1. Reference: The Application, Exhibit B1, Page 11

The Applicant indicates a number of key matters of competitiveness and business risk which have changed for the Applicant in recent years. One of the key matters referred to is the assertion that natural gas enjoys a substantial operating cost advantage over electricity.

1.1 *In the Applicant's view, has there been a significant change in the understanding of the availability of natural gas reserves such that the change in the competitive position of natural gas pricing, vis a vis electricity, was unforeseen?*

Response:

The "substantial operating cost advantage over electricity" referenced in the question was intended to mean that from the perspective of a customer gas had a cost advantage over electricity (i.e. was priced lower). While it is true that in the past natural gas enjoyed a substantial pricing advantage over electricity, that is no longer the case in British Columbia.

The **US Department of Energy** published in their "World Energy Outlook" paper that as of January 1, 2004, proven world natural gas reserves, as reported by Oil & Gas Journal, were estimated at 6,076 trillion cubic feet – representing more than 60 years at current production levels. Excluding LNG imports, in North America alone there is reportedly over 70 years of supply resources including coal-bed methane and unconventional gas. While there are sufficient supplies of natural gas in North America and across the globe to serve growing demand for decades to come, efforts to extract new sources of gas and bring it to growing markets have lagged. It is therefore not an issue as to whether there is enough supply but at what cost new supply will be enticed to be brought to market in the long run.

While uncertainty remains in determining an equilibrium price that will result from the future marginal costs of developing new reserves, in the near term natural gas prices will likely continue to be established by a complex interplay of factors including unpredictable natural variables such as weather and global related issues.

Though natural gas prices in British Columbia remain low compared to much of North America, they have risen dramatically over the last few years, largely tracking price increases across North America. The sustained higher prices we have experienced in recent years are a result of fundamental market dynamics: growth in demand for natural gas is outpacing production capabilities.

B.C.' situation with a Provincial Energy Plan (and subsequent actions on these policies) targeting low electricity rates to shelter customers from market prices or the marginal costs of their electricity load limits the gas to electricity advantage. This gas to electric advantage is currently estimated at less than 8% for TGI.

It has not been a significant change in the understanding of natural gas reserves that has caused the change in the competitive position of natural gas pricing vis a vis electricity. In most areas of North America electric and gas prices will move, to a large degree, together because of the amount of electricity generated by oil or gas. In British Columbia that is not the case and the spread between gas and electric pricing has been substantially decreased.

1.2 *What steps has the Applicant taken since 1994 to mitigate the impact of the risk of the price position of natural gas, vis a vis electricity?*

Response:

Since 1994, TGI has consistently developed a supply portfolio predicated on the basis of ensuring safe, reliable and cost effective delivery of natural gas to core customers while also managing disruptions due to aging infrastructure or interruption from supply sources. Given that the gas supply business has gone through tremendous changes since 1994 the supply portfolio has over time been well diversified to take into account the changing market conditions and storage and infrastructure availability. TGI has also supported coordinated planning efforts between industry players and the Northwest Gas Association to monitor infrastructure requirements to meet growing demand in the region and also encourage proactive planning in the near and long term.
In addition, TGI has utilized Price Risk Management activities since 1994 to manage commodity price volatility on behalf of the customers. While early price risk management activities were limited due to market liquidity and availability, over the years TGI has developed a more rigorous plan offering a diversified portfolio of with respect to gas sourcing, storage and pricing. The value of Price Risk Management is to reduce the overall natural gas commodity price risk that has increased over the years due to increased volatility, not only from regional markets but the overall North American market, and also improve the likelihood that natural gas remains competitive with alternative fuels primarily electric over the term of the Plan.

TGI’s ability to manage the natural gas/electricity gap is challenged by the fact that natural gas consumed by TGI’s customers has increased in price while electricity pricing in BC remains relatively static. While TGI continues to work with the government to evaluate the Provincial Energy Plan (and subsequent actions on these policies), TGI in the meantime is also exploring alternatives to manage this exposure through stable rate programs, commercial unbundling options that provide customers the option of purchasing their natural gas from a variety of marketers with a range of fixed price options and terms. TGI is also working with the BCUC, and natural gas marketers toward providing supplier choice to residential customers by 2007. However, these measures will not change the fact that gas commodity pricing is market based while in B.C. electricity is largely priced on the basis of the heritage electric generation facilities.

1.3 *What changes to the Applicant's rate design have been implemented by the Applicant or applied to be implemented by the Applicant to attempt to mitigate this risk?*

Response:

Changes to Terasen Gas’ rate design will not necessarily change the competitiveness of natural gas versus electricity. A rate design process is a “zero sum game” in that the revenue requirement, as approved by the regulatory body, must be recovered from customers via rates as applied for and approved through a rate design proceeding. A rate design process allocates costs to customers with similar profiles and then rates are established to recover these costs (in Terasen Gas’ case these are fixed and variable distribution charges). If one customer class were to have rates that were set lower in order to be competitive, other rate classes would need to have correspondingly higher rates; thus ensuring that the regulated utility can recover its revenue requirement.

The main driver in the compression of the difference between natural gas and electricity is the increase in the commodity cost of natural gas versus that of electricity. Terasen Gas purchases natural gas on the open market and passes this cost on to its customers without mark up. As natural gas commodity prices have increased so to has the commodity portion of the customer's bill. At the same time, rates for electricity have remained relatively flat (decreasing in real terms) over the same period. A full scale rate design would have no effect on the commodity portion of a customer's bill.

However, Terasen Gas is constantly reviewing and analyzing its current rate offerings and structure to determine if the rate offerings are appropriate for the given market and if new rates could be offered. Terasen Gas recently introduced the Commercial Commodity Unbundling program which allows commercial customers in Rate Schedules 2 and 3 the option of sourcing their commodity supply from a supplier other than Terasen Gas. Licensed marketers are able to offer customers rate offerings such as 1-5 year fixed price contracts as opposed to the Terasen Gas commodity rate which may be changed quarterly. Terasen Gas also introduced the Stable Rate option for residential customers in 2005. The Stable Rate option allows residential customers to pay a fixed price per GJ for their gas commodity for a full year, thus mitigating potential quarterly rate changes. For 2006, the Stable Rate will again be offered along with a continuation of Commercial Unbundling, and in addition Terasen Gas is also at the beginning stages of developing a plan to bring unbundling to residential customers.

1.4 *What submissions have been prepared and filed with the provincial government by the Applicant to attempt to impact the competitive position of natural gas, vis a vis electricity, in British Columbia? Please provide any submissions prepared and filed since 1994.*

Response:

In its approaches to governments, Terasen has generally tried to provide policy makers with "workable solutions" that would lead to a more competitive downstream gas industry (rather than just complaining about taxes, policies or competitor positions that lead to less competitive outcomes). There have been many such proposed solutions presented to the provincial government in the last 10 years. Some include:

1. Input to Provincial Energy Policy – in 2001, 2002 the government established a process (including a policy committee) for interested parties to provide input on a new provincial energy policy. Terasen made a number of submissions, twice in person. Submissions were to be structured around key pre-set topic areas – Terasen responded to many of those key areas but the primary focus was the need to fairly price all commodity fuels to market pricing. Our primary position was that "market-based" gas pricing was put at a competitive disadvantage to "historic depreciated cost" electricity pricing; thereby greatly reducing the capture of new gas loads. The loss of these new gas loads resulted in a disproportionate amount of the fixed costs of the gas infrastructure being recovered from existing customers (or being deferred to future gas customers). The resulting Provincial Energy Policy proposed to "solve" this tilted field over time through the introduction of market based pricing signals for new electric loads in non residential markets, a very slow way to address gas customers' concern.

2. Proposed Gas Pipeline across southern B.C. – through the late 1990's and into this decade Terasen has repeatedly consulted with policy makers about creating competing supply routes to our end-use gas markets. This included the Southern Crossing Pipeline and the proposed Inland Pacific Pipeline. Creating and sustaining competition among supply companies, supply basins and supply pipelines is the best method of lowering supply costs in the long run.

3. Direct Purchasing – in recent years Terasen, working with others, created an efficient and non-disruptive way of allowing many customers to tailor their gas supply needs specifically to gas suppliers (and brokers) who could meet those needs. This was through the development of "buy sells" and direct purchasing markets. The creation of these markets required extensive consultation with all parties including governments.

4. Hedging Programs – Terasen worked with both the BCUC and Victoria to develop balanced hedging programs around gas purchasing.

5. Efficiency Programs – Terasen worked with Victoria and others, especially in the mid 1990's, on standards for energy efficiency in appliances using gas. Moreover, in the late 1990's Terasen developed non-regulated commercial vehicles like Homeworks to help deliver these energy efficient gas appliances.

6. Niche Market Advocacy – throughout the past decade Terasen has pursued grants and tax relief for NGV markets, to keep prices lower in this specific sector. This required aggressive advocacy at both the Provincial and Federal levels.

7. Rebates To Low Income – especially in the winter of 2000/2001 Terasen worked with Victoria and others in a program to shelter elderly and low income customers from the gas price spike in 2001. While Terasen's specific program was not successful, there was subsequently a BC Hydro delivered government rebate aimed at cushioning energy costs to British Columbians.

Although many meetings were held with government officials on the topics noted above which utilized slide presentations, such presentations have long since been discarded. Governments either took action or/not on the related issues and as the material became dated, it was destroyed. Much information provided was in the form of gas to electric comparisons, etc. similar to those included in the application which are continually updated so old submissions were not kept.

We have included below links to a number of documents we have filed in connection with utility specific resource plans for 2004 as well as the 2004 Regional Resource Planning Study.

TGI 2004 Resource Plan

http://www.terasengas.com/_Publications/Regulatory/Submissions/LowerMainlandInterior/default.htm

TGVI 2004 Resource Plan

http://www.terasengas.com/_Publications/Regulatory/Submissions/VancouverIslandSunshineCoast/default.htm

TGW 2004 Resource Plan

http://www.terasengas.com/_Publications/Regulatory/Submissions/Whistler/default.htm

2004 Regional Resource Planning Study

http://www.terasengas.com/_AboutTerasenGas/PlanningFutureGrowth/default.htm

1.5 *Please provide research studies commissioned by the Applicant to demonstrate the validity of this risk.*

Response:

Terasen Gas has not commissioned any research studies to demonstrate the validity of the risk of the price position of natural gas vis a vis electricity.

However, two primary external indicators, market share capture of new construction and annual use rates, that Terasen Gas uses to gauge its demand for and the competitiveness of natural gas in the marketplace have trended downwards in the last decade, in conjunction with the price increases observed for natural gas.

Many factors contribute to a consumer's decision on energy choice and use including not only the economics of installing and operating the equipment but also consumer preferences (i.e. cooking use), the success of marketing strategies employed by utilities and energy efficiency improvement opportunities available. The experience of the price shock in 2000/01 where natural gas spiked significantly upwards provide some recent evidence of the risk of the price position of natural gas relative to electricity though.

As noted in Terasen Gas' response to BCUC IR#1, Question 14.3, the annual use rate for a Lower Mainland Rate 1 customer suffered a significant decline in 2000/01 from that observed prior to 2000, dropping to an annual use rate of approximately 105 gigajoules from approximately 120 gigajoules the years before. During the same time period, net customer additions vs. new construction declined significantly as noted in Table 3 of the ROE application. These two significant changes occurred at the same time where the price position of natural gas to electricity eroded significantly, providing an indication of the effects of the impacts of competitive pricing position.

1.6 *Was the construction of the Southern Crossing Pipeline an attempt to mitigate the risks associated with the reduction in the natural gas cost advantage over electricity in the British Columbia market?*

Response:

No. SCP was determined to be the lowest cost, long term resource to meet growth (doing nothing was not an option).

SCP did provide capacity to access new and diverse supplies for growth in peaking and seasonal requirements and was measured against what alternatives would have cost.

2. *Reference: Application, Exhibit B1, Page 11*

The Applicant identifies the risk on the commercial customer side that existing rate design for gas is making heat pumps an attractive alternative. What application has been made to amend the existing rate structure of the Applicant to mitigate this risk?

Response:

Generally, when a heat pump system is installed for either residential or commercial use, it is designed to provide approximately 50-80% of a building's heating and cooling needs. A heat pump system requires electricity to operate and either electricity or another energy source to provide the additional 20-50% of the heating needs.

Customers using gas to provide the peak 20-50% of supplemental heat pay the same rate as customers who use gas for heating. This poses two problems for Terasen Gas:

1) The capital costs, within a rate class, are the same regardless of end use customer consumption. As the heat pump customer does not use as much gas as customers using gas for space heating, Terasen Gas does not recover enough revenue to offset the capital cost.[1]

2) As noted, heat pumps provide the base load heating needs and gas would only provide the peak when needed. This is problematic for Terasen Gas as the heat pump peak would occur at the same time as system wide peak loads (i.e.: cold winter days). In other words, heat pump customers would be using gas at the peak time only without paying for all the fixed costs required to provide gas at the peak time. The current rate structure is not designed to recover revenue from peak load only customers.

Terasen Gas is currently investigating the implementation of a "back up" rate schedule that would be designed for customers who use gas as only a back up to their main heating source. This type of rate structure would be designed to recover all the costs for serving a customer who uses gas only for "back up" or "peak" loads. However, Terasen Gas has not implemented such a structure at this time.

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[1] Note: For Terasen Gas, if a customer is not on a main and therefore requires a main extension test, consumption is factor and may result in the customer paying a contribution in aid of construction to offset the costs of providing service to the customer. However, if the Terasen Gas customer is "on main" the customer only pays a flat connection fee which it not based upon consumption. A significant increase in customers using gas as a back up fuel will put upward pressure on the connection fee and may negatively impact Terasen Gas' ability to attach new customers who use gas as a primary fuel.

3. Reference: Application, Tab 1, Page 14

The Applicant identifies the declining annual use rates of residential customers as placing upward pressure on customer rates contributing to the compression of the difference between the natural gas rates to electricity rates.

3.1 *Is the Applicant planning a rate design filing to attempt to mitigate this risk?*

Response:

As noted in the response to CEC IR1 No. 1.3, a rate design filing would not provide a method by which Terasen Gas could mitigate the risk associated with rate compression between natural gas and electricity. As such Terasen Gas is not planning a rate design filing to address this issue at this time.

3.2 *Please provide copies of any submissions to government or the Utilities Commission or any other appropriate body to attempt to influence energy policies and mitigate this risk.*

Response:

Please refer to IR No. 1.4.

4. Reference: Application, Cover Letter, Page 12

At page 12, the Applicant identifies a number of risks associated with Terasen Gas (Vancouver Island) Inc.

