

**Liberty Utilities (EnergyNorth Natural Gas) Corp.
Marginal Cost Study**

Incremental Production Cost Support Summary (LNG Facility)

| Line | Description | Total | Units | |
|------|--|-----------|----------|-----|
| 1 | Cost of incremental LNG capacity | 6,417,840 | \$, 2016 | [1] |
| 2 | Incremental capacity | 10,000 | dth | [2] |
| 3 | Unit cost of incremental capacity | 641.78 | \$/dth | [3] |
| 4 | Year of pressure support analysis | 2016 | | [4] |
| 5 | Base year of MCS study | 2019 | | [5] |
| 6 | Period adjustment | 1.062 | | [6] |
| 7 | Current-year unit cost of incremental capacity | 681.48 | \$/dth | [7] |
| 8 | Percentage related to pressure support | 8.73% | | [8] |
| 9 | Marginal cost of production plant for distribution function (\$/dth) | 59.52 | \$/dth | [9] |

[1] Source: Company data

[2] Source: Company data

[3] Equals [1]/[2]

[6] Source: U.S. Bureau of Economic Analysis, Gross Domestic Product Implicit Price Deflator

[7] Equals [3]*[6]

[8] Source: Company data

[9] Equals [7]*[8]

Liberty Utilities (EnergyNorth Natural Gas) Corp.
Marginal Cost Study

Marginal Capacity-Related Distribution Plant Costs for Reinforcements

| Line No. | Year | Design Day Demand (Dth) | Dummy Variable: 2022 - 2030 | Incremental Design Day Demand (Dth) | Reinforcement Cost (Constant \$) | Cumulative Total |
|----------|--|-------------------------|-----------------------------|-------------------------------------|----------------------------------|------------------|
| | [1] | [2] | | [3] | [4] | [5] |
| 1 | 2020 | 168,699 | 0 | 0 | \$0 | \$0 |
| 2 | 2021 | 170,932 | 0 | 2,232 | \$3,950,000 | \$3,950,000 |
| 3 | 2022 | 173,377 | 1 | 2,445 | \$4,700,000 | \$8,650,000 |
| 4 | 2023 | 181,097 | 1 | 7,720 | \$10,400,000 | \$19,050,000 |
| 5 | 2024 | 184,065 | 1 | 2,967 | \$2,880,000 | \$21,930,000 |
| 6 | 2025 | 186,987 | 1 | 2,923 | \$3,900,000 | \$25,830,000 |
| 7 | 2026 | 189,963 | 1 | 2,975 | \$3,420,000 | \$29,250,000 |
| 8 | 2027 | 192,968 | 1 | 3,006 | \$3,420,000 | \$32,670,000 |
| 9 | 2028 | 196,015 | 1 | 3,047 | \$3,420,000 | \$36,090,000 |
| 10 | 2029 | 199,042 | 1 | 3,027 | \$3,420,000 | \$39,510,000 |
| 11 | 2030 | 202,065 | 1 | 3,023 | \$3,420,000 | \$42,930,000 |
| 12 | | | | | | |
| 13 | Total (2021 - 2030) | | | 33,366 | \$42,930,000 | |
| 14 | | | | | | |
| 15 | REGRESSION RESULTS | | | | <u>Col. [5] vs. Col. [2]</u> | |
| 16 | Slope | | | | 1,261.973 | |
| 17 | Y Intercept | | | | (211,012,698.480) | |
| 18 | R ² | | | | 0.995 | |
| 19 | t-stat | | | | 0.000 | |
| 20 | p-value | | | | 1,195.043 | |
| 21 | | | | | | |
| 22 | Regression Estimate | | [Line 16] | | \$1,261.97 | |
| 23 | | | | | | |
| 24 | ASSUMED MARGINAL COSTS FOR REINFORCEMENT | | | | | |
| 25 | \$s per Design Day Therm | | | | <u><u>\$1,261.97</u></u> | |

NOTES:

1 Forecast used to develop marginal distribution investment taken from engineer's estimates (company data).

SUMMARY OUTPUT

| Regression Statistics | |
|-----------------------|-------------|
| Multiple R | 0.997535661 |
| R Square | 0.995077395 |
| Adjusted R Square | 0.994530439 |
| Standard Error | 1069689.807 |
| Observations | 11 |

| ANOVA | | | | | |
|------------|----|-------------|-------------|-----------|----------------|
| | df | SS | MS | F | Significance F |
| Regression | 1 | 2.08171E+15 | 2.08171E+15 | 1819.3004 | 1.06791E-11 |
| Residual | 9 | 1.02981E+13 | 1.14424E+12 | | |
| Total | 10 | 2.09201E+15 | | | |

| | Coefficients | Standard Error | t Stat | P-value | Lower 95% | Upper 95% | Lower 95.0% | Upper 95.0% |
|--------------|--------------|----------------|--------------|-------------|--------------|--------------|--------------|--------------|
| Intercept | -211012698.5 | 5510464.544 | -38.29308706 | 2.80489E-11 | -223478235.3 | -198547161.6 | -223478235.3 | -198547161.6 |
| X Variable 1 | 1261.972627 | 29.58678171 | 42.65325779 | 1.06791E-11 | 1195.042677 | 1328.902578 | 1195.042677 | 1328.902578 |

Liberty Utilities (EnergyNorth Natural Gas) Corp.
Marginal Cost Study

Marginal Capacity Related Distribution Plant Costs for Mains Extensions

| Line No. | Year | Design Day Demand (Dth) | Dummy Variable: 2009 -2019 | Interaction Variable: Col [2] x Col [3] | Dummy Variable: 2001 - 2003 | Incremental Design Day Demand (Dth) | Cost of Mains Installed (\$) | Handy-Whitman Cost Index | Conversion Factor (\$2019) | Cost of Mains Installed (\$2019) | Cumulative Total |
|----------|--------------------------------------|-------------------------|----------------------------|---|-------------------------------|-------------------------------------|------------------------------|--------------------------|----------------------------|----------------------------------|------------------|
| [1] | [2] | [3] | [4] | [5] | [6] | [7] | [8] | [9] | [10] | [11] | |
| 1 | 1989 | 94,340 | 0 | 0 | 0 | 0 | \$2,102,827 | 280 | 2.15 | \$4,528,588 | \$4,528,588 |
| 2 | 1990 | 95,525 | 0 | 0 | 0 | 1,185 | \$1,724,250 | 289 | 2.09 | \$3,600,771 | \$8,129,360 |
| 3 | 1991 | 97,891 | 0 | 0 | 0 | 2,366 | \$1,341,529 | 297 | 2.03 | \$2,723,710 | \$10,853,070 |
| 4 | 1992 | 101,018 | 0 | 0 | 0 | 3,127 | \$1,489,922 | 302 | 2.00 | \$2,977,375 | \$13,830,445 |
| 5 | 1993 | 101,899 | 0 | 0 | 0 | 882 | \$1,018,848 | 310 | 1.95 | \$1,981,824 | \$15,812,269 |
| 6 | 1994 | 104,535 | 0 | 0 | 0 | 2,635 | \$975,268 | 316 | 1.91 | \$1,863,983 | \$17,676,252 |
| 7 | 1995 | 107,163 | 0 | 0 | 0 | 2,628 | \$667,884 | 322 | 1.87 | \$1,250,727 | \$18,926,979 |
| 8 | 1996 | 112,323 | 0 | 0 | 0 | 5,160 | \$1,138,184 | 330 | 1.83 | \$2,082,929 | \$21,009,907 |
| 9 | 1997 | 118,475 | 0 | 0 | 0 | 6,152 | \$4,396,282 | 337 | 1.79 | \$7,866,344 | \$28,876,252 |
| 10 | 1998 | 119,650 | 0 | 0 | 0 | 1,176 | \$1,792,794 | 344 | 1.75 | \$3,144,887 | \$32,021,138 |
| 11 | 1999 | 127,994 | 0 | 0 | 0 | 8,344 | \$2,415,815 | 351 | 1.72 | \$4,156,167 | \$36,177,305 |
| 12 | 2000 | 123,296 | 0 | 0 | 0 | -4,698 | \$3,440,754 | 358 | 1.68 | \$5,795,459 | \$41,972,764 |
| 13 | 2001 | 120,420 | 0 | 0 | 1 | -2,876 | \$8,588,507 | 367 | 1.64 | \$14,120,980 | \$56,093,744 |
| 14 | 2002 | 117,163 | 0 | 0 | 1 | -3,257 | \$5,787,927 | 374 | 1.61 | \$9,325,638 | \$65,419,383 |
| 15 | 2003 | 129,188 | 0 | 0 | 1 | 12,025 | \$6,335,289 | 381 | 1.58 | \$10,033,300 | \$75,452,683 |
| 16 | 2004 | 135,096 | 0 | 0 | 0 | 5,908 | \$2,804,933 | 397 | 1.52 | \$4,260,389 | \$79,713,072 |
| 17 | 2005 | 138,566 | 0 | 0 | 0 | 3,470 | \$1,761,281 | 422 | 1.43 | \$2,519,698 | \$82,232,770 |
| 18 | 2006 | 142,066 | 0 | 0 | 0 | 3,500 | \$1,531,679 | 443 | 1.36 | \$2,083,705 | \$84,316,475 |
| 19 | 2007 | 146,269 | 0 | 0 | 0 | 4,203 | \$2,092,072 | 467 | 1.29 | \$2,699,721 | \$87,016,196 |
| 20 | 2008 | 148,760 | 0 | 0 | 0 | 2,491 | \$1,779,635 | 492 | 1.23 | \$2,183,357 | \$89,199,553 |
| 21 | 2009 | 147,487 | 1 | 147,487 | 0 | -1,273 | \$5,177,230 | 512 | 1.18 | \$6,097,401 | \$95,296,954 |
| 22 | 2010 | 150,439 | 1 | 150,439 | 0 | 2,952 | \$1,853,067 | 505 | 1.19 | \$2,213,768 | \$97,510,722 |
| 23 | 2011 | 145,478 | 1 | 145,478 | 0 | -4,961 | \$1,419,065 | 522 | 1.16 | \$1,640,050 | \$99,150,773 |
| 24 | 2012 | 149,203 | 1 | 149,203 | 0 | 3,725 | \$3,379,136 | 541 | 1.11 | \$3,766,393 | \$102,917,166 |
| 25 | 2013 | 154,471 | 1 | 154,471 | 0 | 5,268 | \$2,245,707 | 545 | 1.11 | \$2,486,981 | \$105,404,147 |
| 26 | 2014 | 160,216 | 1 | 160,216 | 0 | 5,745 | \$2,424,524 | 551 | 1.10 | \$2,655,746 | \$108,059,893 |
| 27 | 2015 | 158,060 | 1 | 158,060 | 0 | -2,157 | \$2,684,371 | 559 | 1.08 | \$2,896,959 | \$110,956,852 |
| 28 | 2016 | 163,606 | 1 | 163,606 | 0 | 5,546 | \$2,246,935 | 567 | 1.06 | \$2,391,707 | \$113,348,558 |
| 29 | 2017 | 169,976 | 1 | 169,976 | 0 | 6,370 | \$4,426,087 | 575 | 1.05 | \$4,643,637 | \$117,992,195 |
| 30 | 2018 | 173,822 | 1 | 173,822 | 0 | 3,846 | \$9,277,518 | 584 | 1.03 | \$9,579,355 | \$127,571,550 |
| 31 | 2019 | 179,564 | 1 | 179,564 | 0 | 5,742 | \$8,477,001 | 603 | 1.00 | \$8,477,001 | \$136,048,551 |
| 32 | | | | | | | | | | | |
| 33 | Total (1989 - 2019) | 4,133,957 | | | | 85,224 | \$96,796,320 | | | \$136,048,551 | |
| 34 | Total (2009 - 2019) | 1,752,320 | | | | 30,804 | \$43,610,640 | | | \$46,848,998 | |
| 35 | Total (2014 - 2019) | 1,005,243 | | | | 25,093 | \$29,536,436 | | | \$30,644,404 | |
| 36 | | | | | | | | | | | |
| 37 | | | | | | | | | | | |
| 38 | REGRESSION RESULTS | | | | | | | | | | |
| 39 | Slope for the period 2009 and beyond | | | | | | 1,090.652 | | | | |
| 40 | Y Intercept | | | | | | (153,632,473.80) | | | | |
| 41 | R ² | | | | | | 0.975 | | | | |
| 42 | t-stat | | | | | | 17.374 | | | | |
| 43 | p-value | | | | | | 0.000 | | | | |
| 44 | | | | | | | | | | | |
| 45 | Regression Estimate | | | | [Line 37] | | \$1,090.65 | | | | |
| 46 | Incremental Average Cost | | | | | | | | | | |
| 47 | 1989 - 2019 | | | | [Line 33], Col [10] / Col [6] | | \$1,596.37 | | | | |
| 48 | 2009 - 2019 | | | | [Line 34], Col [10] / Col [6] | | \$1,520.88 | | | | |
| 49 | 2014 - 2019 | | | | [Line 35], Col [10] / Col [6] | | \$1,221.25 | | | | |
| 50 | | | | | | | | | | | |
| 51 | MARGINAL COSTS FOR MAINS ADDITIONS | | | | | | | | | | |
| 52 | \$s per Design Day Therm | | | | | | <u><u>\$1,090.65</u></u> | | | | |

NOTES:
1 Source: Company data.

SUMMARY OUTPUT

| Regression Statistics | |
|-----------------------|-------------|
| Multiple R | 0.987425289 |
| R Square | 0.975008702 |
| Adjusted R Square | 0.971163887 |
| Standard Error | 7014710.273 |
| Observations | 31 |

ANOVA

| | df | SS | MS | F | Significance F |
|------------|----|-------------|-------------|-------------|----------------|
| Regression | 4 | 4.99129E+16 | 1.24782E+16 | 253.5905293 | 2.02855E-20 |
| Residual | 26 | 1.27936E+15 | 4.92062E+13 | | |
| Total | 30 | 5.11922E+16 | | | |

| | Coefficients | Standard Error | t Stat | P-value | Lower 95% | Upper 95% | Lower 95.0% | Upper 95.0% |
|--------------|--------------|----------------|--------------|-------------|--------------|--------------|--------------|--------------|
| Intercept | -153632473.8 | 11248002.62 | -13.65864492 | 2.25894E-13 | -176753074.3 | -130511873.3 | -176753074.3 | -130511873.3 |
| X Variable 1 | 1629.907125 | 93.81073488 | 17.37442018 | 7.89617E-16 | 1437.076397 | 1822.737852 | 1437.076397 | 1822.737852 |
| X Variable 2 | 90276727.76 | 33141817.26 | 2.723952252 | 0.011375037 | 22152746.73 | 158400708.8 | 22152746.73 | 158400708.8 |
| X Variable 3 | -539.2555105 | 216.6126968 | -2.489491699 | 0.019515686 | -984.5092855 | -94.00173548 | -984.5092855 | -94.00173548 |
| X Variable 4 | 20020070.27 | 4406737.732 | 4.543059171 | 0.000112291 | 10961891.13 | 29078249.41 | 10961891.13 | 29078249.41 |

