

June 21, 2019

Doreen Friis
Regulatory Affairs Officer/Clerk
Nova Scotia Utility and Review Board
1601 Lower Water Street, 3rd Floor
P.O. Box 1692, Unit "M"
Halifax, NS B3J 3S3

Dear Ms. Friis:

Re: P-887 FAM19 - Fuel Adjustment Mechanism (FAM) Monthly Report – May 2019

Please find enclosed Nova Scotia Power's FAM Monthly report for May 2019. The confidential versions of the report and the FAM Calculation Model have been uploaded to the Board's confidential website.

The 2019 Base Cost of Fuel was ordered to be between \$671.1M and \$731.8M, with the higher amount recognizing the election of the Consumer Advocate and Small Business Advocate to assign a January 1, 2020 start date to the delivery of Maritime Link Nova Scotia Block energy. Table 1a and Report M2 use a 2019 BCF of \$731.8M ("FAM Budget"). AA and BA information in Report M2 is compared against the amounts presented in the AA/BA filing on January 21, 2019.

High level adjustments were made to the 2019 BCF Refresh Budget filed May 27, 2016, to arrive at the \$671.1M and \$731.8M BCF figures, meaning detailed fuel cost information is not available for comparison. As a result, all fuel cost variance analysis is based on the 2019 BCF Refresh Budget of \$653.7M ("BCF Refresh Budget"). This includes Figure 1 and 2, Table 1b, Table 2, Table 3, as well as reports M1, M6, and M7.

Report M3 includes NS Power's updated expectations of future month FAM Balances as per NS Power's internal 2019 Q1 Forecast completed in February 2019.

May 2019 Results

As shown in Figure 1 and Figure 2 below, in May there was increased generation from natural gas, solid fuel, and biomass offset by decreased generation from Maritime Link NS Block, imports, IPPs, and COMFIT. There was an overall increase in generation compared to budget due to a higher load resulting from cooler than average temperatures in May.

