside equal to 15 or 20 times the current year requirements of the core market.
"EJ"	Exajoules (10^{18} joules). One EJ is approximately 0.95 trillion cubic feet.
"PJ"	Petajoules (10^{15} joules)
"R/P"	Reserves to Production
"R/P 15"	Reserves to Production Ratio Procedure

Appendix 4

Reference Publications

(i) National Energy Board

- May 1987 *Reasons for Decision, TransCanada PipeLines Limited, Application dated 14 July 1986 for new tolls effective 1 January 1987, RE-3-86.*
- October 1986 *Canadian Energy Supply and Demand 1985-2005 (Summary and detailed reports).*
- August 1986 *Reasons for Decision, Westcoast Transmission Company Limited Application dated 1 December 1985, as amended, for new tolls effective 1 January 1986, RH-6-85.*
- May 1986 *Reasons for Decision In the Matter of TransCanada Pipelines Limited Availability of Services.*
- April 1986 *Reasons for Decision In the Matter of Phase 1 The Surplus Determination Procedures Phase of the Gas Export Omnibus Hearing, 1985.*

(ii) Other

- July 1987 *Review of the British Columbia Natural Gas Surplus Determination Procedures, Reasons for Decision, Ministry of Energy, Mines and Petroleum Resources, Province of British Columbia.*
- March 1987 *Gas Supply Protection for Alberta: Policy and Procedures, Alberta Energy Resources Conservation Board Report 87-A.*
- January 1987 *Discussion Paper Concerning British Columbia Natural Gas Surplus Determination Procedures and the British Columbia Energy Supply and Requirements Forecast 1984-2005, Ministry of Energy, Mines and Petroleum Resources, Province of British Columbia.*
- June 1986 *A review of the role and operations of interprovincial pipelines in Canada engaged in the buying, selling and transmission of natural gas by the Pipeline Review Panel.*
- 31 October 1985 *Agreement among the Governments of Canada, Alberta, British Columbia, and Saskatchewan on Natural Gas Markets and Prices.*
- 28 March 1985 *The Western Accord: Agreement between the Governments of Canada, Alberta, Saskatchewan, and British Columbia on Oil and Gas Pricing and Taxation.*

Appendix 5 Definitions

Buy/Sell	In this arrangement, the end user purchases its own supply of gas and arranges for transportation generally to the distributor's delivery point. The distributor purchases the gas and commingles it with the balance of its supplies, and then sells to the end user as a sales customer at a rate lower than if the end user had not made the direct purchase.
Competitive Marketing Programs	The 31 October 1985 <i>Agreement Among the Governments of Canada, Alberta, British Columbia and Saskatchewan on Natural Gas Markets and Prices</i> provided for the implementation of competitive marketing programs. These were programs under which price discounts were accorded to industrial gas users in order that gas be competitive with the costs of competing fuels.
Core Market	A term whose definition was not generally agreed to. Some parties used it to denote those natural gas users who are unable to switch readily to alternative fuels or who cannot or do not wish to contract directly for their supply needs, instead purchasing gas from distributors. Some parties considered the core market to include residential, commercial and small industrial customers, although there was no general agreement on what should constitute "small". Some parties considered the core market to include all customers of distributors.
Conventional Areas	Those areas of Canada which have a long history of hydrocarbon production. Conventional areas are also referred to as non-frontier areas.
Deliverability	A general term used to refer to an actual or expected rate of natural gas production.
Deliverability Appraisal	An exercise conducted by the Board under its former surplus determination procedures in which the Board forecast future demand for, and supply of, Canadian natural gas, assuming a given future price track. The exercise identified a point in time beyond which demand would exceed supply.
Discounting	The application of a discount rate to obtain the present value of costs and benefits that occur in different years.
Double Demand Charges	The duplication of demand charges which occurred when a customer, who previously purchased gas through a distributor, arranged an alternate supply through a direct purchase. In these circumstances, the direct purchaser was required to pay the demand toll twice: once to the transmission pipeline company for transportation service and once to its distributor to indemnify the distributor for the unabsorbed demand charges which occurred as a result of the displacement. The payment of double demand charges was eliminated effective 1 November 1986. (See NEB <i>Reasons for Decision In The Matter of TransCanada Pipelines Limited Availability of services</i> , May 1986.)

