

TAB 13

Rate of Return Information

Pennichuck East Utility, Inc.
Overall Rate of Return
For the Twelve Months Ended December 31, 2016
City vs Public Ownership

Schedule 1

<u>Capital Component</u>	<u>Pro Forma</u> <u>Test Year</u>	<u>Component</u> <u>Ratio</u>	<u>Component</u> <u>Cost Rate</u>	<u>Weighted</u> <u>Average</u> <u>Cost Rate</u>	<u>Adjustment</u>	<u>Adjusted</u> <u>Amount</u>	<u>Component</u> <u>Ratio</u>	<u>Component</u> <u>Cost Rate</u>	<u>Weighted</u> <u>Average</u> <u>Cost Rate</u>
Long-term Debt	15,223,935	88.46%	4.11%	3.64%	\$ (5,142,389)	10,081,546	42.68%	4.11%	1.75%
Intercompany Debt	1,728,686	10.04%	3.74% (1)	0.38%		1,728,686	7.32%	3.74%	0.27%
Preferred Stock	-	0.00%	0.00%	0.00%		-	0.00%	0.00%	0.00%
Common Equity	<u>257,791</u>	<u>1.50%</u>	5.63%	<u>0.08%</u>	(3) \$ <u>11,552,442</u>	<u>11,810,233</u>	<u>50.00%</u>	9.75%	<u>4.88%</u>
Overall Rate of Return	\$ <u>17,210,412</u>	<u>100.00%</u>		<u>4.10%</u>	\$ <u>6,410,053</u>	\$ <u>23,620,465</u>	<u>100.00%</u>		<u>6.90%</u>

Notes:

(1) The interest reflected is the effective interest rates for 2016 per Schedule F-35 of the Annual Report.

(2) The return on equity based on Order 25,292 in DW 11-026 is as follows:

Average 2016 30 year Treasury bonds	2.63%
Plus 3.0%	<u>3.00%</u>
Total	<u>5.63%</u>

(3) To reverse the 1/25 fresh start entry related to equity as follows:

Paid in Capital	\$ 6,000,000
Comprehensive Income	\$ (529,702)
Retained Earnings	<u>\$ 939,755</u>
Pre Acquisition Company Equity at 12/31/2011	<u>\$ 6,410,053</u>
Proforma equity raises that would maintain 50/50 Debt/Equity ratio	<u>\$ 5,142,389</u>
Add 2016 Retained Earnings	<u>\$ 257,791</u>
Projected Pre Acquisition Company Equity at 12/31/2016	<u><u>\$ 11,810,233</u></u>

Pennichuck East Utility, Inc.
Overall Rate of Return
For the Twelve Months Ended December 31, 2016

Schedule 1

<u>Capital Component</u>	<u>Pro Forma Test Year</u>	<u>Component Ratio</u>	<u>Component Cost Rate</u>	<u>Weighted Average Cost Rate</u>
Long-term Debt	15,223,935	88.46%	4.11%	3.64%
Intercompany Debt	1,728,686	10.04%	3.74% (1)	0.38%
Preferred Stock	-	0.00%	0.00%	0.00%
Common Equity	<u>257,791</u>	<u>1.50%</u>	5.63% (2)	<u>0.08%</u>
Overall Rate of Return	<u>\$ 17,210,412</u>	<u>100.00%</u>		<u>4.10%</u>

Notes:

(1) The interest reflected is the effective interest rates for 2016 per Schedule F-35 of the Annual Report.

(2) The return on equity based on methodology used in Order 25,292 in DW 11-026 is as follows:

Average 2016 30 year Treasury bonds	2.63%
Plus 3.0%	<u>3.00%</u>
Total	<u>5.63%</u>

Pennichuck East Utility, Inc.
Capital Structure for Ratemaking Purposes
For the Twelve Months Ended December 31, 2016

Schedule 2

	<u>Test Year</u>	<u>Pro Forma</u> <u>Adjustments</u>		<u>Pro Forma</u> <u>Test Year</u>	<u>Component</u> <u>Ratio</u>
Long-term Debt	16,658,945	(1,435,010) (1)		15,223,935	88.46%
Intercompany Debt	\$ 4,038,030	(2,309,344) (1)		1,728,686	10.04%
<u>Common Equity:</u>					
Common Stock	100			100	
Paid In Capital	13,333,907	(13,333,907) (2)		0	
Comprehensive Income	(272,011)	529,702 (2)		257,691	
Retained Earnings	-			-	
Total Common Equity	13,061,996			257,791	1.50%
Total Capital	<u>\$ 33,758,970</u>			<u>\$ 17,210,412</u>	100.00%

Notes:

(1) Eliminate Capital Recovery Surcharge Related Assets with the offset to Long Term Debt and reclass to Intercompany Debt.

The Long Term Debt related to the SRF Loan for the Birch Hill interconnection is reclassified to Intercompany.

