

Filed on: 10/07/2010
Public Service Company of New Hampshire
Docket No. DE 10-188

Data Request STAFF-02
Dated: 09/22/2010
Q-STAFF-022
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Witness: Thomas R. Belair
Request from: New Hampshire Public Utilities Commission Staff

Question:

Follow-up to Staff 1-34, Home Performance with Energy Star. Please provide a reconciliation of the proposed lifetime kWh savings in 2009, actual achieved savings in 2009 and proposed savings in 2011, showing the side-by-side build-up of actual and proposed lifetime kWh values on a measure-by-measure basis. For purposes of this response, please use the final fourth quarter report covering the period January - December 2009.

Response:

Please see attached spreadsheet.

(NHEC Response)

New Hampshire Electric Cooperative, Inc.
Home Performance w/Energy Star

Measure	Quantity			Annual Savings per Unit (kWh)			Measure Life	Realization Rate	Total Lifetime Savings (kWh)		
	2009 Plan	2009 Actual	2011 Plan ¹	2009 Plan	2009 Actual	2011 Plan ¹	2009 & 2011	2009 & 2011	2009 Plan	2009 Actual	2011 Plan ¹
Lighting	31	22	39	228.4	438.0	291.72	8	100.00%	57,401	272,521	91,017
Thermostats	26	7	22	1,105.0	2,064.6	3729.22	10	100.00%	289,286	144,520	808,010
Air Sealing	34	21	30	708.5	1,892.7	2631.43	15	100.00%	359,834	596,191	1,197,169
Insulation	14	19	22	1,318.1	3,879.1	321	25	100.00%	460,093	1,842,550	173,878
Hot Water Measures	26	24	28	442.8	1,120.8	456	7	100.00%	81,134	188,299	89,909
Refrigerators	5	1	0	546.7	797.0	0	7	100.00%	20,036	5,579	0

1. NHEC did not plan by measure category in 2011 as in previous years, but did this calculation for this data request. Because of this, the total lifetime kWh does not match exactly the 2011 planned kWh.

The amount of savings attained in a home is determined by factors such as the size of the home, condition of the home and the mix and amount of measures installed. NHEC used 2010 actual results through the end of June as the basis for 2011 planned savings. These results were used to construct an average expected home.

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Witness: Thomas R. Belair
Request from: New Hampshire Public Utilities Commission Staff

Question:
Follow-up to Staff 1-35, Home Energy Assistance program. Please provide a reconciliation of the proposed lifetime savings in 2009, actual achieved savings in 2009 and proposed savings in 2011, showing the side-by-side build-up of actual and proposed lifetime kWh values on a measure-by-measure basis. For purposes of this response, please use the final fourth quarter report covering the period January - December 2009.

Response:
Please see attached spreadsheet.

(NHEC Response)

New Hampshire Electric Cooperative, Inc.
Home Energy Assistance

Measure	Quantity			Annual Savings per Unit (kWh)			Measure Life	Realization Rate		Total Lifetime Savings (kWh)		
	2009 Plan	2009 Actual	2011 Plan ¹	2009 Plan	2009 Actual	2011 Plan ¹	2009 & 2011	2009 Plan & Actual	2011 Plan ¹	2009 Plan	2009 Actual	2011 Plan ¹
Lighting	31	48	10	228.0	438.0	449.43	8	91.20%	86.20%	51,568	136,829	32,294
Thermostats	5	10	4	1,105.0	2,064.6	511.5	10	91.20%	86.20%	46,315	56,138	18,386
Air Sealing	34	13	19	709.0	1,892.7	82	25	91.20%	86.20%	549,617	268,333	33,133
Insulation	14	11	15	1,318.0	3,879.1	327.79	25	91.20%	86.20%	420,706	215,504	102,991
Hot Water Measures	28	43	40	443.0	1,120.8	321.13	7	91.20%	86.20%	77,985	77,884	76,694
Refrigerators	5	25	30	547.0	797.0	796.17	19	91.20%	86.20%	47,392	361,011	393,928
Fixtures	14	14	10	251.0	182.0	210.7	17	91.20%	86.20%	54,000	39,000	32,173

1. NHEC did not plan by measure category in 2011 as in previous years, but did this calculation for this data request. Because of this, the total lifetime kWh does not match exactly the 2011 planned kWh.

