

Reprinted 4/18/2020:  
Rows A6c-Res Education and Colum Total Resource Cost Test were not displayed in Attachment J1, Page 1 of 6, of the March 1, 2022 Compliance Filing. No changes were made to program budgets or goals.

**Program Cost-Effectiveness - 2022 PLAN**

	Benefit/Cost Ratios		Total Resource Cost Test (Net)	Granite State Test (Net)	Utility Costs (\$000 - 2022\$) <sup>2</sup>	Customer Costs (\$000 - 2022\$) <sup>2</sup>	Annual Net MWh Savings	Lifetime Net MWh Savings	Winter kW Savings	Summer kW Savings	Number of Customers Served	Annual Net MMBtu Savings	Lifetime Net MMBtu Savings
	Total Resource Cost Test (Net)	Granite State Test (Net)											
<b>Residential Programs</b>													
B1 - Home Energy Assistance	1.03	1.03	575.3	575.3	556.9	-	12.8	273.8	2.0	3.4	56	2,650.6	57,040.6
A1 - Energy Star Homes	1.48	1.83	616.3	547.4	298.5	116.6	-	-	-	-	106	2,418.0	57,950.0
A2 - Home Performance with Energy Star	1.03	1.14	426.4	378.0	332.9	80.5	5.0	74.7	1.5	0.1	75	1,795.2	38,165.8
A3 - Energy Star Products	1.15	1.95	362.9	321.2	164.6	150.6	7.9	132.4	2.4	0.0	182	1,938.0	34,437.7
A4 - Residential Behavior	1.57	1.38	64.0	56.3	40.7	-	-	-	-	-	11,200	5,847.4	5,847.4
A6c - Res Education	-	-	-	-	18.2	-	-	-	-	-	-	-	-
<b>Sub-Total Residential</b>	<b>1.16</b>	<b>1.33</b>	<b>2,044.9</b>	<b>1,878.1</b>	<b>1,411.8</b>	<b>347.7</b>	<b>25.7</b>	<b>480.9</b>	<b>5.9</b>	<b>3.6</b>	<b>11,619</b>	<b>14,649.3</b>	<b>193,441.5</b>
<b>Commercial, Industrial &amp; Municipal</b>													
C1 - Large Business Energy Solutions	2.16	3.88	2,976.4	2,641.9	681.3	698.6	-	-	-	-	118	21,902.0	325,856.3
C2 - Small Business Energy Solutions	2.24	2.66	2,015.0	1,795.3	675.4	225.4	-	-	-	-	168	13,598.1	197,483.0
C6c - C&I Education	-	-	-	-	15.9	-	-	-	-	-	-	-	-
<b>Sub-Total Commercial &amp; Industrial</b>	<b>2.17</b>	<b>3.23</b>	<b>4,991.3</b>	<b>4,437.2</b>	<b>1,372.5</b>	<b>924.1</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>286</b>	<b>35,500.1</b>	<b>523,339.3</b>
<b>Total</b>	<b>1.73</b>	<b>2.27</b>	<b>7,036.3</b>	<b>6,315.4</b>	<b>2,784.3</b>	<b>1,271.7</b>	<b>25.7</b>	<b>480.9</b>	<b>5.9</b>	<b>3.6</b>	<b>11,905</b>	<b>50,149.3</b>	<b>716,780.9</b>

- Notes:**
- (1) The Granite State Test is used as the primary cost test, as approved in Order No. 26,322, and includes an annual NEI adder of \$405.71 per weatherization project in the Home Energy Assistance program. For the Secondary Granite State Test, NEI adders of 15% for Residential and 15% for C&I
  - (2) Utility and Customer Costs and Benefits are expressed in 2022 Dollars.
  - (3) Per past precedent, discount and inflation rates have been updated for the year in which measures will be installed, and were updated as of June 2021 for program year 2022.

