

February 25, 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 – January 2019

Please find enclosed Nova Scotia Power's FAM Monthly report for January 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 budget completed in August 2018.

January 2019 Results

As shown in Figure 1 and Figure 2 below, in January there was increased generation from solid fuel and natural gas which was primarily offset by decreased generation from Maritime Link NS Block imports and HFO. There was an overall increase in generation compared to budget due to higher load.

Figure 1

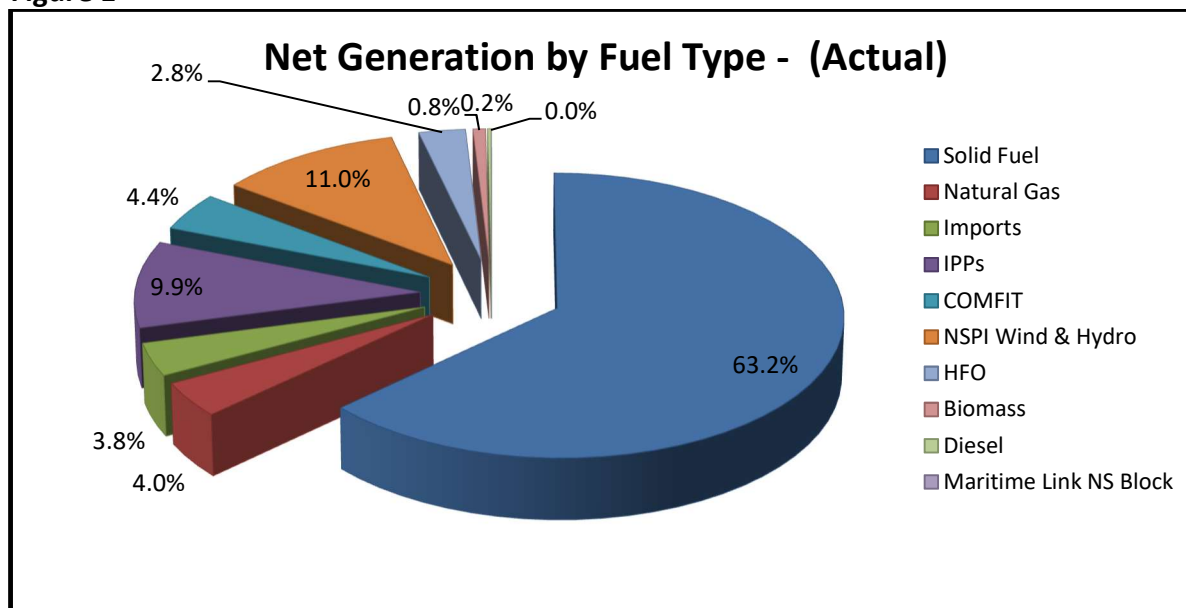


Figure 2

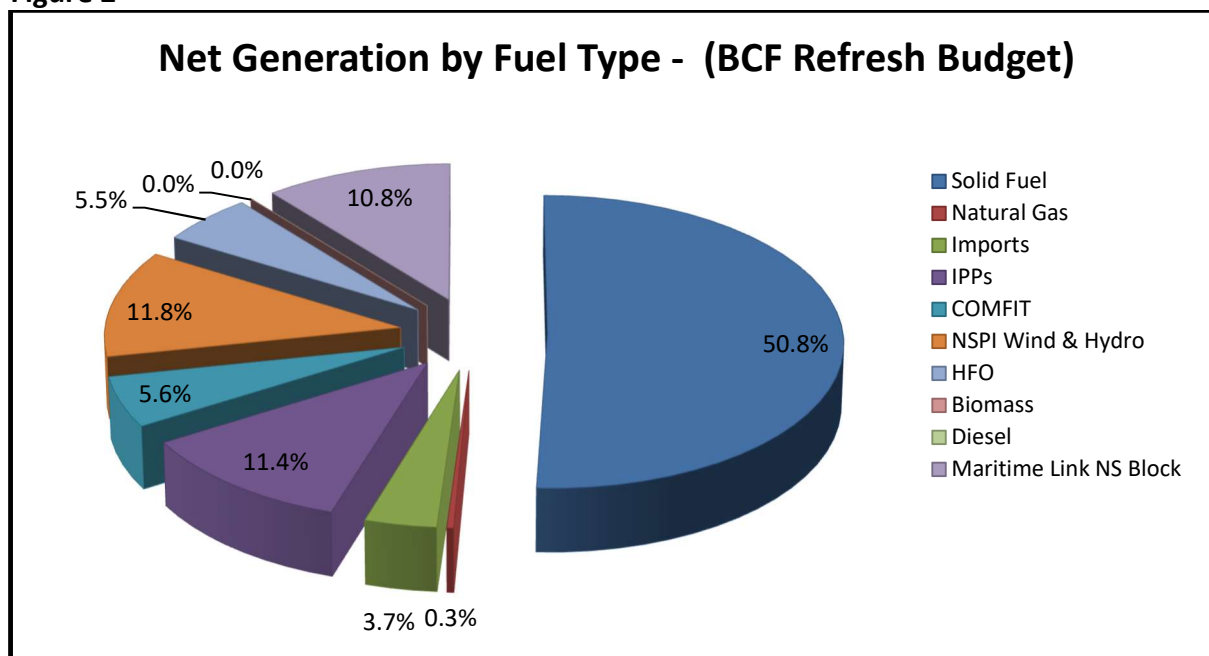


Table 1a

FAM (Over)/Under-Recovery (in \$ millions)			
	Actual	FAM Budget	Variance
Total fuel and purchased power	\$68.1	\$75.5	(\$7.5)
Fuel adjustments	(\$7.4)	(\$8.0)	\$0.6
Total Adjusted Fuel Costs	\$60.6	\$67.5	(\$6.9)
Revenue	(\$63.4)	(\$62.4)	(\$1.1)
FAM (Over)/Under Recovery	(\$2.8)	\$5.1	(\$8.0)

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	\$68.1	\$64.8	\$3.3
Fuel adjustments	(\$7.4)	(\$3.4)	(\$4.1)
Total Adjusted Fuel Costs	\$60.6	\$61.4	(\$0.8)
Revenue	(\$63.4)	(\$60.0)	(\$3.4)
FAM (Over)/Under Recovery	(\$2.8)	\$1.4	(\$4.2)

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

In January, there was a variance of (\$1.9) million in the BCF (over)/under-recovery as compared to the BCF Refresh Budget (\$2.8 million actual over-recovery as compared to \$1.0 million over-recovery in the BCF Refresh Budget).

Increased Port Hawkesbury Paper (PHP) load served by NS Power generation resulted in \$0.6 million higher 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 14.2 GWh higher than the BCF Refresh Budget, resulting in an increase to fuel costs of \$0.8 million. Export costs were higher than the FAM Budget by \$0.3 million.

The following table sets out the components of the variance between actual budgeted fuel and purchased power 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	\$4.0
Purchased power pricing and mix	(\$1.6)
Maritime Link Assessment	(\$5.1)
Natural gas, HFO, and LFO pricing and mix	\$1.8
Generation Mix	\$2.5
Total excluding load and PHP fuel costs	\$1.6

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 favorable pricing relative to HFO, as well as increased dispatch due to higher load.

Table 3

	Variance from BCF Refresh Budget
Natural gas consumption (MMBtu)	494,639
Natural gas price (\$/MMBtu)	(\$4.94)

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 January 31, 2019, \$4.0 million has been returned to customers.

As of January 31, 2019, the 2018 Maritime Link depreciation and deferred financing amortization costs collected through BCF rates totals \$5.9 million.

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

Sincerely,



Nicole Godbout
Director, Regulatory
c. Intervenor – P-887
Encl.

