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October 18, 2010

Regulatory Affairs Correspondence
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British Columbia Public Interest Advocacy Centre
Suite 209 – 1090 West Pender Street
Vancouver, BC
V6E 2N7

Attention: Mr. James L. Quail, Executive Director

Dear Mr. Quail:

Re: Terasen Utilities (comprised of Terasen Gas Inc., Terasen Gas (Vancouver Island) Inc. and Terasen Gas (Whistler) Inc.) 2010 Long Term Resource Plan

Response to the British Columbia Public Interest Advocacy Centre on behalf of the British Columbia Old Age Pensioners Organization et al (“BCOAPO”) Information Request (“IR”) No. 1

On July 15, 2010, Terasen Gas filed the Application as referenced above. In accordance with Commission Order No. G-146-10 setting out the Regulatory Timetable for the review of the Application, the Terasen Utilities respectfully submit the attached response to BCOAPO IR No. 1.

If there are any questions regarding the attached, please contact the undersigned or Ken Ross at (604) 576-7343 or ken.ross@terasengas.com for further information.

Yours very truly,

on behalf of the TERASEN UTILITIES

Original signed:

Diane Roy

Attachment

cc (e-mail only): Erica Hamilton, Commission Secretary
Registered Parties



Terasen Gas Inc., Terasen Gas (Vancouver Island) Inc. Terasen Gas (Whistler) Inc. [collectively (the "Terasen Utilities" or the "Utilities")] 2010 Long Term Resource Plan (the "2010 LTRP" or the "Application")	Submission Date: October 18, 2010
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1.0 Reference: Exhibit B-1, Page E-4, Cost Recovery of Alternative Energy Projects

Preamble: The referenced page contains the following passage:

"The British Columbia Utilities Commission ("the Commission") approved this initiative as part of a Negotiated Settlement Agreement with respect to TGI's 2010-11 Revenue Requirement Application, allowing TGI to pursue and develop alternative energy projects with the proviso that all associated costs are paid by alternative energy customers and not by TGI's natural gas customers."

- 1.1 Please indicate whether TU believe that this proviso effectively applies to all TU. If not, please explain why not.

Response:

The statement within Clause 13 that was included in TGI's 2010-2011 Revenue Requirement Application ("RRA") Negotiated Settlement Agreement ("NSA") that "The Parties agree that the costs incurred by TGI to provide AES should not be recovered as part of natural gas service rates, and visa versa" applies to natural gas customers in territories served by TGI, TGVI and TGW. It is the Terasen Utilities' intention and it is approved in the NSA that alternative energy projects will be carried out under TGI's name whether the development is in TGI's service territory or TGVI's or TGW's.

- 1.2 Please confirm that "the proviso that all associated costs are paid by alternative energy customers and not by TGI's natural gas customers" excludes the possibility of charging TGI's natural gas customers in any way for the option of participating in the alternative energy projects, at present and in the future. If unable to so confirm, please explain.

Response:

The terms of TGI's 2010-2011 NSA mean that natural gas customers will not be charged for the option of being able to participate in alternative energy projects for the duration of the RRA two-year settlement period. However, the Terasen Utilities does not know at this point in time how the lines of business for natural gas and alternative energy will develop over time, and thus TGI cannot confirm that this will always be the case. The appropriate sharing of costs, rate structures and other charges for energy service will develop over time as this future unfolds and in consideration of customers' interests. Natural gas customers will benefit over time as the alternative energy line of business grows since the alternative energy line of business will



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absorb a growing portion of overheads and common corporate costs. The Terasen Utilities expect generally that this evolution will be subject to the Commission's oversight and that stakeholders will therefore be able to represent their views and interests at the appropriate time(s).

- 1.3 Please confirm that the proviso excludes the possibility of assigning any costs, incremental or otherwise, to any customers who have not chosen to participate in any of the alternative energy projects. If unable to so confirm, please explain.

Response:

This is true for the duration of the NSA with respect to the 2010-2011 RRA, which provides in part that "The Parties agree that the costs incurred by TGI to provide AES should not be recovered as part of natural gas service rates, and vice versa." Please see the response to BCOAPO IR 1.1.2.

- 1.4 Please explain how TU propose to recover all associated costs consistent with the proviso.

Response:

Section 13 of the TGI 2010-2011 RRA NSA sets out how the costs associated with Alternative Energy Solutions will be captured in a deferral account called the "New Energy Solutions Deferral Account". The rates and charges for alternative energy customers will be set in a manner that recovers over time the accumulated balance in the New Energy Solutions Deferral Account at the end of 2011. TGI has not yet established the final methodology or time period for recovery of the New Energy Solutions Deferral Account balance. These matters will be subject to a future Commission review. Stakeholders will therefore have the opportunity to participate in the regulatory process to review the Company's proposals in these matters.



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2.0 Reference: BCUC IR 1.1.1

- 2.1 Is it TU's opinion that the Commission has the option of requiring certain adjustments, revisions, or caveats to the Application as filed as a condition of approval if the Commission finds such adjustments, revisions, or caveats to be in the public interest?

Response:

Section 44.1 of the *Utilities Commission Act* does not provide the Commission with jurisdiction to impose conditions on the acceptance of a long-term resource plan. The Commission Decision dated July 27, 2009 on BC Hydro's Application for Approval of the 2008 Long Term Acquisition Plan (the "2008 LTAP Decision") considered the Commission's jurisdiction under section 44.1 and states (at page 19):

In essence, the Commission must accept an LTAP if the Commission determines that the carrying out of the plan would be in the public interest, or reject the LTAP either in whole or in part. The Commission may not amend or otherwise approve anything different than what has been applied for.

The same reasoning is applicable to the Commission's options when considering the Terasen Utilities 2010 LTRP.



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3.0 Reference: BCUC IR1.2.1, TES and TU

- 3.1 Do the TU envision any issues or perceived issues with respect to cross-subsidization or affiliate relations with respect to TES and the TU under the proposal, going forward? If not, please explain why not. If so, what are the safeguards or mitigation efforts proposed to address these issues.

Response:

The Terasen Utilities does not envision any issues with respect to cross-subsidization or affiliate relations with respect to TES going forward.

As outlined in the TGI 2010-2011 RRA (please refer to pages 496 – 499 for details), the existing Code of Conduct and Transfer Pricing Policy which serves to govern relationships between Terasen Gas regulated utilities and TES continues to provide appropriate direction and guidelines.

The Terasen Utilities believes that the processes in place and the compliance review conducted annually by its Internal Audit group provide a sufficient level of assurance to ratepayers, stakeholders and the Commission.



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4.0 Reference: BCUC IR 1.7.0, Responsiveness to the Carbon Tax

- 4.1 Please provide the TU's assumptions regarding (i) the incidence of the carbon tax on end users, (ii) the long-term and short-term demand elasticities underpinning the estimated tax incidence, (iii) the long-term and short-term supply elasticities underpinning the estimated tax incidence. Where there are differences by utility, region, or rate class for these estimates please provide disaggregated estimates requested in (i), (ii), or (iii).

Response:

The Terasen Utilities recognizes that the carbon tax is one of many variables that impact the demand for natural gas. As stated in TGI's response to BCUC IR 2.31.4 in TGI's 2010-2011 RRA, although it is recognized that customers do change their short-term behaviour when faced with sudden and significant cost increases, long-term changes in use per customer rates for mature gas utilities are more a function of advances in heating technology and home construction techniques, both of which improve on an ongoing basis regardless of natural gas costs. Sudden increases in natural gas prices may accelerate the decision to purchase more efficient equipment, but once that purchase has been made the impact on consumption (related to the new equipment) is permanent regardless of whether prices later moderate.

Since the implementation of the carbon tax in July 2008, the impact of the carbon tax has been somewhat mitigated by cost of gas adjustments that have been made as part of Terasen's quarterly rate filing applications, with the exception of 2008. In 2008, the commodity toll increased at the same time the carbon tax was introduced. This likely added to the decline in average residential use per customer experienced that year. For 2009 and 2010, the month of July saw a decrease in the commodity rate that was greater than the increase in the carbon tax, which resulted in a reduction in the variable portion on the customer's bill. For example, in the Lower Mainland region, the commodity rate increased by \$1.493 per GJ in July 2008 while at the same time the carbon tax was being introduced at a rate of \$0.499 per GJ, which lead to an overall increase of \$1.992 per GJ to Terasen Gas' customers. In July 2009, the commodity rate decreased by \$1.009 per GJ, while the carbon tax increased by \$0.249 per GJ, which led to an overall decrease of \$0.76 per GJ. In July 2010, the commodity rates decreased again by \$0.633 per GJ while the carbon tax increased by \$0.249 per GJ leading to an overall decrease of \$0.384 per GJ.

Due to the fact that there are other factors influencing the price customers pay for natural gas service as described above, the Terasen Utilities does not consider price elasticity explicitly in their demand forecast.



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- 4.2 Please provide all of the estimated equations, parameter estimates, and summary statistics (t-statistics, F-statistics, R², adjusted R², number of observations, etc.) supporting the responses to 4.1 above.

Response:

Please refer to the response to BCOAPO IR1.4.1.

- 4.3 Please justify the TU retaining any equation variables for which the associated estimated parameters either (i) differ from standard economic theory in terms of sign, or (ii) are not significantly different from zero at the 95% confidence level.

Response:

Please refer to the response to BCOAPO IR 1.4.1.



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5.0 Reference: Exhibit B-1, Chapter 4, Section 4.2, and Appendices B-2 and B-3, Natural Gas Demand Forecast

- 5.1 For each region, utility, and rate class for which estimated equations were used to forecast demand, please provide the equations estimated, parameter estimates, and summary statistics (t-statistics, F-statistics, R2, adjusted R2, number of observations, etc.,).

Response:

The table below illustrates the results of the trending analyses performed, together with the number of observations used and resulting R-square statistic. The results of the models used are illustrated by region with the corresponding parameter estimates and summary statistics.

Inputs to the long term demand forecast include the analysis of historical data and trends from the Terasen Utilities' own systems, as well as many external factors such as population growth, retrofit activities, and natural gas competitiveness. A review of various economic reports and data was conducted as well as holding informal discussions with EEC Sales staff in order to support and validate the trends going forward. The analysis of historical data was carried out by region in order to establish historical trends in the average customer usage, and in most cases the most recent three-year trend was considered most appropriate for use in developing the demand forecast.

For TGVI, due to a significant number of commercial customers being reclassified (as discussed in the TGVI 2010-2011 RRA RDA filed to the BCUC on June 29, 2009), establishing appropriate historical trends in the average use per customer was challenging. As such, the trends for those customer classes were developed based on the estimated impact of reclassifying those customers as opposed to trending the data.



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TGI Rate 1	Service Area	Annual Change	R1	Number of Observations
	LML	-1.8	R ² = 0.801	36
	INL	-2.0	R ² = 0.8847	36
	COL	-2.0	R ² = 0.8568	36
	FTN	-1.2	R ² = 0.5534	36
TGVI Rate 1	TGVI	-2.0	R ² = 0.9231	36
TGW Rate 1	TGW	0.0	R ² = 0.0013	36
TGI Rate 2	Sector	Annual Change	R2	Number of Observations
	Apartment/Condo	-6.1	R ² = 0.524	36
	Wholesale/Retail	6.7	R ² = 0.5735	36
	Restaurant	1.1	R ² = 0.0037	36
	Commercial/Office Building	-6.9	R ² = 0.4753	36
	Education	-17.2	R ² = 0.334	36
	others	-4.4	R ² = 0.3015	36
TGI Rate 3	Sector	Annual Change	R2	Number of Observations
	Apartment/Condo	-59.2	R ² = 0.2798	36
	Wholesale/Retail	-50.1	R ² = 0.7645	36
	Restaurant	-10.9	R ² = 0.0255	36
	Commercial/Office Building	-97.7	R ² = 0.4373	36
	Health	-122.9	R ² = 0.5215	36
	Others	-119.4	R ² = 0.8046	36
TGI Rate 23	Sector	Annual Change	R2	Number of Observations
	Apartment/Condo	-75.7	R ² = 0.5774	36
	Education	23.2	R ² = 0.0791	36
	Greenhouse	258.9	R ² = 0.0828	36
	Wholesale/Retail	-130.0	R ² = 0.4831	36
	Government Building	137.8	R ² = 0.8684	36
	others	150.6	R ² = 0.7394	36
TGVI	Rate Class	Annual Change	R2	Number of Observations
	SCS1	6.4	N/A	24
	SCS2*	0.0	N/A	
	LCS1*	0.0	N/A	
	LCS2	50.8	N/A	24
	AGS	-1.9	R ² = 0.8987	36
	LCS3	-882.8	N/A	24
	HLF**	0.0	N/A	
	ILF**	0.0	N/A	
TGW	Rate Class	Annual Change	R2	Number of Observations
	SGS1/2 Com	0.3	R ² = 0.0933	36
	LGS1-Com	0.3	R ² = 0.7791	36
	LGS2-Com	-7.1	R ² = 0.8242	36
	LGS3-Com	-24.9	R ² = 0.6012	36

* Due to reclassification of Customers

** used 2009 actual UPC due to small number of customers (HLF = 118 Customers and ILF = 98 Customers)

We assumed that the most recent UPC will hold over the near-term, unless more information is available for analysis purposes.



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- 5.2 Please justify the TU retaining any equation variables for which the associated estimated parameters either (i) differ from standard economic theory in terms of sign, or (ii) are not significantly different from zero at the 95% confidence level.

Response:

Although the Terasen Utilities typically would not retain equation variables where the associated parameters differ from economic theory in terms of sign, there may be instances where equation variables are retained when statistically they are not significantly different from zero at the 95% confidence level. Although some of the R square values are lower than what is generally acceptable, in absence of better information and the fact that the resulting trends have been validated through researching the available economic data and holding discussions with internal managers, the Terasen Utilities concludes the estimated trends are reasonable.



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6.0 Reference: Exhibit B-1, Appendix B-4, pp 3-4, Design Day Forecast Methodology

6.1 For the estimated spline model, please provide the parameter estimates and summary statistics for each region/utility.

Response:

The parameter estimates and summary statistics for each region and utility are illustrated in the following table.

Region	GasYear	Regression Parameters				R-Square Value	Peak UPC
		GJ's Per Customer					
		Intercept	spline1	spline2	spline3		
COL	2006	0.104	(0.001)	0.007	0.027	97%	1.3178
COL	2007	0.096	(0.001)	0.009	0.025	96%	1.2545
COL	2008	0.092	(0.002)	0.007	0.025	96%	1.2227
FTN	2006	0.124	(0.001)	0.006	0.036	99%	2.3638
FTN	2007	0.115	(0.007)	0.009	0.035	99%	2.3186
FTN	2008	0.121	(0.006)	0.009	0.034	98%	2.2721
INL	2006	0.104	(0.003)	0.003	0.031	98%	1.3402
INL	2007	0.105	(0.003)	0.002	0.030	98%	1.2794
INL	2008	0.099	(0.003)	0.002	0.029	98%	1.2501
LML	2006	0.138	0.002	0.023	0.053	96%	1.6221
LML	2007	0.144	(0.002)	0.019	0.052	96%	1.5910
LML	2008	0.139	(0.002)	0.019	0.050	95%	1.5189
TGVI	2006	0.144	0.001	0.020	0.040	95%	1.1903
TGVI	2007	0.142	(0.001)	0.016	0.038	94%	1.1159
TGVI	2008	0.127	0.001	0.017	0.037	95%	1.0791

As the above table illustrates, the spline models used by the Terasen Utilities provide a reasonable estimation of design day demand. The R-square values indicate a very high level of goodness of fit, ranging from 94% to 99%, and the p-values (as illustrated in the application) further support this conclusion.

Due to a lack of daily sendout data, the design day demand for TGW is estimated in a slightly different manner than for the other utilities. For TGW, an analysis of monthly billing data leads to an estimated peak use per customer for each customer class, and then through applying the forecast customer accounts the design day demand is derived.



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7.0 Reference: Exhibit B-1, Chapter 5, page 119 and BCUC IR 1.34.4, NGV Programs

7.1 Prior to preparing the Application, did the TU review and analyze the historical experiences of Ontario utilities with respect to NGV programs? If so, please explain how the analyses informed the instant proposal. If not, please explain why not.

Response:

Yes, in developing its NGV strategies and plans, the Terasen Utilities have considered the experiences in Ontario and a variety of other jurisdictions to understand the factors that have led to success or failure within a variety of jurisdictions. The analysis of the history in Ontario, along with the lessons learned in other jurisdictions, was instructive in confirming our assessment of the drivers of NGV success. Specifically, the analysis confirmed that the NGV market adoption is driven by the following success factors:

- Availability of commercially proven NGVs,
- A strong fuel pricing advantage,
- Supporting government policy,
- Suitable fuelling infrastructure to support the target fleets, and
- Availability of incentives to help early adopters with the incremental initial capital costs of NGV.

The Terasen Utilities also reviewed the experience of other jurisdictions around the world and in North America and have summarized our analysis below. This analysis of the experience in other regions has led to the present NGV strategy including the following:

- Focus on heavy duty vehicle markets where proven vehicle offerings are available
- Clear identification and communication of the operating cost advantages of natural gas
- Collaboration with Provincial and Federal agencies re policy and support initiatives
- Targeting return home fleets where fuelling infrastructure can be provided economically
- Development of specific incentives to help offset the incremental initial capital cost of vehicles

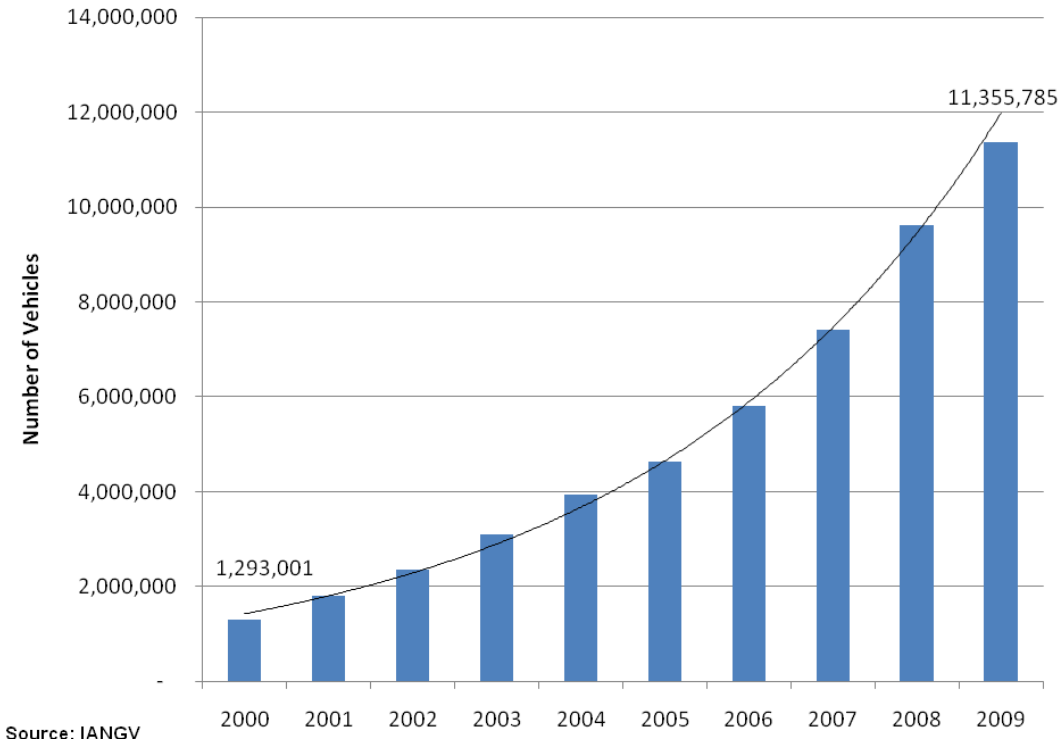
All of these areas will be discussed in more depth in the upcoming Transportation Fuelling Service application, to be filed to the Commission by the end of 2010.



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The following discussion summarizes our review of NGV market experience in other jurisdictions.

Our analysis started at the world level. As shown in the figure below, in the past decade NGV use has grown from 1.3 million vehicles to over 11 million vehicles.



On average, worldwide growth has exceeded 27% per year for the past nine years. Over the next 10 years, the International Association for Natural Gas Vehicles (“IANGV”) is projecting a six-fold increase, to reach a target of 65 million NGVs on the road globally by 2020.¹

The Terasen Utilities also considered various specific jurisdictions including the United States with a specific focus on California and Utah, Europe with a specific focus on Italy and Canada with a specific focus on BC and Ontario. A summary of some findings are set out below.

With Respect to Europe:

Historic growth can be attributed to a number of factors, including the availability of original equipment manufacturer (“OEM”) vehicles, NGV price competitiveness, along with progressive government policy and incentives. In addition, European environmental considerations with respect to GHG emission reductions are notably higher than other parts of the world.

¹ <http://www.iangv.org/component/content/article/1/145-alternative-fuels-natural-gas-vehicles-cng-lng.html>



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OEM NGVs in Europe are abundant, and include those produced by manufacturers such as Fiat, Mercedes Volkswagen, and Volvo. The IANGV currently lists over 80 vehicle models in their directory available in European countries.² While the directory cites mostly passenger and light to medium duty models, heavy duty engine technology from Cummins-Westport and Westport Innovations are increasingly being adopted with over 25,000 engine deliveries worldwide³ In general, vehicles sold in Europe generally attract a 10% premium over their diesel and gasoline counterparts due to their lower cost of fuelling.⁴

Despite high natural gas prices, the fuel price differential in Europe is quite significant. Gasoline sells at premium prices greater than \$2 per litre, compared to NGV prices around \$1 per litre-equivalent.⁵

Strong government policy has driven market activity in recent years. The European Union ("EU") has committed to reducing GHGs emissions by 25 - 40% until 2020, and by at least 80% by 2050, from 1990 levels. Emissions from the transportation sector represent 20% of total emissions. The EU expects to achieve these targets through mandatory tailpipe emission limits and fuel content standards, which effectively favour NGV policy.⁶

With Respect to the US:

Industry coalition NGV America believes the North American market is at a tipping point of rapid future growth.⁷ In general, the Utilities believe the principle reasons for optimism are:

- A number of new light duty OEM offerings have been announced in North America by GM, Ford and Honda.⁸ Heavy duty offerings from Peterbilt, Mack, New Flyer, and others have also experienced significant growth. In addition, these new vehicle offerings bring improved performance and reliability over previous models.
- The price differential in the U.S. and Canada has widened in recent years. This is due to an abundance of new found unconventional natural gas reserves, which have alleviated supply concerns.⁹

² <http://www.iangv.org/tools-resources/oem-vehicle-directory/Vehicles-By-Location/Europe.html>

³ <http://www.westport.com/products/md.php>

⁴ <http://www.oilweek.com/articles.asp?ID=732>

⁵ <http://www.ngvaeurope.eu/european-ngv-statistics>

⁶ <http://www.ngvaeurope.eu/eu-policy-on-alternativerenewable-fuels-and-ghg-emissions>

⁷ <http://www.ngvglobal.com/us-ngv-industry-upbeat-at-ngvamerica-summit-conference-0816>

⁸ <http://blog.caranddriver.com/ford-adds-cng-and-lpg-options-for-f-450-f-550/>

<http://www.ngvglobal.com/gm-update-on-cng-van-production-0713>

<http://automobiles.honda.com/civic-gx/>

⁹ Potential Gas Committee June 18, 2009 news release

<http://www.mines.edu/Potential-Gas-Committee-reports-unprecedented-increase-in-magnitude-of-U.S.-natural-gas-resource-base>



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- Increased government support for NGV initiatives in the form of proposed federal legislation, incentives, grants, and tax credits.
- Government support for GHG emission reductions that result from the adoption of alternative fuels like CNG and LNG

With respect to Canada:

The NGV market in Canada is comprised of 9,500 light duty cars and commercial vehicles, as well as 300 heavy duty vehicles and 150 urban transit buses.¹⁰ The majority of these vehicles are concentrated within BC and Ontario.

Ontario:

For over twenty years, Enbridge Gas Distribution ("Enbridge") has been an NGV leader and advocate in the Ontario transportation market.¹¹ Regulated by the Ontario Energy Board, Enbridge offers on-site refuelling station solutions for commercial vehicle operators. Enbridge has shifted its focus from passenger and light duty NGVs to commercial, return-to-base applications like urban transit buses, refuse trucks, and heavy duty trucks. This was largely due to a lack of OEM vehicle options in the light duty segment, as well as the advancement of passenger and light duty electric vehicle policies. As a result, public CNG fuelling infrastructure has declined rapidly in recent years from as many as 72 stations to just 9 in 2010.¹²

¹⁰ "Study of Opportunities for Natural Gas in the Transportation Sector", Marbek Resources Ltd, March 2010.

¹¹ <http://www.ngvontario.com/>

¹² Atco Gas Canada Wide Station List last accessed September 2, 2010

http://www.atcogas.com/About_NG/NGV/NG_Vehicles.asp, <http://www.cngprices.com>