### NEW HAMPSHIRE PUBLIC UTILITIES COMMISSION

# LIBERTY UTILITIES (ENERGYNORTH NATURAL GAS) CORP. d/b/a LIBERTY

# ENERGY EFFICIENCY PROGRAMS - 2022 YEAR-END REPORT NHPUC Docket No. IR 22-042

May 31, 2023



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#### Table 1a. Program Cost-Effectiveness - 2022 PLAN

	Benefit/	Cost Ratios		Benefits (	\$000	)3												
	Total Resource Cost Test	Granite State Test		l Resource ost Test		Franite ate Test		y Costs (\$000 - 2022\$) <sup>2</sup>		Customer Costs (\$000 - 2022\$) <sup>2</sup>	Performance Incentive (\$000)	Annual Net MWh Savings	Lifetime Net MWh Savings	Winter kW Savings	Summer kW Savings	Number of Customers Served	Annual Net MMBtu Savings	
Residential Programs																		
B1 - Home Energy Assistance	1.96	1.96	\$	3,322	S	3,322	\$	1,699	\$	-		132	2,600	21	35	299	6,730	126,196
A1 - Energy Star Homes	1.30	2.03	\$		\$	1,293	\$	638	\$	479		-	-	-	-	249	5,386	
A2 - Home Performance with Energy Star	2.49	2.73	\$	3,723	\$	3,297	\$	1,207	\$	287		74	699	15	12	491	17,034	337,127
A3 - Energy Star Products	1.39	2.41	\$	3,400	\$	3,007	\$	1,246	\$	1,198		29	477	9	0	2,710	19,364	
A4 - Home Energy Reports	1.17	1.03	\$	190	\$	167	\$	163	\$	-		-	-	-	-	30,000	17,325	17,325
A6c - Residential Education	0.00	0.00	\$	-	\$	-	\$	71	\$	-								
Sub-Total Residential	1.73	2.21	s	12,090	\$	11,086	s	5,023	s	1,965		234	3,776	45	46	33,749	65,839	934,744
Commercial & Industrial Programs																		
C1 - Large Business Energy Solutions	1.71	3.34	\$	7,119	\$	6,303	\$	1,888	\$	2,269		-	-	-	-	438	49,140	712,616
C2 - Small Business Energy Solutions	1.49	2.75	\$	4,682	\$	4,249	\$	1,545	\$	1,595		-	-	-	-	2,294	22,845	402,181
C6c - C&I Education	-	-	\$	-	\$	-	\$	38	\$	-		-	-	-	-	-	-	-
Sub-Total Commercial & Industrial	1.61	3.04	s	11,801	\$	10,552	\$	3,471	s	3,864		-	-	-	-	2,732	71,985	1,114,797
Total	1.67	2.55	s	23,890	\$	21,637	s	8,494	s	5,828	\$ 467	234	3,776	45	46	36,481	137,824	2,049,541

(I) The Granite State Test is used as the primary cost test, as approved in Order No. 26,322 and includes an annual NE adder of \$405.71 per weatherization project in the Home Energy Assistance program. For the illustrative Total Resource Cost Test, NEI adders of 15% for Residential and 15% for C&I are applied to total benefits excluding water.
(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.

Annual kWh Savings	234,042	0.6%	kWh < 65%
Annual MMBTU Savings (in kWh)	40,394,041	99.4%	
	40.628.083	100.0%	

Lifetime kWh Savings	3,776,414	0.6%	kWh < 65%
Lifetime MMBTU Savings (in kWh)	600,661,281	99.4%	
I	604 427 605	100.0%	