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

NON-CONFIDENTIAL



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

NSPI (FAM) M-1
NON CONFIDENTIAL

	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	\$ 27.7	\$ 18.6	\$ 27.7	\$ 18.6	\$ 152.9	18.1%	
Natural Gas	4.2	0.5	4.2	0.5	19.6	21.4%	
Biomass	0.4	0.2	0.4	0.2	2.7	14.8%	
Bunker C	3.4	4.7	3.4	4.7	12.3	27.6%	
Furnace	0.3	0.2	0.3	0.2	1.7	17.6%	
Diesel	0.7	0.0	0.7	0.0	0.0	0.0%	
Additives	2.0	1.6	2.0	1.6	13.0	15.4%	
Subtotal	\$ 38.8	\$ 25.7	\$ 38.8	\$ 25.7	\$ 202.2	19.2%	
Import Purchases	4.0	3.2	4.0	3.2	62.4	6.4%	
Maritime Link	8.6	13.7	8.6	13.7	164.0	5.2%	
Non-Wind IPP Purchases	1.2	3.2	1.2	3.2	33.6	3.6%	
Wind Purchases	7.9	8.9	7.9	8.9	81.5	9.7%	
COMFIT Purchases	7.2	10.0	7.2	10.0	108.9	6.6%	
Fuel for Resale Net Margin	(0.0)	0.0	(0.0)	0.0	0.0	0.0%	
Exports	0.3	0.0	0.3	0.0	0.0	0.0%	
Fuel and Purchased Power	\$ 68.0	\$ 64.7	\$ 68.0	\$ 64.7	\$ 652.6	10.4%	
Water Royalties	0.1	0.1	0.1	0.1	1.1	9.1%	
Total Fuel and Purchased Power	\$ 68.1	\$ 64.8	\$ 68.1	\$ 64.8	\$ 653.7	10.4%	
Less: Load Retention Revenue	(6.9)	(3.1)	(6.9)	(3.1)	(39.2)	17.6%	
Total Fuel and Purchased Power Less LRT Revenue	\$ 61.1	\$ 61.7	\$ 61.1	\$ 61.7	\$ 614.5	9.9%	
Less: Export Revenues	(0.4)	(0.3)	(0.4)	(0.3)	(2.5)	16.0%	
Less: 1PT RTP	(0.0)	(0.0)	(0.0)	(0.0)	(0.3)	0.0%	
Less: Shore Power	0.0	0.0	0.0	0.0	(0.0)	0.0%	
Less: Back Up / Top Up	(0.1)	0.0	(0.1)	0.0	0.0	0.0%	
Less: GRLF Fuel Costs	(0.0)	(0.0)	(0.0)	(0.0)	(0.5)	0.0%	
Loss / (Gain): Foreign exchange - Fuel Other	0.0	0.0	0.0	0.0	0.0	0.0%	
Net Fuel and Purchased Power	\$ 60.6	\$ 61.4	\$ 60.6	\$ 61.4	\$ 611.1	9.9%	
Total System Requirements (GWh)	1,222.2	1,192.7	1,222.2	1,192.7	11,331.1	10.8%	
Less: Export Sales and Attributed Losses	(5.0)	(5.0)	(5.0)	(5.0)	(50.0)	10.0%	
Less: GRLF Requirements	(0.7)	(0.4)	(0.7)	(0.4)	(23.9)	2.9%	
Less: Load Retention	(88.4)	(73.2)	(88.4)	(73.2)	(1,058.3)	8.4%	
Less: Shore Power	0.0	0.0	0.0	0.0	(1.0)	0.0%	
Less: 1PT RTP	(0.3)	(0.1)	(0.3)	(0.1)	(9.8)	3.1%	
Less: Back Up / Top Up	(1.6)	0.0	(1.6)	0.0	0.0	0.0%	
Less: Losses*	(82.0)	(86.0)	(82.0)	(86.0)	(725.6)	11.3%	
Total FAM Sales	1,044.3	1,027.9	1,044.3	1,027.9	9,462.5	11.0%	

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 January 31, 2019
(millions of dollars)

NSPI (FAM) M-2
NON CONFIDENTIAL

Base Fuel Component (BCF)

	<u>Actual</u>	<u>Budget</u>
2019 Beginning BCF Balance	-	-
(Over)/Under-recovered Prior to Current Month	-	-
(Over)/Under-recovered in Current Month	(2.84)	5.12
Balance Yet to be Recovered	(2.84)	5.12
(Over)/Under-recovery- Remainder of the Year	N/A	88.93
Interest on BCF Balance	(0.02)	0.03

Actual Adjustment Component (AA)

	<u>Actual</u>	<u>Budget</u>
2019 Beginning AA Balance	15.30	15.30
Recovered/(Refunded) Prior to Current Month	-	-
Opening Balance as of January 1, 2019	15.30	15.30
Recovered/(Refunded) in Current Month	(3.99)	(3.94)
Closing Balance as of January 31, 2019	19.29	19.24
Recovered/(Refunded) Remainder of the Year	N/A	(31.95)
Interest on AA Balance	0.11	0.11

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	-	-
Opening Balance as of January 1, 2019	(176.62)	(176.62)
Recovered/(Refunded) in Current Month	(0.00)	-
Non-fuel amounts applied to FAM in current period	-	-
Closing Balance as of January 31, 2019	(176.62)	(176.62)
Recovered/(Refunded) Remainder of the Year	N/A	-
Interest on BA Balance	(1.01)	(1.01)
FAM Deferral (Over)/Under-Recovery	(161.08)	(153.13)

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.