Figure 1

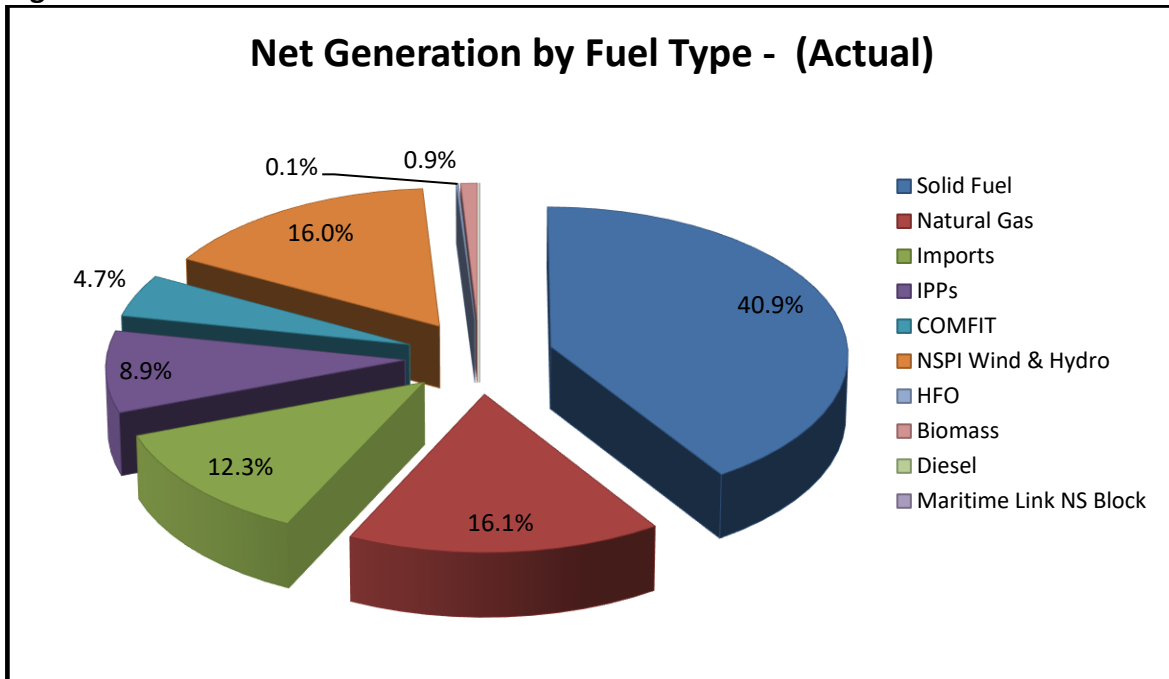


Figure 2

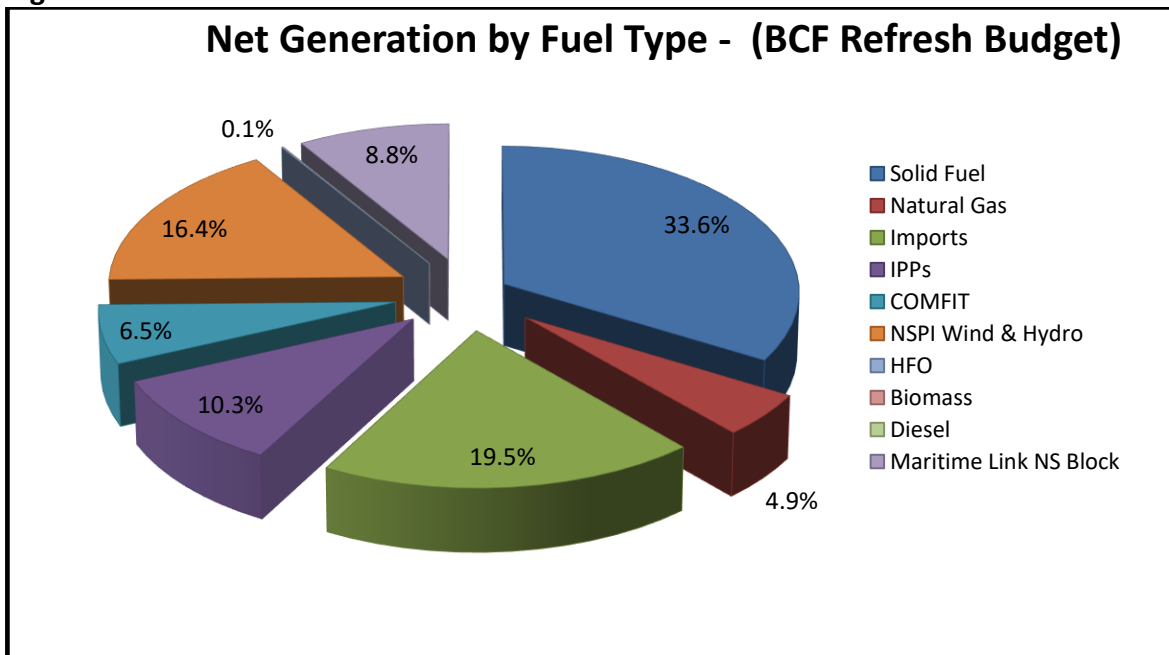


Table 1a

FAM (Over)/Under-Recovery (in \$ millions)			
	Actual	FAM Budget	Variance
Total fuel and purchased power	\$48.0	\$53.2	(\$5.2)
Fuel adjustments	(\$4.1)	(\$3.4)	(\$0.7)
Total Adjusted Fuel Costs	\$43.9	\$49.8	(\$5.9)
Revenue	(\$43.7)	(\$42.3)	(\$1.4)
FAM (Over)/Under Recovery	\$0.2	\$7.4	(\$7.2)

Figures presented are rounded to one decimal place which may cause rounding differences on some line items. Figures are presented as follows: (Favorable)/Unfavorable in the variance column. FAM Budget reflects the 2019 BCF Compliance filing (CA/SBA Request) of \$731.8M.