#### Table 1b. Program Cost-Effectiveness - 2022 ACTUAL

	Benefit/	Cost Ratios		Benefits (	\$000)	)3												
	Total Resource Cost Test	Granite State Test		l Resource ost Test		ranite te Test	Util	lity Costs (\$000 - 2022\$) <sup>2</sup>		Customer Costs (\$000 - 2022\$) <sup>2</sup>	Performanc Incentive (\$000)	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
Residential Programs																		
B1 - Home Energy Assistance	2.46	2.46	\$	4,183	S	4,183	\$	1,701	\$	1		34	765	1	9	324	11,774	221,397
A1 - Energy Star Homes	2.06	2.91	\$	1,506	\$	1,337	\$	459	\$	272		2	44	0	0	225	5,572	139,291
A2 - Home Performance with Energy Star	1.44	1.72	\$	2,259	\$	2,002	\$	1,165	\$	406		106	1,043	20	20	394	9,388	197,510
A3 - Energy Star Products	1.65	3.05	\$	4,081	S	3,609	\$	1,185	\$	1,283		23	372	8	(0)	3,579	23,805	382,867
A4 - Home Energy Reports	1.31	1.15	\$	219	\$	192	\$	168	\$	-		-	-	-	-	22,180	19,967	19,967
A6c - Residential Education	0.00	0.00	\$	-	\$	-	\$	16	\$	-								
Sub-Total Residential	1.76	2.17	s	12,247	\$	11,323	\$	4,694	s	1,963		164	2,224	29	28	26,702	70,506	961,031
Commercial & Industrial Programs																		
C1 - Large Business Energy Solutions	1.80	3.82	\$	3,312	S	2,932	\$	1,173	\$	787		(53)		-	-	294	25,588	338,620
C2 - Small Business Energy Solutions	1.49	2.83	\$	2,555	\$	2,284	\$	1,245	\$	733		42	588	1	-	1,209	14,304	245,568
C6c - C&I Education	0.00	0.00	\$	-	\$	-	\$	16	\$	-		-	-	-	-	-	-	-
Subtotal Commercial & Industrial	1.66	3.34	s	5,867	\$	5,216	\$	2,435	s	1,519		(11)	(214)	1	-	1,503	39,892	584,187
Total	1.71	2.67	s	18,114	\$	16,539	s	7,128	\$	3,482	\$ 190	153	2,011	30	28	28,205	110,398	1,545,219

(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 15% for Residential and 15% for C&I are applied to total benefits excluding

water.
(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 in June 2021 for program year 2022.

Annual kWh Savings	153,359	0.5% kWh < 65%
Annual MMBTU Savings (in kWh)	32,355,860	99.5%
Total Energy Savings	32,509,219	100.0%

Lifetime kWh Savings	2,010,603	0.4%	kWh < 65%
Lifetime MMBTU Savings (in kWh)	452,877,669	99.6%	
Total Energy Savings	454,888,272	100.0%	

### Table 1c. Percent of Plan Program Cost-Effectiveness Targets Achieved

	Benefit/	Cost Ratios	Benefits (	\$000) <sup>3</sup>										
	Total Resource	Granite State	Total Resource	Granite	Utility Costs (\$000	Customer Costs	Performance Incentive	Annual Net MWh	Lifetime Net MWh	Winter kW	Summer kW	Number of Customers	Annual Net MMBtu	Lifetime Net MMBtu
	Cost Test	Test	Cost Test	State Test	- 2022\$) <sup>2</sup>	(\$000 - 2022\$) <sup>2</sup>	(\$000)	Savings	Savings	Savings	Savings	Served	Savings	Savings
Residential Programs	102%	98%	101%	102%	93%	100%	n/a	70%	59%	64%	61%	79%	107%	103%
Commercial & Industrial Programs	103%	110%	50%	49%	70%	39%	n/a	0%	0%	0%	0%	55%	55%	52%
Total	102%	105%	76%	76%	84%	60%	42%	66%	53%	67%	61%	77%	80%	75%

#### Table 2a. Present Value Benefits - 2022 PLAN

	Total						Res	ource Benefit	ts (\$000)							Non-Re	source Benefi	ts (\$000)
	Benefits					Elect	ric						Non	- Electric				
	(\$000) <sup>1</sup>			CAPACITY					ENERGY									
	Granite State Test	Summer	Winter					Winter Off	Summer	Summer		Total Electric Resource	Other		Total Resource	Fossil	Other Non- Resource	Resource
		Generation	Generation	Transmission	Distribution	Reliability	Peak	Peak	Peak	Off Peak	DRIPE	Benefits	Fuels	Water Benefit	Benefits	Emissions	Benefits <sup>2</sup>	Benefits
Residential Programs																		
B1 - Home Energy Assistance	\$3,322		\$0	\$52	\$54	\$0		\$48			\$8	\$269	\$1,042	\$2	\$1,313			
A1 - Energy Star Homes	\$1,293		\$0	\$0	\$0	\$0		\$0			\$0	\$0	\$1,085	\$0	\$1,085			
A2 - Home Performance with Energy Star	\$3,297		\$0	\$10	\$10	\$0		\$15	\$6		\$3	\$65	\$2,773		\$2,842			
A3 - Energy Star Products	\$3,007	\$0	\$0	\$0	\$0	\$0		\$18			\$2	\$33	\$2,585	\$0	\$2,618	\$389		
A4 - Home Energy Reports	\$167	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$153	\$0	\$153	\$13	\$23	\$36
A6c - Residential Education																		
Sub-Total Residential	\$11,086	\$12	\$0	\$62	\$64	\$0	\$70	\$81	\$34	\$30	\$13	\$367	\$7,638	\$6	\$8,011	\$1,230	\$2,848	\$4,079
Commercial & Industrial Programs																		
C1 - Large Business Energy Solutions	\$6,303	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,438	\$0	\$5,438	\$865	\$816	\$1,68
C2 - Small Business Energy Solutions	\$4,249	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,889	\$829	\$3,718	\$531	\$433	\$964
C6c - C&I Education	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	) S(
Subtotal Commercial & Industrial	\$10,552	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$8,326	\$829	\$9,156	\$1,396	\$1,249	\$2,645
Total	\$21,637	\$12	\$0	\$62	\$64	\$0	\$70	\$81	\$34	\$30	\$13	\$367	\$15,964	\$836	\$17,166	\$2,626	\$4,097	\$6,724