Commentary for Month: The 2019 Beginning FAM BA balance, has increased by an additional \$3.71M from the amount provided in NS Power's AA/BA filing, dated January 21, 2019, as a result of earnings above NS Power's allowable ROE range being applied to FAM in December, 2018. This amount was not included in the December 2018 monthly report or AA/BA filing as these reports were filed prior to the release of NS Power's 2018 Q4 financial statements.

Nova Scotia Power Inc.
Monthly FAM Reporting
2017 Total Accumulated Unrecovered FAM Balance
For the Period Ended January 31, 2019
(millions of dollars)

NSPI (FAM) M-3
NON CONFIDENTIAL

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)	(9.6)	(1.9)	(171.7)
March	(176.7)	38.1	(12.5)	(5.7)	(2.8)	(159.6)
April	(176.7)	50.6	(18.2)	1.0	(3.6)	(146.8)
May	(176.7)	50.6	(17.2)	1.9	(4.4)	(145.7)
June	(176.7)	50.6	(15.2)	5.2	(5.2)	(141.3)
July	(176.7)	50.6	(10.0)	5.9	(5.9)	(136.2)
August	(176.7)	50.6	(4.1)	6.1	(6.7)	(130.8)
September	(176.8)	50.6	2.0	10.0	(7.3)	(121.5)
October	(176.8)	50.6	12.0	9.7	(7.9)	(112.4)
November	(176.8)	50.6	21.7	4.0	(8.5)	(108.9)
December	(176.8)	50.6	25.7	(3.3)	(9.1)	(112.9)

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 Budget from August 2018.

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

**NSPI (FAM) M-4
NON CONFIDENTIAL**

Fuel Manual Updates

A new version of the Fuel Manual was approved by FST and became effective on January 30, 2019. Changes made relate to the new entity, NS Power Energy Marketing Inc

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 January 31, 2019
(millions of dollars)

NSPI (FAM) M-5
NON CONFIDENTIAL

Generating Unit	Additive Type	Quantity	Current Month		Year-to-Date	
			Cost	\$/MWh	Quantity	Cost
Lingan - Unit 1	Powder Activated Carbon	kgs			kgs	
Lingan - Unit 2	Powder Activated Carbon	kgs			kgs	
Lingan - Unit 3	Powder Activated Carbon	kgs			kgs	
Lingan - Unit 4	Powder Activated Carbon	kgs			kgs	
Point Tupper	Powder Activated Carbon	kgs			kgs	
Trenton 5	Powder Activated Carbon	kgs			kgs	
Trenton 6	Powder Activated Carbon	kgs			kgs	
Lingan	Calcium Chloride	L			L	
Point Tupper	Calcium Chloride	L			L	
Trenton	Calcium Chloride	L			L	
Total Costs - Powder Activated Carbon		586,476 kgs	\$1.258		586,476 kgs	\$1.258
Total Costs - Calcium Chloride		208,637 L	\$0.077		208,637 L	\$0.077
Total Mercury Sorbent Costs			\$1.335			\$1.335

^a Calculated using actual MWh produced by unit.

Commentary for the month:

YTD emissions are estimated at 9.0 kg. The start of year forecast indicated YTD emissions by January 2019 of 8.0 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	9.0				8.7
Feb					
Mar					
Apr					
May					
Jun					
Jul					
Aug					
Sep					
Oct					
Nov					
Dec					
Year to Date (f)	9.0	0.0	0.0		0.0

^b As reported by NSPI's Environmental Services.

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

^d The January mercury emission estimate was not available at the time of this report. An estimate is provided here based on actual generation for the month of January. The next monthly report will provide the January estimate based on mass balance results.