Liberty Utilities (EnergyNorth Natural Gas) Corp.
Marginal Cost Study

Marginal Capacity-Related Distribution O&M Expense

| Line No. | Year | Design Day Demand (Dth) | Capacity-Related O&M Expense (\$) | GDP Implicit Price Deflator | Conversion Factor (\$2019) | Capacity-Related O&M Expense (\$2019) |
|----------|---|-------------------------|-----------------------------------|------------------------------|------------------------------|---------------------------------------|
| | [1] | [2] | [3] | [4] | [5] | [6] |
| 1 | 1989 | 94,340 | \$1,945,026 | 61.37 | 1.83 | \$3,560,503 |
| 2 | 1990 | 95,525 | \$1,893,462 | 63.67 | 1.76 | \$3,340,785 |
| 3 | 1991 | 97,891 | \$1,918,550 | 65.82 | 1.71 | \$3,274,506 |
| 4 | 1992 | 101,018 | \$2,040,158 | 67.32 | 1.67 | \$3,404,580 |
| 5 | 1993 | 101,899 | \$2,151,230 | 68.92 | 1.63 | \$3,506,770 |
| 6 | 1994 | 104,535 | \$2,529,506 | 70.39 | 1.60 | \$4,037,247 |
| 7 | 1995 | 107,163 | \$2,598,141 | 71.86 | 1.56 | \$4,061,537 |
| 8 | 1996 | 112,323 | \$2,558,264 | 73.18 | 1.54 | \$3,927,350 |
| 9 | 1997 | 118,475 | \$2,645,969 | 74.44 | 1.51 | \$3,993,101 |
| 10 | 1998 | 119,650 | \$2,768,391 | 75.28 | 1.49 | \$4,131,372 |
| 11 | 1999 | 127,994 | \$2,626,392 | 76.37 | 1.47 | \$3,863,710 |
| 12 | 2000 | 123,296 | \$2,781,957 | 78.07 | 1.44 | \$4,003,044 |
| 13 | 2001 | 120,420 | \$2,518,609 | 79.79 | 1.41 | \$3,546,140 |
| 14 | 2002 | 117,163 | \$2,241,570 | 81.05 | 1.39 | \$3,106,982 |
| 15 | 2003 | 129,188 | \$3,479,902 | 82.55 | 1.36 | \$4,735,729 |
| 16 | 2004 | 135,096 | \$3,370,059 | 84.77 | 1.33 | \$4,466,035 |
| 17 | 2005 | 138,566 | \$3,675,620 | 87.41 | 1.29 | \$4,723,763 |
| 18 | 2006 | 142,066 | \$4,093,085 | 90.06 | 1.25 | \$5,105,554 |
| 19 | 2007 | 146,269 | \$4,154,511 | 92.48 | 1.21 | \$5,046,643 |
| 20 | 2008 | 148,760 | \$4,431,308 | 94.29 | 1.19 | \$5,279,760 |
| 21 | 2009 | 147,487 | \$4,882,340 | 95.00 | 1.18 | \$5,773,431 |
| 22 | 2010 | 150,439 | \$5,316,649 | 96.11 | 1.17 | \$6,214,788 |
| 23 | 2011 | 145,478 | \$4,976,899 | 98.12 | 1.15 | \$5,698,551 |
| 24 | 2012 | 149,203 | \$3,277,420 | 100.00 | 1.12 | \$3,681,966 |
| 25 | 2013 | 154,471 | \$4,743,594 | 101.75 | 1.10 | \$5,237,330 |
| 26 | 2014 | 160,216 | \$7,930,472 | 103.63 | 1.08 | \$8,596,987 |
| 27 | 2015 | 158,060 | \$7,395,141 | 104.72 | 1.07 | \$7,933,734 |
| 28 | 2016 | 163,606 | \$6,501,276 | 105.80 | 1.06 | \$6,903,405 |
| 29 | 2017 | 169,976 | \$7,161,084 | 107.79 | 1.04 | \$7,463,585 |
| 30 | 2018 | 173,822 | \$8,255,274 | 110.41 | 1.02 | \$8,399,367 |
| 31 | 2019 | 179,564 | \$8,185,922 | 112.34 | 1.00 | \$8,185,922 |
| 32 | | | | | | |
| 33 | Total (1989 - 2019) | 4,133,957 | \$125,047,785 | | | \$155,204,177 |
| 34 | Total (2009 - 2019) | 1,752,320 | \$68,626,074 | | | \$74,089,066 |
| 35 | Total (2014 - 2019) | 1,005,243 | \$45,429,171 | | | \$47,483,001 |
| 36 | | | | | | |
| 37 | REGRESSION RESULTS | | | | <u>Col. [6] vs. Col. [2]</u> | |
| 38 | Slope | | | | 58.515 | |
| 39 | Y Intercept | | | | (2,796,628.49) | |
| 40 | R ² | | | | 0.758 | |
| 41 | t-stat | | | | 9.531 | |
| 42 | p-value | | | | 0.000 | |
| 43 | | | | | | |
| 44 | Regression Estimate | | | [Line 38] | \$58.52 | |
| 45 | Average Cost | | | | | |
| 46 | 1989 - 2019 | | | [Line 33], Col [6] / Col [2] | \$37.54 | |
| 47 | 2009 - 2019 | | | [Line 34], Col [6] / Col [2] | \$42.28 | |
| 48 | 2014 - 2019 | | | [Line 35], Col [6] / Col [2] | \$47.24 | |
| 49 | | | | | | |
| 50 | ASSUMED MARGINAL COSTS FOR CAPACITY-RELATED O&M | | | | | |
| 51 | \$s per Design Day Therm | | | | <u>\$58.52</u> | |

NOTES:

- Source: Company data.
- GDP implicit price deflator obtained from Bureau of Economic Analysis/FRED database.

SUMMARY OUTPUT

| Regression Statistics | |
|-----------------------|-------------|
| Multiple R | 0.870631585 |
| R Square | 0.757999357 |
| Adjusted R Square | 0.749654507 |
| Standard Error | 832773.0334 |
| Observations | 31 |

ANOVA

| | df | SS | MS | F | Significance F |
|------------|----|-------------|-------------|-------------|----------------|
| Regression | 1 | 6.29946E+13 | 6.29946E+13 | 90.83439209 | 1.94148E-10 |
| Residual | 29 | 2.01118E+13 | 6.93511E+11 | | |
| Total | 30 | 8.31065E+13 | | | |

| | Coefficients | Standard Error | t Stat | P-value | Lower 95% | Upper 95% | Lower 95.0% | Upper 95.0% |
|--------------|--------------|----------------|--------------|-------------|--------------|-------------|-------------|-------------|
| Intercept | -2796628.494 | 832294.3688 | -3.360143477 | 0.00219683 | -4498861.608 | -1094395.38 | -4498862 | -1094395 |
| X Variable 1 | 58.51528009 | 6.139657308 | 9.530707848 | 1.94148E-10 | 45.95827097 | 71.07228921 | 45.95827097 | 71.07228921 |

**Liberty Utilities (EnergyNorth Natural Gas) Corp.
Marginal Cost Study**

Marginal Capacity-Related Production Expense

| Line No. | Year | Design Day Demand (Dth) | Capacity-Related | | Conversion Factor (\$2019) | Capacity-Related |
|----------|---------------------|----------------------------|----------------------------|-----------------------------|-------------------------------|--------------------------------|
| | | | Production Expense (\$) | GDP Implicit Price Deflator | | Production Expense (\$2019) |
| | [1] | [2] | [3] | [4] | [5] | [6] |
| 1 | 1989 | 94,340 | \$1,544,027 | 61.37 | 1.83 | \$2,826,447 |
| 2 | 1990 | 95,525 | \$1,752,291 | 63.67 | 1.76 | \$3,091,706 |
| 3 | 1991 | 97,891 | \$1,620,490 | 65.82 | 1.71 | \$2,765,789 |
| 4 | 1992 | 101,018 | \$1,467,204 | 67.32 | 1.67 | \$2,448,444 |
| 5 | 1993 | 101,899 | \$1,566,459 | 68.92 | 1.63 | \$2,553,522 |
| 6 | 1994 | 104,535 | \$1,714,538 | 70.39 | 1.60 | \$2,736,509 |
| 7 | 1995 | 107,163 | \$1,647,159 | 71.86 | 1.56 | \$2,574,917 |
| 8 | 1996 | 112,323 | \$1,722,081 | 73.18 | 1.54 | \$2,643,673 |
| 9 | 1997 | 118,475 | \$1,784,059 | 74.44 | 1.51 | \$2,692,370 |
| 10 | 1998 | 119,650 | \$1,760,381 | 75.28 | 1.49 | \$2,627,081 |
| 11 | 1999 | 127,994 | \$1,591,292 | 76.37 | 1.47 | \$2,340,965 |
| 12 | 2000 | 123,296 | \$679,438 | 78.07 | 1.44 | \$977,664 |
| 13 | 2001 | 120,420 | \$575,485 | 79.79 | 1.41 | \$810,269 |
| 14 | 2002 | 117,163 | \$845,341 | 81.05 | 1.39 | \$1,171,705 |
| 15 | 2003 | 129,188 | \$545,839 | 82.55 | 1.36 | \$742,821 |
| 16 | 2004 | 135,096 | \$591,437 | 84.77 | 1.33 | \$783,778 |
| 17 | 2005 | 138,566 | \$699,365 | 87.41 | 1.29 | \$898,796 |
| 18 | 2006 | 142,066 | \$768,391 | 90.06 | 1.25 | \$958,461 |
| 19 | 2007 | 146,269 | \$757,630 | 92.48 | 1.21 | \$920,322 |
| 20 | 2008 | 148,760 | \$812,189 | 94.29 | 1.19 | \$967,697 |
| 21 | 2009 | 147,487 | \$693,185 | 95.00 | 1.18 | \$819,700 |
| 22 | 2010 | 150,439 | \$592,199 | 96.11 | 1.17 | \$692,239 |
| 23 | 2011 | 145,478 | \$472,046 | 98.12 | 1.15 | \$540,493 |
| 24 | 2012 | 149,203 | (\$69,221) | 100.00 | 1.12 | (\$77,765) |
| 25 | 2013 | 154,471 | \$1,412,098 | 101.75 | 1.10 | \$1,559,076 |
| 26 | 2014 | 160,216 | \$2,057,282 | 103.63 | 1.08 | \$2,230,186 |
| 27 | 2015 | 158,060 | \$1,818,960 | 104.72 | 1.07 | \$1,951,436 |
| 28 | 2016 | 163,606 | \$1,068,987 | 105.80 | 1.06 | \$1,135,108 |
| 29 | 2017 | 169,976 | \$1,578,046 | 107.79 | 1.04 | \$1,644,707 |
| 30 | 2018 | 173,822 | \$1,560,420 | 110.41 | 1.02 | \$1,587,657 |
| 31 | 2019 | 179,564 | \$1,796,151 | 112.34 | 1.00 | \$1,796,151 |
| 32 | | | | | | |
| 33 | Total (1989 - 2019) | 4,133,957 | \$37,425,249 | | | \$51,411,924 |
| 34 | Total (2000 - 2019) | 2,953,145 | \$19,255,268 | | | \$22,110,500 |
| 35 | Total (2014 - 2019) | 1,005,243 | \$9,879,846 | | | \$10,345,244 |
| 36 | | | | | | |

REGRESSION RESULTS

Col. [6] vs. Col. [2]

| | | |
|----|---------------------|--------------------------------------|
| 38 | Slope | (19.833) |
| 39 | Y Intercept | 4,303,229.27 |
| 40 | R ² | 0.311 |
| 41 | t-stat | (3.620) |
| 42 | p-value | 0.001 |
| 43 | | |
| 44 | Regression Estimate | [Line 38] (\$19.83) |
| 45 | Average Cost | |
| 46 | 1989-2019 | [Line 33], Col [6] / Col [2] \$12.44 |

| Allocation to Distribution Function | Production (Pressure Support) Expense |
|---|--|
| 8.73% | \$1.09 |

47 ASSUMED MARGINAL COSTS FOR CAPACITY-RELATED PRODUCTION
48 \$s per Design Day Therm

\$12.44

NOTES:

- Source: Company data.
- GDP implicit price deflator obtained from Bureau of Economic Analysis/FRED database.
- Regression results show negative coefficient, low R² value, so average cost estimate used.

SUMMARY OUTPUT

| Regression Statistics | |
|-----------------------|-------------|
| Multiple R | 0.557900227 |
| R Square | 0.311252664 |
| Adjusted R Square | 0.287502756 |
| Standard Error | 743091.4172 |
| Observations | 31 |

ANOVA

| | df | SS | MS | F | Significance F |
|------------|----|-------------|-------------|-----------|----------------|
| Regression | 1 | 7.23662E+12 | 7.23662E+12 | 13.105426 | 0.001109963 |
| Residual | 29 | 1.60134E+13 | 5.52185E+11 | | |
| Total | 30 | 2.325E+13 | | | |

| | Coefficients | Standard Error | t Stat | P-value | Lower 95% | Upper 95% | Lower 95.0% | Upper 95.0% |
|--------------|--------------|----------------|-------------|-------------|--------------|--------------|--------------|--------------|
| Intercept | 4303229.275 | 742664.3002 | 5.794312819 | 2.80444E-06 | 2784310.234 | 5822148.316 | 2784310.234 | 5822148.316 |
| X Variable 1 | -19.83285762 | 5.478475487 | -3.62014171 | 0.001109963 | -31.03759808 | -8.628117159 | -31.03759808 | -8.628117159 |

**Liberty Utilities (EnergyNorth Natural Gas) Corp.
Marginal Cost Study**

Services and Meters Plant Investment Costs

| Line | Description | R-1 | R3, R-4 | G-41 | G-42 | G-43 | G-51 | G-52 | G-53 | G-54 | |
|------|-----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-----|
| 1 | Service Costs | | | | | | | | | | |
| 2 | Representatiave Cost | \$5,346 | \$5,346 | \$4,995 | \$6,346 | \$10,913 | \$15,649 | \$6,583 | \$39,407 | \$9,647 | [1] |
| 3 | Services per Customer | <u>0.76</u> | <u>0.76</u> | <u>0.76</u> | <u>1.00</u> | <u>1.00</u> | <u>0.76</u> | <u>1.00</u> | <u>1.00</u> | <u>1.00</u> | [2] |
| 4 | Average Service Cost Per Customer | \$4,063 | \$4,063 | \$3,796 | \$6,346 | \$10,913 | \$11,894 | \$6,583 | \$39,407 | \$9,647 | [3] |
| 5 | Meter Costs | | | | | | | | | | |
| 6 | Installed Cost per Customer | \$440 | \$440 | \$1,077 | \$2,750 | \$9,333 | \$3,483 | \$2,750 | \$3,995 | \$11,904 | [4] |
| 7 | Meters per Customer | <u>1.00</u> | <u>1.00</u> | <u>1.00</u> | <u>1.00</u> | <u>1.00</u> | <u>1.00</u> | <u>1.00</u> | <u>1.00</u> | <u>1.00</u> | [5] |
| 8 | Average Meter Cost per Customre | \$440 | \$440 | \$1,077 | \$2,750 | \$9,333 | \$3,483 | \$2,750 | \$3,995 | \$11,904 | [6] |

[1] Source: Company data

[2] Source: Company data

[3] Equals [1]*[2]

[4] Source: Company data

[5] Source: Company data

[6] Equals [4]*[5]