<b>Annual Savings as a % of 2019 Sales</b>	0.66%	<b>Spending per Customer</b>	\$ 439.86
			\$ 33.61
			\$ 195.71

Reprinted 4/18/2020:  
Colum *Total Resource Cost Test* was not displayed in Attachment J1, Page 2 of 6, of the March 1, 2022 Compliance Filing. No changes were made to program budgets or goals.

Northern Utilities Inc.  
NHPUC Docket No. DE 20-092  
March 1, 2022 Plan Filing (2022-2023)  
2023 Plan - REVISED Attachment J1  
Page 2 of 6

**Program Cost-Effectiveness - 2023 PLAN**

	Benefit/Cost Ratios		Total Resource Cost Test (Net)	Granite State Test (Net)	Utility Costs (\$000 - 2022\$) <sup>2</sup>	Customer Costs (\$000 - 2022\$) <sup>2</sup>	Annual Net MWh Savings	Lifetime Net MWh Savings	Winter kW Savings	Summer kW Savings	Number of Customers Served	Annual Net MMBtu Savings	Lifetime Net MMBtu Savings
	Total Resource Cost Test (Net)	Granite State Test (Net)											
<b>Residential Programs</b>													
B1 - Home Energy Assistance	1.01	1.01	484.1	484.1	479.3	-	10.9	232.4	0.0	-	56	2,208.4	47,567.5
A1 - Energy Star Homes	1.57	1.93	698.3	620.9	321.2	124.8	-	-	-	-	106	2,637.0	63,425.0
A2 - Home Performance with Energy Star	1.02	1.11	434.8	386.0	347.3	79.6	5.0	74.7	1.5	0.1	6	1,798.6	38,254.5
A3 - Energy Star Products	1.18	1.83	347.5	308.0	168.2	127.5	7.9	132.4	(0.0)	0.1	182	1,835.6	32,492.1
A4 - Residential Behavior	1.48	1.30	63.8	56.2	43.3	-	-	-	-	-	11,200	5,847.4	5,847.4
A6c - Res Education	-	-	-	-	20.0	-	-	-	-	-	-	-	-
<b>Sub-Total Residential</b>	<b>1.19</b>	<b>1.35</b>	<b>2,028.6</b>	<b>1,855.1</b>	<b>1,379.2</b>	<b>331.9</b>	<b>23.8</b>	<b>439.5</b>	<b>1.6</b>	<b>0.2</b>	<b>11,550</b>	<b>14,327.0</b>	<b>187,586.5</b>
<b>Commercial, Industrial &amp; Municipal</b>													
C1 - Large Business Energy Solutions	2.12	3.83	2,163.0	1,922.1	502.0	520.3	-	-	-	-	108	14,307.9	220,365.6
C2 - Small Business Energy Solutions	2.54	3.10	1,718.2	1,540.6	497.4	179.1	-	-	-	-	140	10,830.0	156,347.9
C6c - C&I Education	-	-	-	-	17.9	-	-	-	-	-	-	-	-
<b>Sub-Total Commercial &amp; Industrial</b>	<b>2.26</b>	<b>3.40</b>	<b>3,881.3</b>	<b>3,462.6</b>	<b>1,017.4</b>	<b>699.4</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>248</b>	<b>25,137.8</b>	<b>376,713.5</b>
<b>Total</b>	<b>1.72</b>	<b>2.22</b>	<b>5,909.9</b>	<b>5,317.7</b>	<b>2,396.6</b>	<b>1,031.4</b>	<b>23.8</b>	<b>439.5</b>	<b>1.6</b>	<b>0.2</b>	<b>11,798</b>	<b>39,464.8</b>	<b>564,300.0</b>

- Notes:**
- (1) The Granite State Test is used as the primary cost test, as approved in Order No. 26,322, and includes an annual NEI adder of \$405.71 per weatherization project in the Home Energy Assistance program. For the Secondary Granite State Test, NEI adders of 25% for Residential and 10% for C&I
  - (2) Utility and Customer Costs and Benefits are expressed in 2022 Dollars.
  - (3) Per past precedent, discount and inflation rates have been updated for the year in which measures will be installed, and were updated as of June 2021 for program year 2022.

