PROPANE MARKET STUDY
SUMMARY REPORT

Prepared For

Propane Gas Association of Canada

Prepared By

Purvin & Gertz Inc.

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London ~ Los Angeles ~ Moscow ~ Singapore

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Gerald Goobie, P.Eng.

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I. EXECUTIVE SUMMARY

Purvin & Gertz was engaged by the Propane Gas Association of Canada (PGAC) to prepare an analysis of Canadian propane markets including supply, demand and economic indicators as well as an outlook for propane supply and demand to 2015. This report summarizes the results of that analysis. It is important to acknowledge that this study has an unavoidable degree of uncertainty due to inconsistencies in the publicly available data and industry reports. Purvin & Gertz' estimates of the supply of and demand for propane in Canada are shown in Table I-1.

TABLE I-1
CANADIAN PROPANE SUPPLY AND DEMAND
(Thousand Cubic Metres)

	2003	2004	2005	2006	2007	2008
Supply						
Gas Plant	10,049.6	9,845.0	9,664.0	10,245.3	9,996.7	8,880.1
Refinery	2,006.5	1,570.9	1,400.4	1,295.9	1,360.7	1,266.8
Imports	119.5	124.6	92.4	121.5	31.6	23.7
Inventory Adjustment	-122.7	1,047.1	554.4	-450.9	276.5	747.1
Total	**12,052.9**	**12,587.6**	**11,711.2**	**11,211.9**	**11,665.5**	**10,917.8**
Demand						
Domestic - wholesale	1,191.0	1,243.5	2,062.9	2,051.4	2,247.9	2,080.7
Domestic - retail	2,413.7	2,558.4	2,216.4	2,333.7	2,628.4	2,432.9
Exports	8,448.2	8,785.7	7,431.9	6,826.8	6,789.2	6,404.1
Total	**12,052.9**	**12,587.6**	**11,711.2**	**11,211.9**	**11,665.5**	**10,917.8**

Purvin & Gertz estimates that the total value of the Canadian propane industry rose to approximately $4.9 billion in 2007 but fell back to $3.8 billion in 2008. With an overall industry multiplier of approximately 2.5 the total economic value of the propane industry in Canada was approximately $12.2 billion in 2007 and $9.9 billion in 2008.

Purvin & Gertz estimates that the total direct employment in the propane industry in Canada is approximately 8,200 and the total indirect employment in the propane industry in Canada is approximately 20,000.

Purvin & Gertz estimates that the total payments of royalties, fees, income and other taxes was approximately $870 million in 2007 and $911 million in 2008.

Purvin & Gertz forecasts propane supply from natural gas processing will decline with natural gas production over the next several years while refinery supply will increase slowly. Propane demand should decline in 2009 but should start to increase with economic growth in 2010 and beyond.

II. INTRODUCTION

DISCLAIMER

Purvin & Gertz was engaged by the Propane Gas Association of Canada (PGAC) to provide an update to Purvin & Gertz' Propane Market Study report which was prepared for the PGAC in April 2006 (C-2568). The report is an analysis of the Canadian Propane market. The data in the report will be used in communications prepared by the PGAC for the benefit of members.

This report has been prepared for the sole benefit of the client. Neither the report nor any part of the report shall be provided to third parties without the written consent of Purvin & Gertz. Any third party in possession of the report may not rely upon its conclusions without the written consent of Purvin & Gertz. Possession of the report does not carry with it the right of publication.

Some of the information on which this report is based has been provided by others including the client. Purvin & Gertz has utilized such information without verification unless specifically noted otherwise. Purvin & Gertz accepts no liability for errors or inaccuracies in information provided by others.

Purvin & Gertz conducted this analysis and prepared this report utilizing reasonable care and skill in applying methods of analysis consistent with normal industry practice. All results are based on information available at the time of review. Changes in factors upon which the review is based could affect the results. Forecasts are inherently uncertain because of events or combinations of events that cannot reasonably be foreseen including the actions of government, individuals, third parties and competitors. **NO IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE SHALL APPLY.**

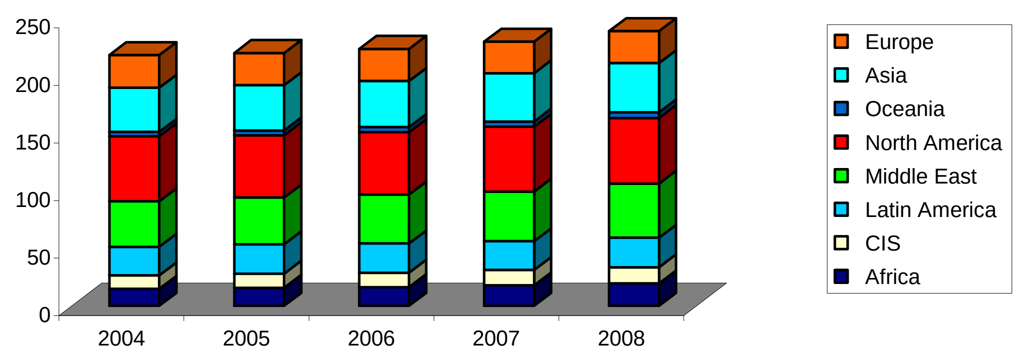
Historical supply and disposition numbers in this report are based on a variety of sources including statistics published by the National Energy Board (NEB), Natural Resources Canada (NRCan), Statistics Canada, the Alberta Energy and Utilities Board (AEUB), the British Columbia Department of Energy and Mines, the Saskatchewan Department of Mineral Resources, industry surveys and other sources.

III. WORLD AND NORTH AMERICAN ENERGY CONSUMPTION

Throughout much of the world, propane is produced and consumed as part of a Liquefied Petroleum Gas (LPG) mixture consisting primarily of propane and butane. The international LPG industry has expanded rapidly over the past two decades and has undergone many profound changes. New markets for LPG have emerged in many locations, and LPG consumption is increasing in virtually every region of the world.

Worldwide LPG supply has been growing steadily in recent years especially in the Middle East, Asia and Africa. The significant growth is largely due to investments in Liquefied Natural Gas (LNG), refining and petrochemical projects in these regions. Figure III–1 illustrates the supply growth.

FIGURE III-1
WORLD LPG SUPPLY
Million Tonnes

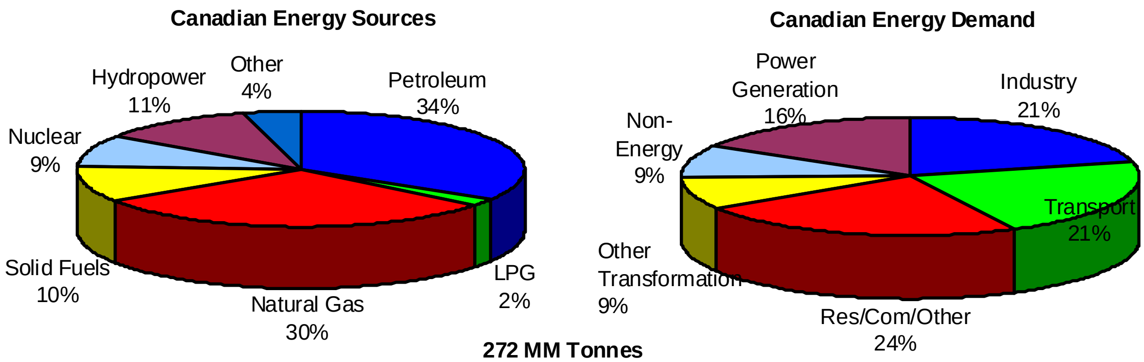


Utilization of LPG as fuel in residential and commercial markets has been rising fairly rapidly in many developing countries as access to LPG is expanded and markets are liberalized. The residential/commercial sector demand tends to expand with population and GDP growth in these developing markets. It is likely that demand growth in the residential/commercial sector will slow with the economic slowdown in 2009. However, per capita LPG consumption in most developing regions remains substantially below consumption patterns in well-established markets such as Japan, North America and Western Europe. As economic growth recovers in developing economies, so should the growth of residential/commercial propane demand.

The petrochemical industry is also a large consumer of LPG as a feedstock primarily for ethylene and derivative production. The global petrochemical industry represents a key market for LPG, and the evolution of regional petrochemical industries and feedstock markets will continue to be a key driver in international LPG markets, especially in the Middle East.

Worldwide, propane is a relatively small component of the total energy supply spectrum. Purvin & Gertz' estimates of the distribution of Canadian energy sources and demands are illustrated in Figure III-5.

FIGURE III-5
CANADIAN ENERGY SOURCES AND DEMANDS (2008)



272 MM Tonnes Oil Equivalent

Statistics Canada data indicates that propane's share of total energy consumption in Canada was approximately 1.55% in 2007.

IV. PROPANE SUPPLY OVERVIEW

Canada is a large producer of natural gas. The vast majority of Canada's propane production results from natural gas processing. Therefore, the outlook for Canadian propane supply depends primarily on the outlook for natural gas production.

NATURAL GAS SUPPLY

In recent years, Canadian natural gas markets have been characterized by flat to declining production coupled with rising domestic demand. In the Western Canadian Sedimentary Basin (WCSB), natural gas directed drilling surged in the 2003 through 2006 period in response to higher demand and prices. Production remained relatively flat through the period of increased drilling activity indicating that high levels of drilling activity are required to maintain the productive capacity of the basin.

In the 2007/08 period gas directed drilling declined as a result of relatively weak prices and high costs. Gas production and exports declined in 2008. In the winter of 2008/09, gas directed drilling throughout North America declined sharply as a result of very weak natural gas prices and the worsening economic conditions. The weak price environment and drilling decline has continued through late 2009 and will inevitably have an impact on conventional gas production in both Western Canada and the lower 48 US states.

Considering these factors, Purvin & Gertz has significantly reduced its outlook for gas production in Western Canada. It is expected that drilling rates will increase slowly from the current depressed levels. However, Purvin & Gertz does not currently forecast that drilling rates will return to levels experienced in the 2003 to 2006 period. Unconventional gas production will increase but will be insufficient to overcome the conventional declines.

PROPANE SUPPLY AND INFRASTRUCTURE

There is a well-developed propane infrastructure in Canada. Propane supply is dominated by Alberta gas plant production, from which it is moved by truck, rail and pipeline throughout the province, across Canada, and for export to the United States. Significant volumes are also produced in Central and Eastern Canadian refineries. Propane demand is seen across all the provinces, with consumption dominated by conventional and industrial customers.

Canadian refinery propane production remains below 15 percent of total supply. Refinery LPG production excludes volumes which are utilized within the refinery to produce other products but are not recovered in segregated form for sale or storage. Total Propane supply for the years 2003 to 2008 is shown in Table IV-1.

TABLE IV-1
CANADIAN PROPANE SUPPLY AND DEMAND
(Thousand Cubic Metres)

	2003	2004	2005	2006	2007	2008
Supply						
Gas Plant	10,049.6	9,845.0	9,664.0	10,245.3	9,996.7	8,880.1
Refinery	2,006.5	1,570.9	1,400.4	1,295.9	1,360.7	1,266.8
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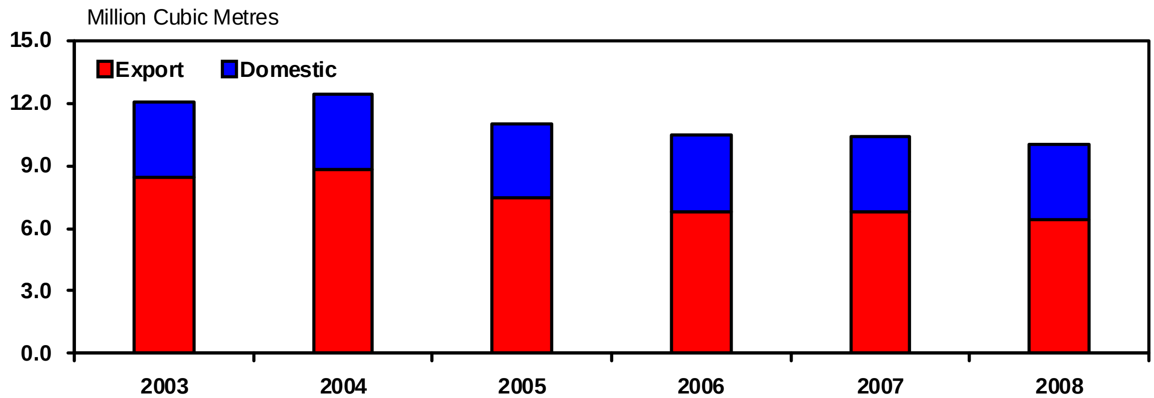
Exports	8,448.2	8,785.7	7,431.9	6,826.8	6,789.2	6,404.1
Total	**12,052.9**	**12,587.6**	**11,711.2**	**11,211.9**	**11,665.5**	**10,917.8**

V. PROPANE DEMAND

Propane demand is shown in Figures V-1 and V-2.

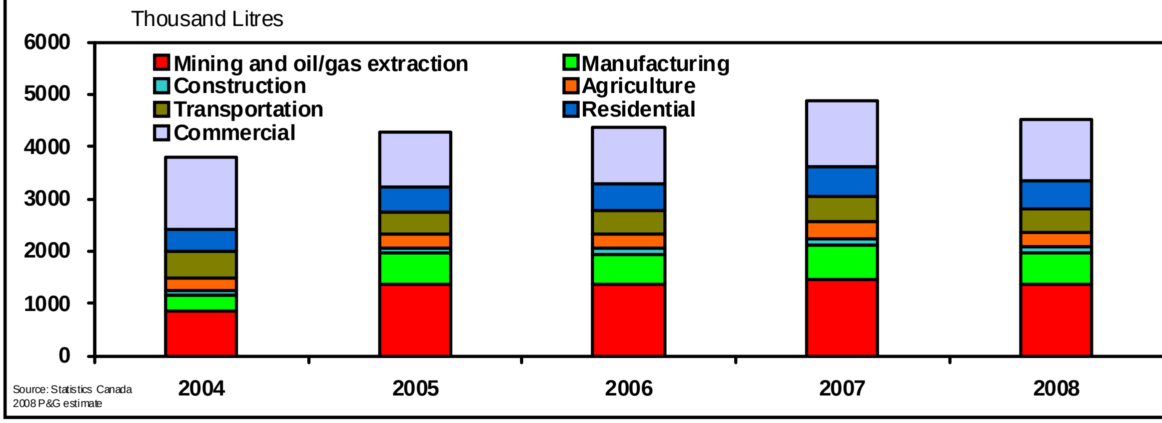
FIGURE V-1
TOTAL CANADIAN PROPANE DEMAND



EXPORTS

The largest demand segment by far is exports which account for approximately 3/5 of the overall market with virtually all of the exports destined for the United States. In the U.S., propane is consumed in a number of markets including space heating, crop drying, and as a petrochemical feedstock. The U.S. Gulf Coast centered petrochemical segment is one of the dominant influences on the market price for propane across North America.

FIGURE V-2
DOMESTIC CANADIAN PROPANE DEMAND BY SOURCE



Source: Statistics Canada
2008 P&G estimate

DOMESTIC MARKETS

A major use of propane in Canada is for residential and commercial consumption as a space heating, water heating and cooking fuel. Propane usage in the residential and commercial sector is primarily for consumers who are not on local natural gas distribution systems. The residential sector includes a large seasonal housing component. Compared to natural gas and electricity, propane retains a relatively small share of the home heating fuel market (approximately 6.5% in the U.S.). Propane has a higher market share in rural markets and a lower share in urban markets.

Industrial construction and manufacturing demand includes paving applications, construction heating, heavy industrial use, food processing, etc. Agricultural demand is primarily for crop drying and space heating.

ENGINE FUEL/AUTO PROPANE

Fleet vehicles currently represent the major market for propane as a transportation fuel, and propane is widely available at a broad network of retail outlets across the country. Some of the more significant applications are light-duty and heavy-duty trucks, taxicabs, buses, delivery and service vehicles. Forklifts and riding lawn mowers are also growing markets for propane as an internal combustion engine fuel.

It is difficult to find reliable data on auto propane demand in North America. Statistics Canada reports a little over 20 million total vehicles in Canada in 2008. Of those vehicles, almost 19 million were fuelled by gasoline, a little over 1 million were fuelled by diesel and

82,231 were fuelled by other fuels[1]. With rising fuel prices, it appears that Canadians are shifting their driving to smaller and more fuel efficient vehicles.

Superior Propane, who is Canada's largest propane retailer, continues to report declines in automotive propane sales. Sales dropped from 204 million litres in 2004 to 114 million litres in 2008[2] due to continued structural decline in the automotive market. In contrast, Statistics Canada data indicates steady growth of propane consumption in the Road Transport and Urban Transit category to 476 million litres in 2007[3].

It is reasonable to assume the majority of propane fuelled vehicles are high mileage fleet vehicles and that their annual fuel consumption would be relatively high. Purvin & Gertz estimates of the number of propane fuelled vehicles in Canada to be approximately 40,000. However, there remains a significant element of uncertainty in this estimate. Purvin & Gertz estimates that the total number of automotive refuelling stations in Canada is probably in the 2,200 to 2,500 range.

[1] Statistics Canada – 2008 Canadian Vehicle Survey. Coefficient of Variation is 15% to 20%. This figure is up from 69,450 in 2007.

[2] Superior Plus Income Fund 2008 Annual Report

[3] Road transport and urban transit - Establishments primarily engaged in truck transport services, in the operation of urban, interurban and rural transit systems, school buses, charter and sightseeing buses, taxis and limousine services to airports and stations. Card Lock (Key Lock) operations are also included here.

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VI. INDUSTRY ECONOMIC INDICATORS

Industrial activities cause direct impacts or first round effects on the economy from expenditures such as salaries as well as investments such as construction and capitalized goods and services. Indirect impacts are caused by the impact of these expenditures on other firms to satisfy this increase in demand. Consumer induced or spin-off impacts occur when consumer spending changes in response to an increase in income taken after taxes and savings. Purvin & Gertz estimates an overall propane industry multiplier of approximately 2.5.

Tables VI-1A and VI-2A present Purvin & Gertz' estimate of total economic impact by province.

TABLE VI-1A
CANADIAN PROPANE VALUE BY PROVINCE
(Dollars)

	2003	2004	2005	2006	2007	2008
British Columbia	191,247,307	191,785,647	183,762,027	188,369,345	221,315,472	179,096,941
Alberta	2,040,710,543	2,160,885,213	2,542,508,102	2,696,032,783	3,917,920,632	2,578,944,043
Saskatchewan	52,699,552	60,069,986	60,879,144	64,049,813	82,623,326	66,124,613
Manitoba	36,443,228	40,136,522	29,386,862	34,062,897	26,297,988	54,373,337
Ontario	231,855,953	267,243,994	265,629,622	334,372,871	234,694,320	511,598,304
Quebec	160,725,709	179,676,182	156,781,991	137,240,341	125,639,494	197,138,526
New Brunswick	38,313,119	47,150,266	27,041,719	33,219,983	32,443,338	32,237,297
Nova Scotia	159,521,519	151,629,127	186,026,687	260,746,117	191,492,556	178,289,867
Prince Edward Island	10,319,309	12,334,707	10,655,299	9,902,179	6,145,840	11,946,931
Newfoundland	12,066,822	11,862,822	11,419,909	17,874,920	14,145,005	27,681,218
Territories	13,649,777	15,413,328	11,597,631	12,492,510	14,827,197	16,686,853
Total Canada	**2,947,552,839**	**3,138,187,795**	**3,485,688,993**	**3,788,363,759**	**4,867,545,168**	**3,854,117,931**

TABLE VI-2A
CANADIAN PROPANE TOTAL ECONOMIC IMPACT BY PROVINCE
(Dollars)

	2003	2004	2005	2006	2007	2008
British Columbia	501,556,146	501,825,289	473,865,649	485,416,805	559,556,072	479,258,645
Alberta	4,950,889,462	5,256,567,193	6,219,723,688	6,591,867,817	9,719,083,408	6,330,556,160
Saskatchewan	136,766,463	156,787,597	156,305,450	166,448,350	211,176,751	174,809,070
Manitoba	101,520,484	111,657,708	81,091,116	94,236,776	69,006,227	152,340,280
Ontario	674,620,944	777,423,950	769,609,579	970,378,365	665,503,604	1,492,677,005
Quebec	451,044,591	503,603,674	438,473,102	384,253,946	341,600,704	555,796,106
New Brunswick	107,032,251	131,866,588	76,322,758	94,038,161	91,050,298	90,982,512
Nova Scotia	414,337,502	395,877,860	482,938,113	667,834,779	484,838,680	464,583,568
Prince Edward Island	30,036,567	35,883,450	30,897,856	28,743,353	17,474,703	34,853,906
Newfoundland	33,399,263	32,786,191	31,283,553	49,104,156	36,673,461	77,098,416
Territories	39,812,656	44,956,450	33,827,108	36,437,224	43,246,867	48,670,974
Total Canada	**7,441,016,328**	**7,949,235,949**	**8,794,337,971**	**9,568,759,732**	**12,239,210,775**	**9,901,626,642**

EMPLOYMENT

Employment estimates for the propane industry in Canada vary widely. Purvin & Gertz used employment numbers from PGAC members as well as estimates of the proportion of the propane industry to the total upstream petroleum industry. Purvin & Gertz estimates that the total direct employment in the propane industry in Canada is approximately 8,200 and the total indirect employment in the propane industry in Canada is approximately 20,000. The employment breakdown by province is presented in Table VI-3.

TABLE VI-3
CANADIAN PROPANE INDUSTRY EMPLOYMENT

	2003	2004	2005	2006	2007	2008
BC/Territories	376	382	467	474	470	472
Alberta	3628	3682	4500	4568	4534	4551
Saskatchewan/Manitoba	305	310	379	385	382	383
Ontario	902	916	1119	1136	1128	1132
Quebec	753	764	934	948	941	944
Atlantic Provinces	535	543	664	674	669	672
Total	6500	6598	8063	8184	8123	8154

TAXES & ROYALTIES

The industry's activities also have positive impacts on governmental revenues. The industry contributes to government revenues through income taxes and royalties. Furthermore, property taxes and other indirect taxes should be taken into account. There is, of course, an additional fiscal impact from other direct and indirect activities generated by the industry's activities. Purvin & Gertz estimates that the total payments of royalties, fees, income and other taxes has averaged over $850 million per year for the period from 2006 through 2008. The breakdown by province is presented in Table VI-4.

TABLE VI-4
CANADIAN PROPANE INDUSTRY TAXES & ROYALTIES

($ millions)	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
Taxes						
Territories	$1.0	$1.3	$1.0	$1.0	$1.2	$1.4
BC	$14.5	$21.4	$16.8	$17.0	$21.1	$23.0
Alberta	$26.6	$12.3	$8.4	$9.5	$10.9	$11.7
Saskatchewan	$2.6	$1.8	$1.3	$1.8	$1.9	$2.1
Manitoba	$6.6	$8.8	$7.1	$8.0	$9.9	$10.8
Ontario	$17.4	$24.3	$27.3	$32.7	$38.6	$42.1
Quebec	$19.2	$35.4	$31.9	$27.5	$35.3	$35.6
New Brunswick	$3.6	$9.6	$4.8	$5.6	$6.3	$5.7
Nova Scotia	$5.2	$15.2	$17.6	$17.2	$15.9	$16.3
PEI	$0.6	$1.1	$1.1	$1.0	$1.0	$1.0
Newfoundland	$1.6	$2.8	$3.0	$4.5	$5.8	$5.9
Total Taxes	$98.9	$133.9	$120.2	$125.9	$148.0	$155.7
Royalties						
Alberta	$401.9	$388.2	$559.6	$594.9	$643.5	$673.0
BC	$20.1	$19.4	$28.0	$29.7	$32.2	$33.6
Saskatchewan	$8.4	$8.2	$11.7	$12.5	$13.5	$14.1
Nova Scotia	$20.7	$20.0	$28.8	$30.6	$33.1	$34.6
Total Royalties	$451.1	$435.7	$628.0	$667.7	$722.2	$755.3

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VII. PROPANE SUPPLY AND DEMAND FORECAST

Purvin & Gertz outlook for propane supply and demand to 2015 is presented in Table VII-1 and Figure VII-1.

SUPPLY FORECAST

Purvin & Gertz outlook for Canadian propane supply is largely driven by the natural gas outlook discussed in Section IV of this report. Purvin & Gertz has significantly reduced its outlook for gas and NGL production in Western Canada. It is expected that drilling rates will increase slowly from the current depressed levels. However, Purvin & Gertz does not currently forecast that drilling rates will return to levels experienced in the 2003 to 2006 period.

Demand for refined products is expected to grow slowly with GDP and population growth in Canada. Therefore, refinery production of propane is expected to follow the growth of refined products demand in Canada.

Canada will remain a net exporter of propane over the forecast period

DEMAND FORECAST

Overall, Canadian propane demand is expected to decline in the short term with the general economic decline, but return to growth over the forecast period. Mining and oil and gas extraction demand is expected to decline with gas production activity. This will be offset somewhat by the growth in oil sands mining. The majority of this decline will occur in Western Canada.

In 2009 industrial consumption in manufacturing and construction are expected to decline with the economic slowdown but will return to growth beyond 2010. The rate of growth is expected to be similar across the country.

Transportation consumption will be affected similarly. The growth of alternatively fuelled vehicles in Canada is expected to continue with increasing fuel prices and the likely implementation of environmental regulations favouring such vehicles. Purvin & Gertz forecasts a decline of propane as a transportation fuel in Canada in 2009 with the economic slowdown. In 2010 and beyond, Purvin & Gertz forecasts a return to slow growth of propane as a transportation fuel.

Agricultural consumption of propane is influenced by weather and GDP. Purvin & Gertz forecasts slow but steady growth in the agricultural sector over the forecast period.

Residential and commercial consumption is largely population and weather driven but is also affected by economic conditions and fuel price. Purvin & Gertz forecasts slow but steady growth in the residential and commercial sectors over the forecast period.

TABLE VII-1

CANADA PROPANE SUPPLY/DEMAND OUTLOOK
(thousand cubic metres)

	2008	2009	2010	2011	2012	2013	2014	2015
SUPPLY								
Natural gas Co Product [(1)]	8,880	8,643	7,849	7,396	7,051	6,780	6,606	6,462
Refineries	1,267	1,259	1,284	1,363	1,378	1,381	1,384	1,385
Imports	24	28	28	28	29	29	29	30
Inventory Change	747	-	-	-	-	-	-	-
Total Supply	10,918	9,930	9,161	8,788	8,458	8,191	8,019	7,877
DEMAND								
Mining and oil and gas extraction	1,360	1,324	1,202	1,133	1,080	1,039	1,012	990
Total manufacturing	614	593	604	626	641	654	667	680
Construction	106	103	105	108	111	113	115	118
Road transport and urban transit	441	425	427	430	432	434	436	438
Agriculture	292	295	300	311	319	325	332	338
Residential	536	541	552	571	586	597	609	622
Commercial and other institutional	1,165	1,176	1,200	1,242	1,273	1,298	1,324	1,351
Total Demand	4,514	4,457	4,391	4,421	4,441	4,461	4,496	4,537
Exports [(1)]	6,404	5,473	4,770	4,367	4,017	3,730	3,523	3,340

Note: (1) Production excludes propane in Alliance Pipeline Natural Gas Exports

FIGURE VII-1
DOMESTIC CANADIAN PROPANE DEMAND OUTLOOK BY SOURCE