(2) Per Order 25,292 in DW 11-026, eliminate the MARA and related equity:

MARA	7,992,375	balance at 12-31-16
Equity as of 1/25/12	939,755	amount to be kept the same with each rate case - consistent with PWW
Paid in Capital as of 1/25/12	6,000,000	amount to be kept the same with each rate case - consistent with PWW
Adjustment to proform Paid in Capital to 0	(1,598,223)	adjustment amount to zero out PIC consistent with PWW methodology
	<u>13,333,907</u>	
Comprehensive Income as of 1/25/12	<u>(529,702)</u>	amount to be kept the same with each rate case

Pennichuck East Utility, Inc.
Historical Capital Structure
For the Twelve Months Ended December 31, 20012 - 2016

Schedule 3

	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2013</u>	<u>2012</u>
Bonds	-	-	-	-	4,226,497
Other LTD	16,658,945	13,537,311	11,760,724	10,748,047	3,752,294
Long-term Debt	<u>\$ 16,658,945</u>	<u>\$ 13,537,311</u>	<u>\$ 11,760,724</u>	<u>\$ 10,748,047</u>	<u>\$ 7,978,791</u>
Intercompany Debt	4,038,030	5,799,592	6,294,442	5,133,269	6,359,294
Common Equity:					
Common Stock	100	100	100	100	100
Paid In Capital	13,333,907	13,889,862	14,340,507	15,152,158	15,904,329
Comprehensive Income	(272,011)	(328,900)	(349,855)	(231,906)	(495,228)
Retained Earnings	-	-	(137,658)	-	100,542
Total Common Equity	<u>\$ 13,061,996</u>	<u>\$ 13,561,063</u>	<u>\$ 13,853,094</u>	<u>\$ 14,920,352</u>	<u>\$ 15,509,743</u>
Total Capital	<u>\$ 33,758,970</u>	<u>\$ 32,897,965</u>	<u>\$ 31,908,259</u>	<u>\$ 30,801,668</u>	<u>\$ 29,847,827</u>

Long-term Debt	49.35%	41.15%	36.86%	34.89%	26.73%
Total Common Equity	38.69%	41.22%	43.42%	48.44%	51.96%
Intercompany Debt	<u>11.96%</u>	<u>17.63%</u>	<u>19.73%</u>	<u>16.67%</u>	<u>21.31%</u>
Total Capital	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>

Pennichuck East Utility, Inc.
Historical Capitalization Ratios
For the Twelve Months Ended December 31, 2012 - 2016

Schedule 4

	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2013</u>	<u>2012</u>
Long-term Debt	49.35%	41.15%	36.86%	34.89%	26.73%
Total Common Equity	38.69%	41.22%	43.42%	48.44%	51.96%
Intercompany Debt	<u>11.96%</u>	<u>17.63%</u>	<u>19.73%</u>	<u>16.67%</u>	<u>21.31%</u>
Total Capital	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>	<u>100.00%</u>

F-35 LONG TERM DEBT (Accounts 221, 222, 223, and 224)

1. Report by balance sheet accounts particulars concerning long-term debt included in Accounts 221, Bonds; 222, Reacquired Bonds; 223, Advances from Associated Companies; and 224, Other Long-Term Debt.
2. For bonds assumed by the respondent, column (a) should include name of the issuing company as well as the description of the bonds.
3. Advances from Associated Companies should be reported separately for advances on notes, and advances on open accounts. Demand notes shall be designated as such. Names of associated companies from which advances were received shall be shown in col. (a).
4. In an insert schedule give explanatory particulars for accounts 223, and 224 of net changes during the year. With respect to long-term advances show for each company (a) principal advanced during year, (b) interest added to principal amount, and (c) principal repaid during year. Give Commission authorization case numbers and dates.
5. If the respondent has pledged any of its long-term debt securities, give particulars in a footnote, including name of the pledge and purpose of the pledge.
6. If the respondent has any long-term debt securities which have been nominally issued and are nominally outstanding at end of year, describe such securities in a footnote.
7. If interest expense was incurred during the year on any obligations retired or reacquired before end of year, include such interest expense in column (f). Explain any difference between the total of column (f) and the total of Account 427, Interest on Long-term Debt, and Account 430, Interest on Debt to Associated Companies.
8. Give particulars concerning any long-term debt authorized by the commission but not yet issued.