4.1 *Have any of these risks changed significantly since the Applicant acquired Terasen Gas (Vancouver Island) Inc.?*

Response:

Yes. One of the risks noted in the question above included "Being highly dependent on industrial load totalling in excess of 65% of throughput for which approximately two thirds is contracted on a year to year basis with no long-term commitment". At the time of acquisition BC Hydro was planning for generation from two or more gas-fired generation facilities on Vancouver Island. BC Hydro as since abandoned the Duke Point proposal.

Further, TGVI has recently been made aware that BC Hydro is considering plans to convert the Elk Falls generation (ICP) facility from a base load plant to a dispatchable or peaking facility. If this occurs it will have a significant detrimental effect on future revenues and recovery of the Revenue Deficiency Deferral Account by 2011.

4.2 *Why were these risks assumed by the Applicant?*

Response:

The Applicant did not assume these risks, TGVI has existed (under different names) since the inception of the project to serve Vancouver Island and the Sunshine Coast with natural gas. These are and were business risks associated with TGVI. Terasen Inc. acquired the shares of TGVI with the expectation of earning a fair return commensurate with the business risks of the utility. Investors in utilities in BC can expect to be allowed an opportunity to earn a fair and reasonable return on their investments pursuant to common regulatory principles and the Utilities Commission Act, which is a subject of this Application.

4.3 *What has been implemented by the Applicant to mitigate these risks since the acquisition?*

Response:

The applicant is TGVI. The acquisition was an acquisition by Terasen Inc. of the shares of TGVI.

The applicant has pursued numerous activities to mitigate these risks:

- It maintains an active commodity price risk management program to manage commodity prices and dampen volatility through its hedging activities
- It has had discussions with ministry officials concerning provincial energy policies to level the playing field with BC Hydro
- Supporting the Duke Point Power development by pursuing development of additional supply to Vancouver Island with LNG storage (this project has been suspended with the cancellation of Duke Point by BC Hydro)

- Extension of the Vancouver Island Gas Joint Venture Transportation Service Agreement (TSA) for seven years from 2006 through 2012 albeit at reduced firm demand levels
- Active pursuit of a long term TSA with BC Hydro. BC Hydro has now cast significant doubt on this ever being achievable with its stated intention of considering the conversion of ICP to a peaking facility.
- Conducting exploratory discussions with the province concerning the possible future amalgamation/consolidation of TGI and TGVI

4.4 *What plans to mitigate these risks have proven unsuccessful?*

Response:

To date the Company has not been successful in influencing BC Hydro rate design or the Province's Energy Policy to deal with issues associated with leveling the competitive playing field for natural gas versus electricity and as noted above, a long term TSA with BC Hydro has proven elusive.

5. Reference: Application, Tab 1, Page 11, Table 2

It would appear that the percentage of single-family dwelling construction and multifamily dwelling construction are identical in 1994 and 2004.

5.1 *What steps have been taken by the Applicant to approve efficiency and maintain or improve its penetration rate in the single family and multi-family markets since 1994?*

Response:

Over most of the period in question, Terasen Gas focussed its attention on operational efficiency and cost containment through efficiencies in the processes used to connect new customers and markets. Prior to the winter of 2000/01, natural gas enjoyed a clear competitive advantage, and this was likely the main driver in the decision making for builders and developers of all residential construction. In more recent years, there has been a need to exert more effort in educating builders and developers, and the public generally about the other advantages of natural gas, to help ensure that natural gas is used in the applications to which it is best suited relative to competitors. Since the use of natural gas involves a clear decision being made by the architects, builders and developers, Terasen has focussed its efforts in recent years on working with these groups to optimise its market position. Terasen also continues to support and promote the use of high efficiency equipment and appliances through various programs and promotions, and notes that it is with such equipment and appliances that natural gas is most competitive relative to other fuels.

There have also been some significant improvements in metering technology which now make it easier to include natural gas in multi-family developments, and ensure that required footprint is minimal.

However, notwithstanding the efforts of the Company, increases in the gas commodity price will have a much greater effect on the long-term penetration rate.

5.2 *Have gas utilities in other jurisdictions gone further to preserve their competitive position, vis a vis electricity?*

Response:

The competition position of natural gas utilities relative to electric utilities is quite different in BC than in most other jurisdictions in North America; electricity is much less expensive in BC than in most other areas of North America. In BC, electric customers enjoy the benefit of low-cost electricity resulting from the legislated heritage contract that locks in the value of existing low-cost generation. Further, existing pricing policy sets electricity rates for new customers at a postage-stamp rate, instead of the marginal costs of serving the new load. On the other hand, natural gas customers in BC are faced with market based pricing for natural gas and an attachment policy that is reflective of marginal costs. These differences in determining electric and natural gas rates hinder the creation of effective competition between natural gas and electricity in BC.

Actions or policies should be adopted which are based on appropriate signals to potential customers of the costs associated with different types of load. For instance, if customers are using electricity for space heating in a context where the marginal source of electricity production is natural gas-fired generation, it is better for the natural gas to be used directly for space heating at an 80% to 95% efficiency than to burn the gas at a much lower efficiency in a generation facility. If, due to government policy or rate design, the electricity rates to be paid by new customers mask the marginal costs to the system of new space heating load (e.g. low postage-stamp rates from the Heritage resources) then policies in other areas such as those governing attachments, system extension tests or customer incentives need to be adjusted to have the appropriate effect.

Stakeholders, including customers, in general have a limited understanding of the above argument for the "right fuel for the right use". Continued efforts to educate stakeholders on the issue will be required ensure the correct decisions on energy use are being made.

In addition to the requirement to have the appropriate pricing signals in energy choice, an integral component of preserving a gas utility's competitive position relative to other energy sources is its Energy Efficiency programs and the program funding available. Through Energy Efficiency program activities such as education and incentives, natural gas utilities are able to encourage customers to use natural gas efficiently, helping preserve natural gas as competitive energy choice.

The table below is an excerpt from a report titled "Canadian natural gas distribution utilities' best practices in demand side management" sponsored by the Canadian Gas Association in 2005 showing DSM spending for Canadian natural gas utilities. Relative to the comparable natural gas utilities in Canada in terms of total utility revenue, Union, Gaz Metro, and Atco, Terasen Gas Inc. DSM funding is significantly lower. In fact, Terasen Gas ranks as one of the lowest of all Canadian natural gas utilities in the category of DSM expenditures as a % of utility revenues less cost of gas.

Table 4 2004 DSM expenditures, by company, as a proportion of revenue

LDC	DSM expenditure[1] ($ millions)	Total utility revenue ($ millions)	% of total utility revenue	Utility revenue less cost of gas ($ millions)	% of utility revenue less cost of gas
Atco	$ 4.30	1,550[2]	0.28%	407[2]	1.06%
Enbridge	$ 13.09	2,408[1]	0.54%	987[3]	1.33%
Gaz Métro	$ 5.55	1,783[4]	0.31%	555[4]	1.00%
Manitoba Hydro	$ 0.46	494[5]	0.09%	119[5]	0.39%
SaskEnergy	$ 0.73	317[6]	0.23%	167[1]	0.43%
Terasen	$ 2.20	1494[7]	0.15%	609[7]	0.36%
Union	$ 4.60	1,791[8]	0.26%	885[8]	0.52%

5.3 *What efforts have been made by the Applicant to mitigate this risk by attempting to influence building codes or building standards to preserve the competitive position of gas, vis a vis electric, competition?*

Response:

As stated in the previous response, Terasen Gas' main focus remains one of influencing key decision makers in the building and construction markets to understand the benefits of natural gas and ensure that it is used optimally with electricity and other fuel options.

Improving building codes may make buildings more energy efficient, but that would not necessarily improve the competitive position of natural gas vis a vis electric or other forms of energy.

6. Reference: Performance Based Regulation

The Applicant actively sought performance based regulation during the past decade. To what extent has performance based regulatory structure mitigated the risk position of the Applicant by providing opportunities to earn above the approved ROE of the company?

Response:

Performance Based Regulation provides incentives for utilities to pursue cost efficiency programs for the benefit of its customers and earn a share of the efficiencies so generated. To the extent that these programs have reduced cost of service and thus rates they have contributed to the improved competitiveness of natural gas (in the case of Terasen). While these programs have proven successful and provided benefits to customers and Terasen alike, the rate relief afforded by the efficiency gains while welcome has been dwarfed by the increase in the commodity cost of natural gas. That the Company has earned above the allowed ROE from efficiency gains it has made under PBR does not mitigate business risk beyond that discussed above. Having said that, the Company continues to maintain that PBR provides benefits to customers and the Company and supports its continuation.

7. Reference: Policy

It would appear that the Applicant continues a policy of expansion notwithstanding a concern about uneconomic customer additions. Given the Applicant's concerns with the risk of an economic expansion, what changes have been implemented by the Applicant to ensure uneconomic expansion is not undertaken?

Response:

Terasen Gas' policies have and continue to be focused on economic and profitable customer growth. This is assured through an economic test applied to main extensions in accordance with Section 12.3 of Terasen Gas' General Terms and Conditions. In addition, the cost of any individual service line can not exceed the allowance as set out in the Standard Fees and Charges Schedule without offsetting compensation from the customer (Section 10.1 (c) of the General Terms and Conditions). In addition, Terasen Gas has sought and had approved capital incentive mechanisms in its 1998-2001 and 2004-2007 PBR Plans which encourage the Company to minimize the capital expenditures associated with attaching customers. These capital incentive mechanisms have assisted in the aim of attaching economic customers.

APPENDIX 3.2

BC Gas NATURALLY RESOURCEFUL

Pipeline Regulation - An Effective Surrogate for Competition?

BC Gas NATURALLY RESOURCEFUL

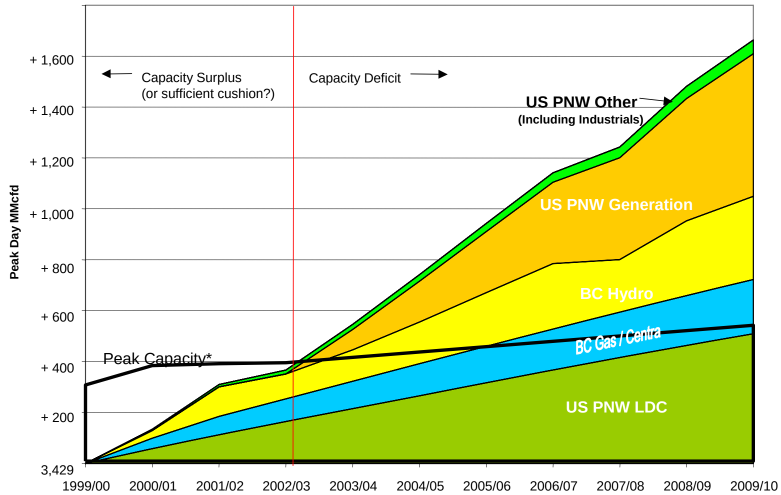
Key Messages:

- The societal and economic costs of lagging infrastructure additions to demand are large.
- The role of regulators should be more related to market effectiveness than to segment efficiency:
  - i.e. Optimization of parts may sub-optimize the whole.
- There is a need for regional energy planning and harmonization of regulations in markets that share infrastructure.

January 11, 2001

NATURALLY RESOURCEFUL

Regional Gas Demand Growth

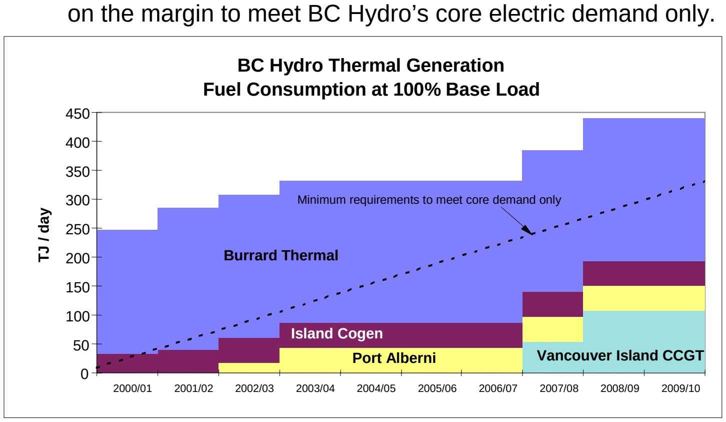


* I-5 Corridor includes: Lower Mainland, Vancouver Island, Western Washington thru SW Oregon

January 11, 2001

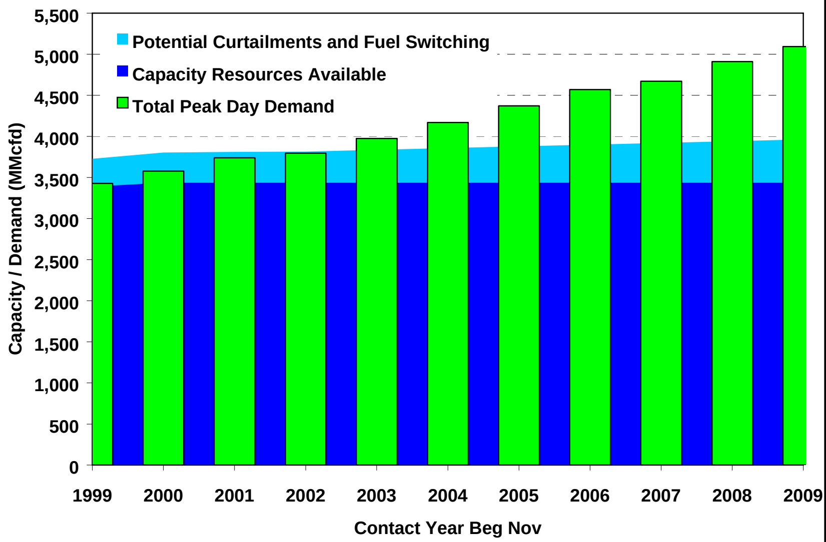
NATURALLY RESOURCEFUL

- **By 2007**
  - Vancouver Island CCGTs could consume 200 TJ/d and Burrard Thermal 245 TJ/d (total gas capacity 445 TJ/d).
  - Forecast of firm requirement of 250 TJ/d is based on Burrard running on the margin to meet BC Hydro's core electric demand only.

