7.0 Propane Heating Fuel – Supply and Distribution

7.1 Propane Supply and Usage as a Heating Fuel

Propane use for home heating in Newfoundland and Labrador is fairly limited. Of the total annual consumption of propane in the province, only an estimated 15% to 18% is delivered to residences for various uses. Very few homes utilize propane as a primary heating source. However, a number have auxiliary propane space heaters or fireplaces equipped with heat blower fans to supplement the primary means of heating the residence. The PPPC sets the maximum retail price of propane by zone (where propane is available to be delivered via tank-wagon) when it is used as a primary or auxiliary home heating fuel. Propane used for home appliances such as stoves and refrigerators as well as its use in fireplaces and other equipment for 'atmosphere' or 'ambiance' is not intended to be included in the regulated price.

The PPPC uses the following definition for price regulation of propane used in the home[1]:

> 'Propane that is delivered to a consumer's household by tank-truck into fixed storage and which is used by an appliance designed and intended to generate heat for the residence. Such appliances are furnaces, space heaters, and fireplaces equipped with heat blower fans. Fixed storage is defined as one, or an interconnected number of storage tanks approved and certified for propane use, with a total capacity of at least 178 litres. (2 x 100 pound cylinders or greater)'

[1] Source: News Release- Department of Government Services and Lands – December 14-2001

There are three main suppliers of propane in the province: Superior Propane, North Atlantic Petroleum and Irving Oil. Superior has four propane bulk storage depots throughout the Island part of the province at St. John's, Clarenville, Grand Falls-Windsor and Pasadena. North Atlantic produces propane at its Come by Chance Refinery and has a storage depot for redistribution in Donovans near St. John's. Irving has bulk storage depots at St.John's, Grand Falls-Windsor and Corner Brook. All three suppliers obtain the majority of their supply from North Atlantic's Refinery. However, both Superior and Irving maintain supply links for propane from mainland sources and import product via the North Sydney to Port aux Basques Ferry when it is more economical for them to do so, or when the fuel is not readily available from the refinery. Unscheduled shutdowns and other disruptions at the refinery have caused some serious problems with propane supply in the past, which has necessitated the import of propane from mainland sources at higher laid-in costs, particularly to the eastern parts of the province.

7.2 Cost of Tractor Trailer Deliveries to Bulk Storage Depots

The cost of overland transport of propane to all redistribution depots is based on tractor-trailer supply from the primary supply source, the Come by Chance Refinery. The model previously developed and used in calculating tractor-trailer delivery rates for gasolines is still applicable for propane transport notwithstanding the design and structure of pressurized tanks required to keep that product in a liquid state. The shell of the propane tanks is much thicker and hence heavier in order to withstand this pressure and the tanks are only filled to 80% liquid volume. A standard propane trailer with a total volume capacity of about 55,000 litres would therefore only carry approximately 44,000 litres of liquid propane. Liquid propane has a lower density and is therefore lighter than gasoline, however, the additional weight of the tank shell and other equipment limits the highway scale weight accordingly.

The estimated T/T costs for propane shipped from the Come by Chance Refinery to the various storage depots identified around the province have been calculated as follows using the modified tractor-trailer costing model for 44,000 litres of liquid propane:

Come by Chance	to	St. John's	**1.37** cpl
Come by Chance	to	Grand Falls	**2.10** cpl
Come by Chance	to	Pasadena/ Corner Brook	**3.66** cpl

The above figures are taken from Table J-1, Appendix J.

7.3 Cost of Operating Bulk Storage Depots – Propane

Because the vast majority of propane is used for commercial purposes, any attempt to break out the cost of storing and handling the relatively small volume thruput at a bulk storage depot for residential heating purposes is not feasible. The operation's economics are largely dependent on the commercial volume and without that volume the depot would not be viable. The estimated cost of operating a propane storage depot as an industry norm is reported to be about 0.5 cents per litre. This figure is used in cost calculations for each depot in the province.

7.4 Tank Wagon Deliveries of Propane to Households

The average costs of tank wagon delivery of propane to individual homes in major centres, and in defined pricing zones where the depots are located, are assumed to be quite similar in each case. However, the incremental extra costs of delivering propane to households in adjacent zones without a depot must be calculated to ascertain pricing differentials from the supplying zone.

As was the case with home heating distillate fuels, firstly the operating costs of propane tank-wagon delivery vehicles had to be estimated. These calculations for both tandem and single axle vehicles are included in Appendix J as Table J-2. The capital cost of a propane tank-wagon is greater than that of a normal unit due to the pressurized tank construction and specialized pumping and metering equipment. It is assumed that since home heat deliveries are not a scheduling priority in the sense of peak vehicle usage, the cost per hour of operation is based on a standard 8 hour day, 5 days per week. The average cost per hour for a tandem axle propane tank-wagon is calculated at $64.50 per hour, while a single axle unit is estimated at $60.00 per hour. The costs of the units when idle (with driver) and when idle (without driver) are also calculated in Table J-2.

The PPPC publishes maximum delivered propane prices for only 10 out of the 25 listed zones due to the non-availability of tank-wagon delivered propane to households in the remaining zones or sub-zones. For reference, the published table of propane prices effective October 15, 2004 is included as Table J-3 in Appendix J.

The extra tank-wagon delivery costs to zones or sub-zones, which do not have storage depots, are calculated in Appendix J, Tables J-4 through J-10. These costs are then added to the delivered cost in the supplying zones to arrive at a realistic cost for the areas without storage depots.

7.5 Summary of Propane Heating Fuel Delivery Costs

Table 12 below gives the total delivered cost of propane to households above that of Zone 2, which is the base zone for propane with supply originating at the Come by Chance refinery.

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Table 12

Calculated Delivery Costs of Propane Heating Fuels to Households

By Zone where Tank Wagon Delivery is Available

Zone	Geographic Area for Zone	T/T Costs from Come By Chance to nearest Bulk Depot CPL	Estimated Operating Cost of Bulk Storage Depot CPL	Extra Delivery Costs to Zones without Depots CPL	Total Delivered Cost to Households Above Base Zone CPL
1	St. John's & Avalon	1.4	0.5	0	1.9
1a	Bell Island	1.4	0.5	1.1	3
2	**Clarenville/ Burin-Bonavista Peninsulas (Base Zone)**	**0**	**0**	**0**	**0**
3	Central Newfoundland - Glovertown to Buchans	2.1	0.5	0	2.6
3a	St. Brendan's (Island)	N/A	N/A	N/A	N/A
3b	Fogo Island	N/A	N/A	N/A	N/A
3c	Change Islands	N/A	N/A	N/A	N/A
4	Connaigre Peninsula	2.1	0.5	0.8	3.4
4a	Gaultois to Francois / Rencontre East	N/A	N/A	N/A	N/A
5	Springdale & Baie Verte Peninsula	2.1	0.5	0.6	3.2
5a	Long Island	N/A	N/A	N/A	N/A
5b	Little Bay Islands	N/A	N/A	N/A	N/A
6	Deer Lake - Corner Brook Areas	3.7	0.5	0	4.2
7	Gallants to Port aux Basques / Burgeo	3.7	0.5	1.2	5.4
7a	Ramea (Island)	N/A	N/A	N/A	N/A
7b	Grey River/ Grand Bruit / La Poile	N/A	N/A	N/A	N/A
8	Northern Peninsula - Gros Morne to Belburns	3.7	0.5	1.1	5.2
9	Northern Peninsula - to Englee and St. Anthony	3.7	0.5	2.9	7.1
10	Labrador Straits - L'Anse au Clair to Red Bay	N/A	N/A	N/A	N/A
11	Mary's Harbour to Cartwright (road access)	N/A	N/A	N/A	N/A
11a	Coastal Labrador – South	N/A	N/A	N/A	N/A
12	Central Labrador - Goose Bay Area	N/A	N/A	N/A	N/A
13	Western Labrador - Labrador City / Wabush	N/A	N/A	N/A	N/A
13a	Churchill Falls	N/A	N/A	N/A	N/A
14	Coastal Labrador – North	N/A	N/A	N/A	N/A