The amount of savings attained in a home is determined by factors such as the size of the home, condition of the home and the mix and amount of measures installed. In addition, the Home Energy Assistance program is a fuel neutral program. NHEC used 2010 actual results through the end of June as the basis for 2011 planned savings. These results were used to construct an average expected home. The reduction in savings is due to the fact that NHEC is serving a higher number of non-electrically heated homes.

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Witness: Thomas R. Belair
Request from: New Hampshire Public Utilities Commission Staff

Question:

Follow-up to Staff 1-37, New Equipment & Construction program. Please provide a reconciliation of proposed lifetime savings in 2009, actual achieved savings in 2009 and proposed savings in 2011, showing the side-by-side build-up of actual and proposed lifetime kWh values on a measure-by-measure basis. For purposes of this responses, please use the final fourth quarter report covering the period January - December 2009.

Response:

Please see attached spreadsheet.

(NHEC Response)

New Hampshire Electric Cooperative, Inc
New Equipment & Construction

Measure	Quantity			Annual Savings per Unit (kWh)			Measure Life	In-Service Rate	Total Lifetime Savings (kWh)		
	2009 Plan	2009 Actual	2011 Plan	2009 Plan	2009 Actual	2011 Plan	2009 & 2011	2009 & 2011	2009 Plan	2009 Actual	2011 Plan
Air Compressors	3	3		52,677.0	21,528.3		15	100.00%	2,724,909	968,775	0
HVAC	3	2		32,739.0	4,599.0		15	100.00%	1,693,543	137,970	0
Lighting	7	5		9,624.0	13,260.6		15	100.00%	995,673	994,548	0
Motors		1			4,576.0		20	100.00%	0	91,520	0
Chiller		1			8,688.0		15	100.00%	0	130,320	0
Snowmaking		1			193,474.0		15	100.00%	0	2,902,110	0
EMS		1			166,023.0		15	100.00%	0	2,490,345	0
VFD		1			13,190.0		15	100.00%	0	197,850	0
Average Project			5			32,605	15	100.00%	0	0	2,430,703

Projects within the New Equipment and Construction Core Program category have typically been comprised of a blend of new building construction, gut rehabs of existing facilities, new HVAC equipment in existing buildings, and new snowmaking equipment at one or more ski areas within the NHEC territory.

Snowmaking projects typically have produced a significant amount of the savings in the NCI program. For example, in 2009 one snowmaking project comprised 41% of the annual program savings.

Technical advances in the snowmaking industry over the past several years have allowed manufacturers to produce equipment that increasingly exceeds the snow output volumes of previous technologies while using less energy to do so. Historically capitol costs associated with purchasing new snowmaking equipment have been significant but the technical advances have resulted in exceptional kw savings opportunities for our members due largely to reduced compressed air volumes needed to produce the snow.

As energy efficient snowmaking technology has become more commonplace we are seeing the price gap between "base" case and "energy efficient" technologies narrow, and as a result it is more difficult for projects to qualify under the conditions of the NEC Program. There is no snowmaking included in the 2011 plan. The average expected project for 2011 is a new building including measures such as lighting, HVAC, VFDs and motors.

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Witness: Thomas R. Belair
Request from: New Hampshire Public Utilities Commission Staff

Question:

Follow-up to Staff 1-38, Energy Star Homes program. Please provide a reconciliation of the proposed lifetime kWh savings in 2009, actual achieved savings in 2009 and proposed savings in 2011, showing the side-by-side build-up of actual and proposed lifetime kWh values on a measure-by measure basis. For purposes of this response, please use the final fourth quarter report covering the period January - December 2009.