#### Table 2b. Present Value Benefits - 2022 ACTUAL

-	Total							Resource Ben	efits							Non	-Resource Be	nefits
	Benefits					Elect	tric						Non	- Electric				
	(\$000) <sup>1</sup>		CA	PACITY					ENERGY									
	Granite State											Total Electric	Other		Total		Other Non-	Total Non-
	Test	Summer	Winter				Winter	Winter Off	Summer	Summer	Electric	Resource	Fuels		Resource	Fossil	Resource	Resource
		Generation	Generation	Transmission	Distribution	Reliability	Peak	Peak	Peak	Off Peak	DRIPE	Benefits	Benefits	Water Benefit	Benefits	Emissions	Benefits <sup>2</sup>	Benefits
Residential Programs																		
B1 - Home Energy Assistance	\$4,183	\$3	\$0	\$11	\$12	\$0	\$9	\$10	\$10	\$8	\$2	\$63	\$1,820	\$2	\$1,885	\$300	\$1,998	
A1 - Energy Star Homes	\$1,337	\$0	\$0	\$0	\$0	\$0		\$0	\$0		\$0	\$0	\$1,122	\$0	\$1,122	\$215		
A2 - Home Performance with Energy Star	\$2,002		\$0	\$20	\$20	\$0			\$11		\$3			\$4	\$1,719		\$257	
A3 - Energy Star Products	\$3,609	\$0	\$0	\$0	\$0	\$0		\$14	-\$1		\$2		,		\$3,148		\$472	
A4 - Home Energy Reports	\$192	\$0	\$0	\$0	\$0	\$0			\$0		\$0			\$0	\$177	\$15		
A6c - Residential Education	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	SO	0 \$0
Sub-Total Residential	\$11,323	\$6	\$0	\$31	\$32	\$0	\$37	\$43	\$20	\$18	\$6	\$193	\$7,853	\$7	\$8,052	\$1,273	\$2,922	2 \$4,195
Commercial & Industrial Programs																		
C1 - Large Business Energy Solutions	\$2,932	\$0	\$0	\$0	\$0	\$0			\$0	\$0	-\$1	-\$1	\$2,533	\$0	\$2,532	\$399	\$380	\$779
C2 - Small Business Energy Solutions	\$2,284	\$0	\$0	\$0	\$0	\$0	\$2	\$3	\$0	\$0	\$1	\$6	\$1,803	\$157	\$1,965	\$319	\$27	1 \$590
C6c - C&I Education	\$0	\$0	\$0	\$0	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0 \$0
Sub-Total Commercial & Industrial	\$5,216	\$0	\$0	\$0	\$0	\$0	\$2	\$3	\$0	\$0	\$0	\$5	\$4,336	\$157	\$4,498	\$718	\$651	1 \$1,369
Total	\$16,539	\$6	\$0	\$31	\$32	\$0	\$39	\$46	\$20	\$18	\$7	\$198	\$12,189	\$163	\$12,550	\$1,991	\$3,573	3 \$5,564

#### Table 2c. Percent of Plan Present Value Benefits Achieved

		Total							Resource Ben	efits							Non-	Resource Be	nefits
		Benefits					Elect	ric						Non-	- Electric				
		(\$000)1		C	APACITY					ENERGY									
													Total Electric	Other		Total		Other Non-	Total Non-
		Granite State Test	Summer	Winter				Winter	Winter Off	Summer	Summer	Electric	Resource	Fuels	Fossil	Resource	Fossil	Resource	Resource
		rest	Generation	Generation	Transmission	Distribution	Reliability	Peak	Peak	Peak	Off Peak	DRIPE	Benefits	Benefits	Emissions	Benefits	Emissions	Benefits <sup>2</sup>	Benefits
Residential Programs		102%	48%	0%	49%	49%	0%	53%	53%	60%	59%	49%	53%	103%	106%	101%	103%	103%	103%
Commercial & Industrial Programs		49%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	52%	19%	49%	51%	52%	52%
	Total	76%	48%	0%	49%	49%	0%	56%	57%	60%	59%	50%	54%	76%	20%	73%	76%	87%	83%

Notes:

(1) The Granite State Test is used as the primary cost test, as approved in Order No. 26,322. Benefits are calculated based on net savings.