Liberty Utilities (EnergyNorth Natural Gas) Corp.
Marginal Cost Study

Marginal Customer-Related O&M Expense

| Line No. | Year | Annual Customers | Customer-Related O&M Expense (\$) | GDP Implicit Price Deflator | Conversion Factor (\$2019) | Customer-Related O&M Expense (\$2019) |
|----------|---|------------------|-----------------------------------|-----------------------------|------------------------------|---------------------------------------|
| | [1] | [2] | [3] | [4] | [5] | [6] |
| 1 | 1989 | 58,809 | \$3,265,009 | 61.37 | 1.83 | \$5,976,824 |
| 2 | 1990 | 60,216 | \$3,297,919 | 63.67 | 1.76 | \$5,818,781 |
| 3 | 1991 | 60,958 | \$3,391,122 | 65.82 | 1.71 | \$5,787,835 |
| 4 | 1992 | 61,725 | \$3,502,421 | 67.32 | 1.67 | \$5,844,777 |
| 5 | 1993 | 62,566 | \$3,522,064 | 68.92 | 1.63 | \$5,741,400 |
| 6 | 1994 | 64,044 | \$3,720,493 | 70.39 | 1.60 | \$5,938,137 |
| 7 | 1995 | 65,385 | \$3,736,123 | 71.86 | 1.56 | \$5,840,486 |
| 8 | 1996 | 66,464 | \$3,391,523 | 73.18 | 1.54 | \$5,206,537 |
| 9 | 1997 | 67,928 | \$3,405,043 | 74.44 | 1.51 | \$5,138,640 |
| 10 | 1998 | 69,588 | \$3,507,511 | 75.28 | 1.49 | \$5,234,387 |
| 11 | 1999 | 71,291 | \$3,481,936 | 76.37 | 1.47 | \$5,122,309 |
| 12 | 2000 | 73,106 | \$2,984,429 | 78.07 | 1.44 | \$4,294,386 |
| 13 | 2001 | 74,959 | \$3,275,394 | 79.79 | 1.41 | \$4,611,674 |
| 14 | 2002 | 74,721 | \$2,439,210 | 81.05 | 1.39 | \$3,380,926 |
| 15 | 2003 | 78,438 | \$2,340,691 | 82.55 | 1.36 | \$3,185,399 |
| 16 | 2004 | 80,221 | \$2,348,327 | 84.77 | 1.33 | \$3,112,025 |
| 17 | 2005 | 81,735 | \$2,621,664 | 87.41 | 1.29 | \$3,369,259 |
| 18 | 2006 | 82,474 | \$2,750,067 | 90.06 | 1.25 | \$3,430,326 |
| 19 | 2007 | 83,637 | \$3,087,832 | 92.48 | 1.21 | \$3,750,906 |
| 20 | 2008 | 83,943 | \$3,445,440 | 94.29 | 1.19 | \$4,105,130 |
| 21 | 2009 | 84,346 | \$3,828,174 | 95.00 | 1.18 | \$4,526,866 |
| 22 | 2010 | 84,420 | \$4,444,691 | 96.11 | 1.17 | \$5,195,529 |
| 23 | 2011 | 85,286 | \$4,037,750 | 98.12 | 1.15 | \$4,623,226 |
| 24 | 2012 | 85,862 | \$3,209,604 | 100.00 | 1.12 | \$3,605,778 |
| 25 | 2013 | 86,972 | \$3,817,221 | 101.75 | 1.10 | \$4,214,536 |
| 26 | 2014 | 87,754 | \$6,271,678 | 103.63 | 1.08 | \$6,798,779 |
| 27 | 2015 | 90,335 | \$5,696,782 | 104.72 | 1.07 | \$6,111,683 |
| 28 | 2016 | 90,867 | \$5,856,722 | 105.80 | 1.06 | \$6,218,982 |
| 29 | 2017 | 93,291 | \$5,832,460 | 107.79 | 1.04 | \$6,078,836 |
| 30 | 2018 | 94,965 | \$6,333,758 | 110.41 | 1.02 | \$6,444,312 |
| 31 | 2019 | 96,597 | \$6,001,828 | 112.34 | 1.00 | \$6,001,828 |
| 32 | | | | | | |
| 33 | Total (1989 - 2019) | | \$118,844,885 | | | \$154,710,499 |
| 34 | Total (2009 - 2019) | | \$55,330,667 | | | \$59,820,355 |
| 35 | Total (2014 - 2019) | | \$35,993,228 | | | \$37,654,420 |
| 36 | | | | | | |
| 37 | REGRESSION RESULTS | | | | <u>Col. [6] vs. Col. [2]</u> | |
| 38 | Slope | | | | (9.988) | |
| 39 | Y Intercept | | | | 5,764,886.09 | |
| 40 | R ² | | | | 0.011 | |
| 41 | t-stat | | | | (0.562) | |
| 42 | p-value | | | | 0.579 | |
| 43 | | | | | | |
| 44 | Regression Estimate | | [Line 38] | | (\$9.99) | |
| 45 | Average Cost | | | | | |
| 46 | 1989 - 2019 | | | | \$64.38 | |
| 47 | 2009 - 2019 | | | | \$61.00 | |
| 48 | 2014 - 2019 | | | | \$67.99 | |
| 49 | Current Average Cost per Customer | | | | \$62.13 | |
| 50 | | | | | | |
| 51 | ASSUMED MARGINAL COSTS FOR CUSTOMER-RELATED O&M | | | | | |
| 52 | \$s per Customer | | | | <u><u>\$64.38</u></u> | |

NOTES:

- Source: Company data.
- GDP implicit price deflator obtained from Bureau of Economic Analysis/FRED database.
- Regression results show extremely low R² value, so average cost estimate used.

SUMMARY OUTPUT

| Regression Statistics | |
|-----------------------|--------------|
| Multiple R | 0.103708683 |
| R Square | 0.010755491 |
| Adjusted R Square | -0.023356389 |
| Standard Error | 1108341.375 |
| Observations | 31 |

ANOVA

| | df | SS | MS | F | Significance F |
|------------|----|-------------|-------------|-------------|----------------|
| Regression | 1 | 3.87322E+11 | 3.87322E+11 | 0.315300449 | 0.578759666 |
| Residual | 29 | 3.56242E+13 | 1.22842E+12 | | |
| Total | 30 | 3.60115E+13 | | | |

| | Coefficients | Standard Error | t Stat | P-value | Lower 95% | Upper 95% | Lower 95.0% | Upper 95.0% |
|--------------|--------------|----------------|--------------|-------------|--------------|-------------|--------------|-------------|
| Intercept | 5764886.087 | 1393106.89 | 4.138150581 | 0.00027459 | 2915662.58 | 8614109.593 | 2915662.58 | 8614110 |
| X Variable 1 | -9.988327329 | 17.78813724 | -0.561516206 | 0.578759666 | -46.36915289 | 26.39249823 | -46.36915289 | 26.3925 |

**Liberty Utilities (EnergyNorth Natural Gas) Corp.
Marginal Cost Study**

Class Weighting of Services and Meter Plant Expense

| Line | Description | R1 | R-3, R-4 | G-41 | G-42 | G-43 | G-51 | G-52 | G-53 | G-54 | Total | |
|------|---|--------------|---------------|--------------|--------------|-------------|--------------|-------------|-------------|-----------|---------------|-----|
| 1 | Test year customers | 3,549 | 79,448 | 9,349 | 1,423 | 58 | 1,319 | 394 | 34 | 28 | 95,602 | [1] |
| 2 | Meters cost per customer | \$440 | \$440 | \$1,077 | \$2,750 | \$9,333 | \$3,483 | \$2,750 | \$3,995 | \$11,904 | | [2] |
| 3 | Services cost per customer | \$4,063 | \$4,063 | \$3,796 | \$6,346 | \$10,913 | \$11,894 | \$6,583 | \$39,407 | \$9,647 | | [3] |
| 4 | Services and meters per customer total | \$4,503 | \$4,503 | \$4,873 | \$9,097 | \$20,245 | \$15,376 | \$9,333 | \$43,403 | \$21,552 | | [4] |
| 5 | Total cost | \$15,979,776 | \$357,739,395 | \$45,555,875 | \$12,942,386 | \$1,180,127 | \$20,280,736 | \$3,673,679 | \$1,494,249 | \$599,082 | \$459,445,305 | [5] |
| 6 | Average cost per customer | | | | | | | | | | \$4,806 | [6] |
| 7 | Relative weight per customer | 0.94 | 0.94 | 1.01 | 1.89 | 4.21 | 3.20 | 1.94 | 9.03 | 4.48 | | [7] |
| 8 | System average marginal cost per customer | \$64.38 | \$64.38 | \$64.38 | \$64.38 | \$64.38 | \$64.38 | \$64.38 | \$64.38 | \$64.38 | | [8] |
| 9 | Class weighted marginal cost per customer | \$60.33 | \$60.33 | \$65.28 | \$121.87 | \$271.23 | \$206.00 | \$125.03 | \$581.47 | \$288.74 | | [9] |

[1] Source: Company data

[2] MCOS-3, p. 1, ln 8

[3] MCOS-3, p. 1, ln 4

[4] Equals [2]+[3]

[5] Equals [1]*[4]

[6] Equals $\sum_{[5]} / \sum_{[1]}$

[7] Equals [3]/[6]

[8] MCOS-3, p. 2, ln 52

[9] Equals [7]*[8]

Liberty Utilities (EnergyNorth Natural Gas) Corp.
Marginal Cost Study

Marginal Customer-Related Accounting & Marketing Expense

| Line No. | Year | Annual Customers | Customer-Related | GDP Implicit Price | Conversion Factor | Customer-Related |
|----------|---|------------------|--------------------------------|--------------------|------------------------------|--------------------------------|
| | | | Accounting & Marketing Expense | | | Accounting & Marketing Expense |
| | | | (\$) | Deflator | (\$2019) | (\$2019) |
| | [1] | [2] | [3] | [4] | [5] | [6] |
| 1 | 1989 | 58,809 | \$2,864,392 | 61.37 | 1.83 | \$5,243,466 |
| 2 | 1990 | 60,216 | \$3,442,112 | 63.67 | 1.76 | \$6,073,191 |
| 3 | 1991 | 60,958 | \$3,565,057 | 65.82 | 1.71 | \$6,084,700 |
| 4 | 1992 | 61,725 | \$3,740,667 | 67.32 | 1.67 | \$6,242,358 |
| 5 | 1993 | 62,566 | \$4,032,636 | 68.92 | 1.63 | \$6,573,695 |
| 6 | 1994 | 64,044 | \$3,935,631 | 70.39 | 1.60 | \$6,281,510 |
| 7 | 1995 | 65,385 | \$3,677,860 | 71.86 | 1.56 | \$5,749,405 |
| 8 | 1996 | 66,464 | \$3,695,729 | 73.18 | 1.54 | \$5,673,543 |
| 9 | 1997 | 67,928 | \$3,390,219 | 74.44 | 1.51 | \$5,116,269 |
| 10 | 1998 | 69,588 | \$3,377,588 | 75.28 | 1.49 | \$5,040,499 |
| 11 | 1999 | 71,291 | \$3,319,897 | 76.37 | 1.47 | \$4,883,931 |
| 12 | 2000 | 73,106 | \$3,042,687 | 78.07 | 1.44 | \$4,378,216 |
| 13 | 2001 | 74,959 | \$1,318,450 | 79.79 | 1.41 | \$1,856,345 |
| 14 | 2002 | 74,721 | \$1,114,892 | 81.05 | 1.39 | \$1,545,323 |
| 15 | 2003 | 78,438 | \$2,340,981 | 82.55 | 1.36 | \$3,185,794 |
| 16 | 2004 | 80,221 | \$3,171,337 | 84.77 | 1.33 | \$4,202,686 |
| 17 | 2005 | 81,735 | \$3,204,083 | 87.41 | 1.29 | \$4,117,762 |
| 18 | 2006 | 82,474 | \$4,130,827 | 90.06 | 1.25 | \$5,152,632 |
| 19 | 2007 | 83,637 | \$3,990,833 | 92.48 | 1.21 | \$4,847,816 |
| 20 | 2008 | 83,943 | \$3,927,632 | 94.29 | 1.19 | \$4,679,647 |
| 21 | 2009 | 84,346 | \$4,317,533 | 95.00 | 1.18 | \$5,105,539 |
| 22 | 2010 | 84,420 | \$4,816,133 | 96.11 | 1.17 | \$5,629,719 |
| 23 | 2011 | 85,286 | \$7,556,567 | 98.12 | 1.15 | \$8,652,272 |
| 24 | 2012 | 85,862 | \$9,647,965 | 100.00 | 1.12 | \$10,838,852 |
| 25 | 2013 | 86,972 | \$3,519,219 | 101.75 | 1.10 | \$3,885,516 |
| 26 | 2014 | 87,754 | \$5,036,775 | 103.63 | 1.08 | \$5,460,090 |
| 27 | 2015 | 90,335 | \$5,637,886 | 104.72 | 1.07 | \$6,048,497 |
| 28 | 2016 | 90,867 | \$4,757,333 | 105.80 | 1.06 | \$5,051,591 |
| 29 | 2017 | 93,291 | \$4,616,915 | 107.79 | 1.04 | \$4,811,944 |
| 30 | 2018 | 94,965 | \$4,956,435 | 110.41 | 1.02 | \$5,042,948 |
| 31 | 2019 | 96,597 | \$3,956,378 | 112.34 | 1.00 | \$3,956,378 |
| 32 | | | | | | |
| 33 | Total (1989 - 2019) | | \$124,102,649 | | | \$161,412,137 |
| 34 | Total (2009 - 2019) | | \$58,819,139 | | | \$64,483,348 |
| 35 | Total (2014 - 2019) | | \$28,961,723 | | | \$30,371,449 |
| 36 | | | | | | |
| 37 | REGRESSION RESULTS | | | | <u>Col. [6] vs. Col. [2]</u> | |
| 38 | Slope | | | | (10.230) | |
| 39 | Y Intercept | | | | 5,999,812.39 | |
| 40 | R ² | | | | 0.005 | |
| 41 | t-stat | | | | (0.370) | |
| 42 | p-value | | | | 0.714 | |
| 43 | | | | | | |
| 44 | Regression Estimate | | | [Line 38] | (\$10.23) | |
| 45 | Average Cost | | | | | |
| 46 | 1989 - 2019 | | | | \$67.17 | |
| 47 | 2009 - 2019 | | | | \$65.75 | |
| 48 | 2014 - 2019 | | | | \$54.84 | |
| 49 | Current Average Cost per Customer | | | | \$40.96 | |
| 50 | | | | | | |
| 51 | ASSUMED MARGINAL COSTS FOR CUSTOMER-RELATED O&M | | | | | |
| 52 | \$s per Customer | | | | <u><u>\$67.17</u></u> | |

NOTES:

- Source: Company data.
- GDP implicit price deflator obtained from Bureau of Economic Analysis/FRED database.
- Regression results show extremely low R² value and negative coefficient, so average cost estimate used.