Response:

Please see attached document.

(PSNH Response)

PSNH Energy Star Homes Program

Measure	Quantity			Annual Savings per Unit (kWh)			Measure Life			In-Service Rate	Total Lifetime Savings (kWh)		
	2009 Plan	2009 Actual	2011 Plan	2009 Plan	2009 Actual	2011 Plan	2009 Plan	2009 Actual	2011 Plan	2009 & 2011	2009 Plan	2009 Actual	2011 Plan
Oil Heated Homes	52.1	5.0	18.9	40.0	2,837.0	519.8	25	25	25	100.00%	52,123	354,624	245,562
Natural Gas Heated Homes	121.6	194.0	207.9	40.0	1,289.5	481.5	25	25	25	100.00%	121,620	6,254,270	2,501,896
Liquid Propane Heated Homes	173.7	84.0	132.3	40.0	1,289.5	506.0	25	25	25	100.00%	173,743	2,708,035	1,673,190
Electric Baseboard Heated Home	0.0	93.0	18.9		1,289.5	3,077.0	25	25	25	100.00%	0	2,998,181	1,453,498
ASHP Heated Home			0.0			1,600.0				100.00%	0	0	0
ES Thermostats			283.4							100.00%	0	0	0
ES Room AC	0.0		0.0	37.0		16.2			9	100.00%	0	0	0
ES Clothes Washer	52.1	60.0	56.7	118.7	118.7	223.0	14	14	11	100.00%	86,596	99,683	139,067
ES Dishwasher	121.6	139.0	226.8	43.1	43.1	33.0	12	12	10	100.00%	62,902	71,891	74,828
ES Refrigerator	139.0	159.0	302.3	84.9	84.9	107.0	13	13	12	100.00%	153,336	175,406	388,192
ES Light Fixture	1,042	1,190	1,134	105.9	105.9	105.9	20	20	20	100.00%	2,207,034	2,519,404	2,400,265
ES CFL Lights	3,475	3,967	3,779	50.6	50.6	50.6	8	8	5	80.30%	1,130,187	1,290,255	768,257

Planning Assumptions

1. Per prior Q-Staff-038 Response:

a. The lower electric kWh savings are in large part due to a change in the planned measure life for lighting and appliances.

Those measure life changes contributing to this reduction are:

- > CFL reduced from 8 to 5 years.
- > Refrigerator reduced from 13 to 12 years.
- > Clothes Washer reduced from 14 to 11 years.
- > Dishwasher reduced from 12 to 10 years.

b. Also, in the 2009 program year, PSNH had a larger number of electrically heated homes participate in the Energy Star Homes program. Since 24% of the homes were electrically heated, this increased the amount of kWh savings realized in 2009. This quantity of electrically heated homes in 2009 was higher than normal, and the 2011 plan includes 5% electrically heated homes.

c. Going into 2011, there is a major milestone that will be encountered. Energy Star Homes Version 3.0 will begin to phase out the existing Energy Star Homes program and all of the rules and requirements will be changing. These changes are implemented by the EPA to ensure the program undergoes continuous improvement. The reality of introducing Version 3.0 is that builders will have a more difficult time meeting the new EPA version 3.0 requirements. Additionally more testing and consulting work will be required by the nationally recognized HERs raters that perform Energy Star Homes certifications. Therefore it is also expected that contractor service fees will increase.

d. In summary, lower measure lives and a smaller number of planned electrically heated homes have resulted in a lower kWh savings estimate. Increases in administration associated with the changes to the Energy Star Homes program are expected to increase the cost of each home rated in this program.

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Witness: Thomas R. Belair
Request from: New Hampshire Public Utilities Commission Staff

Question:

Follow-up to Staff 1-39, Home Performance with Energy Star. Please provide a reconciliation of proposed lifetime kWh savings in 2009, actual achieved savings in 2009 and proposed savings in 2011, showing the side-by-side build-up of actual and proposed lifetime kWh values on a measure-by-measure basis. For purposes of this response, please use the final fourth quarter report covering the period January - December 2009.