^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 January 31, 2019

NSPI (FAM) M-6
NON CONFIDENTIAL

	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>
<u>Solid Fuel</u>						
Solid Fuel Consumption Costs (\$)						
Solid Fuel Consumption (MMBtu)						
Solid Fuel Price (\$/MMBtu)						
Solid Fuel Price (\$/MWh)						
<u>Natural Gas</u>						
Natural Gas Consumption Costs (\$)						
Natural Gas Consumption (MMBtu)						
Natural Gas Price (\$/MMBtu)						
Natural Gas Price (\$/MWh)						
<u>Biomass</u>						
Biomass Consumption Costs (\$)						
Biomass Consumption (MMBtu)						
Biomass Price (\$/MMBtu)						
Biomass Price (\$/MWh)						
<u>Bunker</u>						
Bunker Consumption Costs (\$)						
Bunker Consumption (MMBtu)						
Bunker Price (\$/MMBtu)						
Bunker Price (\$/MWh)						
<u>Light Fuel Oil</u>						
Light Fuel Oil Consumption Costs (\$)						
Light Fuel Oil Consumption (MMBtu)						
Light Fuel Oil Price (\$/MMBtu)						
Light Fuel Oil Price (\$/MWh)						
<u>Imports</u>						
Imported Power Volume (MWh)						
Imported Power Price (\$/MWh)						
<u>Non-Wind IPP Purchases</u>						
IPP Purchase Volumes (MWh)						
IPP Purchase Price (\$/MWh)						
<u>Wind IPP Purchases</u>						
Wind Purchase Volumes (MWh)						
Wind Purchase Price (\$/MWh)						
<u>COMFIT</u>						
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 January 31, 2019**

**NSPI (FAM) M-7
NON CONFIDENTIAL**

<u>Category</u>	<u>Variance from budget</u>	<u>Details</u>
Total Fuel and Purchased Power Expense	5.0% above Budget for the month	
Total System Requirements	2.5% above Budget for the month	
Total FAM Sales	1.6% above Budget for the month	January's 1,044.3 GWh was more than the FAM Budget of 1,027.9 GWh
Net Fuel and Purchased Power Costs	6.7% above Budget for the month	January's \$60.6M was less than the FAM Budget of \$61.4M
Purchased Power Costs*	19.8% below Budget for the month	January's \$20.3M was less than the FAM Budget of \$25.3M. This is primarily due to decreased COMFIT and IPP volumes.
Solid Fuel Costs	48.9% above Budget for the month	January's \$27.7M was more than the FAM Budget of \$18.6M. Solid Fuel expenditure was higher as a result of increased dispatch of solid fuel generation as well as higher than forecast pricing.
Natural Gas	740.0% above Budget for the month	January's \$4.2M was more than the FAM Budget of \$0.5M. Higher than budgeted load coupled with lower than budgeted prices led to the dispatch of more than expected natural gas generation.
Biomass Fuel Costs	100.0% above Budget for the month	January's \$0.4M was more than the FAM Budget of \$0.2M. Biomass Fuel expenditure was higher as a result of increased generation from Biomass due to favorable pricing compared to HFO.
Heavy Fuel Oil	27.7% below Budget for the month	January's \$3.4M was less than the FAM Budget of \$4.7M. HFO fuel expenditure was lower as a result of decreased generation from HFO due to higher than budgeted pricing and lower cost generation options.
Mercury Sorbent/Additives	Above Budget for the month	January's \$2.0M was more than the FAM Budget of \$1.6M. Additive costs were higher due to higher coal consumption.
Mercury Emissions	Above Budget for the month	January's 9.0kg was higher than the forecast of 8.0kg.

* Purchased power costs are exclusive of Maritime Link assesment costs.

Nova Scotia Power Inc.
Monthly FAM Reporting
Load Retention Tariff Revenue
For the Period Ended January 31, 2019

NSPI (FAM) M-8

NON CONFIDENTIAL

	January \$	January MWH
Energy		
Line Losses		
Environmental Adder		
Accrual Booked		
Accrual Reversed		
Prior Period Adjustments		
LRT Credit in Monthly FAM Report (reported on M-1)	\$ 6,923,690	88,401

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
31-Dec-2018 to 06-Jan-2019														
07-Jan-2019 to 13-Jan-2019														
14-Jan-2019 to 20-Jan-2019														
21-Jan-2019 to 27-Jan-2019														
January 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.