SUMMARY OUTPUT

| Regression Statistics | |
|-----------------------|-------------|
| Multiple R | 0.068596433 |
| R Square | 0.004705471 |
| Adjusted R Square | -0.02961503 |
| Standard Error | 1721473.586 |
| Observations | 31 |

ANOVA

| | df | SS | MS | F | Significance F |
|------------|----|-------------|-------------|-------------|----------------|
| Regression | 1 | 4.06303E+11 | 4.06303E+11 | 0.137103788 | 0.713868103 |
| Residual | 29 | 8.59407E+13 | 2.96347E+12 | | |
| Total | 30 | 8.6347E+13 | | | |

| | Coefficients | Standard Error | t Stat | P-value | Lower 95% | Upper 95% | Lower 95.0% | Upper 95.0% |
|--------------|--------------|----------------|--------------|-------------|--------------|-------------|-------------|-------------|
| Intercept | 5999812.394 | 2163770.809 | 2.772850234 | 0.009610194 | 1574404.196 | 10425220.59 | 1574404 | 10425221 |
| X Variable 1 | -10.23015032 | 27.62849884 | -0.370275286 | 0.713868103 | -66.73677512 | 46.27647448 | -66.7368 | 46.2764 |

Liberty Utilities (EnergyNorth Natural Gas) Corp.
Marginal Cost Study

Plant-Related A&G Marginal Loading Factor

| Line No. | Year | Plant Related A&G | | |
|----------|---------------------------------------|-------------------|--------------------------|-------------------|
| | | Expense (\$) | Total Utility Plant (\$) | Loading Factor |
| | [1] | [2] | [3] | [4] |
| 1 | 1989 | \$1,364,240 | \$90,119,098 | 1.51% |
| 2 | 1990 | \$1,429,254 | \$99,467,339 | 1.44% |
| 3 | 1991 | \$1,427,802 | \$106,202,255 | 1.34% |
| 4 | 1992 | \$1,435,822 | \$112,423,806 | 1.28% |
| 5 | 1993 | \$1,445,997 | \$118,656,821 | 1.22% |
| 6 | 1994 | \$1,342,813 | \$124,120,097 | 1.08% |
| 7 | 1995 | \$1,200,572 | \$129,472,654 | 0.93% |
| 8 | 1996 | \$1,405,850 | \$135,806,318 | 1.04% |
| 9 | 1997 | \$1,422,193 | \$145,866,429 | 0.97% |
| 10 | 1998 | \$1,311,090 | \$156,424,246 | 0.84% |
| 11 | 1999 | \$1,624,095 | \$166,682,099 | 0.97% |
| 12 | 2000 | \$2,209,040 | \$174,018,261 | 1.27% |
| 13 | 2001 | \$1,000,753 | \$189,363,169 | 0.53% |
| 14 | 2002 | \$1,127,386 | \$202,252,941 | 0.56% |
| 15 | 2003 | \$413,762 | \$227,692,187 | 0.18% |
| 16 | 2004 | \$401,446 | \$239,474,276 | 0.17% |
| 17 | 2005 | \$686,615 | \$242,115,491 | 0.28% |
| 18 | 2006 | \$696,565 | \$263,405,595 | 0.26% |
| 19 | 2007 | \$705,896 | \$280,967,870 | 0.25% |
| 20 | 2008 | \$734,523 | \$298,931,548 | 0.25% |
| 21 | 2009 | \$756,942 | \$318,900,861 | 0.24% |
| 22 | 2010 | \$1,218,997 | \$328,222,369 | 0.37% |
| 23 | 2011 | \$388,947 | \$338,986,146 | 0.11% |
| 24 | 2012 | \$689,718 | \$339,610,905 | 0.20% |
| 25 | 2013 | \$1,071,232 | \$360,914,157 | 0.30% |
| 26 | 2014 | \$1,132,042 | \$379,562,429 | 0.30% |
| 27 | 2015 | \$1,135,511 | \$426,165,148 | 0.27% |
| 28 | 2016 | \$909,139 | \$459,143,909 | 0.20% |
| 29 | 2017 | \$776,521 | \$491,757,243 | 0.16% |
| 30 | 2018 | \$939,134 | \$538,745,644 | 0.17% |
| 31 | 2019 | \$1,039,393 | \$595,576,448 | 0.17% |
| 32 | | | | |
| 33 | Average Loading Factor | | | Col [2] / Col [3] |
| 34 | 1989 - 2019 | | | 0.61% |
| 35 | 2009 - 2019 | | | 0.23% |
| 36 | 2014 - 2019 | | | 0.21% |
| 37 | Current | | | 0.17% |
| 38 | | | | |
| 39 | MARGINAL LOADING FACTOR FOR PLANT A&G | | | |
| 40 | % | | | 0.61% |

NOTES:

1 Source: Company data.

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Liberty Utilities (EnergyNorth Natural Gas) Corp.
Marginal Cost Study

Non-Plant Related A&G Marginal Loading Factor

| Line No. | Non-Plant Related A&G | | | |
|----------|---|--------------|-------------------|-------------------|
| | Year | Expense (\$) | Adjusted O&M (\$) | Loading Factor |
| | [1] | [2] | [3] | [4] |
| 1 | 1989 | \$5,909,986 | \$8,789,813 | 67.24% |
| 2 | 1990 | \$5,916,868 | \$9,468,756 | 62.49% |
| 3 | 1991 | \$6,262,331 | \$9,604,565 | 65.20% |
| 4 | 1992 | \$6,307,455 | \$9,919,580 | 63.59% |
| 5 | 1993 | \$6,311,505 | \$10,375,088 | 60.83% |
| 6 | 1994 | \$6,463,160 | \$10,955,356 | 59.00% |
| 7 | 1995 | \$5,625,812 | \$10,756,889 | 52.30% |
| 8 | 1996 | \$5,708,347 | \$10,442,201 | 54.67% |
| 9 | 1997 | \$5,543,252 | \$10,255,675 | 54.05% |
| 10 | 1998 | \$5,620,410 | \$10,423,880 | 53.92% |
| 11 | 1999 | \$6,187,199 | \$10,155,876 | 60.92% |
| 12 | 2000 | \$6,308,523 | \$9,150,670 | 68.94% |
| 13 | 2001 | \$11,088,012 | \$7,533,407 | 147.18% |
| 14 | 2002 | \$4,904,823 | \$6,352,629 | 77.21% |
| 15 | 2003 | \$4,376,775 | \$8,615,202 | 50.80% |
| 16 | 2004 | \$5,713,357 | \$9,367,067 | 60.99% |
| 17 | 2005 | \$4,218,671 | \$10,090,659 | 41.81% |
| 18 | 2006 | \$5,464,787 | \$11,466,986 | 47.66% |
| 19 | 2007 | \$5,829,666 | \$11,734,639 | 49.68% |
| 20 | 2008 | \$7,666,805 | \$12,318,347 | 62.24% |
| 21 | 2009 | \$7,997,073 | \$13,469,376 | 59.37% |
| 22 | 2010 | \$9,072,506 | \$14,925,410 | 60.79% |
| 23 | 2011 | \$6,668,773 | \$16,907,246 | 39.44% |
| 24 | 2012 | \$14,901,222 | \$16,624,967 | 89.63% |
| 25 | 2013 | \$13,527,831 | \$12,972,812 | 104.28% |
| 26 | 2014 | \$9,650,588 | \$20,243,503 | 47.67% |
| 27 | 2015 | \$11,452,287 | \$19,797,077 | 57.85% |
| 28 | 2016 | \$12,293,594 | \$18,126,160 | 67.82% |
| 29 | 2017 | \$11,392,447 | \$18,961,161 | 60.08% |
| 30 | 2018 | \$9,952,862 | \$20,865,808 | 47.70% |
| 31 | 2019 | \$11,610,667 | \$19,756,858 | 58.77% |
| 32 | | | | |
| 33 | Average Loading Factor | | | Col [2] / Col [3] |
| 34 | 1989 - 2019 | | | 63.04% |
| 35 | 2009 - 2019 | | | 63.04% |
| 36 | 2014 - 2019 | | | 56.65% |
| 37 | Current | | | 58.77% |
| 38 | | | | |
| 39 | MARGINAL LOADING FACTOR FOR NON-PLANT A&G | | | |
| 40 | % | | | 63.04% |

NOTES:

1 Source: Company data.

Liberty Utilities (EnergyNorth Natural Gas) Corp.
Marginal Cost Study

Materials & Supplies and Prepayments Marginal Loading Factor

| Line No. | Year | Materials & Supplies and Prepayments (\$) | Total Utility Plant (\$) | Loading Factor |
|----------|--|--|--------------------------|-------------------|
| | [1] | [2] | [3] | [4] |
| 1 | 1989 | \$3,629,263 | \$90,119,098 | 4.03% |
| 2 | 1990 | \$2,814,685 | \$99,467,339 | 2.83% |
| 3 | 1991 | \$2,978,851 | \$106,202,255 | 2.80% |
| 4 | 1992 | \$2,903,000 | \$112,423,806 | 2.58% |
| 5 | 1993 | \$2,911,222 | \$118,656,821 | 2.45% |
| 6 | 1994 | \$2,603,364 | \$124,120,097 | 2.10% |
| 7 | 1995 | \$2,653,717 | \$129,472,654 | 2.05% |
| 8 | 1996 | \$2,551,060 | \$135,806,318 | 1.88% |
| 9 | 1997 | \$2,737,535 | \$145,866,429 | 1.88% |
| 10 | 1998 | \$2,351,916 | \$156,424,246 | 1.50% |
| 11 | 1999 | \$2,472,925 | \$166,682,099 | 1.48% |
| 12 | 2000 | \$1,694,816 | \$174,018,261 | 0.97% |
| 13 | 2001 | \$1,423,213 | \$189,363,169 | 0.75% |
| 14 | 2002 | \$688,197 | \$202,252,941 | 0.34% |
| 15 | 2003 | \$12,491 | \$227,692,187 | 0.01% |
| 16 | 2004 | \$89,880 | \$239,474,276 | 0.04% |
| 17 | 2005 | \$464,721 | \$242,115,491 | 0.19% |
| 18 | 2006 | \$570,708 | \$263,405,595 | 0.22% |
| 19 | 2007 | \$556,729 | \$280,967,870 | 0.20% |
| 20 | 2008 | \$338,049 | \$298,931,548 | 0.11% |
| 21 | 2009 | \$356,896 | \$318,900,861 | 0.11% |
| 22 | 2010 | \$46,167 | \$328,222,369 | 0.01% |
| 23 | 2011 | \$2,715,050 | \$338,986,146 | 0.80% |
| 24 | 2012 | \$3,479,465 | \$339,610,905 | 1.02% |
| 25 | 2013 | \$2,870,074 | \$360,914,157 | 0.80% |
| 26 | 2014 | \$4,730,829 | \$379,562,429 | 1.25% |
| 27 | 2015 | \$6,132,549 | \$426,165,148 | 1.44% |
| 28 | 2016 | \$7,076,674 | \$459,143,909 | 1.54% |
| 29 | 2017 | \$8,037,125 | \$491,757,243 | 1.63% |
| 30 | 2018 | \$10,609,413 | \$538,745,644 | 1.97% |
| 31 | 2019 | \$11,069,588 | \$595,576,448 | 1.86% |
| 32 | | | | |
| 33 | Average Loading Factor | | | Col [2] / Col [3] |
| 34 | 1989 - 2019 | | | 1.32% |
| 35 | 2009 - 2019 | | | 1.13% |
| 36 | 2014 - 2019 | | | 1.61% |
| 37 | Current | | | 1.86% |
| 38 | | | | |
| 39 | MARGINAL LOADING FACTOR FOR MATERIALS & SUPPLIES AND PREPAYMENTS | | | |
| 40 | % | | | 1.32% |

NOTES:

1 Source: Company data.

**Liberty Utilities (EnergyNorth Natural Gas) Corp.
Marginal Cost Study**

General Plant Marginal Loading Factor

| Line No. | Year | General Plant (\$) | Total Utility Plant (\$) | Total Utility Plant Less | |
|----------|---|--------------------|--------------------------|--------------------------|----------------|
| | | | | General Plant (\$) | Loading Factor |
| | [1] | [2] | [3] | [4] | [5] |
| 1 | 1989 | \$5,933,582 | \$90,119,098 | \$84,185,516 | 7.05% |
| 2 | 1990 | \$6,503,724 | \$99,467,339 | \$92,963,615 | 7.00% |
| 3 | 1991 | \$6,849,445 | \$106,202,255 | \$99,352,810 | 6.89% |
| 4 | 1992 | \$7,659,250 | \$112,423,806 | \$104,764,556 | 7.31% |
| 5 | 1993 | \$7,970,207 | \$118,656,821 | \$110,686,614 | 7.20% |
| 6 | 1994 | \$8,384,740 | \$124,120,097 | \$115,735,357 | 7.24% |
| 7 | 1995 | \$8,221,795 | \$129,472,654 | \$121,250,859 | 6.78% |
| 8 | 1996 | \$8,870,155 | \$135,806,318 | \$126,936,163 | 6.99% |
| 9 | 1997 | \$9,203,222 | \$145,866,429 | \$136,663,207 | 6.73% |
| 10 | 1998 | \$9,478,301 | \$156,424,246 | \$146,945,945 | 6.45% |
| 11 | 1999 | \$11,244,509 | \$166,682,099 | \$155,437,590 | 7.23% |
| 12 | 2000 | \$7,255,965 | \$174,018,261 | \$166,762,296 | 4.35% |
| 13 | 2001 | \$8,348,042 | \$189,363,169 | \$181,015,127 | 4.61% |
| 14 | 2002 | \$11,173,887 | \$202,252,941 | \$191,079,054 | 5.85% |
| 15 | 2003 | \$11,582,178 | \$227,692,187 | \$216,110,009 | 5.36% |
| 16 | 2004 | \$10,499,392 | \$239,474,276 | \$228,974,884 | 4.59% |
| 17 | 2005 | \$10,220,042 | \$242,115,491 | \$231,895,449 | 4.41% |
| 18 | 2006 | \$11,333,343 | \$263,405,595 | \$252,072,252 | 4.50% |
| 19 | 2007 | \$12,089,175 | \$280,967,870 | \$268,878,695 | 4.50% |
| 20 | 2008 | \$15,097,758 | \$298,931,548 | \$283,833,790 | 5.32% |
| 21 | 2009 | \$16,049,203 | \$318,900,861 | \$302,851,658 | 5.30% |
| 22 | 2010 | \$16,060,707 | \$328,222,369 | \$312,161,662 | 5.14% |
| 23 | 2011 | \$16,195,189 | \$338,986,146 | \$322,790,957 | 5.02% |
| 24 | 2012 | \$8,811,783 | \$339,610,905 | \$330,799,122 | 2.66% |
| 25 | 2013 | \$9,473,843 | \$360,914,157 | \$351,440,314 | 2.70% |
| 26 | 2014 | \$10,590,671 | \$379,562,429 | \$368,971,758 | 2.87% |
| 27 | 2015 | \$18,670,190 | \$426,165,148 | \$407,494,958 | 4.58% |
| 28 | 2016 | \$23,861,850 | \$459,143,909 | \$435,282,059 | 5.48% |
| 29 | 2017 | \$25,425,819 | \$491,757,243 | \$466,331,424 | 5.45% |
| 30 | 2018 | \$28,196,651 | \$538,745,644 | \$510,548,993 | 5.52% |
| 31 | 2019 | \$34,662,196 | \$595,576,448 | \$560,914,252 | 6.18% |
| 32 | | | | | |
| 33 | Average Loading Factor | | | <u>Col [2] / Col [4]</u> | |
| 34 | 1989 - 2019 | | | 5.52% | |
| 35 | 2009 - 2019 | | | 4.63% | |
| 36 | 2014 - 2019 | | | 5.01% | |
| 37 | Current Average Cost per Customer | | | 5.82% | |
| 38 | | | | | |
| 39 | MARGINAL LOADING FACTOR FOR GENERAL PLANT | | | | |
| 40 | % | | | <u><u>5.52%</u></u> | |

NOTES:

1 Source: Company data.

**Liberty Utilities (EnergyNorth Natural Gas) Corp.
Marginal Cost Study**

Class Weighted Bad Debt Expense

| Line No. | Rate Class | Gross Bad Debt Expense | Percent of Total | Adjusted Bad Debt Accounts Expense | Total Normalized Distribution Revenues | Bad Debt Expense Percentage |
|----------|------------|------------------------|------------------|------------------------------------|--|-----------------------------|
| | | [1] | [2] | [3] | [4] | [5] |
| 1 | R-1 | \$54,638 | 2.33% | \$39,236 | \$895,559 | 4.38% |
| 2 | R-3, R-4 | \$2,072,985 | 88.57% | \$1,488,642 | \$46,836,151 | 3.18% |
| 3 | G-41 | \$168,920 | 7.22% | \$121,304 | \$14,691,765 | 0.83% |
| 4 | G-42 | \$28,979 | 1.24% | \$20,810 | \$13,862,372 | 0.15% |
| 5 | G-43 | \$0 | 0.00% | \$0 | \$2,979,914 | 0.00% |
| 6 | G-51 | \$13,411 | 0.57% | \$9,631 | \$1,687,389 | 0.57% |
| 7 | G-52 | \$1,597 | 0.07% | \$1,147 | \$2,248,398 | 0.05% |
| 8 | G-53 | \$0 | 0.00% | \$0 | \$1,703,104 | 0.00% |
| 9 | G-54 | \$0 | 0.00% | \$0 | \$1,105,561 | 0.00% |
| 10 | Total | \$2,340,529 | 100.00% | \$1,680,770 | \$86,010,213 | 1.95% |

[1] Company data

[2] Col [1] Line (n) / Col [1] Line 10

[3] Col [2] Line (n) x Col [3] Line 10

[4] Company data.