Response:

Please see attached document.

(PSNH Response)

PSNH Home Performance w/Energy Star

Measure	Quantity			Annual Savings per Unit (kWh)			Measure Life			Realization Rate	Total Lifetime Savings (kWh)			Total Annual MMBTU Savings			Total Lifetime MMBTU Savings		
	2009 Plan	2009 Actual	2011 Plan	2009 Plan	2009 Actual	2011 Plan	2009 Plan	2009 Actual	2011 Plan	2009 & 2011	2009 Plan	2009 Actual	2011 Plan	2009 Plan	2009 Actual	2011 Plan	2009 Plan	2009 Actual	2011 Plan
	Weatherization - Lighting Only (6 CFLs)	536.9	0		268.1	268		17.0	17.0	10.0	96.67%	2,365,293	0	0	0.00			0	0
Weatherization - EH, MF+SF Avg, Elec	578.2	1,553		268.1	1,785		8.0	16.0	15.0	96.67%	1,198,717	42,802,640	0	0.00			0	0	0
Weatherization - EH, MF+SF Avg, Wxn	578.2	1,553		769.9	0		19.0	10.4	25.0	96.67%	8,177,209	0	0	4.10	0.57		43,544	8,539	0
Baseload - EH, MF+SF, Wxn										96.67%	0	0	0				0	0	0
Baseload SF (Audit Installed Measures)			50.8			366.1			9.7	96.67%	0	0	174,728				0	0	0
Baseload MF (Audit Installed Measures)			398.7			366.1			9.7	96.67%	0	0	1,371,542				0	0	0
Pilot Wxn - Lighting Savings @ Fossil		89	495.2		1,334	465.3		14.0	7.4	96.67%	0	1,604,647	1,651,750				0	0	0
Fuel Neutral Pilot (Oil)-SF	77.2	62	257.5	105.7		0.0	19.0	20.0	20.2	96.67%	149,935	0	0	17.03	38.26	29.50	24,148	45,868	148,036
Fuel Neutral Pilot (LP) - SF	12.3	16	99.0	105.7		0.0	19.0	20.1	20.4	96.67%	23,889	0	0	17.03	22.40	15.37	3,847	6,930	30,018
Fuel Neutral Pilot (Gas) - SF	10.5	3	14.9	105.7		0.0	19.0	4.0	20.2	96.67%	20,393	0	0	17.03	20.26	22.62	3,284	235	6,562
Fuel Neutral Pilot (Wood) - SF		21	89.1			0.0		22.6	20.6	96.67%	0	0	0		25.74	14.10	0	12,018	25,075
Fuel Neutral Pilot (Kerosene) - SF			9.9			0.0			16.9	96.67%	0	0	0			8.89	0	0	1,439
Pilot Wxn - Electric Heat Savings			24.8			3,133.9			16.0	96.67%	0	0	1,198,623			0.00	0	0	0
Pilot - Fossil - Audits & CFLs	200.0	0		268.1			8.0			96.67%	414,614	0	0				0	0	0
Pilot - Heating System Replacements	20.0	0					20.0	20.0	7.0	96.67%	0	0	0	11.36	11.36		4,391	0	0

Planning Assumptions

1. From prior Staff Response (Q-STAFF-039): In 2009, we continued serving electrically heated homes and/or electric measures at fossil heated homes. A large part of the 2009 electric savings came from 1,553 multi-family units where energy efficient lighting fixtures and CFLs were installed. For 2011 and 2012, the plan is to install some lighting measures at each of the 945 home homes (much less than in 2009 -- more single family, but fewer units overall), with additional energy savings resulting from weatherization of 495 fossil heated homes. This lower number of units will result in lower electric savings, while the increase in fossil heated homes will result in additional fossil savings.