Line No.	Class and Series of Obligation (a)	Date of Issue (b)	Date of Maturity (c)	Outstanding (d)	INTEREST FOR YEAR		HELD BY RESPONDENT		Redemption Price per \$100 End of Year (i)	Commission Order
					Rate (e)	Amount (f)	Reacquired Bonds (Acct. 222) (g)	Sinking and Other Funds (h)		
1	Bonds (Account 221)									
2	CoBank (1)	3/1/2010	3/1/2030	3,331,797	5.950%	207,238				25,041
3	CoBank	7/21/2013	6/20/2023	1,505,183	3.620%	56,824				25,480
4	CoBank	7/21/2013	6/20/2033	814,894	4.250%	36,058				25,480
5	CoBank	3/1/3015	3/6/2040	602,072	4.900%	30,393				25,746
6	Green Hills SRF	8/14/2002	1/1/2025	182,618	3.728%	7,275				23,922
7	Pelham SRF	5/9/2006	1/1/2027	330,182	3.488%	12,032				24,375
8	Maple Hills SRF	12/1/2009	6/1/2030	436,351	2.952%	13,301				24,844
9	Birch Hill SRF	9/14/2007	12/1/2031	1,435,010	2.864%	42,284				24,739
10	Locke Lake 2007 SRF	1/1/2010	5/1/2030	199,933	2.952%	6,154				24,739
11	Locke Lake 2011 SRF	6/1/2012	6/1/2033	263,630	2.864%	7,719				25,209
12	Liberty Tree	12/15/2011	4/1/2035	377,874	3.104%	11,945				25,248
14	Locke Lake 2012 SRF	12/1/2013	12/1/2033	351,578	2.720%	9,802				25,348
15	Locke Lake Dam Site 2	9/1/2014	7/1/2035	376,950	2.720%	10,482				
16	Locke Lake - Winwood & Monroe Phase	5/22/2014	7/1/2036	379,426	2.720%	13,921				
17	Hickory & Avery	td	4/1/2036	410,771	2.720%	10,959				25,890
18	W&E Main Replacement	9/1/2016	8/1/2036	1,005,196	2.616%	38,530				25,890
19	Hardwood Treatment Station	8/1/2016	7/1/2036	560,864	2.464%	15,263				25,890
20	Locke Lake - Winwood & Monroe Phase 2	12/1/2016	11/1/2036	397,415	2.464%	11,137				25,773
	Locke Lake - Vamey Road	11/1/2017	10/1/2037	1,497,202		6,043				25,890
21	Co Bank Patronage					(66,012)				
	Co Bank 1.25M Portion of 2.2M Loan T6			2,200,000		24,450				25,890
22	TOTALS			16,658,945		505,798	-	\$ -		
23	Advances from Associated Companies (Account 223)									
24										
25		From Penn		4,038,030	3.74%	150,874				
26		Corp								
27	TOTALS			4,038,030		150,874	\$ -	\$ -		
28	Other Long Term Debt (Account 224)									
29										
30	Derivative			453,352		-				
31	TOTALS			453,352		-	\$ -	\$ -		

Note:

(1) The \$4.5 million floating rate secured note payable to Co Bank has a related interest rate swap agreement.

17,112,297

Pennichuck East Utility, Inc.
Weighted Average Cost of Long-Term Debt
For the Twelve Months Ended December 31, 2016

Schedule 5

-325.95

Debt associated with assets in use as of 12-31-15
Columns used in calculation for 2016 TY proform Adj

Holder	Term	Maturity	Coupon Rate	Outstanding Balance as of 12/31/16	New Debt Added in 2017	Annual Interest (1)	Annual Amortization Issue Costs	All in Annual Cost	Effective Rate	2016 TY Principal Payments(9)	2016 TY Interest Payments	Principal and Interest Payments	2016 Proformed Adj to 2016 TY Principal	2016 Proformed Adj to 2016 TY Interest	2016 TY Proformed Principal and Interest Payments	2017 Principal Payments	2017 Interest Payments	2017 Principal and Interest Payments	Proformed 2017 Interest Adjustment for Step	Proformed 2017 Principal Adjustment for Step	Proformed 2017 Principal & Interest Payments for Step
CoBank	20	03/01/30	5.950%	3,331,797		198,242	1,455	199,697	5.99%	\$ 190,984.73	\$ 208,210.98	\$ 399,195.71	\$ 7,219.75	\$ (12,181.17)	\$ 394,234.29	\$ 198,204.46	\$ 60,628.81	\$ 394,234.29			\$ 394,234.29
State of NH SRF (Green Hills) (9)	20	01/01/25	3.728%	182,818		6,808	6,854	13,662	7.48%	\$ 17,325.00	\$ 7,274.92	\$ 24,599.92	\$ -	\$ (862.04)	\$ 23,737.87	\$ 17,325.00	\$ 6,412.87	\$ 23,737.87			\$ 23,737.87
State of NH SRF (Pelham Tank)	20	01/01/27	3.488%	330,182		11,517	247	11,764	3.56%	\$ 27,126.19	\$ 12,031.97	\$ 39,158.16	\$ 961.43	\$ (961.43)	\$ 39,158.16	\$ 28,087.62	\$ 11,070.54	\$ 39,158.16			\$ 39,158.16
State of NH SRF (Maple Hills)	20	06/01/30	2.952%	436,351		12,881	471	13,352	3.06%	\$ 26,126.00	\$ 13,300.74	\$ 39,426.74	\$ 784.00	\$ (781.79)	\$ 39,428.95	\$ 26,910.00	\$ 12,518.95	\$ 39,428.95			\$ 39,428.95
State of NH SRF (Birch Hill) (4)	20	12/01/31	2.864%	1,435,010		41,099	549	41,648	2.90%	\$ 76,044.39	\$ 42,283.53	\$ 118,327.92	\$ (76,044.39)	\$ (42,283.53)	\$ -	\$ 78,251.11	\$ 40,076.81	\$ -	\$ (78,251.11)	\$ (40,076.81)	\$ -
State of NH SRF (Locke Lake - 2007) (9)	20	05/01/30	2.952%	199,933		5,902	90	5,992	3.00%	\$ 12,001.00	\$ 6,154.34	\$ 18,155.34	\$ 128.00	\$ (467.03)	\$ 17,816.31	\$ 12,129.00	\$ 5,687.31	\$ 17,816.31			\$ 17,816.31
State of NH SRF (Locke Lake - 2011) (9)	20	08/01/33	2.864%	263,630		434	7,955	8,389	3.03%	\$ 4,789.51	\$ 7,719.39	\$ 12,508.90	\$ 533.21	\$ (316.71)	\$ 12,725.40	\$ 5,322.72	\$ 7,402.68	\$ 12,725.40			\$ 12,725.40
State of NH SRF (Liberty Tree) (9)	20	04/01/35	3.104%	377,874		11,729	531	12,260	3.24%	\$ 5,869.00	\$ 11,947.85	\$ 17,816.85	\$ 698.00	\$ (410.25)	\$ 18,102.60	\$ 6,565.00	\$ 11,537.60	\$ 18,102.60			\$ 18,102.60
State of NH SRF (Locke Lake - 2012)	20	12/1/2033	2.720%	351,576		9,563	136	9,699	2.76%	\$ 16,151.01	\$ 9,801.87	\$ 25,952.88	\$ 444.80	\$ (444.80)	\$ 25,952.88	\$ 16,595.61	\$ 3,357.07	\$ 25,952.88			\$ 25,952.88
CoBank \$1.7M Loan (RX0846T4)	10	06/20/23	3.620%	1,505,183		54,488	1,663	56,150	3.73%	\$ 65,067.19	\$ 56,813.58	\$ 121,880.77	\$ 2,589.96	\$ (2,573.60)	\$ 121,897.13	\$ 67,657.15	\$ 54,239.98	\$ 121,897.13			\$ 121,897.13
CoBank \$925K Loan (RX0846T3)	10	06/20/33	4.250%	814,894		34,633	446	35,079	4.30%	\$ 33,112.48	\$ 36,058.08	\$ 69,170.56	\$ 1,558.07	\$ (1,547.67)	\$ 69,180.96	\$ 34,670.55	\$ 34,510.41	\$ 69,180.96			\$ 69,180.96
SRF Loan - Locke Lake Dam Site Phase 2	20	07/01/35	2.720%	376,950		10,253	-	10,253	2.72%	\$ 15,470.96	\$ 10,481.92	\$ 25,952.88	\$ 428.09	\$ (426.09)	\$ 25,952.88	\$ 15,897.05	\$ 10,055.83	\$ 25,952.88			\$ 25,952.88
SRF Loan - Locke Lake-Winwood & Monroe-Phase	20	07/01/36	2.720%	379,426		10,320	343	10,663	2.81%	\$ 7,329.35	\$ 10,478.29	\$ 17,806.64	\$ 7,530.38	\$ (343.44)	\$ 25,093.56	\$ 14,958.71	\$ 10,134.85	\$ 25,093.56			\$ 25,093.56
SRF Loan - Locke Lake-Winwood & Monroe-Phase	20	11/01/36	2.464%	397,415		9,792	263	10,055	2.53%	\$ 2,585.00	\$ 11,137.39	\$ 13,722.39	\$ 13,152.00	\$ (1,521.99)	\$ 25,352.40	\$ 15,737.00	\$ 9,615.40	\$ 25,352.40			\$ 25,352.40
SRF Loan - W&E Main Replacement	20	08/01/36	2.616%	1,005,196		26,296	672	26,968	2.68%	\$ 16,290.67	\$ 38,529.93	\$ 54,820.60	\$ 23,536.31	\$ (12,708.31)	\$ 65,649.60	\$ 39,828.98	\$ 25,820.62	\$ 65,649.60			\$ 65,649.60
SRF Loan - Hickory & Avery	20	04/01/36	2.720%	410,771		11,173	119	11,292	2.75%	\$ 12,194.99	\$ 10,958.80	\$ 23,153.79	\$ 4,441.26	\$ (411.57)	\$ 27,183.48	\$ 16,836.25	\$ 10,547.23	\$ 27,183.48			\$ 27,183.48
SRF Loan - Hardwood Treatment Station	20	07/01/36	2.464%	560,864		13,920	349	14,169	2.53%	\$ 11,136.12	\$ 20,983.14	\$ 32,119.26	\$ 11,551.51	\$ (7,418.53)	\$ 36,252.24	\$ 22,687.63	\$ 13,564.61	\$ 36,252.24			\$ 36,252.24
CoBank 625K Loan	25	03/06/40	4.900%	602,072		29,502	1,635	31,137	5.17%	\$ 13,369.97	\$ 30,388.41	\$ 43,758.38	\$ 786.23	\$ (760.55)	\$ 43,764.06	\$ 14,136.20	\$ 29,627.86	\$ 43,764.06			\$ 43,764.06
CoBank 1.25M Loan T6(1st tranche)	25	11/01/41	4.200%	1,250,000		52,500	278	52,778	4.22%	\$ -	\$ 24,449.66	\$ 28,678.60	\$ 28,678.60	\$ 28,281.16	\$ 81,409.42	\$ 28,678.60	\$ 52,730.82	\$ 81,409.42			\$ 81,409.42
CoBank 950K Loan T6(2nd tranche) (7)	25	11/01/41	4.830%	950,000		45,885	211	46,096	4.85%	\$ -	\$ -	\$ -	\$ 11,197.23	\$ 25,090.72	\$ 36,287.95	\$ 11,197.23	\$ 25,090.72	\$ 36,287.95	\$ 8,704.27	\$ 19,504.57	\$ 64,496.79
SRF Loan - Locke Lake Varney Road	20	11/01/37	1.960%	1,497,202		29,345	691	30,036	2.01%	\$ -	\$ -	\$ -	\$ 62,060.00	\$ 28,489.24	\$ 90,549.24	\$ 62,060.00	\$ 28,489.24	\$ 90,549.24			\$ 90,549.24
Intercompany 2013 PEU - \$1,276,850 (5)	10	05/03/23	2.650%	857,632	(857,632)	-	-	-	2.65%	\$ -	\$ -	\$ -	\$ 145,489.70	\$ (145,489.70)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Intercompany 2013 NorthCountry - \$1,723,150 (5)	10	05/03/23	2.650%	1,157,403	-	30,671	-	30,671	2.65%	\$ -	\$ -	\$ -	\$ 196,343.02	\$ (165,671.85)	\$ (30,671.17)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Intercompany 2015 PEU - \$1.0M (5)	10	03/04/25	2.700%	843,884	(843,884)	22,785	-	22,785	2.70%	\$ -	\$ -	\$ -	\$ 114,218.52	\$ (114,218.52)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Refinanced Intercompany 2013 PEU - \$1,276,850 (6)	30	TBD	3.200%	857,632	27,444	27,444	-	27,444	3.20%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 44,894.52	\$ -	\$ -	\$ 44,894.52			\$ 44,894.52
Refinanced Intercompany 2015 PEU - \$1.0M (6)	30	TBD	3.200%	843,884	27,004	27,004	-	27,004	3.20%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 44,174.82	\$ -	\$ -	\$ 44,174.82			\$ 44,174.82
SRF Loan 2017 - Brady Ave (Derry) (2)	20	TBD	1.960%	190,000	3,724	3,724	-	3,724	1.96%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,681.91	\$ 4,066.52	\$ 7,748.43
SRF Loan 2017 Hillcrest Road (Litchfield) (2)	20	TBD	1.960%	-	-	-	-	-	1.96%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Co-Bank(3)	25	-	4.250%	-	-	-	-	-	4.25%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TOTAL				19,517,864	598,998	785,036	17,437	802,473	4.11%	\$ 552,972.56	\$ 569,004.79	\$ 1,578,028.59	\$ (323,067.65)	\$ (35,231.55)	\$ 1,308,798.73	\$ 733,536.09	\$ 604,521.21	\$ 1,219,729.42	\$ (48,482.53)	\$ (7,011.03)	\$ 1,371,633.99

Notes:

(1) The annual interest expense is calculated based on the outstanding balance at year end multiplied by the stated interest rate. The calculated interest expense will differ from interest expense recorded in the last year due to loan repayments made during the year.

(2) Loan is not in repayment mode and final debt amortization schedule not available. Rate used was based on current SRF rate when loan was secured. This is the highest rate the loan would be subject to (1.56%) per Order DW 17-055. The first full year of principal and interest payments are estimated based on the amount of investment in phase one.

(3) Funding levels and rates based on estimates. Basis used was Projected Capital Expenditures of debt. \$ 1,014,497. See (Schedule 3 Step Additions in 1604.06) less funding provided by SRF and remaining funds from Co-Bank 2016.

Estimated Capital Expenditures 2017 \$ 1,014,497.00

SRF Funding \$ (190,000.00)

Co-Bank 2016 funding remaining \$ (415,497.25)

Co-Bank 2017 funding \$ 408,998.75

(4) The Long Term Debt related to the SRF Loan for the Birch Hill assets associated with Capital Recovery-Surcharge Related Property. The amount of this debt is proformed out. It will be included in intercompany debt.

(5) The 2015 Intercompany Loan from PEU to PEU was for \$3,000,000 of which \$1,723,150 was for NC Surcharge Capex and the remaining \$1,276,850 was for PEU Capex.

Monthly PMI Payment on this loan 28,486 per amortization schedule

Annual PMI payment on this loan 341,833

(6) Intercompany debt refinanced W/1.1 multiplier

2016 PMI payments with 1.1 multiplier \$ 259,708.22

Outstanding balance of debt being refinanced \$ 1,701,516.37

Refinanced Rate 3.20%

New PMI annual payment with 1.1 multiplier \$ 97,976.28

Annual savings from refinancing \$ 187,732.77

(7) Portion of Co-Bank funding used in 2nd Tranche drawdown 950,000.00

Capital Expenditures in 2016 (594,558.73)

Remaining funds to be used on 2017 capital 415,492.25

Proportion of funding expended in 2016 -56.26%

The 2016 proformed adj. are based on following:

The interest and principal amounts are prorated based on percentage of 2016 capital expended to total 2nd tranche)

(8) Principal payment shown is net of debt principal forgiveness

North Country Surcharge InterCompany Refi Calculation

	# of Customers	Existing PMI on NC Surcharge	Revised NC Surcharge with InterCompany Refi	Current Tierified NC Surcharge	Current NC Annual Revenues	Proposed NC Surcharges with InterCompany Refi	Annual NC Revenues with Proposed NC Surcharges
Birch Hill	214	\$ 118,327.82	\$ 118,327.82	\$ 45.09	\$ 118,256.40	\$ 12.81	\$ 32,896
Sanette Estates	81			\$ 10.74	\$ 10,439.28	\$ 10.74	\$ 10,439
Locke Lake	682	\$ 196,343.02	\$ 196,343.02	\$ 16.36	\$ 173,154.24	\$ 12.61	\$ 135,980
Totals -	1177	\$ 314,670.94	\$ 178,914.51		\$ 301,849.92		\$ 178,914.51

Outstanding Balance on Current InterCompany NC Loan - 1,157,403

Proposed Term of New InterCompany NC Loan - 30 Years

Proposed Interest Rate for New InterCompany NC Loan - 3.20%

Pennichuck East Utility, Inc.
Short-Term and Long-Term Intercompany Debt
For the Thirteen Months Ended December 31, 2016

Schedule 6

	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	13 Month Average
NOTE PAYABLE: PCP-2015 1M LOAN	844,086	836,669	829,236	821,178	813,711	806,227	798,114	790,597	783,062	774,895	767,326	759,741	751,518	798,182
CURR PORT LTD: 3M PCP NP	283,710	283,710	283,710	285,594	285,594	285,594	287,490	287,490	287,490	289,399	289,399	289,399	291,320	286,815
CURR PORT LTD: 1M PCP NP	89,908	89,908	89,908	90,516	90,516	90,516	91,129	91,129	91,129	91,745	91,745	91,745	92,366	90,843
INTERCOMPANY SHORT TERM DEBT	1,217,704	1,210,288	1,202,854	1,197,288	1,189,821	1,182,337	1,176,733	1,169,215	1,161,681	1,156,039	1,148,470	1,140,885	1,135,204	1,176,040
NOTE PAYABLE: PCP-2015 3M LOAN	2,015,662	1,992,254	1,968,794	1,943,398	1,919,834	1,896,219	1,870,654	1,846,934	1,823,162	1,797,428	1,773,550	1,749,620	1,723,715	1,870,869
INTERCO LOAN NC-INTEGRATED	-	-	-	-	-	-	-	-	-	-	-	-	-	-
INTERCO PAY/REC: PEU/TSC	-	-	-	-	-	-	-	-	-	-	-	-	-	-
INTERCO PAY/REC: PEU/PWS	-	-	-	259	259	260	260	260	260	226	227	227	-	172
INTERCO PAY/REC: PEU/PAC	-	(1)	(3)	(5)	(9)	(15)	880	874	2,085	2,130	2,124	2,118	-	783
INTERCO PAY/REC: PEU/PWW	-	370,799	666,056	895,651	1,176,009	1,459,279	1,779,261	1,984,953	2,308,594	2,572,726	2,830,838	3,142,290	-	1,475,881
AP INTERCO PAY/REC: PEU/PAC	-	(2,255)	(2,644)	(2,739)	(6,391)	(6,786)	(7,053)	(8,127)	(8,382)	(9,241)	(9,241)	(9,241)	-	(5,546)
INTERCO PAY/REC: PEU/PCP	2,566,226	2,369,976	1,952,652	2,441,686	2,219,372	2,132,598	1,178,644	1,105,433	248,225	(48,959)	(1,376,039)	(845,746)	1,179,110	1,163,321
INTERCOMPANY LONG TERM DEBT	4,581,888	4,730,774	4,584,854	5,278,249	5,309,075	5,481,555	4,822,646	4,930,328	4,373,944	4,314,310	3,221,459	4,039,267	2,902,826	4,505,475
TOTAL INTERCOMPANY DEBT	5,799,592	5,941,061	5,787,708	6,475,537	6,498,896	6,663,892	5,999,379	6,099,544	5,535,625	5,470,349	4,369,930	5,180,152	4,038,030	5,681,515

Pennichuck East Utility, Inc.
Weighted Average Cost of Preferred Stock
For the Twelve Months Ended December 31, 2012

Schedule 7

Security	Term	Maturity	Rate	Outstanding Balance	Annual Dividends	Annual Amortization	All In Annual Cost	Effective Rate
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NOT APPLICABLE

Pennichuck East Utility, Inc.
Return on Common Equity
For the Twelve Months Ended December 31, 2016

Schedule 8

Source: 30 yr treasury rates used by S&P

Date	Open	High	Low	Close
1/1/2017				3.02
12/1/2016				3.11
11/1/2016				2.86
10/1/2016				2.5
9/1/2016				2.35
8/1/2016				2.26
7/1/2016				2.23
6/1/2016				2.45
5/1/2016				2.63
4/1/2016				2.62
3/1/2016				2.68
2/1/2016				2.62
1/1/2016				2.86
30 year Treasury bonds				2.63
Average				2.63
Plus				3.00
Cost of Equity				5.63%

Pennichuck East Utility, Inc.
Report of Proposed Rate Changes
For the Twelve Months Ended December 31, 2016

Proforma
Schedule 9
Temporary

DOCKET NO:
TARIFF NO.:

DW 17-
1 or **PAGE NOS.** 38, 40, 42-44,45,48

DATE FILED:
EFF. DATE:

Rate or Class of Service	Effect of Proposed Change	Average Number of Customers	Normalized 2016 TY Proforma Rates	Proposed Temporary Rates	Proposed Change	
					Amount	%
G-M ²	Increase	7,321	5,933,004	6,885,844	952,840	16.06%
Private FP ³	Increase	148	257,130	298,425	41,295	16.06%
FP - Hydrants	Increase	4	628,340	729,251	100,911	16.06%
Windham Public Hydrant ⁴	Increase	328	31,372	36,410	5,038	16.06%
Raymond Public Hydrant ⁴	Increase	232	5,171	6,001	830	16.06%
Lee Public Hydrant ⁴	Increase	34	3,581	4,156	575	16.06%
Exeter Public Hydrant ⁴	Increase	52	4,656	5,404	748	16.06%
Birch Hill Public Hydrant ⁴	Increase	214	9,211	10,690	1,479	16.06%
Bow Public Hydrant ⁴	Increase	24	1,550	1,799	249	16.06%
NC Capital Recovery	Decrease		299,985	178,915	(121,070)	-40.36%
TOTALS		8,357	7,174,000	8,156,896	982,896	

² Includes NC Minimum Consumption Charges

³ Includes Private Fire Services and Private Hydrants - count is number of accounts

⁴ Customer Count for the Windham, Raymond and Bow Public Hydrants are customer counts of G-M

Signed by: _____

Donald L. Ware

Title: **Chief Operating Officer**

Temp Rate set @

80% of requested perm rate

Pennichuck East Utility, Inc.
Report of Proposed Rate Changes
For the Twelve Months Ended December 31, 2016

Pro Forma
Schedule 9
Permanent

DOCKET NO: DW 17- **DATE FILED:** _____
TARIFF NO.: 1 **or PAGE NOS.** 38, 40, 42-43,45,48 **EFF. DATE:** _____

Rate or Class of Service	Effect of Proposed Change	Average Number of Customers	Normalized 2016 TY Proforma Rates	Proposed Perm Rates	Proposed Change (4)	
					Amount	% of Revenues
G-M ²	Increase	7,321	5,933,004	7,124,143	\$1,191,139	20.08%
Private FP ³	Increase	148	257,130	308,753	\$51,623	20.08%
FP - Hydrants	Increase	4	628,340	754,489	\$126,149	20.08%
Windham Public Hydrant ⁴	Increase	328	31,372	37,670	\$6,298	20.08%
Raymond Public Hydrant ⁴	Increase	232	5,171	6,209	\$1,038	20.08%
Lee Public Hydrant ⁴	Increase	34	3,581	4,300	\$719	20.08%
Exeter Public Hydrant ⁴	Increase	52	4,656	5,591	\$935	20.08%
Birch Hill Public Hydrant ⁴	Increase	214	9,211	11,060	\$1,849	20.08%
Bow Public Hydrant ⁴	Increase	24	1,550	1,861	\$311	20.08%
NC Capital Recovery	Decrease		299,985	178,915	(121,070)	-40.36%
TOTALS		8,357	7,174,000	8,432,991	\$1,258,991	

² Includes NC Minimum Consumption Charges

³ Includes Private Fire Services and Private Hydrants - count is number of accounts

⁴ Customer Count for the Windham, Raymond and Bow Public Hydrants are included in the total customer counts of G-M

Signed by: _____
Donald L. Ware
Title: **Chief Operating Officer**

Pennichuck East Utility, Inc.
Report of Proposed Rate Changes
For the Twelve Months Ended December 31, 2016

Pro Forma
Schedule 9
Step Increase

DOCKET NO:
TARIFF NO.:

DW 17-
1 or **PAGE NOS. 38, 40, 42-43,45,48**

DATE FILED:
EFF. DATE:

					Proposed Change (4)	
Rate or Class of Service	Effect of Proposed Change	Average Number of Customers	Normalized 2016 TY Proforma Rates	Proposed Step Rates	Amount	%
G-M ²	Increase	7,321	5,933,004	6,001,827	68,823	1.16%
Private FP ³	Increase	148	257,130	260,113	2,983	1.16%
FP - Hydrants	Increase	4	628,340	635,629	7,289	1.16%
Windham Public Hydrant ⁴	Increase	328	31,372	31,736	364	1.16%
Raymond Public Hydrant ⁴	Increase	232	5,171	5,231	60	1.16%
Lee Public Hydrant ⁴	Increase	34	3,581	3,623	42	1.16%
Exeter Public Hydrant ⁴	Increase	52	4,656	4,710	54	1.16%
Birch Hill Public Hydrant ⁴	Increase	214	9,211	9,318	107	1.16%
Bow Public Hydrant ⁴	Increase	24	1,550	1,568	18	1.16%
NC Capital Recovery	Decrease		299,985	178,915	(121,070)	-40.36%
TOTALS		8,357	7,174,000	7,132,668	(41,332)	

² Includes NC Minimum Consumption Charges

³ Includes Private Fire Services and Private Hydrants - count is number of accounts

⁴ Customer Count for the Windham, Raymond and Bow Public Hydrants are included in the total customer counts of G-M

Signed by: _____

Donald L. Ware

Title: **Chief Operating Officer**

Pennichuck East Utility, Inc.
Report of Proposed Rate Changes
For the Twelve Months Ended December 31, 2016

Pro Forma
Schedule 9
Combined
Permanent & Step

DOCKET NO:
TARIFF NO.:

DW 17-
1 or **PAGE NOS. 38, 40, 42-43, 45, 48**

DATE FILED:
EFF. DATE:

Rate or Class of Service	Effect of Proposed Change	Average Number of Customers	Normalized 2016 TY Proforma Rates	Proposed Combined Rates	Proposed Change (4)	
					Amount	%
G-M ²	Increase	7,321	5,933,004	7,193,364	1,260,360	21.24%
Private FP ³	Increase	148	257,130	311,753	54,623	21.24%
FP - Hydrants	Increase	4	628,340	761,820	133,480	21.24%
Windham Public Hydrant ⁴	Increase	328	31,372	38,036	6,664	21.24%
Raymond Public Hydrant ⁴	Increase	232	5,171	6,269	1,098	21.24%
Lee Public Hydrant ⁴	Increase	34	3,581	4,342	761	21.24%
Exeter Public Hydrant ⁴	Increase	52	4,656	5,645	989	21.24%
Birch Hill Public Hydrant ⁴	Increase	214	9,211	11,168	1,957	21.24%
Bow Public Hydrant ⁴	Increase	24	1,550	1,879	329	21.24%
NC Capital Recovery	Decrease	-	299,985	178,915	(121,070)	-40.36%
TOTALS		8,357	7,174,000	8,513,190	1,339,190	

² Includes NC Minimum Consumption Charges

³ Includes Private Fire Services and Private Hydrants - count is number of accounts

⁴ Customer Count for the Windham, Raymond and Bow Public Hydrants are included in the total customer counts of G-M

Donald L. Ware
Chief Operating Officer

Pennichuck East Utility, Inc.
Bingo Sheet Perm
For the Twelve Months Ended December 31, 2016

UTILITY: Pennichuck East Utility, Inc
TARIFF NO.: 5 or PAGE NOS. 39-40

DATE FILED: _____
EFF. DATE: _____

Rate or Class of Service	Effect of Proposed Change	Average Number of Customers	Estimated Annual Revenue				Proposed Change		
			Current Rates from billing system	Revenue Pro Forma to Normalize	Recoupment	2016 TY Proforma Rates	Proposed Rates	Amount	%
G-M ²	Increase	7,321	6,130,547	(197,543)		5,933,004	7,124,143	1,191,139	20.08%
Private FP ³	Increase	148	257,130			257,130	308,753	51,623	20.08%
FP - Hydrants	Increase	4	628,340			628,340	754,489	126,149	20.08%
Windham Public Hydrant ⁴	Increase	328	31,372			31,372	37,670	6,298	20.08%
Raymond Public Hydrant ⁴	Increase	232	5,171			5,171	6,209	1,038	20.08%
Lee Public Hydrant ⁴	Increase	34	3,581			3,581	4,300	719	20.08%
Exeter Public Hydrant ⁴	Increase	52	4,656			4,656	5,591	935	20.08%
Birch Hill Public Hydrant ⁴	Increase	214	9,211			9,211	11,060	1,849	20.08%
Bow Public Hydrant ⁴	Increase	24	1,550			1,550	1,861	311	20.08%
NC Capital Recovery	No Increase		299,985			299,985	178,915	(121,070)	0.00%
TOTALS		8,357	7,371,543	(197,543)		7,174,000	8,432,991	1,258,991	

² Includes NC Minimum Consumption Charges

³ Includes Private Fire Services and Private Hydrants - count is number of accounts

⁴ Customer Count for the Windham, Raymond and Bow Public Hydrants are inc customer counts of G-M

Signed by: _____

Donald L. Ware

Title: **Chief Operating Officer**

	Existing Revenues	Proposed Revenues
Revenue Requirement -	7,174,000	8,432,991
Fixed Contract Charges -	299,985	178,915
Revenues subject to Proposed Rate Increase -	6,874,015	8,254,076
		20.08%

Pennichuck East Utility, Inc.
Bingo Sheet Step
For the Twelve Months Ended December 31, 2016

UTILITY: Pennichuck East Utility, Inc
TARIFF NO.: 5 or PAGE NOS. 39-40

DATE FILED: _____
EFF. DATE: _____

Rate or Class of Service	Effect of Proposed Change	Average Number of Customers	Estimated Annual Revenue				Proposed Change		
			Current Rates	Revenue Pro Forma to Normalize	Recoupment	Normalized 2016 TY Proforma Rates	Proposed Rates	Amount	%
G-M ²	Increase	7,321	6,130,547	(197,543)		5,933,004	7,193,364	1,260,360	21.24%
Private FP ³	Increase	148	257,130			257,130	311,753	54,623	21.24%
FP - Hydrants	Increase	4	628,340			628,340	761,820	133,480	21.24%
Windham Public Hydrant ⁴	Increase	328	31,372			31,372	38,036	6,664	21.24%
Raymond Public Hydrant ⁴	Increase	232	5,171			5,171	6,269	1,098	21.24%
Lee Public Hydrant ⁴	Increase	34	3,581			3,581	4,342	761	21.24%
Exeter Public Hydrant ⁴	Increase	52	4,656			4,656	5,645	989	21.24%
Birch Hill Public Hydrant ⁴	Increase	214	9,211			9,211	11,168	1,957	21.24%
Bow Public Hydrant ⁴	Increase	24	1,550			1,550	1,879	329	21.24%
NC Capital Recovery	Decrease		299,985			299,985	178,915	(121,070)	-40.36%
TOTALS		8,357	7,371,543	(197,543)		7,174,000	8,513,190	1,339,190	

² Includes NC Minimum Consumption Charges

³ Includes Private Fire Services and Private Hydrants - count is number of accounts

⁴ Customer Count for the Windham, Raymond and Bow Public Hydrants are included in the total customer counts of G-M

Signed by: _____
Donald L. Ware
Title: Chief Operating Officer

	Existing Revenues	Proposed Revenues
Revenue Requirement -	7,174,000	8,513,190
Fixed Contract Charges -	299,985	178,915
Revenues subject to Proposed Rate Increase -	6,874,015	8,334,275
		21.24%