[5] Col [3] / Col [4]

**Liberty Utilities (EnergyNorth Natural Gas) Corp.
Marginal Cost Study**

Carrying Charges Inputs

| Line | Description | Peaking plant | Distribution | Services | Meters | |
|------|------------------------------|---------------|--------------|----------|---------|------|
| 1 | Plant data | | | | | |
| 2 | Capitalized cost | \$1,000 | \$1,000 | \$1,000 | \$1,000 | |
| 3 | Book life | 35 | 59 | 45 | 29 | [1] |
| 4 | Salvage value | 0% | -15% | -60% | 0% | [2] |
| 5 | MACRS life | 20 | 20 | 20 | 20 | [3] |
| 6 | Capital structure | | | | | |
| 7 | Long-term debt ratio | 49.85% | 49.85% | 49.85% | 49.85% | [4] |
| 8 | Short-term debt ratio | 0.00% | 0.00% | 0.00% | 0.00% | [5] |
| 9 | Preferred ratio | 0.00% | 0.00% | 0.00% | 0.00% | [6] |
| 10 | Common ratio | 50.15% | 50.15% | 50.15% | 50.15% | [7] |
| 11 | Other | 0.00% | 0.00% | 0.00% | 0.00% | [8] |
| 12 | Cost of capital | | | | | |
| 13 | Long-term debt cost | 4.42% | 4.42% | 4.42% | 4.42% | [9] |
| 14 | Short-term debt cost | 0.00% | 0.00% | 0.00% | 0.00% | |
| 15 | Preferred cost | 0.00% | 0.00% | 0.00% | 0.00% | [10] |
| 16 | Common cost | 10.51% | 10.51% | 10.51% | 10.51% | [11] |
| 17 | Other | 0.00% | 0.00% | 0.00% | 0.00% | [12] |
| 18 | WACC | 7.47% | 7.47% | 7.47% | 7.47% | [13] |
| 19 | After tax WACC | 6.88% | 6.88% | 6.88% | 6.88% | [14] |
| 20 | Tax affected cost of capital | 9.43% | 9.43% | 9.43% | 9.43% | [15] |
| 21 | Tax info | | | | | |
| 22 | Tax rate | 27.08% | 27.08% | 27.08% | 27.08% | [16] |
| 23 | Property tax rate | 2.58% | 2.58% | 2.58% | 2.58% | [17] |
| 24 | Property insurance rate | 0.18% | 0.18% | 0.18% | 0.18% | [18] |
| 25 | Misc data | | | | | |
| 26 | Inflation rate | 2.14% | 2.14% | 2.14% | 2.14% | [19] |
| 27 | Constant \$ disc rate | 4.73% | 4.73% | 4.73% | 4.73% | [20] |
| 28 | Property tax escalation rate | 2.14% | 2.14% | 2.14% | 2.14% | [21] |

[1] MCOS-5 Page 2

[2] MCOS-5 Page 2

[3] MCOS-5 Page 2

[4] Direct testimony of John Cochrane

[5] Direct testimony of John Cochrane

[6] Direct testimony of John Cochrane

[7] Direct testimony of John Cochrane

[8] Direct testimony of John Cochrane

[9] Direct testimony of John Cochrane

[10] Direct testimony of John Cochrane

[11] Direct testimony of John Cochrane

[12] Direct testimony of John Cochrane

[13] Line 7 x Line 13 + Line 8 x Line 14 + Line 9 x Line 15 + Line 10 x Line 16 + Line 11 x Line 17

[14] (1 - Line 22) * Line 20

[15] Line 19 / (1 - Line 22)

[16] Revenue Requirements RR-1

[17] Revenue Requirements Step-EN

[18] Revenue Requirements Step-EN

[20] Line 19 - Line 26

[21] Line 26

**Liberty Utilities (EnergyNorth Natural Gas) Corp.
Marginal Cost Study**

Development of Plant Service Lives and Net Salvage

| Line | Account | Description | [A] Test Year Plant Balance | [B] Average Service Life | [C] Net Salvage Value | |
|------|---------|-------------------------------|-----------------------------------|--------------------------------|-----------------------------|------|
| 1 | | <u>Production Plant</u> | | | | |
| 2 | 361 | Structures and Improvements | \$96,980 | 35.0 | 0% | [1] |
| 3 | 361.5 | Other Equipment | <u>\$0</u> | <u>35.0</u> | <u>0%</u> | [2] |
| 4 | | Production Plant Total | \$96,980 | 35.0 | 0% | [3] |
| 5 | | <u>Distribution</u> | | | | |
| 6 | 366.2 | Structures and Improvements | \$252,675 | 35.0 | 0% | [4] |
| 7 | 366.3 | Structures and Improvements | \$353,851 | 35.0 | 0% | [5] |
| 8 | 367.0 | Mains | \$239,064,768 | 60.0 | -15% | [6] |
| 9 | 369.0 | Measuring and Regulation Stal | \$4,881,531 | 35.0 | 0% | [7] |
| 10 | 387 | Other Equipment | <u>\$1,044,334</u> | <u>19.0</u> | <u>0%</u> | [8] |
| | | Distribution Total | \$245,597,159 | 59.3 | -15% | [9] |
| 11 | | <u>Services</u> | | | | |
| 12 | 380 | Services | \$185,013,119 | 45.0 | -60% | [10] |
| 13 | 380.1 | Services - Stub | <u>\$2,225,746</u> | <u>45.0</u> | <u>-60%</u> | [11] |
| | | Services Total | \$187,238,865 | 45.0 | -60% | [12] |
| 14 | | <u>Meters</u> | | | | |
| 15 | 381.0 | Meters | \$13,396,339 | 32.0 | 0% | [13] |
| 16 | 381.1 | Meters-Instrument | \$276,522 | 32.0 | 0% | [14] |
| 17 | 381.2 | Meters - ERTs | \$6,038,019 | 15.0 | 0% | [15] |
| 18 | 382 | Meter Installation | <u>\$18,597,177</u> | <u>32.0</u> | <u>0%</u> | [16] |
| 19 | | Meters Total | \$38,308,057 | 29.3 | 0% | [17] |

- [1] Source: Company data
- [2] Source: Company data
- [3] Col A Equals [1]+[2], Cols B,C = Weighted Average of Lines [1] to [2]
- [4] Source: Company data
- [5] Source: Company data
- [6] Source: Company data
- [7] Source: Company data
- [8] Source: Company data
- [9] Col A Equals \sum lines [4] to [8], Cols B, C Equal Weighted Average of Lines [4] to [8]
- [10] Source: Company data
- [11] Source: Company data
- [12] Col A Equals [10]+[11], Cols B,C Equal Weighted Average of Lines [10] to [11]
- [13] Source: Company data
- [14] Source: Company data
- [15] Source: Company data
- [16] Source: Company data
- [17] Col A = \sum lines [13] to [16], Cols B, C = Weighted Average of Lines [13] to [16]

Liberty Utilities (EnergyNorth Natural Gas) Corp.
 Marginal Cost Study

Development of Revenue Requirements Stream
 Peaker Plant

| Year | PV Factor | Rate Base | Interest on Debt | Return on Preferred Equity | Return on Common Equity | Tax Depreciation | Tax Depreciation Rate | Book Depreciation | Deferred Taxes | Taxable Income | Income Taxes | Property Tax | Property Insurance | Revenue Requirement | % of Original Investment Revenue | PV of Revenue Requirement |
|--------------------------------------|-----------|-----------|------------------|----------------------------|-------------------------|------------------|-----------------------|-------------------|----------------|-----------------|---------------|-----------------|--------------------|---------------------|----------------------------------|---------------------------|
| 0 | 1.00 | 1000 | | | | | | | | | | | | | | |
| 1 | 0.94 | 969.01 | 21.35 | 0.00 | 51.07 | 37.50 | 3.75% | 28.57 | 2.42 | 61.11 | 16.55 | 25.80 | 1.80 | 147.56 | 14.76% | 138.07 |
| 2 | 0.88 | 928.63 | 20.46 | 0.00 | 48.95 | 72.19 | 7.22% | 28.57 | 11.81 | 23.50 | 6.36 | 26.35 | 1.84 | 144.35 | 14.43% | 126.37 |
| 3 | 0.82 | 889.71 | 19.60 | 0.00 | 46.89 | 66.77 | 6.68% | 28.57 | 10.34 | 26.11 | 7.07 | 26.92 | 1.88 | 141.28 | 14.13% | 115.72 |
| 4 | 0.77 | 852.15 | 18.78 | 0.00 | 44.91 | 61.77 | 6.18% | 28.57 | 8.99 | 28.40 | 7.69 | 27.50 | 1.92 | 138.36 | 13.84% | 106.04 |
| 5 | 0.72 | 815.85 | 17.98 | 0.00 | 43.00 | 57.13 | 5.71% | 28.57 | 7.73 | 30.41 | 8.24 | 28.09 | 1.96 | 135.56 | 13.56% | 97.21 |
| 6 | 0.67 | 780.70 | 17.20 | 0.00 | 41.15 | 52.85 | 5.29% | 28.57 | 6.57 | 32.15 | 8.71 | 28.69 | 2.00 | 132.89 | 13.29% | 89.16 |
| 7 | 0.63 | 746.63 | 16.45 | 0.00 | 39.35 | 48.88 | 4.89% | 28.57 | 5.50 | 33.66 | 9.11 | 29.30 | 2.04 | 130.34 | 13.03% | 81.82 |
| 8 | 0.59 | 713.55 | 15.72 | 0.00 | 37.61 | 45.22 | 4.52% | 28.57 | 4.51 | 34.93 | 9.46 | 29.93 | 2.09 | 127.89 | 12.79% | 75.12 |
| 9 | 0.55 | 680.63 | 15.00 | 0.00 | 35.87 | 44.62 | 4.46% | 28.57 | 4.35 | 33.15 | 8.98 | 30.57 | 2.13 | 125.47 | 12.55% | 68.96 |
| 10 | 0.51 | 647.72 | 14.27 | 0.00 | 34.14 | 44.61 | 4.46% | 28.57 | 4.34 | 30.78 | 8.34 | 31.23 | 2.18 | 123.07 | 12.31% | 63.28 |
| 11 | 0.48 | 614.80 | 13.55 | 0.00 | 32.40 | 44.62 | 4.46% | 28.57 | 4.35 | 28.39 | 7.69 | 31.90 | 2.23 | 120.68 | 12.07% | 58.06 |
| 12 | 0.45 | 581.88 | 12.82 | 0.00 | 30.67 | 44.61 | 4.46% | 28.57 | 4.34 | 26.02 | 7.05 | 32.58 | 2.27 | 118.31 | 11.83% | 53.26 |
| 13 | 0.42 | 548.97 | 12.10 | 0.00 | 28.93 | 44.62 | 4.46% | 28.57 | 4.35 | 23.63 | 6.40 | 33.28 | 2.32 | 115.95 | 11.59% | 48.84 |
| 14 | 0.39 | 516.05 | 11.37 | 0.00 | 27.20 | 44.61 | 4.46% | 28.57 | 4.34 | 21.26 | 5.76 | 33.99 | 2.37 | 113.61 | 11.36% | 44.77 |
| 15 | 0.37 | 483.13 | 10.65 | 0.00 | 25.46 | 44.62 | 4.46% | 28.57 | 4.35 | 18.87 | 5.11 | 34.72 | 2.42 | 111.28 | 11.13% | 41.03 |
| 16 | 0.35 | 450.22 | 9.92 | 0.00 | 23.73 | 44.61 | 4.46% | 28.57 | 4.34 | 16.50 | 4.47 | 35.47 | 2.47 | 108.98 | 10.90% | 37.60 |
| 17 | 0.32 | 417.30 | 9.19 | 0.00 | 22.00 | 44.62 | 4.46% | 28.57 | 4.35 | 14.11 | 3.82 | 36.23 | 2.53 | 106.68 | 10.67% | 34.44 |
| 18 | 0.30 | 384.39 | 8.47 | 0.00 | 20.26 | 44.61 | 4.46% | 28.57 | 4.34 | 11.75 | 3.18 | 37.00 | 2.58 | 104.41 | 10.44% | 31.54 |
| 19 | 0.28 | 351.47 | 7.74 | 0.00 | 18.53 | 44.62 | 4.46% | 28.57 | 4.35 | 9.36 | 2.53 | 37.80 | 2.64 | 102.16 | 10.22% | 28.87 |
| 20 | 0.26 | 318.56 | 7.02 | 0.00 | 16.79 | 44.61 | 4.46% | 28.57 | 4.34 | 6.99 | 1.89 | 38.61 | 2.69 | 99.92 | 9.99% | 26.42 |
| 21 | 0.25 | 291.68 | 6.43 | 0.00 | 15.37 | 22.31 | 2.23% | 28.57 | (1.70) | 27.34 | 7.40 | 39.44 | 2.75 | 98.27 | 9.83% | 24.31 |
| 22 | 0.23 | 270.85 | 5.97 | 0.00 | 14.28 | 0.00 | | 28.57 | (7.74) | 48.15 | 13.04 | 40.28 | 2.81 | 97.21 | 9.72% | 22.50 |
| 23 | 0.22 | 250.01 | 5.51 | 0.00 | 13.18 | 0.00 | | 28.57 | (7.74) | 46.64 | 12.63 | 41.15 | 2.87 | 96.17 | 9.62% | 20.83 |
| 24 | 0.20 | 229.18 | 5.05 | 0.00 | 12.08 | 0.00 | | 28.57 | (7.74) | 45.14 | 12.22 | 42.03 | 2.93 | 95.15 | 9.51% | 19.28 |
| 25 | 0.19 | 208.34 | 4.59 | 0.00 | 10.98 | 0.00 | | 28.57 | (7.74) | 43.63 | 11.82 | 42.93 | 3.00 | 94.15 | 9.41% | 17.85 |
| 26 | 0.18 | 187.51 | 4.13 | 0.00 | 9.88 | 0.00 | | 28.57 | (7.74) | 42.12 | 11.41 | 43.85 | 3.06 | 93.17 | 9.32% | 16.53 |
| 27 | 0.17 | 166.67 | 3.67 | 0.00 | 8.79 | 0.00 | | 28.57 | (7.74) | 40.62 | 11.00 | 44.79 | 3.12 | 92.21 | 9.22% | 15.31 |
| 28 | 0.16 | 145.84 | 3.21 | 0.00 | 7.69 | 0.00 | | 28.57 | (7.74) | 39.11 | 10.59 | 45.75 | 3.19 | 91.27 | 9.13% | 14.17 |
| 29 | 0.15 | 125.01 | 2.75 | 0.00 | 6.59 | 0.00 | | 28.57 | (7.74) | 37.61 | 10.18 | 46.73 | 3.26 | 90.35 | 9.04% | 13.13 |
| 30 | 0.14 | 104.17 | 2.30 | 0.00 | 5.49 | 0.00 | | 28.57 | (7.74) | 36.10 | 9.78 | 47.73 | 3.33 | 89.46 | 8.95% | 12.16 |
| 31 | 0.13 | 83.34 | 1.84 | 0.00 | 4.39 | 0.00 | | 28.57 | (7.74) | 34.60 | 9.37 | 48.76 | 3.40 | 88.59 | 8.86% | 11.27 |
| 32 | 0.12 | 62.50 | 1.38 | 0.00 | 3.29 | 0.00 | | 28.57 | (7.74) | 33.09 | 8.96 | 49.80 | 3.47 | 87.74 | 8.77% | 10.44 |
| 33 | 0.11 | 41.67 | 0.92 | 0.00 | 2.20 | 0.00 | | 28.57 | (7.74) | 31.58 | 8.55 | 50.87 | 3.55 | 86.92 | 8.69% | 9.68 |
| 34 | 0.10 | 20.83 | 0.46 | 0.00 | 1.10 | 0.00 | | 28.57 | (7.74) | 30.08 | 8.14 | 51.96 | 3.63 | 86.12 | 8.61% | 8.97 |
| 35 | 0.10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | 28.57 | (7.74) | 28.57 | 7.74 | 53.08 | 3.70 | 85.35 | 8.54% | 8.32 |
| Total | | | 327.84 | | 784.23 | 1,000.00 | | 1,000.00 | 0.00 | 1,075.47 | 291.24 | 1,325.11 | 92.45 | 3,820.87 | 382.09% | 1,591.33 |
| PV | | | 175.85 | | 420.67 | 549.02 | | 374.93 | 47.14 | 402.80 | 109.08 | 433.42 | 30.24 | 1,591.33 | 159.13% | |
| Levelized payment current \$ | | | 13.40 | | 32.06 | 41.84 | | 28.57 | 3.59 | 30.70 | 8.31 | 33.03 | 2.30 | 121.27 | 12.13% | |
| Levelized payment constant \$ | | | 10.38 | | 24.83 | 32.41 | | 22.13 | 2.78 | 23.78 | 6.44 | 25.58 | 1.78 | 93.94 | 9.39% | |