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Witness: Thomas R. Belair
Request from: New Hampshire Public Utilities Commission Staff

Question:

Follow-up to Staff 1-40, Residential Energy Star Appliance program. Please provide a reconciliation of proposed lifetime kWh savings in 2009, actual achieved savings in 2009 and proposed savings in 2011, showing the side-by-side build-up of actual and proposed lifetime kWh values on a measure-by measure basis. For purposes of this response, please use the final fourth quarter report covering the period January - December 2009.

Response:

Please see attached document.

(PSNH Response)

PSNH Energy Star Appliance Program

Measure	Quantity			Annual Savings per Unit (kWh)		Measure Life		In-Service Rate	Total Lifetime Savings (kWh)		
	2009 Plan	2009 Actual	2011 Plan	2009 Plan & Actual	2011 Plan	2009 Plan & Actual	2011 Plan	2009 & 2011	2009 Plan	2009 Actual	2011 Plan
Energy Star Clothes Washer	4,039.9	8,403.0	4,259.5	223.01	223.00	14	11	100.00%	12,612,885	26,234,754	10,448,490
Energy Star Room A/C	5,925.3	1,278.0	2,920.8	37.00	16.16	12	9	100.00%	2,630,849	567,432	424,704
Smartstrip Power Strip		676.0	973.6	175.00	75.04	5	5	100.00%	0	591,500	365,291
Energy Star Dishwasher			0.0		60.00		10	100.00%	0	0	0
* Energy Star Refrigerator			3,042.5		107.00		12	100.00%	0	0	3,906,529
* Energy Star Room Air Cleaners & Purifiers			121.7		268.00		9	100.00%	0	0	293,538
* 2nd Refrigerator/Freezer Pickup			851.9		413.00		8	100.00%	0	0	2,814,562
									0	0	0
									0	0	0
									0	0	0

Planning Assumptions

- There are a number of changes to this program for 2011, including:
 - measure lives for clothes washers and room air conditioner has been lowered by more than 20%.
 - rebate level for clothes washers reduced from \$50 to \$30 is expected to result in a lower number of rebates processed.
 - room air conditioner annual energy savings was reduced per a recent evaluation.
 - Smart Power Strips annual energy savings were reduced as well.
- See "*" as 3 new appliance rebates were added for 2011.

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Q-STAFF-030
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Witness: Thomas R. Belair
Request from: New Hampshire Public Utilities Commission Staff

Question:

Follow-up to Staff 1-41, Energy Star Lighting program. Please provide a reconciliation of proposed lifetime kWh savings in 2009, actual achieved savings in 2009 and proposed savings in 2011, showing the side-by-side build-up of actual and proposed lifetime kWh values on a measure-by-measure basis. For purposes of this response, please use the final fourth quarter report covering the period January - December 2009.

Response:

Please see attached document.

(PSNH Response)

PSNH Energy Star Lighting Program

Measure	Quantity			Annual Savings per Unit (kWh)		Measure Life		In-Service Rate	Total Lifetime Savings (kWh)		
	2009 Plan	2009 Actual	2011 Plan	2009 Plan & Actual	2011 Plan	2009 Plan & Actual	2011 Plan	2009 & 2011	2009 Plan	2009 Actual	2011 Plan
Catalog Sales: CFLs	23,118	6,578	2,235	51.61	51.61	8	5	80.30%	7,663,785	2,180,683	463,013
Catalog Sales: Interior Fixtures	2,150	1,057	208	107.10	107.10	8	8	96.40%	1,776,248	873,056	171,701
Catalog Sales: Exterior Fixtures	1,075	162	104	107.10	107.10	15	5	100.00%	1,727,419	260,260	55,660
Catalog Sales: Torchieres	538	90	26	214.57	119.98	8	8	93.50%	862,860	144,446	23,319
Catalog Sales: LEDs			26		47.16	20	20	95.00%	0	0	23,283
Retail Sales: CFLs	187,195	219,694	58,392	50.63	50.63	6	5	80.30%	45,666,055	53,594,094	11,870,494
Retail Sales: CFL Multipacks			84,017		50.63	6	5	80.30%	0	0	17,079,848
Retail Sales: Interior Fixture	7,961	5,126	2,521	105.86	105.86	8	8	96.40%	6,499,377	4,184,720	2,057,669
Retail Sales: Exterior Fixture	1,971	309	840	105.86	105.86	15	5	100.00%	3,130,111	490,649	444,690
Retail Sales: Torchieres	0	37	840	172.93	104.37	8	8	93.50%	0	47,859	655,921
Retail Sales: LEDs			420		47.16	20	20	95.00%	0	0	376,396

Planning Assumptions

1. Rebate Budget from 2009 Plan to 2011 Plan was reduced by approximately \$200,000.
2. Measure life was reduced to 5 years on CFLs.
3. Exterior Fixture measure life reduced from 15 to 5 years.
4. A few catalog changes for 2011:
 - more focus on specialty bulbs (dimmable, 3-way, floodlight).
 - more emphasis on mass market education of ALL energy efficient products.
 - new hand-made fixtures from a New Hampshire manufacturer - Northeastern Lantern, Exeter, NH.

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Witness: Thomas R. Belair
Request from: New Hampshire Public Utilities Commission Staff

Question:

Follow-up to Staff 1-42. Large C&I Retrofit. Please provide a reconciliation of proposed lifetime kWh savings in 2009, actual achieved savings in 2009 vs. proposed savings in 2011, showing the side-by-side build-up of actual and proposed lifetime kWh values on a measure-by-measure basis. For purposes of this response, please use the final fourth quarter report covering the period January - December 2009.

Response:

Please see attached document.

(PSNH Response)

PSNH Large C&I Retrofit Program

Measure	Quantity			Annual Savings per Unit (kWh)			Measure Life			In-Service Rate	Total Lifetime Savings (kWh)		
	2009 Plan	2009 Actual	2011 Plan	2009 Plan	2009 Actual	2011 Plan	2009 Plan	2009 Actual	2011 Plan	2009 & 2011	2009 Plan	2009 Actual	2011 Plan
Lighting	70.3	119.0	70.7	95,000	76,749	93,000	12.8	12.9	12.5	94.00%	80,045,580	110,950,940	77,309,658
Process	42.5	64.0	51.4	57,000	85,005	50,000	13.0	12.3	12.5	94.00%	29,594,731	63,040,224	30,184,105
Cooling	7.2	14.0	14.3	60,000	80,934	70,000	12.3	13.0	13.0	94.00%	4,958,451	13,893,856	12,267,976
Heating		2.0			117,976	106,178		13.0	13.0	94.00%	0	2,883,321	0

Planning Assumptions

1. From prior Staff Response (Q-STAFF-042): The lower planned lifetime kWh savings are the result of lower assumed savings associated with cooling and process measures, and an increase in the average lighting rebate which results in fewer projects.
2. The 2009 GDS Technical Potential Study highlighted the following Maximum Achievable/Cost Effective measures by enduse: lighting, refrigeration, HVAC controls, lighting controls, and ventilation. All of these non lighting measures, while cost effective, will be more expensive to implement and yield less savings than the typical lighting measures.
3. In 2009, PSNH reallocated technical assistance funds and applied it to rebates for additional customer projects.
4. The Lifetime kWh Savings per Lighting Project for 2011 Plan is planned to be between 2009 Plan and 2009 Actuals, higher than 2009 Actuals despite the measure life going down.
5. Lower annual energy savings are being seen in Cooling and Process projects and has incorporated for this in the plan.

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Witness: Thomas R. Belair
Request from: New Hampshire Public Utilities Commission Staff

Question:

Follow-up to Staff 1-43, Small Business Energy Solutions. Please provide a reconciliation of proposed lifetime kWh savings in 2009, actual achieved savings in 2009 vs. proposed savings in 2011, showing the side-by-side build-up of actual and proposed lifetime kWh values on a measure-by-measure basis. For purposes of this response, please use the final fourth quarter report covering the period January - December 2009.