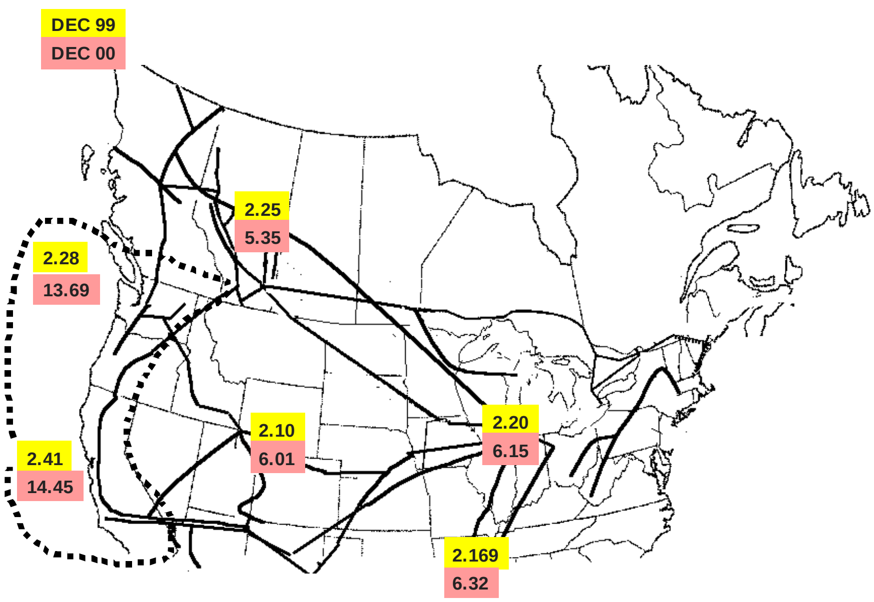


January 11, 2001

BC Gas NATURALLY RESOURCEFUL

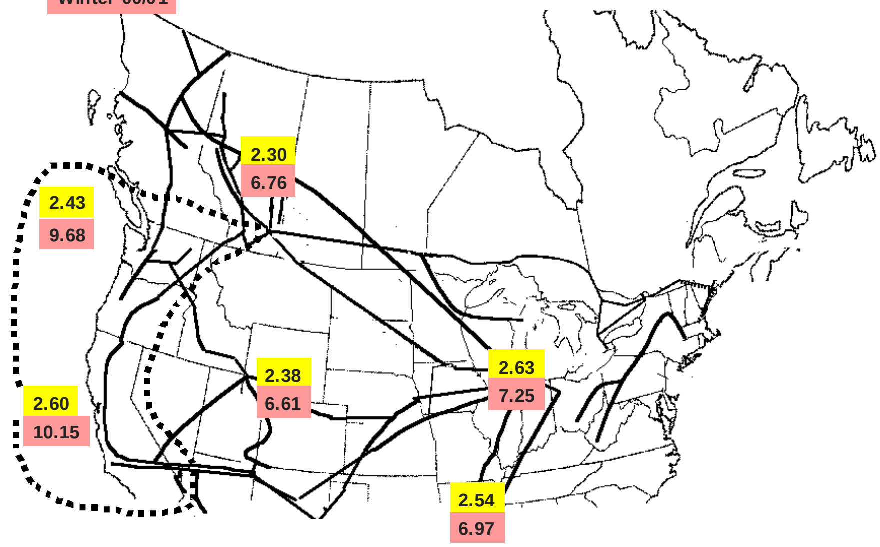


Comparison of Regional Monthly Index Prices US$/MMBtu



Comparison of Regional Winter Prices US$/MMBtu

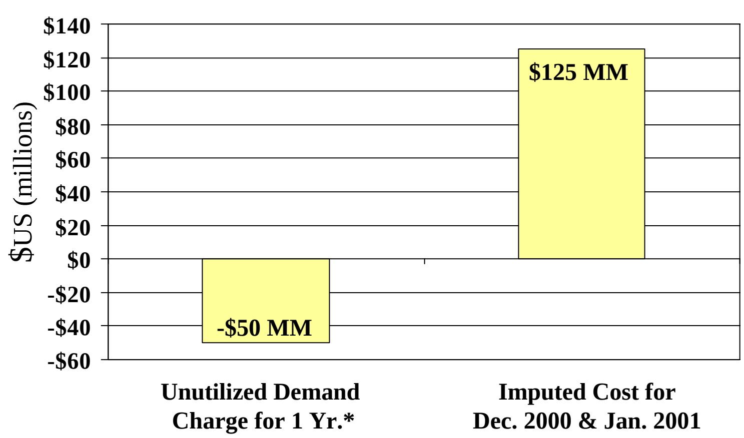
Winter 99/00
Winter 00/01



January 11, 2001

BC Gas NATURALLY RESOURCEFUL

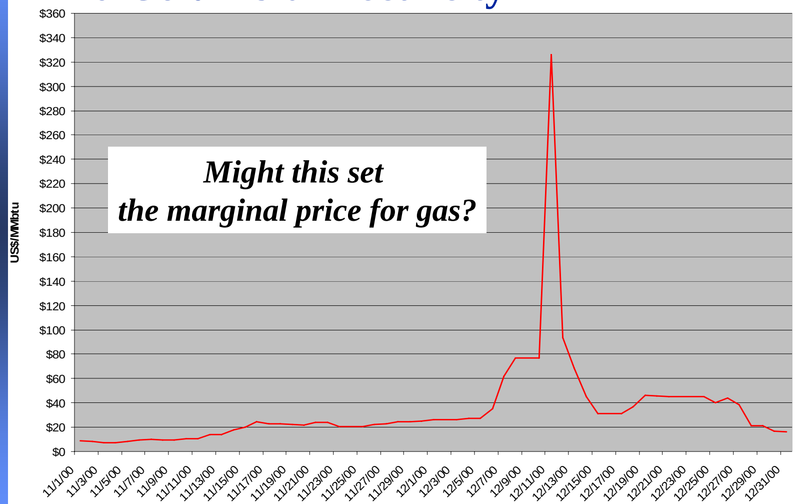
The Cost of Being Wrong



*includes TCPL (Alta. & B.C.), Southern Crossing & Inland Pacific Connector to Huntingdon

BC Gas NATURALLY RESOURCEFUL

Natural Gas Price Equivalent* of Mid Columbia Electricity



*Estimated based on heat rate of 10.2 Mmbtu/MWh

January 11, 2001

BC Gas NATURALLY RESOURCEFUL

A Primary Goal of Regulation??

- Support the creation of a well functioning marketplace.

Critical Success Factor

- Ensuring adequate infrastructure to allow buyers and sellers to meet.

BC Gov't 011101 by Parnell.ppt

January 11, 2001

BC Gas NATURALLY RESOURCEFUL

Who will contract for/build capacity?

- The value of infrastructure investment is in the avoided costs - market prices reflect existing infrastructure.
- Demand growth is largely connected to power generation and generators are reluctant to step up for long term capacity.
- Core customers, with limited alternatives, will continue to bear the greatest burden of infrastructure limitations.

January 11, 2001

BC Gas NATURALLY RESOURCEFUL

The Challenges:

- Recognize that the next round of infrastructure will be market (vs. supply) driven.
  - while utilities exit the merchant function?
- Lack of comprehensive energy policies at the provincial/regional level.
- Lack of harmonization of policies and regulation across borders that share infrastructure.

Energy Policy Comments
BC Gas

January 16, 2002

Outline

- General Comments
- Sector Issues/Opportunities
  - Gas
  - Electricity
- Regulation
- Wrap-up

– Attachments: (1) Price Disconnects
(2) Regional Resource Plan extract

General Comments

- Applaud tone and intention of the Interim Report.
- Concerned with the magnitude of the task ahead and the need to create and communicate a connection with economic principles, political reality and consumer and producer expectations.
- Need to communicate expected, reasonable timeframes and key milestones.
- Need to express high level visions for each sector.

3

Need for Visions

- **Consider developing a vision of what each sector might look like 10 years from now:**
  - An example of a vision statement for the electric market could be;
    - "By 2010, electricity will be purchased and sold in both wholesale and eligible retail markets by any willing creditworthy participant. Markets will clear with competitive prices. Competitive prices will function so as to ration existing supplies efficiently in the short run and to elicit adequate technology and infrastructure in the long run, so that there will be no involuntary curtailment of service at market prices. Electricity markets will be both transparent and liquid and market participants will have opportunities to hedge risks. Although regulation of monopoly service providers will continue, even these monopolies will feel some pressure of competitive market forces." (extracted from a concept discussion paper written by Staff of the U.S. FERC).
    - Entitlement generation assets will be owned by a Crown Corporation.
    - Consumers will retain benefit of entitlement for a long period of time.
    - Transmission assets will transition from a regulated monopoly ownership structure to market based structures
    - Distribution assets will be owned and operated by regulated, for-profit entities.

4

Key Attributes of Energy Markets

(1) Energy is increasingly fungible (convergence between gas & electricity)
(2) All forms of energy must be priced on a market basis to support rational investment and consumption decisions.
(3) Efficient markets require unconstrained access to trade between multiple buyers and sellers (at both wholesale and retail levels.)
(4) Market prices should internalize environmental costs.
(5) The electric endowment assets must be clearly understood to be of enduring value to British Columbia consumers.
(6) Private sector investment should be encouraged in electricity distribution and transmission as well as in generation.
(7) Privatization is not equivalent to de-regulation; regulation of monopolies must continue to protect consumers whether assets held by private or public entities.
(8) Regulatory framework designed to attract capital.

Expected Outcomes

- Movement to market prices, with the creation of entitlement benefits will create wealth for consumers, producers and governments.
- Consumers will gain full benefit of entitlement assets to offset the movement to market prices and will be motivated to make the right short and long run consumption decisions.
- Producers will have the opportunity to invest profitably in a rational investment climate.
- Governments will get increased royalty revenues and income tax revenues from increased energy industry investment and from a stronger B.C. economy.

Gas Issues/Opportunities

- Efficient Markets & Access - Gas Facilities.
- Market Pricing - Gas/Electric Distortions.
- Efficiency and Unconstrained Trade - Customer Choice.

7

Efficient Markets & Access - Gas Facilities

- The policy objective should be to cause development of sufficient gas facilities and contractual arrangements to ensure continuous efficient and liquid wholesale markets for gas at Sumas and Station 2….we must avoid Sumas market place disconnects.
- Gas producers need access to markets for growth
  - the Alliance pipeline illustrates the value of these types of options whereby access to alternate markets has increased the netbacks to the producers and increased production.
- Consumers need access to natural gas that is not constrained by the capacity to deliver, is competitively priced, is sourced from diverse supply basins and is reliable.
  - The experience of the winter 0f 2000/2001 demonstrates that infrastructure to serve this region is constrained and in periods of high demand and/or interruptions in deliverable capacity, the Sumas market place disconnects from the producing basins, resulting in extreme price volatility. (**See Attachment 1)**

8

Efficient Markets & Access - Gas Facilities

- New natural gas infrastructure must be encouraged in order to meet growth and to avoid future regional price disconnects. The draft policy suggests that new storage facilities should be the priority. BC Gas supports any effort to calm unnecessary public anxiety about the risks of gas storage.
- Storage, however, need not be physically located in SW British Columbia. New storage is presently being developed in a number of areas in the Pacific Northwest (Jackson Prairie, Mist) and in most cases we can make contractual arrangements to access peaking gas from out-of-province storage either directly through pipeline capacity or through displacement arrangements.
- We are concerned with the emphasis placed on storage since we believe policy support is primarily required for the development of new pipeline capacity. **Attachment 2** is an extract of our Regional Resource Planning Study and illustrates that in excess of 2/3 of future demand growth is being driven by the development of base load gas-fired generation with less than 1/3 attributable to traditional peaking loads. This puts more pressure on longer term resources like pipeline capacity to meet regional demand requirements. Development of new pipeline capacity is the critical solution.

9

Efficient Markets & Access - Gas Facilities

- The policy draft notes the need to encourage the expansion of infrastructure in advance of demand and suggests that customers should not take the risk on building infrastructure in advance of their demand requirements. One can only ask, then who will take the risk?
- It is the customer who benefits from having the excess capacity to avoid the price disconnects at Sumas that lead to disproportionately higher prices and higher netbacks to producers. It is the customer who benefits from stable commodity prices derived from having access to more than one supply source even if it sometimes means having under-utilized capacity to one or another of those sources.
- If the consumer is not willing to pay, why would the producer do so against his own apparent best interests? Why would transmission owners invest if they were not allowed to send a bill to either party? Presently, transmission developers do not receive a return adjusted for development risks…they receive only a regulated return on the completed asset.
- Expansion of infrastructure in advance of demand is done to serve the advantage of the consumer and the consumer should be willing to pay through prudently negotiated contracts. In the case of utility customers the prudence of these contracts will be tested before regulatory authorities.

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Market Pricing - Gas/Electric Distortions

- Gas commodity prices reflect market costs, whereas electricity commodity prices reflect historic average costs; yet they are fungible commodities, and today's distorted price signals produce inefficient, long term investments by consumers.
- Distorted pricing is resulting in excessive electric consumption and installations and inadequate gas consumption and installations.
- Furthermore, combined cycle gas-fired electric generation to supply residential/commercial electric heating loads is only 45-55% efficient versus the 80-90% efficiency new gas heating appliances. It leads to inefficient use of natural gas and increased emissions.
- Vancouver Island is a perfect and extreme example of what is wrong; but the summary in the interim report highlights only the resource side of the problem. The distortion in consumption on Vancouver Island has lead to the need for government subsidies to support gas infrastructure and exacerbation of the imbalance between on-island electric demand and supply.

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Market Pricing - Gas/Electric Distortions

- A further distortion on Vancouver Island is that transmission and distribution costs for electricity reflect province-wide average t& d costs; whereas gas transmission and distribution costs reflect all the regional costs of serving gas to Vancouver Island….there is no 'averaging out' of high regional gas transmission and distribution costs on Vancouver Island.
- It is in the public interest that a significant and positive differential between on-island gas and on-Island electricity prices should be put in place quickly.
- If electricity prices cannot be increased on Vancouver Island for a number of years, then gas prices must be decreased on-island (at least to the extent of differing transmission and distribution pricing).
- Various solutions are available to move in this direction:
  - Roll Centra's rate base in with BC Gas Utility's rate base to lower Centra's rates
  - Offset some of the rate burden to Centra's customers with significant gas transport revenues from B.C. Hydro for the gas delivery to Vancouver Island power projects
  - offer BC Hydro conversion grants to encourage residential customers to switch to natural gas
- Only then will rational long term investment decisions will be made by consumers and businesses on Vancouver Island.

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Unconstrained Trade - Retail Choice

- BC Gas is supportive of retail choice for all gas consumers.
- Retail choice has worked well for industrials, institutions and large commercial customers.
- Retail choice for residential and commercial customers should occur only as wholesale markets in B.C. become more efficient and as the necessary technology and consumer awareness evolve. There is some doubt whether marketers can be viable with gas only for residential sector….many would like to market gas and electricity.
- BC Gas has been working collaboratively with the Market Unbundling Group (consisting of gas marketers and representatives of residential and consumer customers) and the BCUC over the past 2 years to ensure an orderly transition.
- A full discussion is available in the various reports filed by BC Gas with the BCUC.