Established Reserves	Those reserves recoverable under current technology and present and anticipated economic conditions, specifically proved by drilling, testing or production, plus that judgment portion of continuous recoverable reserves that are interpreted to exist, from geological, geophysical or similar information, with reasonable certainty.
Frontier Areas	Those areas of Canada which have a potential for, but no history of, natural gas production. These include the Mackenzie Delta-Beaufort Sea area, the Arctic Islands and the east coast offshore areas.
Non-Core Market	Natural gas users who are not part of the core market (see above), such as large volume gas customers who contract directly with producers. As with core market, a single definition of non-core market was not generally agreed to.
Offer Mechanism	A procedure whereby a party proposing to export natural gas would first offer it to domestic purchasers under similar terms and conditions, including price.
Productive Capacity	The estimated rate at which natural gas can be produced from a well, pool or other entity, unrestricted by demand, having regard to reservoir characteristics, economic considerations, contractual and regulatory limitations, the feasibility of infill drilling and/or addition of compression, the availability of processing facilities and potential losses due to mechanical breakdown.
Remaining Established Reserves	Initial established reserves (i.e. established reserves prior to the deduction of any production) less cumulative production.
Reserves Additions	Incremental changes to established reserves resulting from the discovery of new pools and reserves' appreciation.
Reserves Appreciation	Incremental changes to established reserves resulting from extensions to existing pools and/or revisions to previous reserves estimates.
Reserves Formula	A surplus determination procedure in which a specific quantity of gas reserves equal, for example, to 25 times current annual consumption, is set aside for future Canadian needs.
Reserves to Production (R/P) Ratio	Remaining reserves divided by annual production.
Take-or-Pay Charges	Amounts which a purchaser contracts to pay for a specified volume of natural gas during a period whether or not the contracted deliveries are taken.
User Costs	The cost to Canadians of having to use higher cost gas earlier in the future because of incremental exports.

Western
Canada
Sedimentary
Basin

Generally, those areas of Manitoba, Saskatchewan, Alberta, British Columbia, the Yukon and Northwest Territories underlain by sedimentary rock, between the Precambrian Shield on the east and the mountain ranges of western Canada on the west, and extending from the international boundary north to, but not including, the Mackenzie Delta-Beaufort Sea area.

Appendix 6

The Legislative Basis for the Board's Gas Export Responsibilities

This appendix sets out the legislative basis for the licensing of exports.

Part VI of the *National Energy Board Act* and the regulations made under that part provide that no person shall export natural gas without an export licence or order¹ from the Board.

Section 83 of the Act sets out the considerations applicable to the issue of licences. It states in part:

“On an application for a licence, the Board shall have regard to all considerations that appear to it to be relevant and, without limiting the generality of the foregoing, the Board shall

- (a) *satisfy itself that the quantity of... gas ... to be exported does not exceed the surplus remaining after due allowance has been made for the reasonably foreseeable requirements for use in Canada having regard, in the case of an application to export ... gas, to the trends in the discovery of ... gas in Canada;... ”*

Export licences are subject to the approval of the Governor in Council.

¹ The regulations provide that orders to export natural gas may be issued.

- (i) for a period not exceeding 24 months, or
(ii) for a period exceeding 24 months but not for a volume of not more than 30 thousand cubic metres per day.

The Board may, under the regulations, make its order subject to the condition that the exportation of gas shall be curtailed or interrupted whenever and to whatever extent pipeline capacity is inadequate to satisfy Canadian domestic requirements and firm export requirements.

Export orders are not subject to the approval of the Governor in Council nor do they require formal surplus determination.

To export larger volumes over a period requires a licence from the Board.

Appendix 7

Evolution of the Board's Natural Gas Surplus Determination Procedures

This appendix outlines how the Board's surplus determination procedures have evolved over the years. It begins with a few extracts from the report of the 1957 Royal Commission on Energy (Chairman: Mr. Henry Borden) which led to the establishment of the NEB, and some of the discussion relating to the protection of domestic requirements which ensued when the NEB Act was debated in Parliament in 1959.

The Establishment of the NEB

(i) The Borden Report

In October 1957 an Order-In-Council appointed the Borden Commission to "enquire into and make recommendations concerning the policies which will best serve the national interest in relation to the export of energy and sources of energy from Canada". One of the major recommendations of the Borden Commission was that a National Energy Board be established. Other recommendations included the following:

- "that, having regard to the proven reserves of natural gas in Canada and trends in the discovery and growth of reserves, the export from Canada of natural gas, which may from time to time be surplus to the reasonably foreseeable requirements of Canada, be permitted under licence;
- "that an export permit may be granted for a period of not more than 25 years from its date"; and
- "it is clear from the very great differences in market estimates presented to the Commission ... that decisions to export must be based on continuous appraisal of the supply and demand situation as it develops in Canada..."

(ii) Statements: House of Commons

Following the release of the Borden Commission's report, the NEB Act was introduced into Parliament. The following remarks of Mr. Gordon Churchill, then Minister of Trade and Commerce, are indicative of the philosophy of the government of the day regarding the determination of surplus, and how the Board subsequently interpreted its mandate in this regard (House of Commons Debates, Official Report (Hansard), May 22, 1959, p. 3929).

- "The term of export licences is not to exceed 25 years. This upper limit is regarded as the term likely to be required to enable financing of gas export pipelines";
- "Gas and power ... move by fixed channels under long-term contracts at the source and long-term contracts in the area of consumption, so that once committed to a market they cannot be withdrawn without hardship. A gas export service once established must

continue for a substantial period to enable the enterprise to attract capital in the first place, and to permit amortization of the necessary investment. Interruption of such export service is apt to be a source of international friction. Hence there is a clear case for being cautious about permitting exports of any power or gas which we are likely to require ourselves..."

Evolution of NEB Surplus Determination Procedures

(i) Reasons for Decision, 1960

In March 1960, the Board undertook its first calculations to determine the extent of exportable gas. At that time, two types of surplus were calculated - a Current Surplus and a Future Surplus.

To calculate the Current Surplus the Board first estimated the future requirements for Canadian natural gas by considering:

- (a) future Canadian requirements; estimated by forecasting demand for four years and projecting the fourth year requirement over the remaining years of a 21-year term;
- (b) commitments under then existing export licences; and
- (c) gas required under export applications then being considered by the Board.

The rationale for (a) was as follows:

"The 21 year period 1960 to 1980 has been selected as that for which requirements should be met from presently established reserves. In the case of Alberta, the estimated provincial requirements for the period are met completely from established reserves. This protection for Alberta consumers is a condition of the Government of Alberta before permitting removal of gas from the Province. The requirements elsewhere in Canada have been levelled at the 1963 rate for the balance of the 21 year period. According to evidence filed before the Board, in general it has not been considered practicable for pipe line companies to obtain contracts for the purchase or sale of gas for incremental requirements commencing more than three or four years in the future. Incremental requirements beyond the 1963 level accordingly have been allocated to future discoveries of gas (future reserves). In every case, all requirements accruing after 1980 are assumed to be met from future reserves."

The reserves necessary to satisfy the requirements of the Current Surplus Test were calculated according to a formula which had been developed by Alberta's Oil and Gas Conservation Board (now called the Energy Resources Conservation Board). These were then compared to the Board's estimate of established reserves which were defined to include all proven reserves plus a varying percentage, not exceeding 50 per cent, of probable reserves. If this comparison did not indicate a Current Surplus, the export application was rejected. If a Current Surplus did exist, the Board proceeded to determine whether a Future Surplus existed as well.

To calculate the Future Surplus, Canadian requirements were estimated for a 30-year period by forecasting requirements over the full 30-year term rather than assuming annual requirements would not grow beyond the fourth-year level. The reserves necessary to satisfy those requirements were estimated

in the same manner as for the Current Surplus calculation; however, the Board's estimate of available future gas reserves also included expected additions to reserves. If a comparison of Board estimates of available and required future reserves indicated a surplus, an export application could be approved.

(ii) Reasons for Decision, July 1965

In July 1965 the Board reviewed the surplus procedures which had been articulated in its 1960 report and concluded that its basic approach was still sound. However, the following modifications were made:

- (a) 50 per cent of the Alberta and British Columbia reserves then considered to be beyond economic reach were accepted as available to meet Canadian requirements and export commitments;
- (b) reserves not expected to be available for reasons of conservation by the Alberta Oil and Gas Conservation Board were excluded from the calculation of available reserves;
- (c) reserves which had been allocated for the protection of peak-day requirements in the terminal year of an export commitment and which would become available for other use after the termination of the licence were included in the surplus; and
- (d) the Board adopted the practice of the Alberta Board in making allowance for Alberta requirements by setting aside an amount equal to 30 years of requirements less two years growth in reserves to be met from reserves available (established reserves as adjusted by the factors in (a) to (c) above).

(iii) Reasons for Decision, August 1966

The Board's surplus determination procedures were next modified in an August 1966 decision regarding an export application by TransCanada. In that decision, the Board outlined the following principles (which became known as the 25A4 rule) for determining the exportable surplus:

- (a) "Available reserves will include the remaining volumes under existing import Licences, plus contractable reserves. The Board considers contractable reserves to be those established reserves which it believes a purchaser will be able to contract for, with delivery to begin within the next four years."
- (b) "Protection of Canadian gas requirements at an adequate level will be achieved if an amount of reserves equal to 25 times the estimated requirement level for the fourth year is set aside. The multiplier of 25 was selected not only because it appears to the Board to supply adequate protection under presently foreseeable circumstances, but also because it corresponds with the 25-year maximum for export licences which can be granted by the Board. The fourth year level was selected because it corresponds with the current policy of the pipe line companies in contracting for the purchase and sale of gas. These contracts provide for a time interval of not more than four years before acceptance and delivery of gas to meet forward requirements."

"In cases where authorization for removal of gas from the province in which it is produced is required by a statute of that province, the amount of protection provided for markets in the province will be the amount set by the province to be its requirement or the amount computed by the above rule, whichever is greater."

(c) "Canadian market requirements, existing export Licences, and those for which applications are under consideration, will not be given terminal year peak-day protection from established reserves provided that a surplus is indicated by calculating the difference between

(1) the established reserves plus those indicated by the trends in the growth of reserves, and

(2) the forecast Canadian requirements over a 30-year period, including terminal year peak-day protection plus export commitments and further, provided that in the opinion of the Board, the trend in the growth of reserves justifies continued confidence."

The application of these principles significantly modified the current surplus calculation. By limiting its consideration to contractable reserves, the Board excluded reserves which were beyond economic reach from its estimate of available reserves. The multiplier in the formula was increased from 21 to 25, and the requirement to meet the peak-day demand in the terminal year was dropped.

The future surplus calculation remained unchanged.

(iv) Reasons for Decision, August 1970

In an August 1970 decision on seven natural gas export applications, the Board liberalized its surplus calculation. Specifically, it allowed 50 percent of reserves beyond economic reach and a part of the reserves deferred for supply conservation by Alberta to be included in its estimate of available reserves which was used to calculate the current surplus. Further, the period of protection provided by the future surplus test was reduced to 20 years from 30. The Board also concluded that considerations as to future increases in price and lower deliverability suggested a 15-year limit should be placed on "incremental licences to existing export systems". The following reasons were cited:

- "...the Board views with concern the trend to accelerated rate of take, because the shortening of the life index of the remaining available reserves tends to open an increasing gap between that life index and any of the formulae proposed for the protection of Canadian requirements. The corollary of this is that the deliverability showing of the Applicants, in relation to the proposed terms of the export licences they seek, leaves a considerable portion of that term to be provided for out of future discoveries. Strictly on the analysis of gas supply available to the individual Applicants, it appears to the Board that, in respect of companies already in the export business, it is increasingly difficult to justify new licences for periods much in excess of 15 years, and that a shorter period would possibly be more appropriate. A new export system might have to be given a longer initial licence to enable the project to be financed.

.... if, once the exporting pipe line transmission systems are going concerns, their increments of export throughput were licensed for relatively short terms, United States and

Canadian customers would share more equitably in whatever may be the costs of future increments of supply to be committed to Canadian and export markets".

- "An obvious objection to the adoption of approximately 15 years as the normal period for incremental licences for an established exporting company, is that pipe line facilities, gathering facilities and processing facilities, are not normally financeable on the basis of sales contracts of less than 20 years. ... The Board is not convinced that this conventional wisdom is applicable in the case of established pipe line enterprises operating in the current circumstances of the energy market.

The Board would be prepared to consider further whether licences for periods longer than 15 years are necessary to make feasible the financing of a complete new pipe line system, or a major looping for an existing system".

Some export licences were granted despite the calculation of a small negative "future surplus" and the Board stated it was essential to emphasize ... the vital importance of an increased rate of discovery if it is to be possible to undertake substantial new exports in the future".

(v) Reasons for Decision, November 1971

In November 1971 in its decision related to additional gas export applications the Board estimated a deficiency of 1.1 Tcf from its current surplus calculation, without taking into account the volumes being considered for export. As a result the export applications were dismissed despite confidence at the time that new discoveries would augment existing reserves beyond the indicated deficiency.

(vi) Canadian Natural Gas - Supply and Requirements, April 1975

Subsequent to the Board's November 1971 decision, there was growing public debate and concern about the outlook for the Canadian natural gas industry and on appropriate policy responses to the industry situation. The Board therefore called a public hearing "to obtain a clearer insight into matters related to Canada's natural gas supply and requirements", and invited submitters to provide an evaluation of the Board's 25A4 gas surplus calculation procedure.

There was virtually unanimous agreement among participants at the hearing that 25A4 no longer adequately protected Canadian requirements and that it appeared "...in light of the changing circumstances now unfolding, that more weight should have been given to deliverability as distinguished from reserves". In considering alternatives to the 25A4 formula, the Board expressed its view that any procedure for determining an exportable surplus should have as many of the following characteristics as possible:

1. It should be easily understood and applied.
2. It should incorporate gas deliverability rather than reserves in the supply considerations.
3. It should be flexible to respond to changing circumstances.
4. It should provide continuing protection for Canadian demand throughout any period of export.
5. It should provide incentive and encouragement to the gas industry.

6. Licensed export commitments should be satisfied to the extent possible.
7. It should reserve for Canadians any benefits from conservation restraints undertaken by Canadians.

At that time, the Board was very concerned about the adequacy of the protection of Canadian requirements given existing export licences and therefore did not anticipate additional export applications in the near future. Given these circumstances the Board decided not to develop a specific surplus determination procedure until it would actually be needed. It did, however, establish the following general principles which could form the basis of a surplus determination procedure in the future:

- "The surplus calculation procedure would be based on gas deliverability and gas demand schedules developed for as far into the future as reasonable forecasting accuracy and data dependability will permit. The comparison of these two schedules will indicate the feasible volumes, rate and timing of exports".

(vii) Canadian Natural Gas - Supply and Requirements, February 1979

In 1979, following a supply/demand inquiry hearing, the Board defined both a current deliverability test and a future deliverability test in addition to a reserves test.

Under the Current Reserves Test, natural gas could be deemed surplus to the extent that available established reserves were calculated to exceed a quantity equal to 25 times the current years Canadian demand plus the total authorized exports.

Under the Current Deliverability Test, annual quantities of gas could be deemed to be surplus if forecast annual deliverability from established reserves exceeded expected Canadian demand plus authorized exports for a minimum of five years.

Finally, under the Future Deliverability Test, annual quantities of gas could be deemed to be surplus provided forecast deliverability from established reserves and forecast reserves additions exceeded expected Canadian demand plus authorized exports for some ten years.

The following rationale was given for these tests:

- The potentially large economic dislocations that could result from unanticipated shortfalls in natural gas deliverability make it imperative that there be a high degree of confidence that deliverability will meet annual Canadian requirements in the immediate future. Such confidence is also necessary to meet the planning requirements of gas distributors. The difficulties that unanticipated reductions in authorized exports would cause export customers make it important to provide similar protection for authorized exports. The Board believes that a test utilizing deliverability from established reserves will provide the requisite high degree of assurance".
- "Tests solely relying on deliverability could lead to excessive industry activity to increase deliverability at the expense of developing new reserves. Therefore the Board believes that a reserves test is necessary to maintain a reasonable relationship between established reserves and deliverability.

A test utilizing remaining established reserves compared with 25 times projected demand four years in the future introduces the uncertainty of a future projection on the demand side but not on the supply side. A formula based on the current year's demand would be more appropriate and a suitable amount of protection would be afforded by setting aside established reserves to provide coverage of current Canadian demand for a period of 25 years plus authorized exports".

- "The Board believes it is important not only to ensure that requirements be afforded the highly assured protection from established reserves as provided under the Current Deliverability Test but also that a longer period of surplus be foreseen when measuring requirements against forecast deliverability from a combination of established reserves, reserves additions and, when appropriate, new sources of gas such as frontier reserves. It would be necessary, in considering proposed new exports which could meet the Current Deliverability Test and the Current Reserves Test, to ensure that such exports would not result in deficiencies in the longer protection period".

The Future Deliverability Test would be used to

“ensure that any proposed exports, which might otherwise be authorized on the basis of satisfying the first two surplus tests, would not cause a future deliverability shortfall within a 10 year period. Secondly, in any case where the Board finds that it would be in the public interest to grant a licence term in excess of that indicated by deliverability from established reserves, the extended portion of the licence, both with respect to the annual quantities and term would be limited by the projected deliverability from future reserves. All exports under this extended portion of the licence would be subject to reduction, if subsequent deliverability determinations indicated a deficiency within the extended term.”

(viii) Reasons for Decision, May 1982

The next changes to the gas surplus test were made following Phase I of the Board's 1982 Gas Export Omnibus Hearing.

Although the procedure of comparing the established reserves base with 25 times the current year's Canadian demand plus licensed exports was continued, the allowance in the Reserves Formula for exports under existing licences was reduced. Rather than continuing to incorporate the remaining term quantities in the licences (whether exportable or not), the new procedure set aside only those quantities considered exportable under existing licence conditions.

Also, the Current and Future Deliverability Tests were combined into a single Deliverability Appraisal which contained features of both the previously employed tests. The Deliverability Appraisal, to be used as a guideline rather than as a test, compared estimates of annual deliverability from both established reserves and future reserves additions, with expected annual Canadian requirements and estimated annual exports under existing licences.

The Board's report stated:

“The Deliverability Appraisal will not contain rigid minimum periods of protection as previously used in the Board’s Deliverability Tests. Rather, the Board will use its judgement to determine the annual deliverability profile which may be deemed surplus to Canadian needs. While the Board might authorize exports which exceed the deliverability by minor amounts in any one year, the Board would not expect to exceed the sum of the annual differences between requirements and deliverability over the effective term of the Deliverability Appraisal; that is, in the period to cross-over taking place.

In coming to the above decisions, the Board agrees with submitters that suggested more flexibility is desirable in determining the amount of surplus gas. While the Board will rely on the Reserves Formula to determine the maximum exportable surplus, it will use the Deliverability Appraisal as a guideline rather than as a specific test to determine the annual quantities of gas surplus to foreseeable Canadian requirements. It is not expected that these procedures would result in the authorization for export of all the surplus calculated using the Reserves Formula.”

(ix) Reasons for December, April 1986

The most recent changes to the Board’s surplus determination procedures were made following a public hearing held in November and December 1985. Section 4.2 of the Board’s April 1986 Reasons for Decision described the procedure adopted at that time as follows:

“4.2 Description of New Procedure

As stated above, the Board has decided to adopt a new surplus determination procedure based upon the ratio of reserves to production - the R/P Ratio Procedure. The Board is of the view that the value of the R/P ratio used in this calculation should, at present, be 15, for reasons which are explained in Section 4.3.

The procedure may be described in four steps.

The first step is to calculate the maximum potential surplus. A potential surplus is calculated for each year of a forecast period. In the illustrations in Section 4.5, this is the 20-year period 1986-2065. The potential annual surplus is the amount by which annual supply, as defined below, exceeds the estimated total annual demand. The maximum potential surplus is the sum of these estimated annual quantities. The calculation is made on the assumption that each annual surplus is, in fact, produced.

In the calculation of the potential annual surpluses, the procedure is as follows:

- (i) annual supply is calculated by dividing the forecast reserves at the end of the year by 15,
- (ii) the forecast reserves at the end of each year consist of the reserves available at the beginning of the year, plus forecast reserves additions during the year, less forecast production during the year,

- (iii) the estimated total annual demand comprises the estimate of Canadian demand plus export volumes expected to flow under existing licences and short-term orders, and
- (iv) the potential annual surplus is the difference between the annual supply in (i) above and the annual demand in (iii) above.

The surplus calculated in this first step of the procedure is termed maximum potential because it is likely, especially in the early years, that neither pipeline capacity nor markets could accommodate the amounts of potential annual surplus derived by the calculation. In addition, an allowance must be made, out of the surplus shown, for the fuel and losses and reprocessing shrinkage associated with any new exports.

The next three steps in the procedure involve the determination of the appropriate annual level and duration of exports under new or extended licences.

In the second step the Board uses its judgement to select an array of trial profiles and durations for possible additional exports, taking into account such factors as the exports applied for the results of the first step. However, the total of each such profile of additional exports will be less than the maximum potential surplus calculated in step 1. The Board then calculates the reserves to production ratio for each year of each export profile and identifies years in which the R/P ratio drops below 15.

The third step is the Productive Capacity Check which replaces the Board's previous Deliverability Appraisal. In this step, the Board assesses the productive capacity year by year to ensure that forecast total demand can, in fact, be met. This verification is especially important for any years in which the R/P ratio resulting from the contemplated new exports is forecast to fall below 15.

In the fourth step, the Board determines the most appropriate export profile using the information from the first three steps. This assessment of each export profile takes into account a number of factors, some of which are:

- the security of supply for Canadian markets apparent from the extent to which R/P ratios exceed or fall short of 15 and from the relationship between productive capacity and demand, particularly when the R/P ratio is below 15;
- the capacity of the existing infrastructure to produce and transport the new exports; and
- the estimated net benefits to Canada, taking into account the costs of any new infrastructure which would be required.”