Table 1b

FAM (Over)/Under-Recovery (in \$ millions)			
	Actual	BCF Refresh Budget	Variance
Total fuel and purchased power	\$48.0	\$49.6	(\$1.6)
Fuel adjustments	(\$4.1)	(\$3.3)	(\$0.8)
Total Adjusted Fuel Costs	\$43.9	\$46.3	(\$2.4)
Revenue	(\$43.7)	(\$40.8)	(\$2.9)
FAM (Over)/Under Recovery	\$0.2	\$5.5	(\$5.3)

Figures presented are rounded to one decimal place which may cause rounding differences on some line items. Figures are presented as follows: (Favorable)/Unfavorable in the variance column. BCF Refresh Budget reflects the 2019 BCF Refresh filing of \$653.7M.

In May, there was a variance of (\$5.3) million in the (over)/under-recovery as compared to the BCF Refresh Budget (\$0.2 million actual under-recovery as compared to \$5.5 million under-recovery in the BCF Refresh Budget).

Decreased Port Hawkesbury Paper (PHP) load served by NS Power generation resulted in \$0.7 million lower fuel costs than the BCF Refresh Budget. Please note that PHP load is included in the total fuel and purchased power BCF Refresh Budget. Fuel costs for PHP are recovered from the mill under its Load Retention Tariff. As such, PHP's fuel costs have no impact on FAM customers. Information about PHP sales can be found in Report M8.

Excluding PHP, domestic load was approximately 23.4 GWh higher than the BCF Refresh Budget, resulting in an increase to fuel costs of \$0.9 million. Export costs were higher than the FAM Budget by \$0.2 million.

The May variance between the actual total fuel and purchased power cost and the FAM Refresh Budget total fuel and purchased power costs (excluding load and PHP fuel cost) is

favorable by \$2.0 million. The following table sets out the components of the variance between actual fuel and purchased power cost as compared to the BCF Refresh Budget.

Table 2

Fuel and Purchased Power Variance (in \$ millions)	
	Actual vs BCF Refresh Budget
Solid fuel pricing and mix, additives, and adjustments	\$0.6
Purchased power pricing and mix	\$0.7
Maritime Link Assessment	(\$5.1)
Natural gas, HFO, and LFO pricing and mix	\$1.7
Generation Mix	\$0.5
Plant Performance	(\$0.4)
Total excluding load and PHP fuel costs	(\$2.0)

Figures presented in Table 2 are rounded to one decimal place which may cause rounding differences on some line items. Figures are presented as follows: (Favorable)/Unfavorable. FAM Budget reflects the 2019 BCF Refresh filing of \$653.7M.

As shown in Table 3 below, natural gas consumption was higher than budget. This was as a result of increased natural gas dispatch compared to the BCF Refresh Budget primarily due to favorable pricing relative to other generation sources, as well as increased dispatch due to the later start date for Maritime Link NS Block as compared to the BCF Refresh budget.

Table 3

	Variance from BCF Refresh Budget
Natural gas consumption (MMBtu)	868,035
Natural gas price (\$/MMBtu)	\$0.87

Variances are against the FAM Budget which reflects the 2019 BCF Refresh filing of \$653.7M. Positive numbers reflect amounts higher than forecast; Negative numbers reflect amounts lower than forecast.

Per the UARB Order dated September 11, 2017 regarding the NSPML Interim Cost Assessment (M07718), NS Power was to return the \$36 million of Maritime Link depreciation and deferred financing amortization costs collected in 2018, plus interest, to customers. As of May 31, 2019, \$34.6 million has been returned to customers.

As of May 31, 2019, the 2019 Maritime Link depreciation and deferred financing amortization costs collected through BCF rates totals \$25.0 million.

June 21, 2019
D. Friis

Please contact me with any questions or concerns with respect to the FAM Monthly report for May 2019.

Sincerely,

A handwritten signature in cursive script that reads "Nicole Godbout".

Nicole Godbout
Director, Regulatory

c. Intervenors – P-887

Encl.

Nova Scotia Power Inc.
Monthly FAM Reporting
For the Period Ended May 31, 2019

NON-CONFIDENTIAL



Nova Scotia Power Inc.
Monthly FAM Reporting
Summary of Fuel Costs
For the Period Ended May 31, 2019
(millions of dollars)

NSPI (FAM) M-1
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	Current Month		Year-to-Date		2019 Budget	
	<u>Actual</u>	<u>Budget</u>	<u>Actual</u>	<u>Budget</u>	<u>Full Year Budget</u>	<u>% of Budget Spent</u>
Fuel for Generation - Domestic Load						
Solid Fuel	\$ 12.3	\$ 9.9	\$ 92.3	\$ 74.5	\$ 152.9	60.4%
Natural Gas	7.6	2.1	34.1	8.2	19.6	174.0%
Biomass	0.5	0.2	2.2	0.9	2.7	81.5%
Bunker C	0.1	0.1	3.7	9.5	12.3	30.1%
Furnace	0.2	0.1	1.7	0.8	1.7	100.0%
Diesel	0.1	0.0	0.9	0.0	0.0	0.0%
Additives	0.9	0.7	7.3	6.3	13.0	56.2%
Subtotal	\$ 21.7	\$ 13.0	\$ 142.1	\$ 100.2	\$ 202.2	70.3%
Import Purchases	5.8	5.7	18.6	21.2	62.4	29.8%
Maritime Link	8.6	13.7	45.5	68.3	164.0	27.7%
Non-Wind IPP Purchases	0.7	2.6	4.7	14.7	33.6	14.0%
Wind Purchases	5.4	6.0	38.4	36.1	81.5	47.1%
COMFIT Purchases	5.6	8.5	35.6	46.7	108.9	32.7%
Fuel for Resale Net Margin	(0.0)	0.0	0.0	0.0	0.0	0.0%
Exports	0.2	0.0	6.0	0.0	0.0	0.0%
Fuel and Purchased Power	\$ 47.9	\$ 49.5	\$ 290.8	\$ 287.2	\$ 652.6	44.6%
Water Royalties	0.1	0.1	0.4	0.4	1.1	36.4%
Total Fuel and Purchased Power	\$ 48.0	\$ 49.6	\$ 291.3	\$ 287.6	\$ 653.7	44.6%
Less: Load Retention Revenue	(3.8)	(3.2)	(22.1)	(13.8)	(39.2)	56.4%
Total Fuel and Purchased Power Less LRT Revenue	\$ 44.2	\$ 46.4	\$ 269.2	\$ 273.9	\$ 614.5	43.8%
Less: Export Revenues	(0.0)	(0.0)	(7.0)	(1.6)	(2.5)	280.0%
Less: 1PT RTP	(0.0)	(0.0)	(0.1)	(0.0)	(0.3)	33.3%
Less: Shore Power	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	0.0%
Less: Back Up / Top Up	(0.1)	0.0	(0.5)	0.0	0.0	0.0%
Less: GRLF Fuel Costs	(0.2)	(0.1)	(0.4)	(0.2)	(0.5)	80.0%
Loss / (Gain): Foreign exchange - Fuel Other	0.0	0.0	0.0	0.0	0.0	0.0%
Net Fuel and Purchased Power	\$ 43.9	\$ 46.3	\$ 261.1	\$ 272.1	\$ 611.1	42.7%
Total System Requirements (GWh)	862.0	856.0	5,256.6	5,225.7	11,331.1	46.4%
Less: Export Sales and Attributed Losses	(0.9)	(0.5)	(82.3)	(32.0)	(50.0)	164.6%
Less: GRLF Requirements	(2.0)	(2.3)	(6.9)	(9.7)	(23.9)	28.9%
Less: Load Retention	(79.3)	(92.2)	(377.1)	(429.4)	(1,058.3)	35.6%
Less: Shore Power	(0.0)	(0.0)	(0.0)	(0.0)	(1.0)	0.0%
Less: 1PT RTP	(0.7)	(0.8)	(1.8)	(1.3)	(9.8)	18.4%
Less: Back Up / Top Up	(2.6)	0.0	(8.3)	0.0	0.0	0.0%
Less: Losses*	(50.8)	(55.8)	(322.7)	(356.6)	(725.6)	44.5%
Total FAM Sales	725.7	704.3	4,457.5	4,396.7	9,462.5	47.1%

Figures presented are rounded to one decimal place which may cause \$0.1M in rounding differences on some line items.

The FAM Budget reflects the 2019 BCF Refresh filing of \$653.7M.

*Includes losses for all customer classes, with the exception of Export Sales.

Nova Scotia Power Inc.
 Monthly FAM Reporting
 Summary of Cost Recovery
 For the Period Ended May 31, 2019
 (millions of dollars)

NSPI (FAM) M-2
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Base Fuel Component (BCF)

	<u>Actual</u>	<u>Budget</u>
2019 Beginning BCF Balance	-	-
(Over)/Under-recovered Prior to Current Month	(9.19)	19.95
(Over)/Under-recovered in Current Month	0.19	7.44
Balance Yet to be Recovered	(9.00)	27.39
(Over)/Under-recovery- Remainder of the Year	N/A	66.65
Interest on BCF Balance	(0.20)	0.43

Actual Adjustment Component (AA)

	<u>Actual</u>	<u>Budget</u>
2019 Beginning AA Balance	15.30	15.30
Recovered/(Refunded) Prior to Current Month	(34.45)	(35.89)
Opening Balance as of May 1, 2019	49.74	51.19
Recovered/(Refunded) in Current Month	(0.17)	-
Closing Balance as of May 31, 2019	49.91	51.19
Recovered/(Refunded) Remainder of the Year	N/A	-
Interest on AA Balance	0.99	1.02

Balancing Adjustment Component (BA)

	<u>Actual</u>	<u>Budget</u>
2019 Beginning BA Balance	(176.62)	(176.62)
Recovered/(Refunded) Prior to Current Month	-	-
Non-fuel amounts applied to FAM prior to current period	(5.52)	(0.05)
Opening Balance as of May 1, 2019	(182.13)	(176.67)
Recovered/(Refunded) in Current Month	-	-
Non-fuel amounts applied to FAM in current period	-	-
Closing Balance as of May 31, 2019	(182.13)	(176.67)
Recovered/(Refunded) Remainder of the Year	N/A	0.16
Interest on BA Balance	(5.13)	(5.03)
FAM Deferral (Over)/Under-Recovery	(145.55)	(101.66)

Figures presented are rounded to two decimal places which may cause \$0.01M in rounding differences on some line items.

The FAM Budget reflects AA/BA filing on January 21, 2019.

Nova Scotia Power Inc.
 Monthly FAM Reporting
 2019 Total Accumulated Unrecovered FAM Balance
 For the Period Ended May 31, 2019
 (millions of dollars)

NSPI (FAM) M-3
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Month	BA Total Outstanding	AA Total Outstanding	BCF Variance		Accumulated Interest	Total Outstanding
			To Current Month	Current Month		
January	(176.6)	19.3	0.0	(2.8)	(0.9)	(161.1)
February	(176.6)	19.3	(2.8)	(2.3)	(1.8)	(164.3)
March	(182.1)	36.0	(5.2)	(3.0)	(2.7)	(157.1)
April	(182.1)	49.7	(8.2)	(1.0)	(3.5)	(145.1)
May	(182.1)	49.9	(9.2)	0.2	(4.3)	(145.6)
June	(182.2)	49.9	(9.0)	2.2	(5.1)	(144.2)
July	(182.2)	49.9	(6.8)	7.3	(5.9)	(137.7)
August	(182.2)	49.9	0.5	6.7	(6.6)	(131.7)
September	(182.2)	49.9	7.2	10.7	(7.3)	(121.7)
October	(182.2)	49.9	17.9	11.5	(7.9)	(110.8)
November	(182.2)	49.9	29.3	7.4	(8.4)	(104.0)
December	(182.3)	49.9	36.7	5.0	(8.9)	(99.6)

Figures presented are rounded to one decimal place which may cause \$0.1M in rounding differences on some line items

Future months reference the NS Power Q1 Forecast from February 2019.

**Nova Scotia Power Inc.
Monthly FAM Reporting
Fuel Policies and Organizational Changes
For the Period Ended May 31, 2019**

**NSPI (FAM) M-4
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Fuel Manual Updates

No Fuel Manual updates to report.

POA Updates

No POA updates to report.

Organizational Updates

No Organizational updates to report.

Nova Scotia Power Inc.
 Monthly FAM Reporting
 Mercury Abatement Program
 For the Period Ended May 31, 2019
 (millions of dollars)

NSPI (FAM) M-5
 NON CONFIDENTIAL

Generating Unit	Additive Type	Current Month			Year-to-Date		
		Quantity	Cost	\$/MWh	Quantity	Cost	\$/MWh
Lingan - Unit 1	Powder Activated Carbon						
Lingan - Unit 2	Powder Activated Carbon						
Lingan - Unit 3	Powder Activated Carbon						
Lingan - Unit 4	Powder Activated Carbon						
Point Tupper	Powder Activated Carbon						
Trenton 5	Powder Activated Carbon						
Trenton 6	Powder Activated Carbon						
Lingan	Calcium Chloride						
Point Tupper	Calcium Chloride						
Trenton	Calcium Chloride						
Total Costs - Powder Activated Carbon		225,168 kgs		\$0.472	2,104,874 kgs		\$4.538
Total Costs - Calcium Chloride		45,960 L		\$0.017	498,793 L		\$0.183
Total Mercury Sorbent Costs				\$0.489			\$4.721

^a Calculated using actual MWh produced by unit.

Commentary for the month:

YTD emissions are estimated at 35.9 kg. The forecast indicated YTD emissions by May 2019 of 31.5 kg.

NSPI Environmental Report for Mercury Emissions (b)

Annual Limit = 65 kg (c)

Month	Reported this month (d)	Reported last month	Variance	Reason for variance	2018 Actuals (e)
Jan	8.2	8.2			8.6
Feb	8.1	8.1			7.1
Mar	11.3	11.3			6.5
Apr	5.5	5.5			5.2
May	2.8				3.4
Jun					
Jul					
Aug					
Sep					
Oct					
Nov					
Dec					
Year to Date (f)	35.9	33.1	0.0		30.8

^b As reported by NSPI's Environmental Services.

^c Province of Nova Scotia Air Quality Regulations - Schedule C section 3(2).

^d This value is an estimate based on incomplete laboratory results and consumption figures. Environmental Services will finalize this result next quarter.

^e Shown for comparative purposes

^f Figures presented are rounded to one decimal place which may cause \$0.1M in rounding differences on some line items

Nova Scotia Power Inc.
 Monthly FAM Reporting
 Volume and Pricing Summary
 For the Period Ended May 31, 2019

NSPI (FAM) M-6
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	Current Month			Year-to-Date		2019 Budget
	<u>Actual</u>	<u>Budget</u>	<u>% Change</u>	<u>Actual</u>	<u>Budget</u>	<u>Budget</u>
Solid Fuel						
Solid Fuel Consumption Costs (\$)						
Solid Fuel Consumption (MMBtu)						
Solid Fuel Price (\$/MMBtu)						
Solid Fuel Price (\$/MWh)						
Natural Gas						
Natural Gas Consumption Costs (\$)						
Natural Gas Consumption (MMBtu)						
Natural Gas Price (\$/MMBtu)						
Natural Gas Price (\$/MWh)						
Biomass						
Biomass Consumption Costs (\$)						
Biomass Consumption (MMBtu)						
Biomass Price (\$/MMBtu)						
Biomass Price (\$/MWh)						
Bunker						
Bunker Consumption Costs (\$)						
Bunker Consumption (MMBtu)						
Bunker Price (\$/MMBtu)						
Bunker Price (\$/MWh)						
Light Fuel Oil						
Light Fuel Oil Consumption Costs (\$)						
Light Fuel Oil Consumption (MMBtu)						
Light Fuel Oil Price (\$/MMBtu)						
Light Fuel Oil Price (\$/MWh)						
Imports						
Imported Power Volume (MWh)						
Imported Power Price (\$/MWh)						
Non-Wind IPP Purchases						
IPP Purchase Volumes (MWh)						
IPP Purchase Price (\$/MWh)						
Wind IPP Purchases						
Wind Purchase Volumes (MWh)						
Wind Purchase Price (\$/MWh)						
COMFIT						
COMFIT Purchase Volumes (MWh)						
COMFIT Purchase Price (\$/MWh)						

The FAM Budget reflects the 2019 BCF Refresh filing of \$653.7M.

Consumption cost totals above are at the forecasted effective USD rate for the year. These figures do not include the impact of monthly foreign exchange rate variations that are reflected in Summary of Fuel Costs (Report M-1).

Nova Scotia Power Inc.
 Monthly FAM Reporting
 Volume and Pricing Summary
 For the Period Ended May 31, 2019

NSPI (FAM) M-7
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<u>Category</u>	<u>Variance from budget</u>	<u>Details</u>
Total Fuel and Purchased Power Expense	3.2% below Budget for the month	
Total System Requirements	0.7% above Budget for the month	
Total FAM Sales	3.0% above Budget for the month	May's 725.7 GWh was more than the FAM Budget of 704.3 GWh
Net Fuel and Purchased Power Costs	5.2% below Budget for the month	May's \$43.9M was less than the FAM Budget of \$46.3M
Purchased Power Costs*	23.2% below Budget for the month	May's \$17.5M was less than the FAM Budget of \$22.8M. This is due to lower COMFIT, non-wind IPP generation, and import purchases.
Solid Fuel Costs	24.2% above Budget for the month	May's \$12.3M was more than the FAM Budget of \$9.9M. Solid Fuel expenditure was primarily higher as a result of increased generation from Solid Fuel.
Natural Gas	261.9% above Budget for the month	May's \$7.6M was more than the FAM Budget of \$2.1M. Although natural gas pricing was higher than budgeted, there was increased natural gas dispatch primarily due to favorable pricing relative to other generation sources, as well as increased dispatch due to the later start date for Maritime Link NS Block.
Biomass Fuel Costs	150.0% above Budget for the month	May's \$0.5M was more than the FAM Budget of \$0.2M.
Heavy Fuel Oil	At Budget for the month	May's \$0.1M was on Budget.
Mercury Sorbent/Additives	28.6% above Budget for the month	May's \$0.9M was more than the FAM Budget of \$0.7M.
Mercury Emissions	Below Budget for the month	May's 2.8kg was lower than the forecast of 3.2kg.

	May \$	May MWh
Energy		
Line Losses		
Environmental Adder		
Accrual Booked		
Accrual Reversed		
Prior Period Adjustments		
LRT Credit in Monthly FAM Report (reported on M-1)	<u>\$ 3,785,057</u>	<u>79,319</u>

The calculations in this Report and for the purpose of billing PHP in the report period have all been done consistent with the system differential calculation methodology outlined in Confidential Attachment A of the Synapse Audit Report. The individual components of the PHP bill are contained in the table below.

PHP LRT Report												Excess Energy Buyback		
Week	Energy Cost (\$)	Total Energy (MWh)	Energy from Biomass (MWh)	Line Losses (\$)	Environmental Adder (\$)	Var OM&G (\$)	Fixed cost (\$)	Var Capital (\$)	Customer charge (\$)	Adjustments (\$)	Total Billed (\$)	Total import energy bought back (MWh)	Total NSPI paid for excess energy	Buyback Price
29-Apr-2019 to 05-May-2019														
06-May-2019 to 12-May-2019														
13-May-2019 to 19-May-2019														
20-May-2019 to 26-May-2019														
May 2019 Total														

The environmental adder costs attributable to PHP's load include the following two components:

- 1) The costs associated with blending of solid fuels that are directly attributable to PHP's load.
- 2) The cost of Powder Activated Carbon (PAC) to abate mercury emissions that are directly attributable to PHP's load.

The costs for PAC are now included in the costs of solid fuel that are input into the modeling software used to calculate PHP's actual cost of energy through the differential system cost methodology. The actual costs for PAC are included in the energy component of PHP's weekly bill.

NS Power now calculates the blending component on a month-after basis when actual environmental emissions for the previous month are known. The blending costs are calculated using the existing methodology to calculate the blending component. Moving to a month-after calculation of the blending component allows NS Power to recover PHP's actual costs associated with blending of solid fuels monthly. It also results in NS Power being able to simplify the existing process by not having to complete annual and quarterly forecasts of PHP's blending costs (\$/MMBtu basis) and recovering PHP's costs throughout the year based on a combination of actual and forecast blending costs attributable to PHP's load. It further simplifies the existing process by eliminating the need to complete a true up calculation of PHP's actual blending costs on an annualized basis.