Response:

Please see attached document.

(PSNH Response)

PSNH Small Business Energy Solutions Program

Measure	Quantity			Annual Savings per Unit (kWh)			Measure Life			In-Service Rate	Total Lifetime Savings (kWh)		
	2009 Plan	2009 Actual	2011 Plan	2009 Plan	2009 Actual	2011 Plan	2009 Plan	2009 Actual	2011 Plan	2009 & 2011	2009 Plan	2009 Actual	2011 Plan
Lighting	403.6	745.0	550.8	14,820	11,256	14,000	13.5	13.0	12.5	92.90%	75,020,685	101,219,283	89,551,057

2011 Planning Assumptions

1. **Per Response to Staff-043**, The lighting program has seen several successful years, and many existing T12's have been replaced. Because of this, the mix of projects has changed noticeably. Vendors are promoting High Performance T8's to customers who replaced T12's with standard T8's 5-7 years ago. In addition, LED's are becoming more popular, and while they do offer significant savings, the cost is still relatively high. As a result of this, the current mix of lighting measures costs more per kWh saved than was the case in prior years. We are also planning for larger projects as we expand this program to the 100-200 kW customers. This expansion is expected to increase the average rebate per project, resulting in less projects. The combination of these two result in slightly lower kWh savings.
2. The 2009 **GDS Technical Potential Study** highlighted the following Maximum Achievable/Cost Effective measures by enduse: lighting, refrigeration, HVAC controls, lighting controls, and ventilation. All of these measures, while cost effective, will be more expensive to implement and yield less savings than the mainstream lighting measures that have dominated our programs in prior years.
3. PSNH has seen the annual kWhs per job going down in recent years. This will be somewhat offset by expanding the program to customers in the in the 100-200 kW range.
4. Lifetime kwh per quantity of project shows that 2011 plan is between 2009 Plan and 2009 Actuals, higher than 2009 actuals despite the fact that the measure life going down slightly.

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Witness: Thomas R. Belair
Request from: New Hampshire Public Utilities Commission Staff

Question:

PSNH's Company Specific programs. Please provide a side-by-side comparison of expenditures and savings for the proposed 2011 and actual 2009 values. Please include in your response a side-by-side comparison of expenditures on a program-by-program basis. Please include in your response a reconciliation of proposed lifetime kWh savings in 2009, actual achieved lifetime kWh savings in 2009 vs. proposed lifetime kWh savings in 2011, showing the side-by-side build-up of actual and proposed lifetime kWh values on a measure-by-measure basis. For purposes of this response, please use the final fourth quarter report covering the period January - December 2009.

Response:

Please see attached.

(PSNH Response)

PSNH Company Specific Programs
 A. Energy Star Homes - Geothermal
 B. Energy Rewards RFP Program

Measure	Quantity			Annual Savings per Unit (kWh)			Measure Life			In-Service Rate	Total Lifetime Savings (kWh)		
	2009 Plan	2009 Actual	2011 Plan	2009 Plan	2009 Actual	2011 Plan	2009 Plan	2009 Actual	2011 Plan	2009 & 2011	2009 Plan	2009 Actual	2011 Plan
GSHP (Heating)	40	54	39	15,592	29,578	22,622	25	25	25	100.00%	15,421,552	39,930,175	22,215,252
GSHP (Cooling)	40	49	39	244	131	167	25	25	25	100.00%	241,333	160,700	163,527
GSHP (Hot Water)	40	47	39	1,072	1,604	1,215	25	25	25	100.00%	1,060,281	1,884,375	1,193,475
GSHP (Lights & Appliances)		51	39		-274	-186	25	25	25	100.00%	0	-349,075	-182,500
ASHP (Heating)			14			10,180	25	25	25	100.00%	0	0	3,623,771
ASHP (Cooling)			14			75	25	25	25	100.00%	0	0	26,675
ASHP (Hot Water)			14			547	25	25	25	100.00%	0	0	194,681
ASHP (Lights & