

1 Q. Please provide a detailed calculation of the Conversion Factors used in the
2 calculation for the second block of the energy rate for Newfoundland Power in 2013
3 (612 kWh per Barrel) and 2015 (607 kWh per Barrel).

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6 A. The detailed calculation of the Conversion Factors used in the calculation of the
7 second block of the energy rate for Newfoundland Power in 2013 (612 kWh per
8 Barrel) and 2015 (607 kWh per Barrel) are provided in the following two tables.

9 These calculations, with a description of the methodology, were provided

10 previously by Hydro in its responses to NP-NLH-069 and NP-NLH-069 (Revision 1,

11 Dec 3-14).

Fuel Conversion rate: 612 kWh/bbl

2003-2012 Linear Regression (Gross)
SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.997
R Square	0.995
Adjusted R Square	0.995
Standard Error	2.092
Observations	96

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	81230.1	81230.1	18561.7	0.0
Residual	94	411.4	4.4		
Total	95	81641.5			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	14.3372	0.9440	15.1885	0.0000	12.4630	16.2115	12.4630	16.2115
X Variable 1	0.00137	0.0000	136.2412	0.0000	0.0014	0.0014	0.0014	0.0014

Calculation of 2013 Test Year Conversion Rate:

1 Unit net average loading (kW)	87,470	
2 Station Service Factor	6.56%	
3 Unit gross average loading (kW)	93,610	Line 1/(1-Line 2)
4 Regression Slope (m)	0.00137	(from regression equation)
5 Regression Y-Intercept (b)	14.3372	(from regression equation)
6 Fuel consumption rate (bbls/hour)	142.94	Line 5 + Line 4 x Line 3
7 Net fuel conversion factor (kWh/bbl)	612	Line 1/Line 6

Fuel Conversion rate: 607 kWh/bbl

2009-2014 Linear Regression (Gross)

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.988878326
R Square	0.977880344
Adjusted R Square	0.976774361
Standard Error	2.302958699
Observations	43

ANOVA

	df	SS	MS	F	Significance F
Regression	2	9378.635113	4689.317556	884.1731958	7.86262E-34
Residual	40	212.1447508	5.303618769		
Total	42	9590.779864			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	155.9173291	33.80783282	4.611869974	4.04168E-05	87.58915015	224.245508	87.58915015	224.2455
	116354.1667	0.001432727	39.81644854	8.42579E-34	0.001360002	0.001505452	0.001360002	0.001505
	152965.8333	-0.00094151	-4.36611266	8.69122E-05	-0.001377332	-0.00050568	-0.00137733	-0.00051

Calculation of 2015 Test Year Conversion Rate:

1 Unit net average loading (kW)	109,570
2 Fuel Heating Content (btu/bbl)	152,400
3 Station Service Factor	6.61%
4 Unit gross average loading (kW)	117,330 Line 1/(1-Line 3)
5 Coefficient 1	0.00143 (from regression equation)
6 Coefficient 2	-0.00094 (from regression equation)
7 Intercept	155.9173 (from regression equation)
8 Fuel consumption rate (bbls/hour)	180.53 Line 7 + (Line 4 x Line 5) + (Line 2 x Line 6)
9 Net fuel conversion factor (kWh/bbl)	607 Line 1/Line 8