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Electric Issues/Opportunities

- Segmentation
- Market Pricing
- Structure of:
  - generation
  - transmission
  - distribution
- Entitlement

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Segmentation

- Functional and then legal segmentation of each of generation, transmission and distribution should occur as soon as possible.
- Legal segmentation should be followed immediately with the sale of transmission, distribution and certain generation assets.
- There is a need to create a timetable and expected outcomes and milestones over the transition period to market prices for the electric market.

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Market Pricing

- We support a prompt move to market, with a bid-based pricing, complete with entitlement rebates
- If the movement to market pricing is prolonged, then consideration should be given to setting interim rates based upon an administered electric commodity price equivalent to the long run price for combined cycle, gas-fired generation

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Generation

- It will be critical to reduce the market power of Genco. As a consequence, the thermal resources of BC Hydro should be sold, including the independent power contracts. Such transactions will also serve to mark to market the value of the resources and any stranded costs can be managed within the value of the entitlement contracts.
- Consideration should also be given to selling other hydroelectric assets that are not required to maximize the value of the entitlement assets.
- The mandate of Genco should be constrained to the efficient operation and optimization of “two river” hydroelectric facilities on a reward for performance basis to maximize the value of the entitlement.
- Powerex would be part of Genco and would optimize the value of the entitlement.

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Transmission

- The most important goal of a new transmission ownership and operational model should be to create sufficient transmission delivery capacity to support a liquid and efficient market for reliable delivery of power at market prices.
- The market participant(s) must be motivated to invest to maintain system reliability and to operate at the lowest reasonable costs.
- Timing of a re-financing/disposition of existing transmission assets challenges implementation of a market bid-based system for determining transmission investments
- Transition from a monopoly transmission provider to a market-based model with many transmission providers will be required

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Distribution

- There is no rationale to support the creation of regional distribution (distcos) entities. The increased cost of separately managing and operating smaller distcos would be significant.
- Within B.C., UNC has struggled to cope with its costs approaching and crossing over BC Hydro's costs. UNC's strategy has been to acquire Alberta distribution assets to drive cost reductions via increased scale. The creation of small regional distcos in B.C. would result in the same challenge. BC Gas itself owes its success, in part, to the creation of value achieved by capturing economies of scale.
- As there is no public policy reason for distribution assets to remain owned by the Crown, the distribution assets should be sold to the private sector. In the event of a sale, the sale of regional distcos, would reduce the financial proceeds to the Province relative to the sale of one province-wide distco.

19

Entitlement Structure

- The entitlement concept is the key to making the transition to market prices acceptable
- Key points of consideration:
  - Value to consumer must be maximized
  - Long term value (political) versus short term value (economic)
  - Structure as a rebate
  - Eligibility of new customers for entitlement
  - Need a mechanism that rewards efficiency

20

Regulation

- Regulatory environments must be designed to compete continentally for private capital for both upstream and downstream investments. Significant capital is needed in downstream industry.
- We reiterate that requiring both the BCUC and the Oil and Gas Commissions to approve gas transmission pipelines in needless duplication.
- The environmental Approval Office should be restructured to make it less of an impediment to investment.
- Economic regulation of monopolies (by BCUC) must align the interests of both customers and investors around result based outcomes….more focus on outcomes less on “prescriptive” approaches.

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Wrap-up

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REVIEW OF NATURAL GAS PIPELINE INFRASTRUCTURE ISSUES

British Columbia Ministry of Energy & Mines

February 12, 2002

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AGENDA

BC GAS AND BC ENERGY & MINES

2:00 p.m., Tuesday, February 12, 2002
Room 6020, Sixth Floor,
1810 Blanshard Street, Victoria, B.C.

1. Westcoast Tolls
2. Westcoast Expansion - impact on tolls
3. IPC
4. Environmental Assessment Act, s. 19
5. GSX

BC Energy & Mines:	Ross Curtis, Steve Roberts, Karen Koncohrada, Stirling Bates, David Molinski, Jim Robertson
BC Gas:	Randy Jespersen, Doug Stout, Cam Avery

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KEY MESSAGES

- Westcoast Tolls
  - revenue requirement focus
  - upstream bias
  - retains barriers to competition

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KEY MESSAGES (cont'd)

- Westcoast Expansion
  - competitively advantaged
    - no minimum build threshold
    - ease of regulatory approval
    - NEB bias for rolled-in tolls
  - economically inferior on full cost basis
  - gas consumers in BC subsidizing export markets and domestic power generator(s)

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KEY MESSAGES (cont'd)

- Inland Pacific Connector
  - economically superior on full cost basis
  - faces many barriers to entry
    - greenfield project requires large volume commitment
    - regulatory maze is daunting
    - competitor is subsidized

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KEY MESSAGES (cont'd)

- Energy Policy
  - Energy Policy should:
    - encourage pipeline competition
    - reduce unnecessary barriers to new entrants
    - consider benefits of supply origin diversity
    - strive for capacity additions to lead demand

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KEY MESSAGES (cont'd)

- Legislative Amendments are required to EAA
  - flexibility for linear projects
  - results based orientation

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WEI Settlement/Rate Application

- Westcoast will seek from all shippers an "election" of either settlement or litigated tolls in the near future.
- The NEB has asked for input (by March 20)in redesigning its guidelines for negotiated settlements.

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WEI Settlement/Rate Application (cont'd)

- Settlement has been signed by CAPP - several other parties (mostly upstream) have indicated a willingness to sign.
- Groups representing BCG's customer base continue to challenge the WEI/CAPP agreement.

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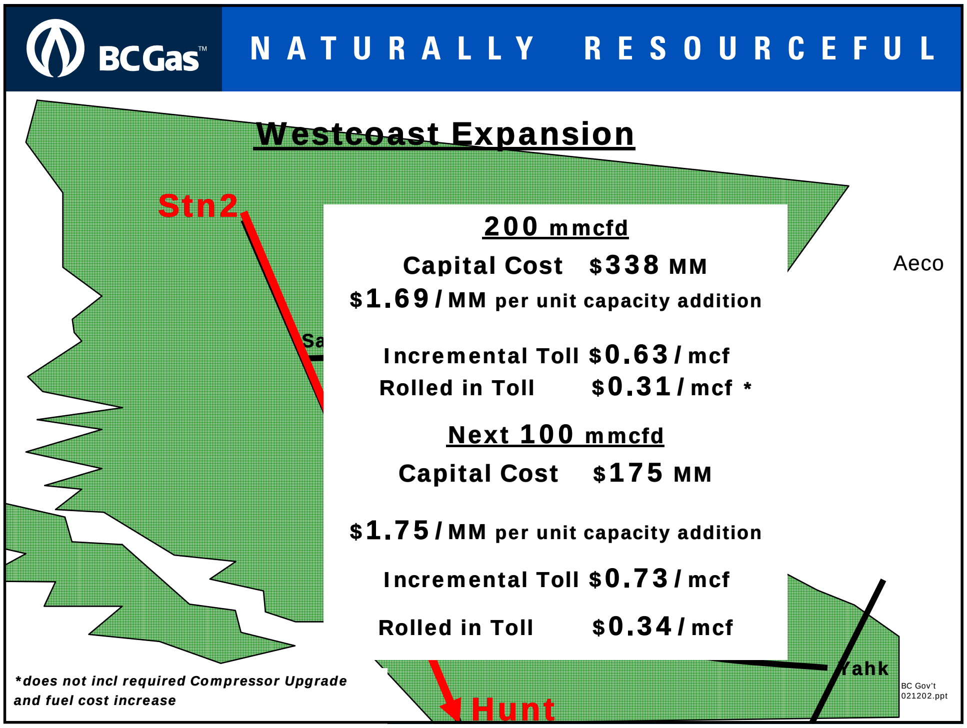
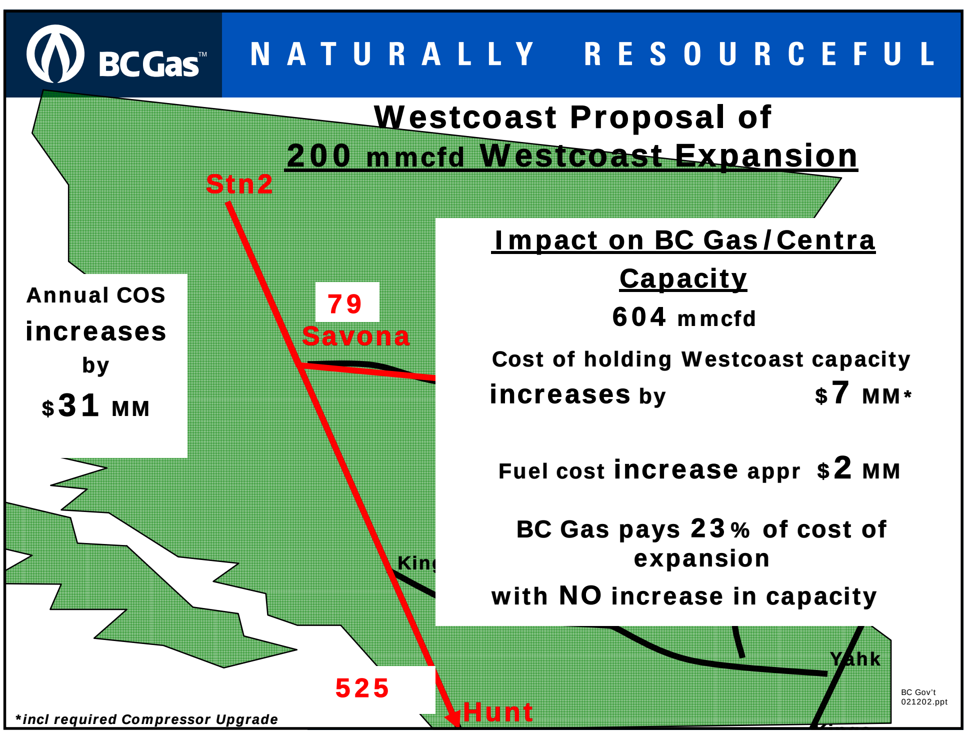

BC Gas
N A T U R A L L Y R E S O U R C E F U L
Westcoast Expansion
Stn2
200 mmcfd
Capital Cost $338 MM
$1.69 / MM per unit capacity addition
Incremental Toll $0.63 / mcf
Rolled in Toll $0.31 / mcf *
Next 100 mmcfd
Capital Cost $175 MM
$1.75 / MM per unit capacity addition
Incremental Toll $0.73 / mcf
Rolled in Toll $0.34 / mcf
Aeco
Yahk
Hunt
*does not incl required Compressor Upgrade and fuel cost increase
BC Gov't 021202.ppt


BC Gas
N A T U R A L L Y R E S O U R C E F U L
Westcoast Proposal of
200 mmcfd Westcoast Expansion
Stn2
Annual COS increases by $31 MM
79
Savona
Impact on BC Gas / Centra Capacity
604 mmcfd
Cost of holding Westcoast capacity increases by $7 MM*
Fuel cost increase appr $2 MM
BC Gas pays 23% of cost of expansion
with NO increase in capacity
Yahk
525
Hunt
*incl required Compressor Upgrade
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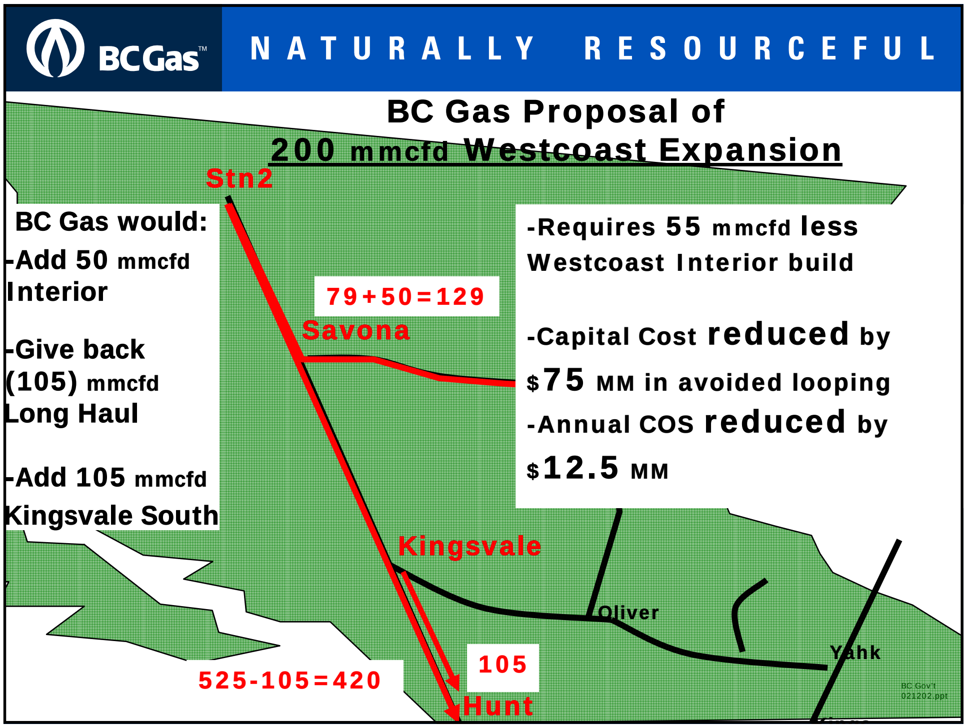
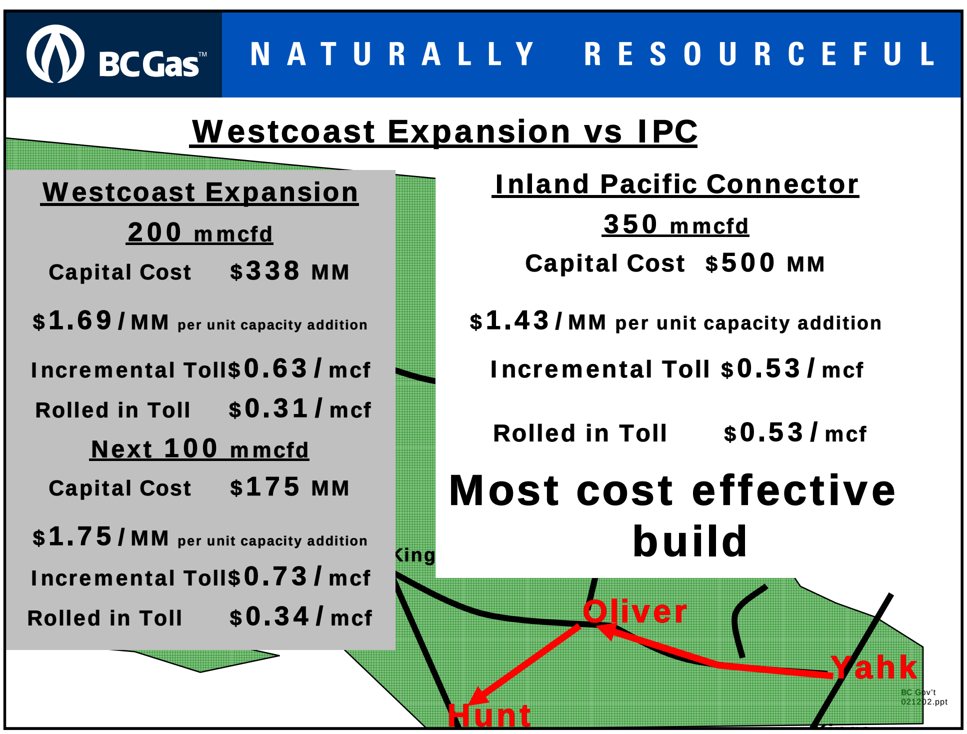

BC Gas
N A T U R A L L Y   R E S O U R C E F U L
BC Gas Proposal of
200 mmcfd Westcoast Expansion
Stn2
BC Gas would:
-Add 50 mmcfd Interior
-Give back (105) mmcfd Long Haul
-Add 105 mmcfd Kingsvale South
79+50=129
Savona
-Requires 55 mmcfd less Westcoast Interior build
-Capital Cost reduced by $75 MM in avoided looping
-Annual COS reduced by $12.5 MM
Kingsvale
Oliver
Yahk
105
525-105=420
Hunt


BC Gas
N A T U R A L L Y   R E S O U R C E F U L
Westcoast Expansion vs IPC
Westcoast Expansion
200 mmcfd
Capital Cost $338 MM
$1.69 / MM per unit capacity addition
Incremental Toll $0.63 / mcf
Rolled in Toll $0.31 / mcf
Next 100 mmcfd
Capital Cost $175 MM
$1.75 / MM per unit capacity addition
Incremental Toll $0.73 / mcf
Rolled in Toll $0.34 / mcf
Inland Pacific Connector
350 mmcfd
Capital Cost $500 MM
$1.43 / MM per unit capacity addition
Incremental Toll $0.53 / mcf
Rolled in Toll $0.53 / mcf
Most cost effective build
Oliver
Yahk
Hunt

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INLAND PACIFIC CONNECTOR

- Economically advantaged
- More capacity required to region
- Shipping commitments required this spring
- BC Hydro capacity commitments to region equal only to Vancouver Island requirements

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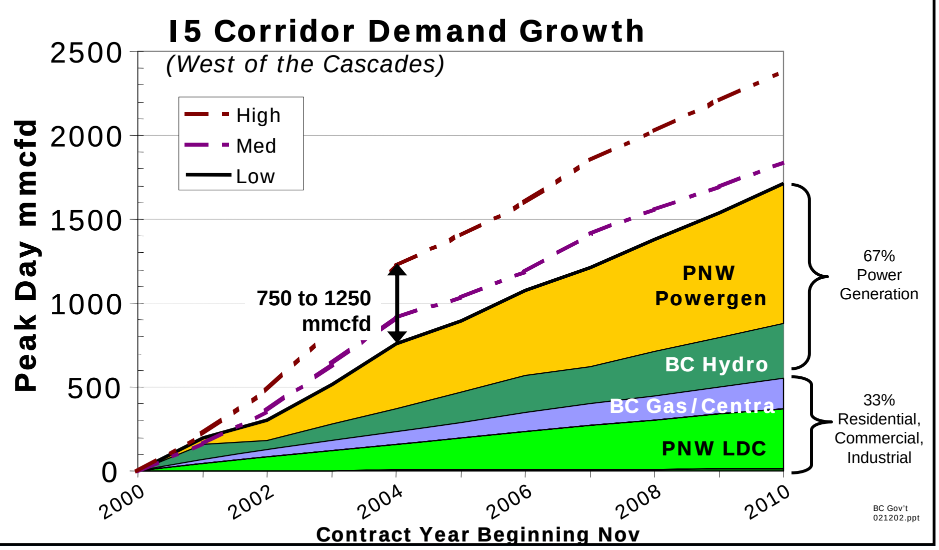
Demand driven by Power Generation



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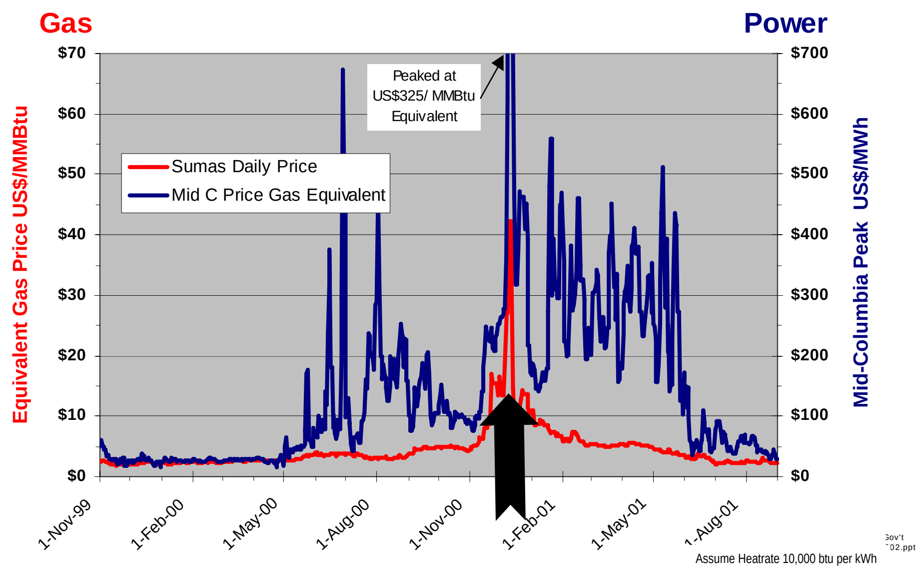
Powergens Compete for Supply



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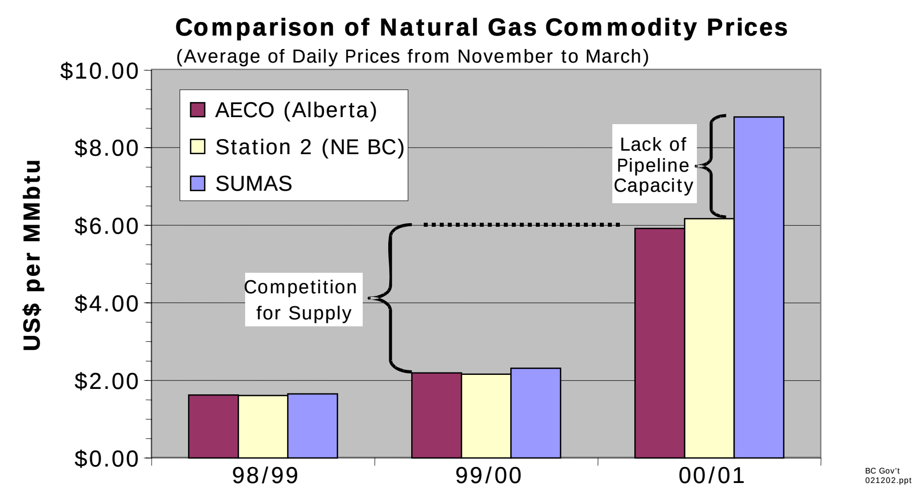
Pipeline Constraints Result in Price Disconnects



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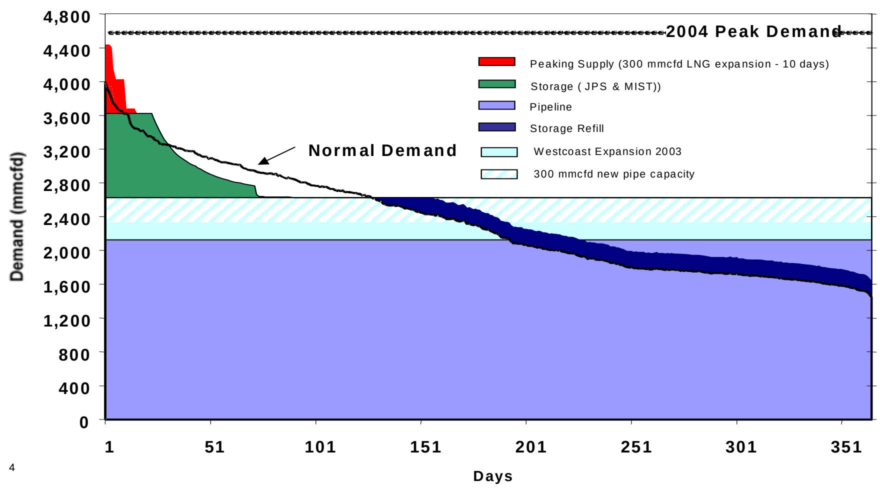
Addition of New Pipe Capacity



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Updated Project Schedule

Public and First Nation Consultation	On-Going
Routing, Engineering & Environmental Assessment	March-Sept. 2001
EAO/CEAA Application Submission	December 2001
Shipper Firm Precedent Agreements	Spring 2002
Detailed Routing and Environmental Assessment	March-Sept. 2002
Regulatory Approvals	Spring 2003
Route Preparation	June-Nov. 2003
Pipeline Construction	May-Nov 2004
Pipeline In-service	November 2004

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ENVIRONMENTAL ASSESSMENT ACT

- S 19 problematic for linear project
  - vague as to committee decision making process and interpretive latitude
    - "all impacts" to be identified complete with mitigation plans (premature and excessive cost in advance of permit/construction state)
    - mandate is to protect vs. consider balance of benefit

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ENVIRONMENTAL ASSESSMENT ACT (cont'd)

- Socio-economic benefits from IPC
  - $98MM to be spent locally
  - $214MM overall to be spent in BC
  - 1250 person-years (direct, indirect and induced) "local area" employment
  - 3910 person-years (direct, indirect and induced) "BC" employment
  - Approx. $3.5MM property taxes to be paid by BC Gas to taxation authorities along the route

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ENVIRONMENTAL ASSESSMENT ACT (cont'd)

- requires perspective of advocacy ministry and familiarity of pipeline construction techniques
- Corridor flexibility required for routing
- Empowers ministries and agencies beyond that of their own regulations/legislation
  - DFO ("all impacts")
  - wildlife (ID and mapping of ecologically important zones)

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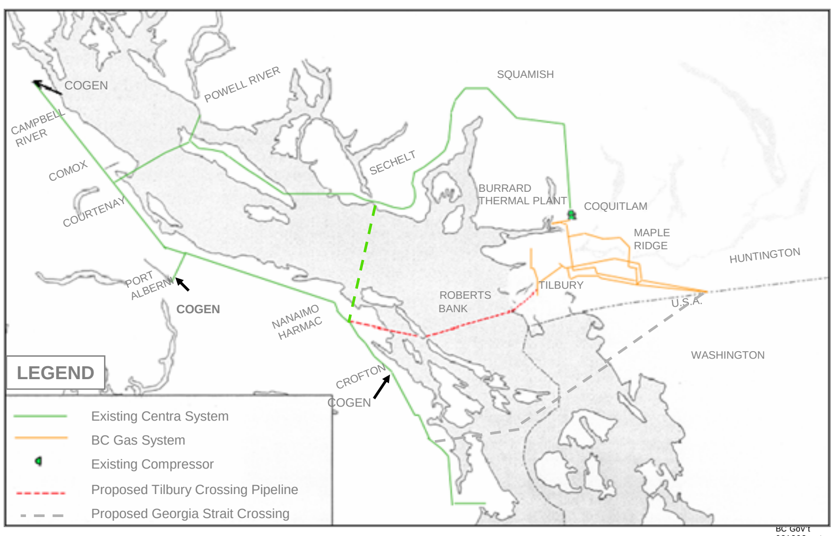
VANCOUVER ISLAND CROSSING CHOICES



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DISCUSSION

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GSX vs Tilbury Crossing

Comparison based on preliminary cost estimates (not including cost impact on Coastal Transmission System):

100 TJ/d Firm Service	GSX (Sumas to Centra)	revised	Tilbury Crossing (Tilbury to Centra)
Compression	7000 hp		4500 hp
Pipeline	16" 2160#		12" 2160#
Mainland	52 km		24 km
Marine Crossing	71 km		52 km
Vancouver Island	13 km		18 km
Total	136 km		94 km
Installed Cost Estimate (CDN $MM)	$175.0* (Direct Costs only??)	**$236.0**	$146.8 (includes AFDUC& OH)
Avg. Cost /Metre	$1286/m	**$1735/m**	$1560/m

* Published cost estimate based on US$120 million (Direct Costs only??)

- 16" pipe for GSX will involve higher material costs and more expensive marine pipe laying technique, therefore expect detailed engineering to increase the relative cost advantage of Tilbury Crossing
- At GSX unit cost $1286/m, Tilbury capital costs would be $120.8 million

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Benefits

Value to BC Hydro - Tilbury Base Case

New Facilities Serve BC Hydro Only	GSX	Tilbury Crossing	Annual Savings to BC Hydro	15 Year PV Savings
100 TJ/d Firm Service	$0.93/GJ	$0.78/GJ	$5.4 million	$44.2 million
200 TJ/d Firm Service starting in 2007	$0.50/GJ	$0.43/GJ	$5.1 million	$39.7 million

Value to BC Hydro - Tilbury @$1286/m Scenario

New Facilities Serve BC Hydro Only	GSX	Tilbury Crossing	Annual Savings to BC Hydro	15 Year PV Savings
100 TJ/d Firm Service	$0.93/GJ	$0.72/GJ	$7.7 million	$63.0 million
200 TJ/d Firm Service starting in 2007	$0.50/GJ	$0.41/GJ	$6.6 million	$53.7 million

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Presentation to Ministry of Energy and Mines

Doug Stout
Vice President, Gas Supply and Transmission
Terasen Gas Inc.

July 2004

Overview

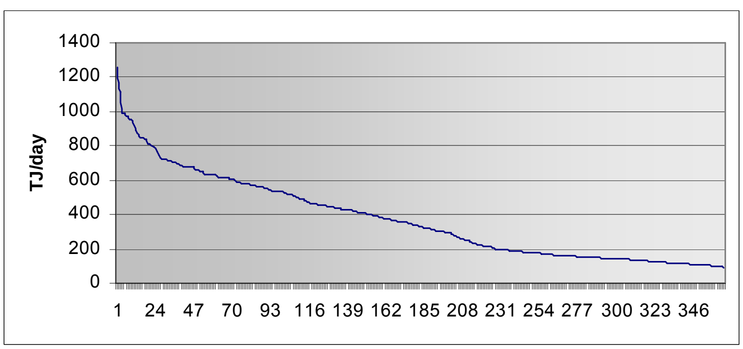
- Terasen Gas Supply Portfolio
- Regional Gas Utility Rate Comparison
- Gas/Electric Competitiveness
- Consumer Choice (Unbundling) Model
- TG Whistler Resource Plan Overview
- TGVI Resource Plan Overview
- Regional Resource Assessment Overview

Terasen Gas

Terasen Gas Supply Portfolio

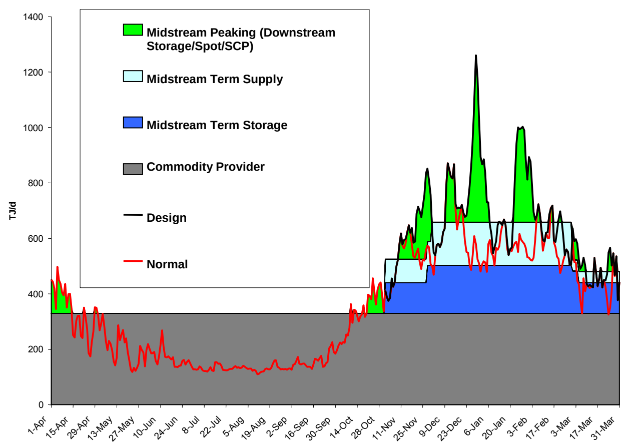
Terasen Gas

Load Duration Curve - TGI

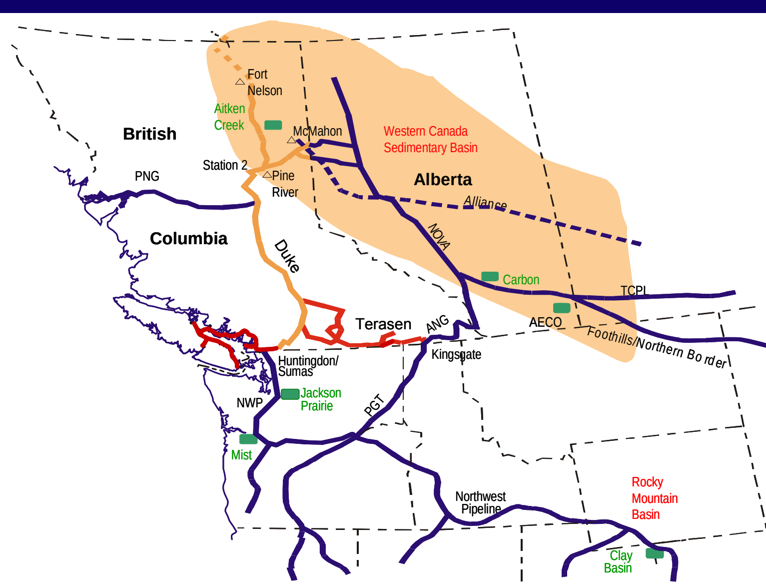


	TJ/day
Design Day	1260
Normal Peak	892
Summer Average	199
Winter Average	526
Annualized Load	330

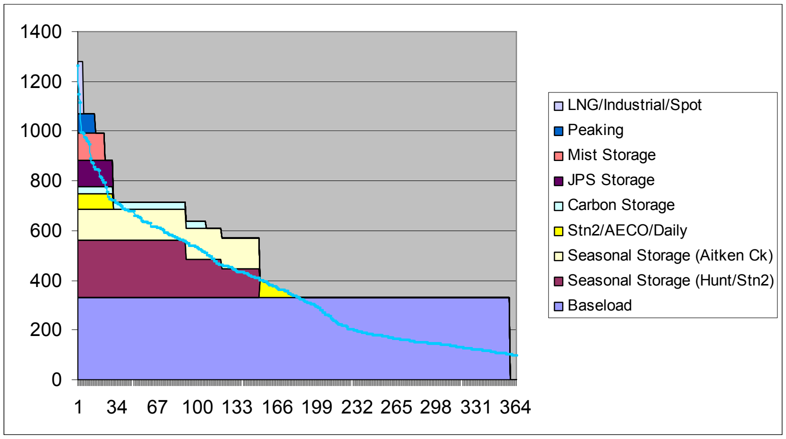
Midstream Portfolio Supply Resources



Midstream Infrastructure

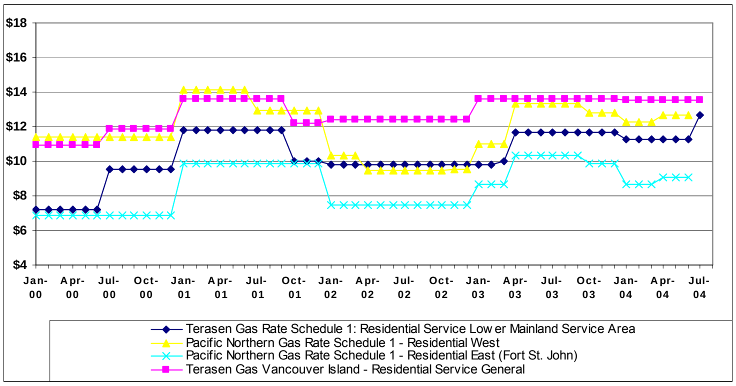


Portfolio Supply Stack (04/05)



Natural Gas Rate Comparisons

Cost Competitiveness
Average Unit Rate
Terasen Gas and BC Utilities

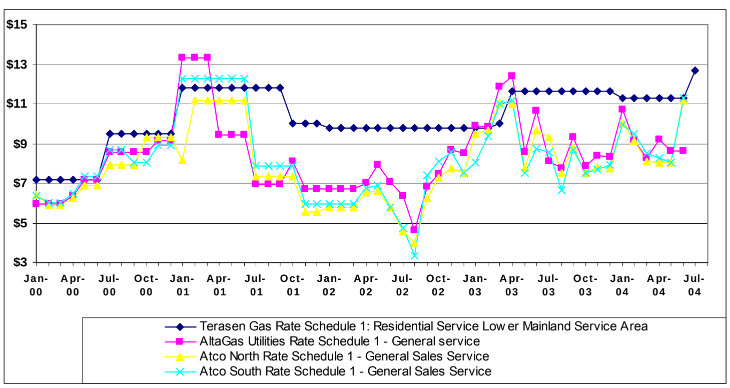


105 GJ - Consolidated Terasen Gas Use Rate

Rates include all applicable riders

As of June 1, 2004

Average Unit Rate
Terasen Gas and Alberta Utilities



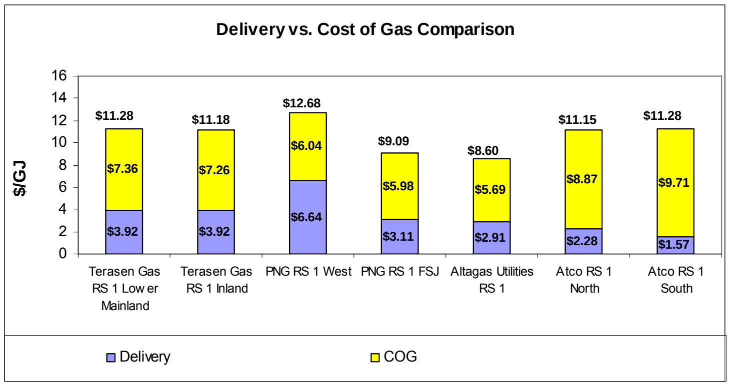
105 GJ - Consolidated Terasen Gas Use Rate

Rates include all applicable riders

As of June 1, 2004

Gas Cost Comparison Breakdown Terasen Gas, British Columbia and Alberta Utilities

Terasen Gas



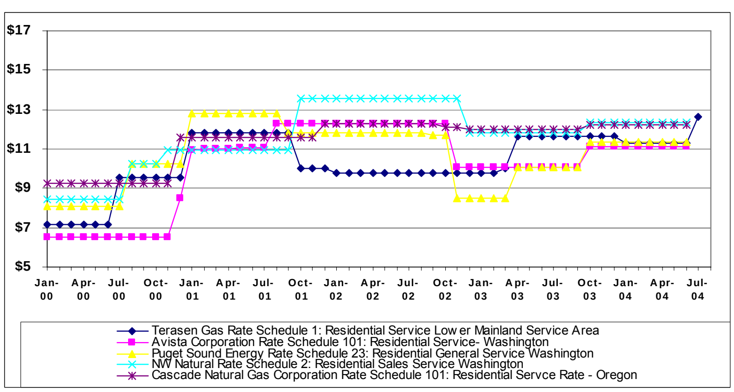
105 GJ - Consolidated Terasen Gas Use Rate

Rates include all applicable riders

As of June 1, 2004

Average Unit Rate Terasen Gas and US Pacific Northwest Utilities

Terasen Gas



105 GJ - Consolidated Terasen Gas Use Rate

1 USD = 1.37 CAD - Bank of Canada USD Canversion Rate

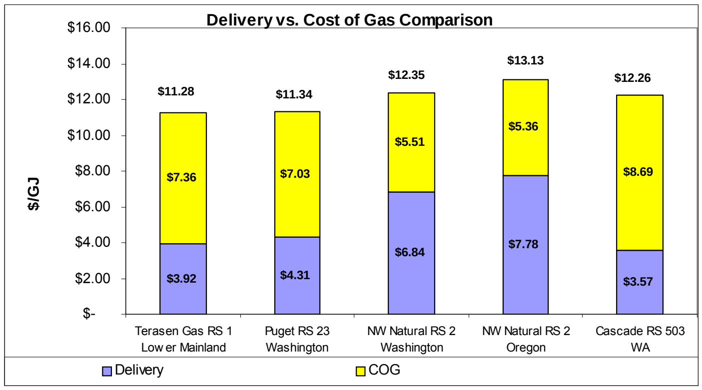
1 GJ = 9.4782 - Conversion from Therms to GJ

Rates include all applicable riders

As of June 1, 2004

Gas Cost Comparison Breakdown Terasen Gas and US Pacific Northwest Utilities

Terasen Gas



105 GJ - Consolidated Terasen Gas Use Rate

1 USD = 1.37 CAD - Bank of Canada USD Canversion Rate

1 GJ = 9.4782 - Conversion from Therms to GJ

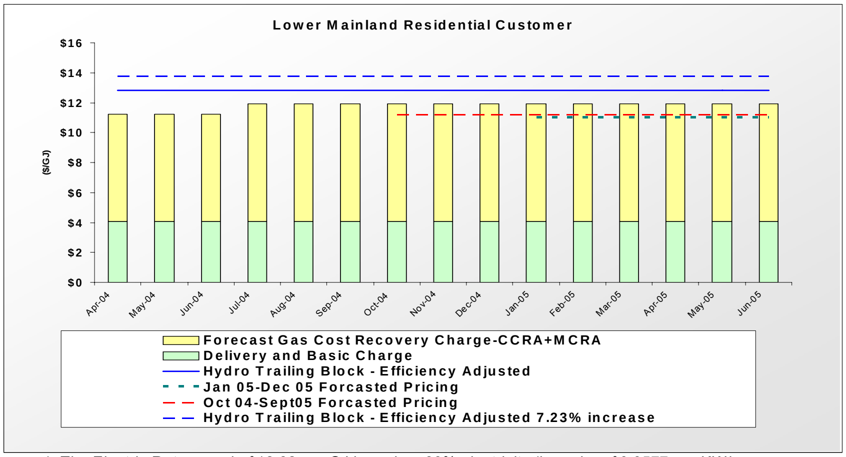
Rates include all applicable riders

As of June 1, 2004

Terasen Gas

Gas and Electric Rate Comparisons

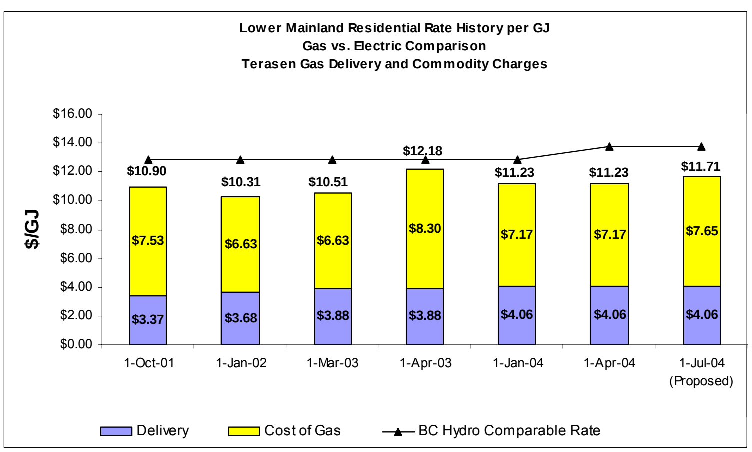
TGI
Competitiveness with Electric



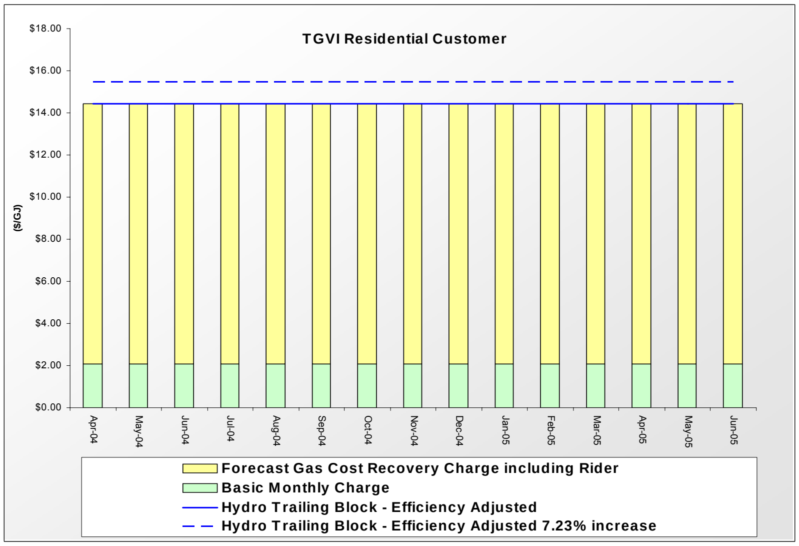
1. The Electric Rate equals $12.82 per GJ based on 80% electricity (based on $0.0577 per KWh multiplied by the KWh to GJ conversion factor multiplied by an 80% efficiency factor)

2. The Electric Rate With Increase equals $13.75 per GJ for electricity (based on $0.0577 per KWh multiplied by the KWh to GJ conversion factor multiplied by an 80% efficiency factor) times 7.23% rate increase effective April 2004.

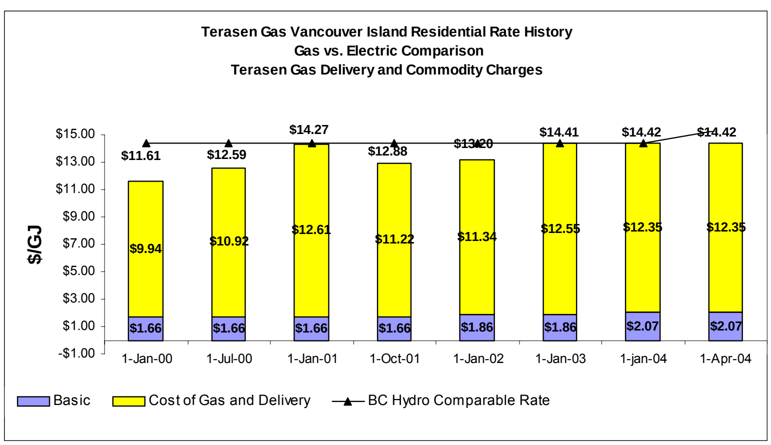
TGI Competitive - Historical



TGVI
Competitiveness with Electric

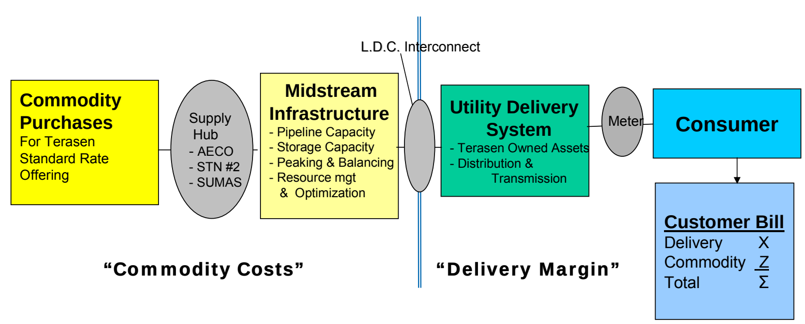


TGVI Competitive - Historical

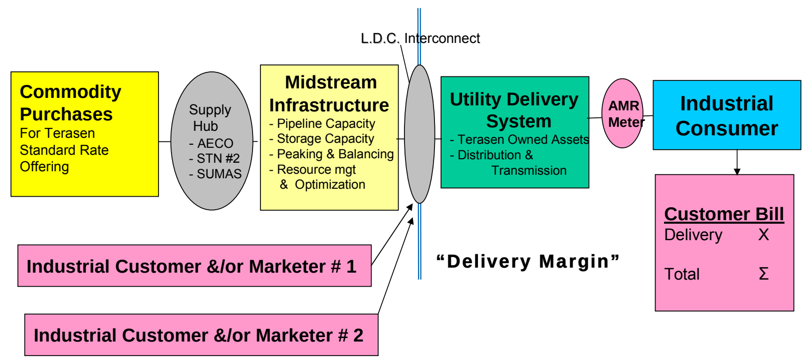


Consumer Choice (Unbundling)

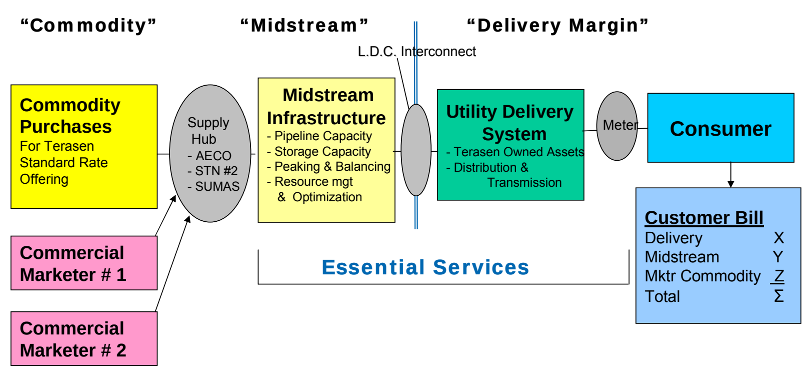
Bundled Sales Model



Industrial Transportation Model



Essential Services Model



Terasen Gas

Terasen Gas Whistler Resource Plan Overview

Terasen Gas

Key Messages

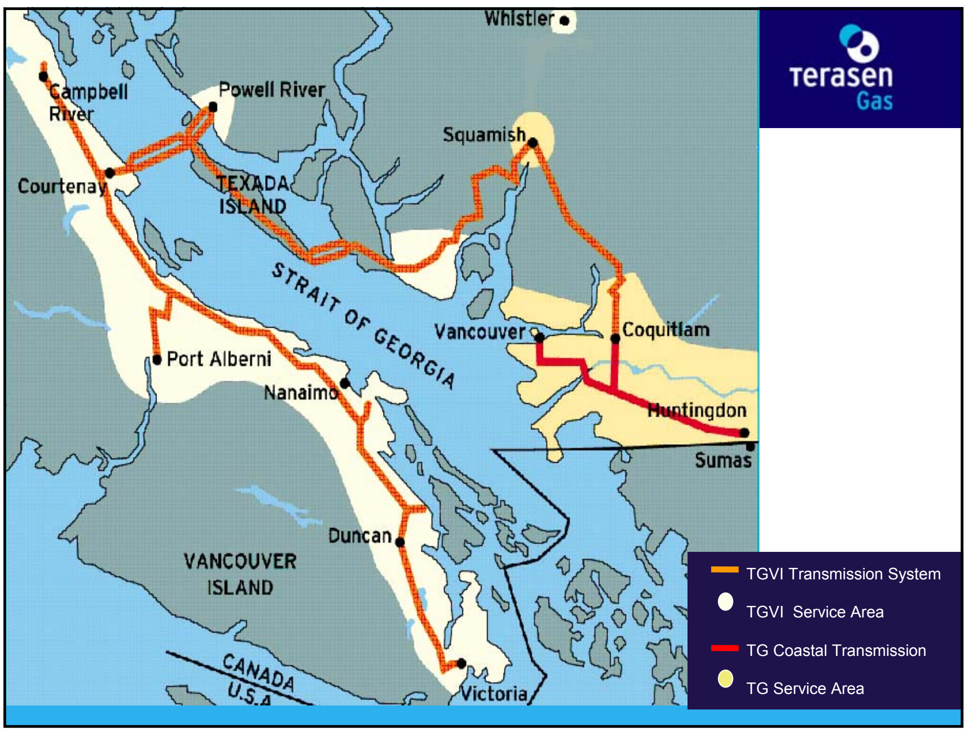
- Terasen Gas (Whistler) Inc is at crossroads at how to meet Whistler's current and future energy requirements
- There are two principal alternatives
  - Maintain and expand existing propane system
  - Convert to natural gas
- Natural Gas Service is a competitive alternative to Propane Expansion and offers additional benefits
  - Supports RMOW's sustainability objectives
  - Facilitates Natural Gas Vehicle Strategy
  - Supports 2010 facility requirements
  - Enhances security and reliability of supply
- Customer rate impact is the primary consideration

Terasen Gas (Whistler) Inc

terasen Gas

- Terasen Inc.
  - Terasen Gas Inc
  - Terasen Gas (Vancouver Island)
  - Terasen Gas (Whistler)
  - Terasen Gas (Squamish)

Recent History	
May 2002	BC Gas Inc. completes acquisition of Centra Gas British Columbia Inc. and Centra Gas Whistler Inc. from Westcoast Energy
April 2003	Company-wide name change to Terasen
January 2004	Consolidation of management and operations teams providing services to the 4 separate distribution companies



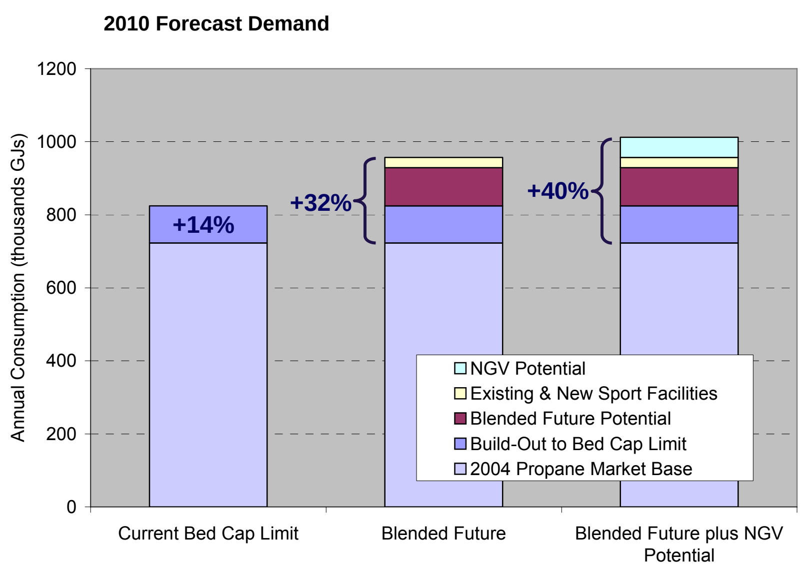
terasen Gas

Demand & Supply Outlook

Demand Outlook
- Community planning process supporting development of additional employee housing
- Energy requirements associated with 2010 Olympic facilities
- Natural gas vehicle (NGV) potential
- Identification of additional development potential

Capacity Outlook
- Propane system currently operates near full capacity during periods of high demand
- New system facilities are required to meet any new loads on the system
- Recent events present unique opportunity to investigate both propane and natural gas alternatives (Sea to Sky Highway Upgrade, 2010 requirements, Community development)

Future Demand Potential



Customer Rate Impacts

Terasen Gas

- Costs to serve customers are recovered through rates set by the British Columbia Utilities Commission (BCUC)
- Rates must be competitive in order to maintain and retain customer base
- Main challenge is to be competitive with electricity for space and hot water heating
- Rate challenge can be met in two ways:
  - Reduce costs to minimise rate impacts, and/or
  - Ensure efficient gas load is added on the system, thereby reducing per unit costs

Whistler's Actions Impact Choice

Terasen Gas

- Strategies developed to support the Preferred Future resulting from the Comprehensive Sustainability Plan (CSP) process
- Implementation of Integrated Energy, Air Quality and Greenhouse Gas Management Plan
  - Building guidelines that support natural gas as fuel of choice for space heating, hot water heaters and appliances
  - Development of Natural Gas Vehicle (NGV) Strategy for transit, municipal vehicles and waste hauling
- Support discussions with major stakeholders, 2010 facility planners, Sea to Sky Highway Project, and regulators

Conclusions

- Whistler's demand for energy is expected to grow to support new housing initiatives and 2010 facility development
- Terasen's propane system is currently operating at near full capacity and new facilities will be required to meet any new loads
- Recent events presents unique opportunity to investigate both natural gas and propane alternatives
- Conversion to natural gas is economically feasible
- Implementation of a natural gas strategy requires support from all stakeholders

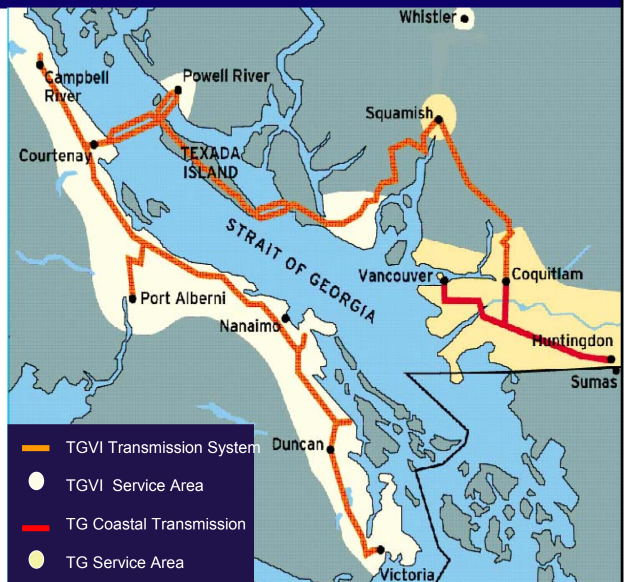
Terasen Gas Vancouver Island Resource Plan Overview

Terasen Gas (Vancouver Island) Inc

TGVI Service Area
- Vancouver Island
- Powell River
- Sunshine Coast

TGVI Customers
- Residential & commercial
- Industrial
- Electric generation

TGVI System
- Gas accessed at Huntingdon and transported to Coquitlam and service area using transmission system.



Terasen Gas Guiding Principles

- Provide safe and reliable natural gas service at least delivered cost
  - Use integrated planning approach to develop long term strategy to meet requirements of current and future customers.
  - Meet Design Day and Annual requirements.
  - Manage rate volatility and mitigate impact of service interruptions.
- Support regional competitiveness
  - Help TGVI energy users access competitively priced natural gas and electricity.
  - Maintain natural gas competitiveness versus electricity and other fuels.
  - Facilitate regional economic development.

“B.C. needs secure, reliable energy to help revitalize the provincial economy.”

(Excerpt from “Energy for our Future: A Plan for BC”, the BC Provincial Government’s energy policy released November 2002)

Terasen Gas Outlook

Demand Outlook

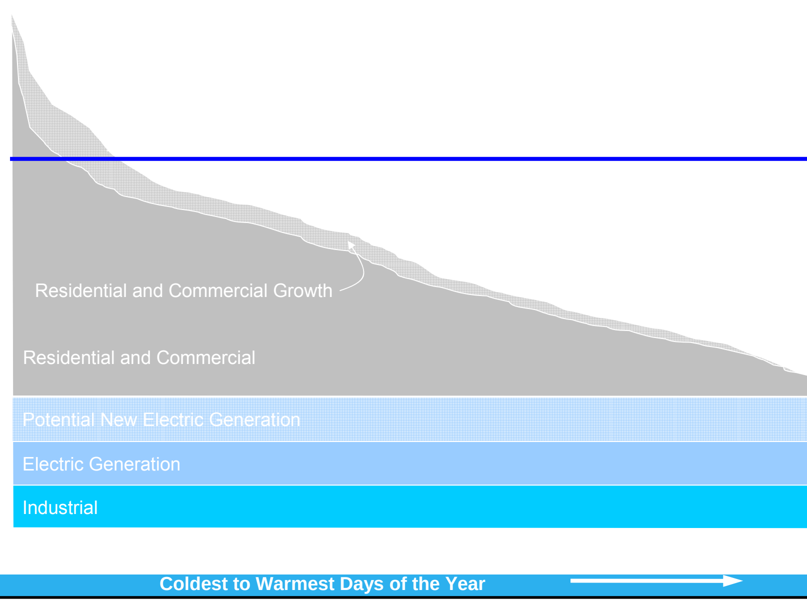
- TGVI's core market demand associated with residential and commercial customers continue to grow at rates greater than the Lower Mainland.
- Industrial demand associated with seven large pulp and paper mills is expected to hold steady.
- BC Hydro needs new dependable generation capacity on Vancouver Island to meet 2007/08 retirement of high voltage direct current (HVDC) cable system.

Capacity Outlook

- TGVI's system currently operates at full capacity during periods of high demand and relies on industrial curtailment to meet peak periods.
- New system facilities are required to meet the growing demand of the core market and the increased demand associated with the existing Island Cogeneration Project (ICP) and any new generation facilities.

Future Requirements

Supply and Demand Balance



System Capacity Expansion Options

- Evaluation of alternatives to serve market under various demand growth scenarios.
- Main components available include:
  - Pipeline looping (twinning) through constrained areas
  - Additional compression to increase throughput
  - Natural gas storage facility to meet core winter load requirements
  - Load management options
- Portfolio evaluation supports the development of Liquefied Natural Gas (LNG) storage facility located on Vancouver Island across all demand scenarios.
- If new gas fired electric generation is developed as a result of BC Hydro's Call for Tender (CFT) process, additional pipe and compression facilities would also be required.

Vancouver Island LNG Storage Project

- Evaluation of LNG storage began in early 2003 as an alternative to the Georgia Strait Crossing (GSX) Pipeline proposal.
- Following stakeholder consultation a site in Mt Hayes area was selected.
- Environmental and socio-economic study has been completed.
- Regional approval from the Cowichan Valley Regional District.
- Project will proceed only if approved by the British Columbia Utilities Commission, and is supported by the Resource Plan.
- CPCN to be filed July 2004

Terasen has owned and operated the Tilbury LNG Storage Facility in Delta since 1970

B.C. Natural Gas Market Assessment

National Energy Board report released April 29, 2004

- Major conclusions impacting B.C.'s natural gas consumers:
  - Significant upside potential exists to increase gas supply from NE British Columbia and develop other provincial supply areas.
  - Growth in gas fired power generation and decrease in industrial demand in the Pacific Northwest means demand are more weather sensitive.
  - Small size of the British Columbia natural gas market and the lack of storage facility near the Lower Mainland limits market liquidity in comparison to other major market centers.
  - Additional storage facilities would assist in managing price volatility.

Conclusions

- **Natural Gas demand growth** continues on Vancouver Island / Sunshine Coast.
- TGVI's system is currently operating at full capacity and **new facilities are required.**
- Evaluation of alternatives indicates that a **liquefied natural gas storage facility is the next step** for customers.
- Additional gas requirements will be met with a combination of pipeline looping and compression expansion and load management resources.

http://gas1.terasen.com/terasen/sustainable.html

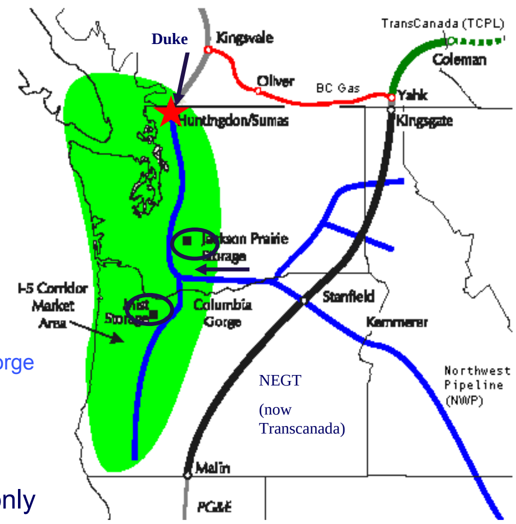
Regional Resource Assessment Overview

What is the 2004 RRA?

- Supply/Demand outlook for the I-5 Corridor Market.
- Design Day Demand, Annual/Seasonal Demand.
- All market sectors: Residential, Commercial, Industrial, Power Generation.
- Includes discussion of market risks:
  - Supply basin issues (Station 2 vs. AECO).
  - Impact of potential capacity outages.
- High Level, Qualitative analysis
  - Identifies and Assesses risk at a high level.
  - Does not include detailed hydraulic modeling or market price analysis.
- A communication tool to identify risk and promote discussion among regional stakeholders.

The I-5 Corridor Market

- I-5 Corridor Market
  - Western WA, Western OR, Southwestern BC.
  - Most gas arrives through Huntingdon/ Sumas
  - Demand Growth Driven by:
    - LDCs, BC Hydro, PNW Power Generators
  - Supply Resources
    - Duke T-South
    - NWP through the Columbia Gorge
    - JPS and Mist storage
    - Peaking and Curtailment

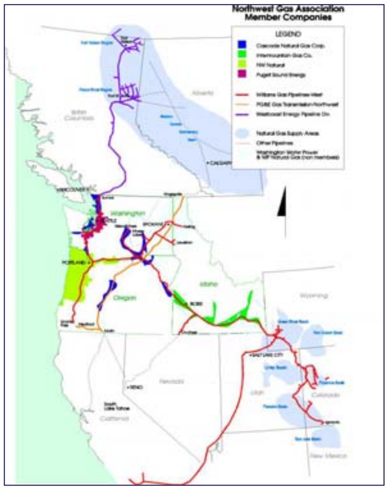


RRA Focused on the I-5 Corridor only

Purpose

- Audience for 2004 RRP
  - I-5 Corridor gas and electricity distributors
  - Regulators and Politicians
- Provide an Outlook for Regional Supply/Demand Balance in the I-5 Corridor
  - Deal with Risks from a Utility Perspective
- Develop Consensus among regional players as to when new infrastructure is needed.
  - Working cooperatively with the Northwest Gas Association
  - Encourage a long-term view, look upstream of Sumas
  - Promote dialogue and transparency
  - Do not recommend specific Projects – identify the need and let the market decide.

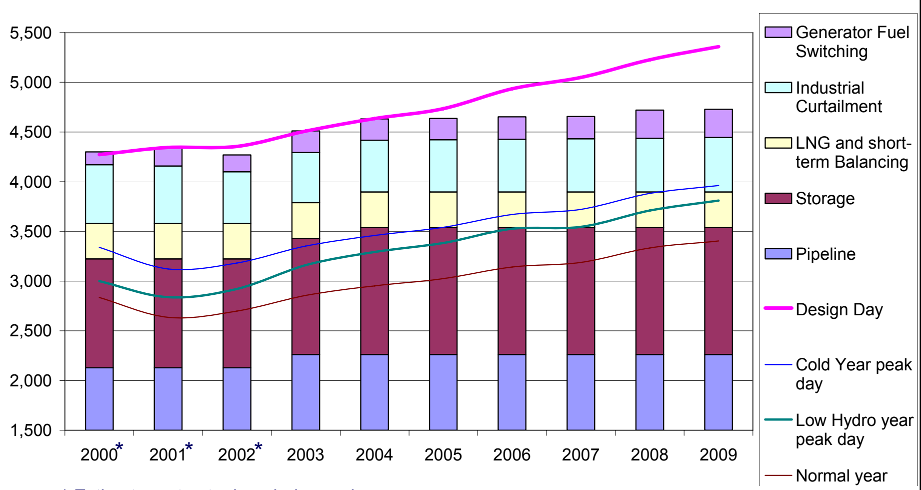
Objectives Common to Stakeholders and Load-Serving Entities



<u>Common Objectives:</u>

- Least Delivered Cost
  - Design Day
  - Integrated Planning
  - Well-Functioning Wholesale Market
- No Regional Price Disadvantage
  - Viability of Regional Economy
  - Level Playing Field
  - Avoid Flight of Industry

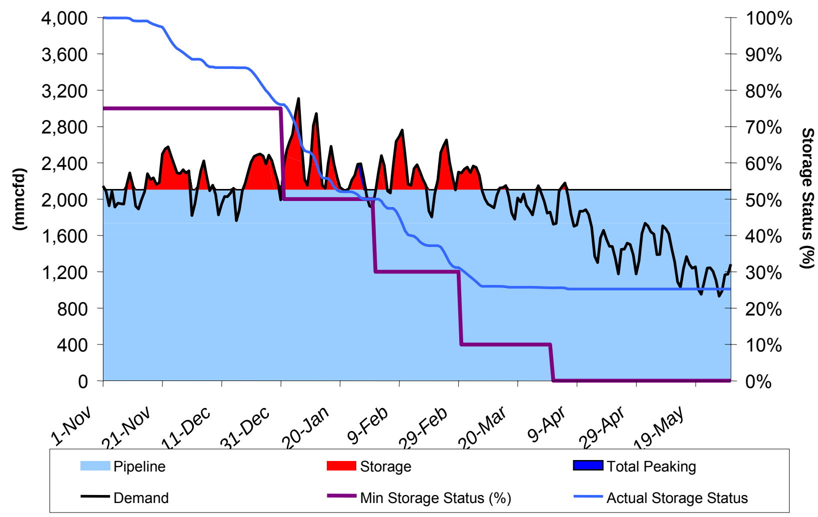
Capacity/Demand Balance Scenarios



* Estimate, not actual peak demand

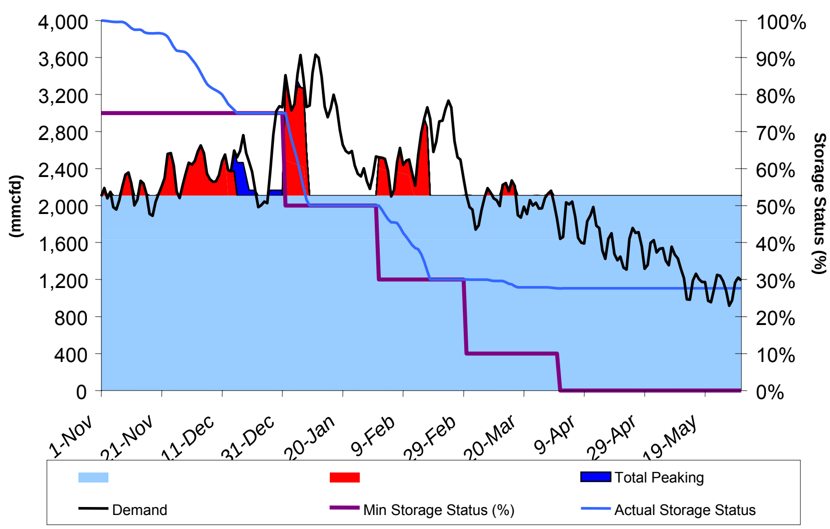
2007 Annual Resource Balance – Normal Year

Terasen Gas

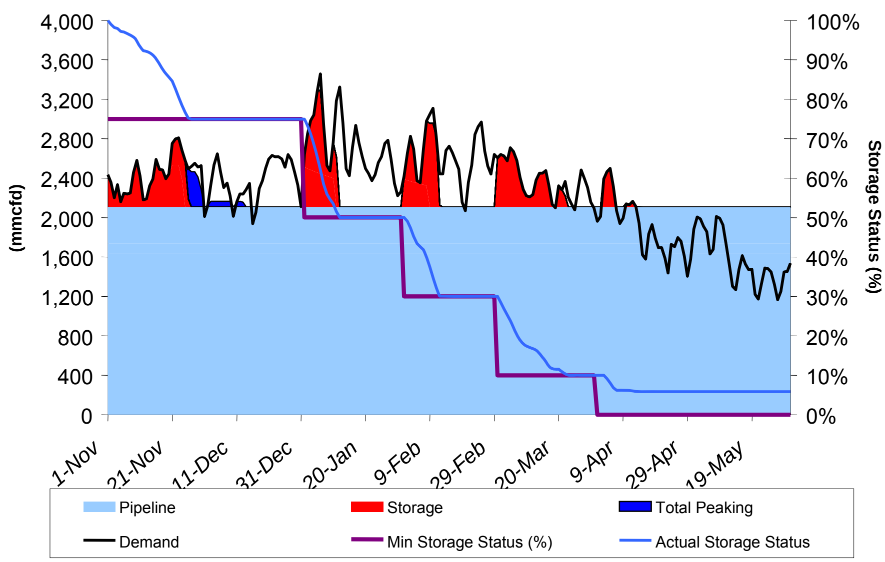


2007 Annual Resource Balance – Cold Year

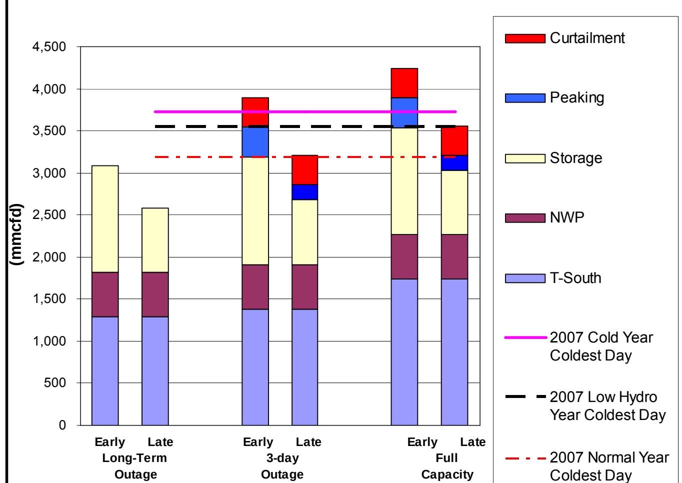
Terasen Gas



2007 Annual Resource Balance – Low Hydro



Capacity Interruptions



- Plant interruptions used as a Proxy
  - Extended complete interruption
  - Partial 3-day outage
- 2007 Peak demand could not be met under the extended interruption scenario.
- Partial interruption in late winter: Peak demand could not be met under low hydro, Moderately Cold conditions.

Future Capacity Options

Terasen Gas

Pipelines

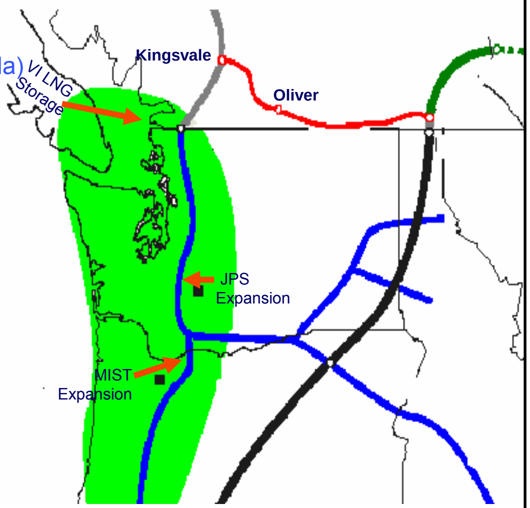
- Inland Pacific Connector (Terasen)
- Puget Sound Express (TransCanada)
- Washington Lateral (GTN)
- Oregon Lateral (GTN / Williams)
- NWP Gorge Expansion (Williams)
- T-South Expansion (Duke)

LNG Imports

- Prince Rupert
- Kitimat
- Wash/Oregon

Storage Projects

- Jackson Prairie Expansion (Williams/Avista/Puget)
- Mist Expansion (NW Natural)
- VI Island LNG Storage (Terasen)



Terasen Gas

Questions?