(2) Non-resource benefits include NEIs, which are only applied to the Home Energy Assistance program in the GST primary cost test.

(3) Non-embedded environmental benefits are not included in the GST primary cost test.

Notes:

(1) The Granite State Test is used as the primary cost test, as approved in Order No. 26,322. Benefits are calculated based on net savings.

(2) Non-resource benefits include NEIs, which are only applied to the Home Energy Assistance program in the GST primary cost test.

(3) Non-embedded environmental benefits are not included in the GST primary cost test.

Table 3. Performance Incentive Calculation - 2022

Row	Category	Planned	Threshold	Actual	% of Plan	Design Coefficient	Actual Coefficient	Planned Pl	125% of Planned Pl	Actual PI	Source
1	Lifetime MMBtu Savings	2,049,541	1,537,156	1,545,219	75%	2.475%	1.866%	\$ 210,230	\$ 262,788	\$ 133,010	Program Cost Effectiveness (Page 1 of 3)
2	Annual MMBtu Savings	137,824	103,368	110,398	80%	1.100%	0.881%	\$ 93,436	\$ 116,794	\$ 62,806	Program Cost Effectiveness (Page 1 of 3)
3	Total Resource Benefits	\$17,166,476		\$12,550,051	73%						Present Value Benefits (Page 2 of 3)
4	Total Utility Costs <sup>1</sup>	\$8,494,145		\$7,128,133	84%						Program Cost Effectiveness (Page 1 of 3)
5	Net Benefits	\$8,672,330	\$6,504,247.58	\$5,421,918	63%	1.925%	0.000%	\$ 163,512	\$ 204,390	\$ -	Line 5 minus line 6
6	Total					5.500%	2.747%	\$ 467.178	\$ 583.972	\$ 195.816	Sum of Rows 1, 2 & 5

Row	Category		Granite Sta	ite 1	est Actual	Source
<del>-</del>	T	•		•		
/	Total Benefits	Þ	21,637,311	\$	16,538,749	Present Value Benefits (Page 2 of 3)
8	Performance Incentive	\$	467,178	\$	195,816	from row 6 above
9	Total Utility Costs	\$	8,494,145	\$	7,128,133	from row 4 above
10	Portfolio GST BCR		2.41		2.26	Row 7 Divided by Rows 8+9

Costs, Benefits, and PI Expressed in 2022 Dollars.

<sup>&</sup>lt;sup>1</sup> Note that in order to avoid a circular reference in the calculation of performance incentive, "Total Utility Costs" does not include the value of PI.

Table 4. Program Expenditures by Category - 2022 ACTUAL

	Ev	Evaluation External Administration		Internal Administration		Internal Implementation			Marketing		Rebates- Services		Total	
Residential Programs														
ENERGY STAR Homes	\$	14,384	\$	509	\$	9,051	\$	40,714	\$	2,186	\$	392,298	\$	459,142
Home Performance with ENERGY STAR	\$	23,959	\$	639	\$	10,413	\$	55,926	\$	4,371	\$	1,069,971	\$	1,165,279
ENERGY STAR Products	\$	24,308	\$	617	\$	3,893	\$	63,256	\$	8,399	\$	1,084,149	\$	1,184,621
Home Energy Assistance	\$	35,363	\$	1,062	\$	19,801	\$	98,365	\$	4,190	\$	1,542,188	\$	1,700,968
Home Energy Reports	\$	3,955	\$	158	\$	2,941	\$	12,987	\$	-	\$	147,465	\$	167,506
Residential Education	\$	1,155	\$	13	\$	185	\$	2,109	\$	18	\$	12,555	\$	16,034
Subtotal Residential	\$	103,123	\$	2,998	\$	46,283	\$	273,358	\$	19,163	\$	4,248,626	\$	4,693,550
Commercial & Industrial Programs														
C&I Education	\$	1,019	\$	46	\$	5,108	\$	4,413	\$	184	\$	5,296	\$	16,066
Large Business Energy Solutions	\$	40,785	\$	1,327	\$	23,862	\$	136,598	\$	8,143	\$	962,340	\$	1,173,054
Small Business Energy Solutions	\$	33,425	\$	1,092	\$	21,223	\$	116,239	\$	15,026	\$	1,058,458	\$	1,245,463
Subtotal Commercial & Industrial	\$	75,229	\$	2,465	\$	50,192	\$	257,250	\$	23,353	\$	2,026,093	\$	2,434,583
Total	\$	178,352	\$	5,463	\$	96,475	\$	530,608	\$	42,516	\$	6,274,719	\$	7,128,133