Liberty Utilities (EnergyNorth Natural Gas) Corp.
 Marginal Cost Study

Development of Revenue Requirements Stream
 Services

| Year | Rate Base | Interest on Debt | Return on Preferred Equity | Return on Common Equity | Tax Depreciation | Tax Depreciation Rate | Book Depreciation | Deferred Taxes | Taxable Income | Income Taxes | Property Tax | Property Insurance | Revenue Requirement | % of Original Investment Revenue | PV of Revenue Requirement |
|------|-----------|------------------|----------------------------|-------------------------|------------------|-----------------------|-------------------|----------------|----------------|--------------|--------------|--------------------|---------------------|----------------------------------|---------------------------|
| 0 | 1000.00 | | | | | | | | | | | | | | |
| 1 | 963.92 | 21.24 | 0.00 | 50.81 | 37.50 | 3.75% | 35.56 | 0.53 | 67.73 | 18.34 | 25.80 | 1.80 | 154.07 | 15.41% | 144.15 |
| 2 | 918.44 | 20.24 | 0.00 | 48.41 | 72.19 | 7.22% | 35.56 | 9.92 | 29.75 | 8.06 | 26.35 | 1.84 | 150.37 | 15.04% | 131.64 |
| 3 | 874.43 | 19.27 | 0.00 | 46.09 | 66.77 | 6.68% | 35.56 | 8.45 | 31.99 | 8.66 | 26.92 | 1.88 | 146.82 | 14.68% | 120.27 |
| 4 | 831.78 | 18.33 | 0.00 | 43.84 | 61.77 | 6.18% | 35.56 | 7.10 | 33.91 | 9.18 | 27.50 | 1.92 | 143.42 | 14.34% | 109.92 |
| 5 | 790.38 | 17.42 | 0.00 | 41.66 | 57.13 | 5.71% | 35.56 | 5.84 | 35.56 | 9.63 | 28.09 | 1.96 | 140.15 | 14.01% | 100.50 |
| 6 | 750.14 | 16.53 | 0.00 | 39.54 | 52.85 | 5.29% | 35.56 | 4.68 | 36.93 | 10.00 | 28.69 | 2.00 | 136.99 | 13.70% | 91.91 |
| 7 | 710.98 | 15.67 | 0.00 | 37.47 | 48.88 | 4.89% | 35.56 | 3.61 | 38.07 | 10.31 | 29.30 | 2.04 | 133.96 | 13.40% | 84.09 |
| 8 | 672.81 | 14.82 | 0.00 | 35.46 | 45.22 | 4.52% | 35.56 | 2.62 | 38.97 | 10.55 | 29.93 | 2.09 | 131.03 | 13.10% | 76.96 |
| 9 | 634.80 | 13.99 | 0.00 | 33.46 | 44.62 | 4.46% | 35.56 | 2.45 | 36.82 | 9.97 | 30.57 | 2.13 | 128.13 | 12.81% | 70.42 |
| 10 | 596.79 | 13.15 | 0.00 | 31.46 | 44.61 | 4.46% | 35.56 | 2.45 | 34.08 | 9.23 | 31.23 | 2.18 | 125.25 | 12.52% | 64.40 |
| 11 | 558.78 | 12.31 | 0.00 | 29.45 | 44.62 | 4.46% | 35.56 | 2.45 | 31.32 | 8.48 | 31.90 | 2.23 | 122.38 | 12.24% | 58.88 |
| 12 | 520.77 | 11.47 | 0.00 | 27.45 | 44.61 | 4.46% | 35.56 | 2.45 | 28.59 | 7.74 | 32.58 | 2.27 | 119.53 | 11.95% | 53.81 |
| 13 | 482.76 | 10.64 | 0.00 | 25.45 | 44.62 | 4.46% | 35.56 | 2.45 | 25.83 | 6.99 | 33.28 | 2.32 | 116.69 | 11.67% | 49.15 |
| 14 | 444.75 | 9.80 | 0.00 | 23.44 | 44.61 | 4.46% | 35.56 | 2.45 | 23.09 | 6.25 | 33.99 | 2.37 | 113.87 | 11.39% | 44.87 |
| 15 | 406.74 | 8.96 | 0.00 | 21.44 | 44.62 | 4.46% | 35.56 | 2.45 | 20.34 | 5.51 | 34.72 | 2.42 | 111.06 | 11.11% | 40.95 |
| 16 | 368.73 | 8.12 | 0.00 | 19.44 | 44.61 | 4.46% | 35.56 | 2.45 | 17.60 | 4.77 | 35.47 | 2.47 | 108.27 | 10.83% | 37.36 |
| 17 | 330.72 | 7.29 | 0.00 | 17.43 | 44.62 | 4.46% | 35.56 | 2.45 | 14.84 | 4.02 | 36.23 | 2.53 | 105.50 | 10.55% | 34.06 |
| 18 | 292.72 | 6.45 | 0.00 | 15.43 | 44.61 | 4.46% | 35.56 | 2.45 | 12.10 | 3.28 | 37.00 | 2.58 | 102.75 | 10.27% | 31.03 |
| 19 | 254.71 | 5.61 | 0.00 | 13.42 | 44.62 | 4.46% | 35.56 | 2.45 | 9.35 | 2.53 | 37.80 | 2.64 | 100.01 | 10.00% | 28.26 |
| 20 | 216.70 | 4.77 | 0.00 | 11.42 | 44.61 | 4.46% | 35.56 | 2.45 | 6.61 | 1.79 | 38.61 | 2.69 | 97.30 | 9.73% | 25.73 |
| 21 | 184.73 | 4.07 | 0.00 | 9.74 | 22.31 | 2.23% | 35.56 | (3.59) | 26.60 | 7.20 | 39.44 | 2.75 | 95.17 | 9.52% | 23.54 |
| 22 | 158.80 | 3.50 | 0.00 | 8.37 | 0.00 | | 35.56 | (9.63) | 47.03 | 12.74 | 40.28 | 2.81 | 93.63 | 9.36% | 21.67 |
| 23 | 132.88 | 2.93 | 0.00 | 7.00 | 0.00 | | 35.56 | (9.63) | 45.16 | 12.23 | 41.15 | 2.87 | 92.10 | 9.21% | 19.95 |
| 24 | 106.95 | 2.36 | 0.00 | 5.64 | 0.00 | | 35.56 | (9.63) | 43.29 | 11.72 | 42.03 | 2.93 | 90.60 | 9.06% | 18.36 |
| 25 | 81.02 | 1.79 | 0.00 | 4.27 | 0.00 | | 35.56 | (9.63) | 41.41 | 11.21 | 42.93 | 3.00 | 89.12 | 8.91% | 16.90 |
| 26 | 55.10 | 1.21 | 0.00 | 2.90 | 0.00 | | 35.56 | (9.63) | 39.54 | 10.71 | 43.85 | 3.06 | 87.66 | 8.77% | 15.55 |
| 27 | 29.17 | 0.64 | 0.00 | 1.54 | 0.00 | | 35.56 | (9.63) | 37.66 | 10.20 | 44.79 | 3.12 | 86.22 | 8.62% | 14.31 |
| 28 | 3.24 | 0.07 | 0.00 | 0.17 | 0.00 | | 35.56 | (9.63) | 35.79 | 9.69 | 45.75 | 3.19 | 84.80 | 8.48% | 13.17 |
| 29 | (22.69) | (0.50) | 0.00 | (1.20) | 0.00 | | 35.56 | (9.63) | 33.92 | 9.18 | 0.00 | 0.00 | 83.42 | 8.34% | 12.11 |
| 30 | (48.61) | (1.07) | 0.00 | (2.56) | 0.00 | | 35.56 | (9.63) | 32.04 | 8.68 | 0.00 | 0.00 | 82.07 | 8.20% | 11.12 |
| 31 | (74.54) | (1.64) | 0.00 | (3.93) | 0.00 | | 35.56 | (9.63) | 30.17 | 8.17 | 0.00 | 0.00 | 80.77 | 8.07% | 10.21 |
| 32 | (100.47) | (2.21) | 0.00 | (5.30) | 0.00 | | 35.56 | (9.63) | 28.29 | 7.66 | 0.00 | 0.00 | 79.52 | 7.95% | 9.36 |
| 33 | (126.39) | (2.78) | 0.00 | (6.66) | 0.00 | | 35.56 | (9.63) | 26.42 | 7.15 | 0.00 | 0.00 | 78.32 | 7.83% | 8.57 |
| 34 | (152.32) | (3.36) | 0.00 | (8.03) | 0.00 | | 35.56 | (9.63) | 24.55 | 6.65 | 0.00 | 0.00 | 77.17 | 7.71% | 7.83 |
| 35 | (178.25) | (3.93) | 0.00 | (9.40) | 0.00 | | 35.56 | (9.63) | 22.67 | 6.14 | 0.00 | 0.00 | 76.07 | 7.60% | 7.14 |
| 36 | (204.18) | (4.50) | 0.00 | (10.76) | 0.00 | | 35.56 | (9.63) | 20.80 | 5.63 | 0.00 | 0.00 | 75.01 | 7.50% | 6.50 |
| 37 | (230.10) | (5.07) | 0.00 | (12.13) | 0.00 | | 35.56 | (9.63) | 18.92 | 5.12 | 0.00 | 0.00 | 74.00 | 7.40% | 5.91 |
| 38 | (256.03) | (5.64) | 0.00 | (13.49) | 0.00 | | 35.56 | (9.63) | 17.05 | 4.62 | 0.00 | 0.00 | 73.03 | 7.30% | 5.37 |
| 39 | (281.96) | (6.21) | 0.00 | (14.86) | 0.00 | | 35.56 | (9.63) | 15.18 | 4.11 | 0.00 | 0.00 | 72.10 | 7.21% | 4.88 |
| 40 | (307.88) | (6.78) | 0.00 | (16.23) | 0.00 | | 35.56 | (9.63) | 13.30 | 3.60 | 0.00 | 0.00 | 71.21 | 7.12% | 4.44 |
| 41 | (333.81) | (7.36) | 0.00 | (17.59) | 0.00 | | 35.56 | (9.63) | 11.43 | 3.09 | 0.00 | 0.00 | 70.35 | 7.03% | 4.05 |
| 42 | (359.74) | (7.93) | 0.00 | (18.96) | 0.00 | | 35.56 | (9.63) | 9.55 | 2.59 | 0.00 | 0.00 | 69.52 | 6.95% | 3.70 |
| 43 | (385.67) | (8.50) | 0.00 | (20.33) | 0.00 | | 35.56 | (9.63) | 7.68 | 2.08 | 0.00 | 0.00 | 68.71 | 6.87% | 3.39 |
| 44 | (411.59) | (9.07) | 0.00 | (21.69) | 0.00 | | 35.56 | (9.63) | 5.81 | 1.57 | 0.00 | 0.00 | 67.92 | 6.79% | 3.11 |
| 45 | (600.00) | (13.22) | 0.00 | (31.62) | 600.00 | | 35.56 | 152.85 | -607.81 | (164.60) | 0.00 | 0.00 | -21.03 | -2.10% | -1.05 |

| | | | | | | | | | | | | | | | |
|--------------------------------------|--|---------------|--|---------------|-----------------|--|-----------------|--------------|---------------|---------------|---------------|--------------|-----------------|----------------|-----------------|
| Total | | 182.87 | | 437.45 | 1,600.00 | | 1,600.00 | 0.00 | 599.90 | 162.45 | 976.17 | 68.11 | 3,427.05 | 342.70% | 1,568.08 |
| PV | | 153.70 | | 367.68 | 579.10 | | 491.07 | 23.84 | 416.19 | 112.71 | 391.75 | 27.33 | 1,568.08 | 156.81% | |
| Levelized payment current \$ | | 11.13 | | 26.62 | 41.93 | | 35.56 | 1.73 | 30.13 | 8.16 | 28.36 | 1.98 | 113.54 | 11.35% | |
| Levelized payment constant \$ | | 8.31 | | 19.88 | 31.32 | | 26.56 | 1.29 | 22.51 | 6.10 | 21.19 | 1.48 | 84.80 | 8.48% | II-471R |

Liberty Utilities (EnergyNorth Natural Gas) Corp.
Marginal Cost Study

Development of Revenue Requirements Stream
Meters

| Year | Rate Base | Interest on Debt | Return on Preferred Equity | Return on Common Equity | Tax Depreciation | Tax Depreciation Rate | Book Depreciation | Deferred Taxes | Taxable Income | Income Taxes | Property Tax | Property Insurance | Revenue Requirement | % of Original Investment Revenue | PV of Revenue Requirement |
|--------------------------------------|-----------|------------------|----------------------------|-------------------------|------------------|-----------------------|-------------------|----------------|----------------|---------------|-----------------|--------------------|---------------------|----------------------------------|---------------------------|
| 0 | 1000.00 | | | | | | | | | | | | | | |
| 1 | 964.70 | 21.26 | 0.00 | 50.85 | 37.50 | 3.75% | 34.48 | 0.82 | 66.71 | 18.07 | 25.80 | 1.80 | 153.07 | 15.31% | 143.22 |
| 2 | 920.01 | 20.27 | 0.00 | 48.49 | 72.19 | 7.22% | 34.48 | 10.21 | 28.79 | 7.80 | 26.35 | 1.84 | 149.45 | 14.94% | 130.83 |
| 3 | 876.78 | 19.32 | 0.00 | 46.21 | 66.77 | 6.68% | 34.48 | 8.74 | 31.09 | 8.42 | 26.92 | 1.88 | 145.97 | 14.60% | 119.57 |
| 4 | 834.91 | 18.40 | 0.00 | 44.01 | 61.77 | 6.18% | 34.48 | 7.39 | 33.06 | 8.95 | 27.50 | 1.92 | 142.64 | 14.26% | 109.32 |
| 5 | 794.29 | 17.50 | 0.00 | 41.87 | 57.13 | 5.71% | 34.48 | 6.13 | 34.77 | 9.41 | 28.09 | 1.96 | 139.44 | 13.94% | 99.99 |
| 6 | 754.84 | 16.63 | 0.00 | 39.79 | 52.85 | 5.29% | 34.48 | 4.97 | 36.19 | 9.80 | 28.69 | 2.00 | 136.36 | 13.64% | 91.49 |
| 7 | 716.45 | 15.79 | 0.00 | 37.76 | 48.88 | 4.89% | 34.48 | 3.90 | 37.39 | 10.12 | 29.30 | 2.04 | 133.40 | 13.34% | 83.75 |
| 8 | 679.06 | 14.96 | 0.00 | 35.79 | 45.22 | 4.52% | 34.48 | 2.91 | 38.35 | 10.38 | 29.93 | 2.09 | 130.55 | 13.05% | 76.68 |
| 9 | 641.84 | 14.14 | 0.00 | 33.83 | 44.62 | 4.46% | 34.48 | 2.75 | 36.26 | 9.82 | 30.57 | 2.13 | 127.72 | 12.77% | 70.19 |
| 10 | 604.61 | 13.32 | 0.00 | 31.87 | 44.61 | 4.46% | 34.48 | 2.74 | 33.57 | 9.09 | 31.23 | 2.18 | 124.91 | 12.49% | 64.23 |
| 11 | 567.38 | 12.50 | 0.00 | 29.91 | 44.62 | 4.46% | 34.48 | 2.75 | 30.87 | 8.36 | 31.90 | 2.23 | 122.12 | 12.21% | 58.75 |
| 12 | 530.16 | 11.68 | 0.00 | 27.94 | 44.61 | 4.46% | 34.48 | 2.74 | 28.19 | 7.63 | 32.58 | 2.27 | 119.34 | 11.93% | 53.72 |
| 13 | 492.93 | 10.86 | 0.00 | 25.98 | 44.62 | 4.46% | 34.48 | 2.75 | 25.49 | 6.90 | 33.28 | 2.32 | 116.58 | 11.66% | 49.10 |
| 14 | 455.70 | 10.04 | 0.00 | 24.02 | 44.61 | 4.46% | 34.48 | 2.74 | 22.81 | 6.18 | 33.99 | 2.37 | 113.83 | 11.38% | 44.86 |
| 15 | 418.48 | 9.22 | 0.00 | 22.06 | 44.62 | 4.46% | 34.48 | 2.75 | 20.11 | 5.45 | 34.72 | 2.42 | 111.10 | 11.11% | 40.96 |
| 16 | 381.25 | 8.40 | 0.00 | 20.09 | 44.61 | 4.46% | 34.48 | 2.74 | 17.43 | 4.72 | 35.47 | 2.47 | 108.38 | 10.84% | 37.39 |
| 17 | 344.02 | 7.58 | 0.00 | 18.13 | 44.62 | 4.46% | 34.48 | 2.75 | 14.73 | 3.99 | 36.23 | 2.53 | 105.68 | 10.57% | 34.12 |
| 18 | 306.80 | 6.76 | 0.00 | 16.17 | 44.61 | 4.46% | 34.48 | 2.74 | 12.05 | 3.26 | 37.00 | 2.58 | 103.01 | 10.30% | 31.11 |
| 19 | 269.57 | 5.94 | 0.00 | 14.21 | 44.62 | 4.46% | 34.48 | 2.75 | 9.35 | 2.53 | 37.80 | 2.64 | 100.34 | 10.03% | 28.36 |
| 20 | 232.34 | 5.12 | 0.00 | 12.25 | 44.61 | 4.46% | 34.48 | 2.74 | 6.67 | 1.81 | 38.61 | 2.69 | 97.70 | 9.77% | 25.83 |
| 21 | 201.16 | 4.43 | 0.00 | 10.60 | 22.31 | 2.23% | 34.48 | (3.30) | 26.71 | 7.23 | 39.44 | 2.75 | 95.64 | 9.56% | 23.66 |
| 22 | 176.01 | 3.88 | 0.00 | 9.28 | 0.00 | | 34.48 | (9.34) | 47.21 | 12.78 | 40.28 | 2.81 | 94.18 | 9.42% | 21.80 |
| 23 | 150.87 | 3.32 | 0.00 | 7.95 | 0.00 | | 34.48 | (9.34) | 45.39 | 12.29 | 41.15 | 2.87 | 92.73 | 9.27% | 20.08 |
| 24 | 125.72 | 2.77 | 0.00 | 6.63 | 0.00 | | 34.48 | (9.34) | 43.57 | 11.80 | 42.03 | 2.93 | 91.30 | 9.13% | 18.50 |
| 25 | 100.58 | 2.22 | 0.00 | 5.30 | 0.00 | | 34.48 | (9.34) | 41.75 | 11.31 | 42.93 | 3.00 | 89.89 | 8.99% | 17.04 |
| 26 | 75.43 | 1.66 | 0.00 | 3.98 | 0.00 | | 34.48 | (9.34) | 39.94 | 10.81 | 43.85 | 3.06 | 88.51 | 8.85% | 15.70 |
| 27 | 50.29 | 1.11 | 0.00 | 2.65 | 0.00 | | 34.48 | (9.34) | 38.12 | 10.32 | 44.79 | 3.12 | 87.14 | 8.71% | 14.46 |
| 28 | 25.14 | 0.55 | 0.00 | 1.33 | 0.00 | | 34.48 | (9.34) | 36.30 | 9.83 | 45.75 | 3.19 | 85.80 | 8.58% | 13.32 |
| 29 | (0.00) | (0.00) | 0.00 | (0.00) | 0.00 | | 34.48 | (9.34) | 34.48 | 9.34 | 46.73 | 3.26 | 84.48 | 8.45% | 12.28 |
| Total | | 279.64 | | 668.93 | 1,000.00 | | 1,000.00 | (0.00) | 917.35 | 248.42 | 1,022.91 | 71.37 | 3,291.26 | 329.13% | 1,550.33 |
| PV | | 162.47 | | 388.65 | 549.02 | | 428.53 | 32.63 | 412.50 | 111.70 | 398.54 | 27.81 | 1,550.33 | 155.03% | |
| Levelized payment current \$ | | 13.07 | | 31.27 | 44.18 | | 34.48 | 2.63 | 33.19 | 8.99 | 32.07 | 2.24 | 124.75 | 12.48% | |
| Levelized payment constant \$ | | 10.41 | | 24.91 | 35.19 | | 27.47 | 2.09 | 26.44 | 7.16 | 25.54 | 1.78 | 99.37 | 9.94% | |

Liberty Utilities (EnergyNorth Natural Gas) Corp.
Marginal Cost Study

Fixed Carrying Charge Rates

| Line | Description | Production Plant | | | | Mains | | | | Services | | | | Meters | | | |
|-----------|------------------------|------------------|--------------|------------------|--------------|-----------------|--------------|------------------|--------------|-----------------|--------------|------------------|--------------|-----------------|--------------|------------------|--------------|
| | | Current Dollars | | Constant Dollars | | Current Dollars | | Constant Dollars | | Current Dollars | | Constant Dollars | | Current Dollars | | Constant Dollars | |
| | | Engineer's FCCR | | Economist's FCCR | | Engineer's FCCR | | Economist's FCCR | | Engineer's FCCR | | Economist's FCCR | | Engineer's FCCR | | Economist's FCCR | |
| | | Current | % of Capital | Constant | % of Capital | Current | % of Capital | Constant | % of Capital | Current | % of Capital | Constant | % of Capital | Current | % of Capital | Constant | % of Capital |
| Levelized | Investment | Levelized | Investment | Levelized | Investment | Levelized | Investment | Levelized | Investment | Levelized | Investment | Levelized | Investment | Levelized | Investment | Levelized | Investment |
| 1 | Interest on Debt | \$13.40 | 1.3% | \$10.38 | 1.0% | \$14.10 | 1.4% | \$10.18 | 1.0% | \$11.13 | 1.1% | \$8.31 | 0.8% | \$13.07 | 1.3% | \$10.41 | 1.0% |
| 2 | Return on Preferred | \$0.00 | 0.0% | \$0.00 | 0.0% | \$0.00 | 0.0% | \$0.00 | 0.0% | \$0.00 | 0.0% | \$0.00 | 0.0% | \$0.00 | 0.0% | \$0.00 | 0.0% |
| 3 | Return on Common | <u>\$32.06</u> | <u>3.2%</u> | <u>\$24.83</u> | <u>2.5%</u> | <u>\$33.73</u> | <u>3.4%</u> | <u>\$24.35</u> | <u>2.4%</u> | <u>\$26.62</u> | <u>2.7%</u> | <u>\$19.88</u> | <u>2.0%</u> | <u>\$31.27</u> | <u>3.1%</u> | <u>\$24.91</u> | <u>2.5%</u> |
| 4 | Total Return | \$45.46 | 4.5% | \$35.21 | 3.5% | \$47.84 | 4.8% | \$34.53 | 3.5% | \$37.75 | 3.8% | \$28.20 | 2.8% | \$44.35 | 4.4% | \$35.32 | 3.5% |
| 5 | Depreciation | \$28.57 | 2.9% | \$22.13 | 2.2% | \$19.42 | 1.9% | \$14.02 | 1.4% | \$35.56 | 3.6% | \$26.56 | 2.7% | \$34.48 | 3.4% | \$27.47 | 2.7% |
| 6 | Income tax | \$8.31 | 0.8% | \$6.44 | 0.6% | \$7.30 | 0.7% | \$5.27 | 0.5% | \$8.16 | 0.8% | \$6.10 | 0.6% | \$8.99 | 0.9% | \$7.16 | 0.7% |
| 7 | Deferred Taxes | \$3.59 | 0.4% | \$2.78 | 0.3% | \$5.23 | 0.5% | \$3.77 | 0.4% | \$1.73 | 0.2% | \$1.29 | 0.1% | \$2.63 | 0.3% | \$2.09 | 0.2% |
| 8 | Revenue Tax | \$0.00 | 0.0% | \$0.00 | 0.0% | \$0.00 | 0.0% | \$0.00 | 0.0% | \$0.00 | 0.0% | \$0.00 | 0.0% | \$0.00 | 0.0% | \$0.00 | 0.0% |
| 9 | Property Tax | <u>\$33.03</u> | <u>3.3%</u> | <u>\$25.58</u> | <u>2.6%</u> | <u>\$34.45</u> | <u>3.4%</u> | <u>\$24.86</u> | <u>2.5%</u> | <u>\$28.36</u> | <u>2.8%</u> | <u>\$21.19</u> | <u>2.1%</u> | <u>\$32.07</u> | <u>3.2%</u> | <u>\$25.54</u> | <u>2.6%</u> |
| 10 | Total Taxes | \$44.93 | 4.5% | \$34.81 | 3.5% | \$46.98 | 4.7% | \$33.91 | 3.4% | \$38.25 | 3.8% | \$28.57 | 2.9% | \$43.68 | 4.4% | \$34.80 | 3.5% |
| 11 | Property Insurance | \$2.30 | 0.2% | \$1.78 | 0.2% | \$2.48 | 0.2% | \$1.79 | 0.2% | \$1.98 | 0.2% | \$1.48 | 0.1% | \$2.24 | 0.2% | \$1.78 | 0.2% |
| 12 | Total Revenue Required | \$121.27 | 12.1% | \$93.94 | 9.4% | \$116.72 | 11.7% | \$84.24 | 8.4% | \$113.54 | 11.4% | \$84.80 | 8.5% | \$124.75 | 12.5% | \$99.37 | 9.9% |

Liberty Utilities (EnergyNorth Natural Gas) Corp.
Marginal Cost Study

Summary of Marginal Capacity-Related Costs

| Line | Description | Production in lieu of reinforcement | Mains reinforcement | Mains extension | Total distribution | |
|------|--|--|---------------------|-----------------|--------------------|------|
| 1 | Plant Investment | | | | | |
| 2 | Long-run unit costs - \$/design day dth | \$59.52 | \$1,261.97 | \$1,090.65 | \$2,412.14 | [1] |
| 3 | General plant loading factor | <u>5.52%</u> | <u>5.52%</u> | <u>5.52%</u> | -- | [2] |
| 4 | Gross-up unit costs | \$62.81 | \$1,331.69 | \$1,150.91 | \$2,545.41 | [3] |
| 5 | Fixed charge rate | 9.39% | 8.42% | 8.42% | -- | [4] |
| 6 | Plant-related A&G loading factor | <u>0.61%</u> | <u>0.61%</u> | <u>0.61%</u> | -- | [5] |
| 7 | Grossed up fixed charge rate | 10.00% | 9.03% | 9.03% | -- | [6] |
| 8 | Annualized cost | \$6.28 | \$120.29 | \$103.96 | \$230.54 | [7] |
| 9 | Operating Expense | | | | | |
| 10 | Production capacity costs | \$1.09 | -- | -- | \$1.09 | [8] |
| 11 | Distribution capacity costs | -- | -- | \$58.52 | \$58.52 | [9] |
| 12 | Non-plant A&G loading factor | <u>63.04%</u> | <u>63.04%</u> | <u>63.04%</u> | -- | [10] |
| 13 | Total O&M expense | \$1.77 | \$0.00 | \$95.40 | \$97.17 | [11] |
| 14 | Working Capital | | | | | |
| 15 | M&S and prepayments rate | <u>1.32%</u> | <u>1.32%</u> | <u>1.32%</u> | <u>0.00%</u> | [12] |
| 16 | M&S and prepayments cost | \$0.83 | \$17.55 | \$15.17 | \$33.54 | [13] |
| 17 | Working cash allowance lag (days) | <u>26.10</u> | <u>26.10</u> | <u>26.10</u> | -- | [14] |
| 18 | Working cash allowance lag (rate) | <u>7.15%</u> | <u>7.15%</u> | <u>7.15%</u> | -- | [15] |
| 19 | Working cash O&M allowance | <u>\$0.58</u> | <u>\$8.60</u> | <u>\$14.26</u> | <u>\$23.43</u> | [16] |
| 20 | Total working capital | \$1.40 | \$26.15 | \$29.42 | \$56.98 | [17] |
| 21 | Tax affected cost of capital rate | <u>9.43%</u> | <u>9.43%</u> | <u>9.43%</u> | <u>0.00%</u> | [18] |
| 22 | Working capital revenue requirement | \$0.13 | \$2.47 | \$2.77 | \$5.37 | [19] |
| 23 | System Seasonal Capacity Related Cost | | | | | |
| 24 | \$/design day dth | \$8.19 | \$122.76 | \$202.14 | \$333.08 | [20] |
| 25 | Sales/sendout factor | <u>95.28%</u> | <u>95.28%</u> | <u>95.28%</u> | -- | [21] |
| 26 | Inflation | <u>2.14%</u> | <u>2.14%</u> | <u>2.14%</u> | -- | [22] |
| 27 | Seasonal Capacity Cost | \$8.76 | \$131.31 | \$216.23 | \$356.30 | [23] |

[1] MCOS-1 and MCOS-2

[2] MCOS-4

[3] (1 + Line 3) x Line 2

[4] MCOS-5

[5] MCOS-4

[6] Line 5 + Line 6

[7] Line 4 x Line 7

[8] MCOS-2

[9] MCOS-2

[10] MCOS-4

[11] (1 + Line 12) x (Line 10 + Line 11)

[12] MCOS-4

[13] Line 15 x Line 4

[14] Company data

[15] Line 17 / 365

[16] (Line 8 + Line 13) x Line 18

[17] Line 19 + Line 16

[18] MCOS-5

[19] Line 21 x Line 20

[20] Line 22 + Line 13 + Line 8

[21] Company data

[23] ((1 + (1 - Line 25)) x Line 24) x (1 + Line 26)

Liberty Utilities (EnergyNorth Natural Gas) Corp.
Marginal Cost Study

Summary of Marginal Customer-Related Costs

| Line | Description | R-1 | R3, R-4 | G-41 | G-42 | G-43 | G-51 | G-52 | G-53 | G-54 | |
|------|---|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|-----------------|-------------------|-----------------|------|
| 1 | Plant Investment | | | | | | | | | | |
| 2 | Meters and regulators | \$439.76 | \$439.76 | \$1,076.76 | \$2,750.07 | \$9,332.68 | \$3,482.86 | \$2,750.07 | \$3,995.06 | \$11,904.46 | [1] |
| 3 | General plant loading factor | <u>5.52%</u> | <u>5.52%</u> | <u>5.52%</u> | <u>5.52%</u> | <u>5.52%</u> | <u>5.52%</u> | <u>5.52%</u> | <u>5.52%</u> | <u>5.52%</u> | [2] |
| 4 | Grossed up meter costs | \$464.06 | \$464.06 | \$1,136.25 | \$2,902.01 | \$9,848.28 | \$3,675.27 | \$2,902.01 | \$4,215.77 | \$12,562.15 | [3] |
| 5 | Fixed charge rate | <u>9.94%</u> | <u>9.94%</u> | <u>9.94%</u> | <u>9.94%</u> | <u>9.94%</u> | <u>9.94%</u> | <u>9.94%</u> | <u>9.94%</u> | <u>9.94%</u> | [4] |
| 6 | Meter carrying costs | \$46.11 | \$46.11 | \$112.91 | \$288.37 | \$978.63 | \$365.21 | \$288.37 | \$418.92 | \$1,248.30 | [5] |
| 7 | Services | \$4,063.04 | \$4,063.04 | \$3,796.20 | \$6,346.48 | \$10,912.52 | \$11,893.51 | \$6,582.61 | \$39,407.48 | \$9,647.45 | [6] |
| 8 | General plant loading factor | <u>5.52%</u> | <u>5.52%</u> | <u>5.52%</u> | <u>5.52%</u> | <u>5.52%</u> | <u>5.52%</u> | <u>5.52%</u> | <u>5.52%</u> | <u>5.52%</u> | [7] |
| 9 | Grossed up services costs | \$4,287.51 | \$4,287.51 | \$4,005.93 | \$6,697.10 | \$11,515.40 | \$12,550.59 | \$6,946.28 | \$41,584.62 | \$10,180.44 | [8] |
| 10 | Fixed charge rate | <u>8.48%</u> | <u>8.48%</u> | <u>8.48%</u> | <u>8.48%</u> | <u>8.48%</u> | <u>8.48%</u> | <u>8.48%</u> | <u>8.48%</u> | <u>8.48%</u> | [9] |
| 11 | Services carrying costs | <u>\$363.59</u> | <u>\$363.59</u> | <u>\$339.72</u> | <u>\$567.94</u> | <u>\$976.54</u> | <u>\$1,064.33</u> | <u>\$589.07</u> | <u>\$3,526.51</u> | <u>\$863.33</u> | [10] |
| 12 | Total plant carrying costs | \$409.71 | \$409.71 | \$452.63 | \$856.31 | \$1,955.17 | \$1,429.54 | \$877.44 | \$3,945.43 | \$2,111.64 | [11] |
| 13 | Plant -related A&G loading factor | <u>0.61%</u> | <u>0.61%</u> | <u>0.61%</u> | <u>0.61%</u> | <u>0.61%</u> | <u>0.61%</u> | <u>0.61%</u> | <u>0.61%</u> | <u>0.61%</u> | [12] |
| 14 | Annualized cost | \$412.20 | \$412.20 | \$455.38 | \$861.52 | \$1,967.07 | \$1,438.24 | \$882.78 | \$3,969.44 | \$2,124.49 | [13] |
| 15 | Operating Expense | | | | | | | | | | |
| 16 | Plant-related O&M/customer | \$60.33 | \$60.33 | \$65.28 | \$121.87 | \$271.23 | \$206.00 | \$125.03 | \$581.47 | \$288.74 | [14] |
| 17 | Customer accounting & marketing expense | \$67.17 | \$67.17 | \$67.17 | \$67.17 | \$67.17 | \$67.17 | \$67.17 | \$67.17 | \$67.17 | [15] |
| 18 | Non-plant A&G loading factor | <u>63.04%</u> | <u>63.04%</u> | <u>63.04%</u> | <u>63.04%</u> | <u>63.04%</u> | <u>63.04%</u> | <u>63.04%</u> | <u>63.04%</u> | <u>63.04%</u> | [16] |
| 19 | Total O&M expense | \$207.87 | \$207.87 | \$215.95 | \$308.21 | \$551.72 | \$445.37 | \$313.37 | \$1,057.53 | \$580.26 | [20] |
| 20 | Working Capital | | | | | | | | | | |
| 21 | M&S and prepayments rate | <u>1.32%</u> | <u>1.32%</u> | <u>1.32%</u> | <u>1.32%</u> | <u>1.32%</u> | <u>1.32%</u> | <u>1.32%</u> | <u>1.32%</u> | <u>1.32%</u> | [21] |
| 22 | M&S and prepayments cost | \$62.62 | \$62.62 | \$67.76 | \$126.50 | \$281.53 | \$213.82 | \$129.78 | \$603.55 | \$299.70 | [22] |
| 23 | Working cash allowance (days) | <u>26.10</u> | <u>26.10</u> | <u>26.10</u> | <u>26.10</u> | <u>26.10</u> | <u>26.10</u> | <u>26.10</u> | <u>26.10</u> | <u>26.10</u> | [23] |
| 24 | Working cash lag (rate) | <u>7.15%</u> | <u>7.15%</u> | <u>7.15%</u> | <u>7.15%</u> | <u>7.15%</u> | <u>7.15%</u> | <u>7.15%</u> | <u>7.15%</u> | <u>7.15%</u> | [24] |
| 25 | Working cash O&M allowance | <u>\$44.34</u> | <u>\$44.34</u> | <u>\$48.00</u> | <u>\$83.64</u> | <u>\$180.11</u> | <u>\$134.69</u> | <u>\$85.53</u> | <u>\$359.46</u> | <u>\$193.41</u> | [25] |
| 26 | Total working capital | \$106.95 | \$106.95 | \$115.77 | \$210.14 | \$461.64 | \$348.51 | \$215.31 | \$963.01 | \$493.11 | [26] |
| 27 | Tax affected cost of capital | <u>9.43%</u> | <u>9.43%</u> | <u>9.43%</u> | <u>9.43%</u> | <u>9.43%</u> | <u>9.43%</u> | <u>9.43%</u> | <u>9.43%</u> | <u>9.43%</u> | [27] |
| 28 | Working capital revenue requirement | \$10.09 | \$10.09 | \$10.92 | \$19.82 | \$43.54 | \$32.87 | \$20.31 | \$90.83 | \$46.51 | [28] |
| 29 | Customer Related Cost | | | | | | | | | | |
| 30 | Annual cost per customer | \$630.16 | \$630.16 | \$682.25 | \$1,189.55 | \$2,562.33 | \$1,916.49 | \$1,216.45 | \$5,117.80 | \$2,751.26 | [29] |
| 31 | Inflation | <u>2.14%</u> | <u>2.14%</u> | <u>2.14%</u> | <u>2.14%</u> | <u>2.14%</u> | <u>2.14%</u> | <u>2.14%</u> | <u>2.14%</u> | <u>2.14%</u> | [30] |
| 32 | Annual customer related cost | \$643.67 | \$643.67 | \$696.88 | \$1,215.05 | \$2,617.27 | \$1,957.58 | \$1,242.54 | \$5,227.54 | \$2,810.25 | [31] |

- [1] Company data
- [2] MCOS-4
- [3] (1 + Line 3) x Line 2
- [4] MCOS-5
- [5] Line 5 x Line 4
- [6] Company data
- [7] MCOS-4
- [8] (1 + Line 8) x Line 7
- [9] MCOS-5
- [10] Line 10 x Line 9
- [11] Line 11 + Line 6
- [12] MCOS-4
- [13] (1 + Line 13) x Line 12
- [14] MCOS-3
- [15] MCOS-3
- [16] MCOS-4
- [20] (Line 16 + Line 17) x (1 + Line 18)
- [21] MCOS-4
- [22] (Line 9 + Line 4) x Line 21
- [23] Company data
- [24] Line 23 / 365
- [25] (Line 19 + Line 14) x Line 24
- [26] Line 25 + Line 22
- [27] MCOS-5
- [28] Line 26 x Line 27
- [29] Line 28 + Line 19 + Line 14
- [31] Line 30 x (1 + Line 31)

Liberty Utilities (EnergyNorth Natural Gas) Corp.
Marginal Cost Study

Marginal Cost Estimates

| Line | Description | R-1 | R3, R-4 | G-41 | G-42 | G-43 | G-51 | G-52 | G-53 | G-54 | |
|------|--|--------------------|---------------------|---------------------|---------------------|--------------------|--------------------|--------------------|--------------------|--------------------|------|
| 1 | Bad debt factor | 4.38% | 3.18% | 0.83% | 0.15% | 0.00% | 0.57% | 0.05% | 0.00% | 0.00% | [1] |
| 2 | Monthly Charge | | | | | | | | | | |
| 3 | Monthly customer charge | \$53.64 | \$53.64 | \$58.07 | \$101.25 | \$218.11 | \$163.13 | \$103.54 | \$435.63 | \$234.19 | [2] |
| 4 | Adjustment for uncollectible | <u>\$2.35</u> | <u>\$1.70</u> | <u>\$0.48</u> | <u>\$0.15</u> | <u>\$0.00</u> | <u>\$0.93</u> | <u>\$0.05</u> | <u>\$0.00</u> | <u>\$0.00</u> | [3] |
| 5 | Grossed up monthly cust charge | \$55.99 | \$55.34 | \$58.55 | \$101.41 | \$218.11 | \$164.06 | \$103.60 | \$435.63 | \$234.19 | [4] |
| 6 | Winter Charge | | | | | | | | | | |
| 7 | Distribution charge - pressure support | \$8.76 | \$8.76 | \$8.76 | \$8.76 | \$8.76 | \$8.76 | \$8.76 | \$8.76 | \$8.76 | [5] |
| 8 | Distribution charge - reinforcement | \$131.31 | \$131.31 | \$131.31 | \$131.31 | \$131.31 | \$131.31 | \$131.31 | \$131.31 | \$131.31 | [6] |
| 9 | Distribution charge - main extension | \$216.23 | \$216.23 | \$216.23 | \$216.23 | \$216.23 | \$216.23 | \$216.23 | \$216.23 | \$216.23 | [7] |
| 10 | Adjustment for uncollectible | <u>\$15.61</u> | <u>\$11.32</u> | <u>\$2.94</u> | <u>\$0.53</u> | <u>\$0.00</u> | <u>\$2.03</u> | <u>\$0.18</u> | <u>\$0.00</u> | <u>\$0.00</u> | [8] |
| 11 | Grossed up winter charge | \$371.91 | \$367.62 | \$359.24 | \$356.83 | \$356.30 | \$358.33 | \$356.48 | \$356.30 | \$356.30 | [9] |
| 12 | Summer Charge | | | | | | | | | | |
| 13 | Summer Charge | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | [10] |
| 13 | Billing Determinants | | | | | | | | | | |
| 14 | Customers | 3,549 | 79,448 | 9,349 | 1,423 | 58 | 1,319 | 394 | 34 | 28 | [11] |
| 15 | Design day demand | <u>500</u> | <u>73,735</u> | <u>33,053</u> | <u>40,264</u> | <u>11,556</u> | <u>2,400</u> | <u>5,518</u> | <u>5,921</u> | <u>3,412</u> | [12] |
| 16 | Winter demand | 50,154 | 5,266,930 | 2,191,390 | 2,937,838 | 878,444 | 255,488 | 594,059 | 629,151 | 803,047 | [13] |
| 17 | Summer demand | 24,402 | 1,071,772 | 306,315 | 576,528 | 249,918 | 157,811 | 362,434 | 423,139 | 1,025,126 | [14] |
| 18 | Total Marginal Costs | | | | | | | | | | |
| 19 | Total customer-related cost (annual) | \$2,384,370 | \$52,763,822 | \$6,568,732 | \$1,731,349 | \$152,565 | \$2,596,697 | \$489,356 | \$179,972 | \$78,117 | [15] |
| 20 | Capacity-related, winter | | | | | | | | | | |
| 21 | Pressure support | \$4,570 | \$666,118 | \$291,790 | \$353,065 | \$101,180 | \$21,132 | \$48,342 | \$51,841 | \$29,876 | [16] |
| 22 | Reinforcements | \$68,542 | \$9,990,233 | \$4,376,181 | \$5,295,156 | \$1,517,465 | \$316,927 | \$725,024 | \$777,502 | \$448,064 | [17] |
| 23 | Main extension | <u>\$112,864</u> | <u>\$16,450,199</u> | <u>\$7,205,944</u> | <u>\$8,719,154</u> | <u>\$2,498,701</u> | <u>\$521,861</u> | <u>\$1,193,844</u> | <u>\$1,280,257</u> | <u>\$737,795</u> | [18] |
| 24 | Total winter | \$185,977 | \$27,106,550 | \$11,873,915 | \$14,367,375 | \$4,117,346 | \$859,921 | \$1,967,210 | \$2,109,601 | \$1,215,735 | [19] |
| 25 | Capacity-related, summer | | | | | | | | | | |
| 26 | Capacity related - summer | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | [20] |
| 27 | Totals | | | | | | | | | | |
| 28 | Total Annual Marginal Cost | <u>\$2,570,346</u> | <u>\$79,870,372</u> | <u>\$18,442,647</u> | <u>\$16,098,724</u> | <u>\$4,269,911</u> | <u>\$3,456,617</u> | <u>\$2,456,566</u> | <u>\$2,289,573</u> | <u>\$1,293,852</u> | [21] |
| 29 | Share | 2.0% | 61.1% | 14.1% | 12.3% | 3.3% | 2.6% | 1.9% | 1.8% | 1.0% | [22] |
| 30 | Unit Costs | | | | | | | | | | |
| 31 | \$/customer | \$55.99 | \$55.34 | \$58.55 | \$101.41 | \$218.11 | \$164.06 | \$103.60 | \$435.63 | \$234.19 | [23] |
| 32 | Winter (\$/dth) | | | | | | | | | | |
| 33 | Pressure support | \$0.09 | \$0.13 | \$0.13 | \$0.12 | \$0.12 | \$0.08 | \$0.08 | \$0.08 | \$0.04 | [24] |
| 34 | Reinforcements | \$1.37 | \$1.90 | \$2.00 | \$1.80 | \$1.73 | \$1.24 | \$1.22 | \$1.24 | \$0.56 | [25] |
| 35 | Main extensions | \$2.25 | \$3.12 | \$3.29 | \$2.97 | \$2.84 | \$2.04 | \$2.01 | \$2.03 | \$0.92 | [26] |
| 36 | Summer (\$/dth) | <u>\$0.00</u> | <u>\$0.00</u> | <u>\$0.00</u> | <u>\$0.00</u> | <u>\$0.00</u> | <u>\$0.00</u> | <u>\$0.00</u> | <u>\$0.00</u> | <u>\$0.00</u> | [27] |
| 37 | Average Annual (\$/dth) | \$2.49 | \$4.28 | \$4.75 | \$4.09 | \$3.65 | \$2.08 | \$2.06 | \$2.00 | \$0.66 | [28] |

- [1] MCOS-4
- [2] MCOS-6 Page 2 Line 32 / 12
- [3] Line 1 x Line 3
- [4] Line 4 + Line 3
- [5] MCOS-6 Page 1 Line 27
- [6] MCOS-6 Page 1 Line 27
- [7] MCOS-6 Page 1 Line 27
- [8] (Line 7 + Line 8 + Line 9) x Line 1
- [9] Line 7 + Line 8 + Line 9 + Line 10
- [10] Company data
- [11] Company data
- [12] Company data
- [13] Company data
- [14] Company data
- [15] Line 14 x Line 5 x 12
- [16] (1 + Line 1) x Line 15 x Line 7
- [17] (1 + Line 1) x Line 15 x Line 8
- [18] (1 + Line 1) x Line 15 x Line 9
- [19] Line 21 + Line 22 + Line 23
- [20] Company data
- [21] Line 19 + Line 24
- [22] Line 28 / Sum of Line 28
- [23] Line 5
- [24] Line 21 / Line 16
- [25] Line 22 / Line 16
- [26] Line 23 / Line 16
- [27] Line 26 / Line 17
- [28] (Line 26 + Line 24) / (Line 16 + Line 17)