<b>Annual Savings as a % of 2019 Sales</b>	0.52%	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;"><b>Spending per Customer</b></td> <td style="width: 50%; text-align: right;">\$ 378.61</td> </tr> <tr> <td></td> <td style="text-align: right;">\$ 35.38</td> </tr> <tr> <td></td> <td style="text-align: right;">\$ 145.07</td> </tr> </table>	<b>Spending per Customer</b>	\$ 378.61		\$ 35.38		\$ 145.07
<b>Spending per Customer</b>	\$ 378.61							
	\$ 35.38							
	\$ 145.07							

Reprinted 4/18/2020:  
Rows A6b-Res ISO Forward Capacity Market Expenses, A6c-Res Education and Colum Total Resource Cost Test were not displayed in Attachment H1, Page 1 of 6, of the March 1, 2022 Compliance Filing.  
No changes were made to program budgets or goals.

**Program Cost-Effectiveness - 2022 Compliance Plan**

	Benefit/Cost Ratios		Benefits (\$000)		Utility Costs (\$000 - 2022\$) <sup>2</sup>	Customer Costs (\$000 - 2022\$) <sup>2</sup>	Annual Net MWh Savings	Lifetime Net MWh Savings	Winter kW Savings	Summer kW Savings	Number of Customers Served	Annual Net MMBtu Savings	Lifetime Net MMBtu Savings
	Total Resource Cost Test	Granite State Test	Total Resource Cost Test	Granite State Test									
<b>Residential Programs</b>													
B1 - Home Energy Assistance	1.73	1.73	2,077.5	2,077.5	1,204.3	-	142.4	2,096.2	21.9	22.7	112	2,124.8	43,427.1
A1 - Energy Star Homes	2.82	3.39	2,035.8	1,642.6	484.4	237.9	124.4	3,000.0	37.1	1.9	158	1,564.0	38,400.0
A2 - Home Performance with Energy Star	2.32	2.08	1,751.9	1,415.4	681.4	73.0	156.5	3,145.6	38.8	13.6	66	1,808.0	36,241.9
A3 - Energy Star Products	1.69	2.09	1,337.6	1,095.0	524.6	268.0	800.1	8,586.0	165.0	105.5	5,499	482.3	10,211.5
A4 - Residential Behavior	2.20	1.76	385.8	308.6	175.0	-	3,100.0	3,100.0	669.2	431.7	-	-	-
A5 - Residential Active Demand Response	-	-	-	-	67.0	-	-	-	-	-	-	-	-
A6b - Res ISO Forward Capacity Market Expenses	-	-	-	-	10.9	-	-	-	-	-	-	-	-
A6c - Res Education	-	-	-	-	33.3	-	-	-	-	-	-	-	-
<b>Sub-Total Residential</b>	<b>2.02</b>	<b>2.06</b>	<b>7,588.6</b>	<b>6,539.2</b>	<b>3,180.9</b>	<b>578.8</b>	<b>4,323.4</b>	<b>19,927.7</b>	<b>932.0</b>	<b>575.3</b>	<b>5,835</b>	<b>5,979.1</b>	<b>128,280.5</b>
<b>Commercial, Industrial &amp; Municipal</b>													
C1 - Large Business Energy Solutions	1.67	2.05	2,765.1	2,517.3	1,225.3	425.6	2,266.5	28,144.5	427.1	353.8	146	(354.1)	(3,653.8)
C2 - Small Business Energy Solutions	1.33	1.74	2,270.0	2,063.3	1,182.6	526.7	2,160.3	26,503.5	243.6	208.1	321	(368.7)	(3,855.9)
C3 - Municipal Energy Solutions	1.12	1.18	281.6	256.0	217.2	33.9	308.5	3,457.4	29.4	28.7	9	(33.9)	(305.0)
C5 - C&I Active Demand Response	-	-	-	-	175.4	-	-	-	-	-	-	-	-
C6b - C&I ISO Forward Capacity Market Expenses	-	-	-	-	18.4	-	-	-	-	-	-	-	-
C6c - C&I Education	-	-	-	-	29.1	-	-	-	-	-	-	-	-
<b>Sub-Total Commercial &amp; Industrial</b>	<b>1.39</b>	<b>1.70</b>	<b>5,316.7</b>	<b>4,836.7</b>	<b>2,848.1</b>	<b>986.2</b>	<b>4,735.3</b>	<b>58,105.4</b>	<b>700.1</b>	<b>590.5</b>	<b>476</b>	<b>(756.7)</b>	<b>(7,814.7)</b>
<b>Total</b>	<b>1.70</b>	<b>1.89</b>	<b>12,905.3</b>	<b>11,375.9</b>	<b>6,029.0</b>	<b>1,565.0</b>	<b>9,058.7</b>	<b>78,033.1</b>	<b>1,632.1</b>	<b>1,165.9</b>	<b>6,310.7</b>	<b>5,222.4</b>	<b>120,465.8</b>

**Notes:**

- (1) The Granite State Test is used as the primary cost test, as approved in Order No. 26,322, and includes an annual NEI adder of \$405.71 per weatherization project in the Home Energy Assistance program. For the illustrative Total Resource Cost Test, NEI adders of 25% for Residential and 10% for C&I are applied to total benefits
- (2) Utility and Customer Costs and Benefits are expressed in 2022 Dollars.
- (3) Per past precedent, discount and inflation rates have been updated for the year in which measures will be installed, and were updated as of June 2021 for program year 2022.

<b>Annual kWh Savings</b>	9,058,743	85.5%	<b>kWh &gt; 65%</b>	<b>Lifetime kWh Savings</b>	78,033,127	68.8%	<b>kWh &gt; 65%</b>
<b>Annual MMBTU Savings (in kWh)</b>	<u>1,530,547</u>	<u>14.5%</u>		<b>Lifetime MMBTU Savings (in kWh)</b>	<u>35,305,051</u>	<u>31.2%</u>	
	<b>10,589,290</b>	100.0%			<b>113,338,178</b>	100.0%	

<b>Annual Net Savings as a % of 2019 Sales</b>	0.78%
--	-------

<b>Spending per Customer</b>	Low-Income	\$	181.37
	Residential	\$	33.08
	C&I	\$	260.74

Reprinted 4/18/2020:  
Rows A4-Residential Behavior, A6c-Res Education and Colum Total Resource Cost Test were not displayed in Attachment H1, Page 4 of 6, of the March 1, 2022 Compliance Filing.  
No changes were made to program budgets or goals.

**Program Cost-Effectiveness - 2023 Compliance Plan**

	Benefit/Cost Ratios		Benefits (\$000)		Utility Costs (\$000 - 2022\$) <sup>2</sup>	Customer Costs (\$000 - 2022\$) <sup>2</sup>	Annual Net MWh Savings	Lifetime Net MWh Savings	Winter kW Savings	Summer kW Savings	Number of Customers Served	Annual Net MMBtu Savings	Lifetime Net MMBtu Savings
	Total Resource Cost Test	Granite State Test	Total Resource Cost Test	Granite State Test									
<b>Residential Programs</b>													
B1 - Home Energy Assistance	1.92	1.92	2,433.7	2,433.7	1,269.7	-	144.4	2,159.0	21.7	24.2	128	2,425.5	49,628.6
A1 - Energy Star Homes	3.03	3.67	2,202.3	1,778.2	484.9	241.6	118.4	2,835.0	30.1	2.0	166	1,690.0	41,550.0
A2 - Home Performance with Energy Star	2.46	2.21	1,859.5	1,503.2	681.6	72.9	157.3	3,163.6	38.8	14.0	68	1,869.8	37,547.3
A3 - Energy Star Products	1.70	2.10	1,343.3	1,103.4	524.6	263.4	788.3	8,024.0	150.5	105.6	5,856	558.2	10,799.9
A4 - Residential Behavior	2.17	1.73	380.6	304.5	175.8	-	3,116.3	3,116.3	672.7	433.9	-	-	-
A5 - Residential Active Demand Response	-	-	-	-	67.1	-	-	-	-	-	-	-	-
A6b - Res ISO Forward Capacity Market Expenses	-	-	-	-	10.9	-	-	-	-	-	-	-	-
A6c - Res Education	-	-	-	-	30.1	-	-	-	-	-	-	-	-
<b>Sub-Total Residential</b>	<b>2.15</b>	<b>2.20</b>	<b>8,219.4</b>	<b>7,122.9</b>	<b>3,244.6</b>	<b>577.8</b>	<b>4,324.7</b>	<b>19,298.0</b>	<b>913.8</b>	<b>579.7</b>	<b>6,218</b>	<b>6,543.4</b>	<b>139,525.8</b>
<b>Commercial, Industrial &amp; Municipal</b>													
C1 - Large Business Energy Solutions	1.30	1.48	2,197.9	2,001.8	1,350.7	338.2	2,419.2	29,284.3	182.8	129.1	128	(330.0)	(2,890.4)
C2 - Small Business Energy Solutions	1.31	1.65	2,360.1	2,145.1	1,303.9	497.1	2,354.4	28,951.3	216.7	166.9	327	(408.3)	(4,236.2)
C3 - Municipal Energy Solutions	1.10	1.15	265.8	241.6	209.3	31.3	324.0	3,614.8	30.5	8.5	7	(32.0)	(287.8)
C5 - C&I Active Demand Response	-	-	-	-	193.0	-	-	-	-	-	-	-	-
C6b - C&I ISO Forward Capacity Market Expenses	-	-	-	-	20.3	-	-	-	-	-	-	-	-
C6c - C&I Education	-	-	-	-	26.9	-	-	-	-	-	-	-	-
C6d - C&I Customer Partnerships	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Sub-Total Commercial &amp; Industrial</b>	<b>1.21</b>	<b>1.41</b>	<b>4,823.8</b>	<b>4,388.5</b>	<b>3,104.1</b>	<b>866.6</b>	<b>5,097.5</b>	<b>61,850.4</b>	<b>430.0</b>	<b>304.5</b>	<b>462</b>	<b>(770.3)</b>	<b>(7,414.4)</b>
<b>Total</b>	<b>1.67</b>	<b>1.81</b>	<b>13,043.1</b>	<b>11,511.5</b>	<b>6,348.7</b>	<b>1,444.5</b>	<b>9,422.3</b>	<b>81,148.4</b>	<b>1,343.8</b>	<b>884.2</b>	<b>6,680</b>	<b>5,773.2</b>	<b>132,111.3</b>

**Notes:**

- (1) The Granite State Test is used as the primary cost test, as approved in Order No. 26,322, and includes an annual NEI adder of \$405.71 per weatherization project in the Home Energy Assistance program. For the illustrative Total Resource Cost Test, NEI adders of 25% for Residential and 10% for C&I are applied to total benefits
- (2) Utility and Customer Costs and Benefits are expressed in 2022 Dollars.
- (3) Per past precedent, discount and inflation rates have been updated for the year in which measures will be installed, and were updated as of June 2021 for program year 2023.

	Annual kWh Savings	9,422,287	84.8%	<b>kWh &gt; 65%</b>		Lifetime kWh Savings	81,148,382	67.7%	<b>kWh &gt; 65%</b>
	Annual MMBTU Savings (in kWh)	<u>1,691,950</u>	<u>15.2%</u>			Lifetime MMBTU Savings (in kWh)	<u>38,718,005</u>	<u>32.3%</u>	
		<b>11,114,237</b>	100.0%				<b>119,866,387</b>	100.0%	

<b>Annual Net Savings as a % of 2019 Sales</b>	0.81%
--	-------

<b>Spending per Customer</b>	Low-Income	\$ 191.23
	Residential	\$ 33.05
	C&I	\$ 284.18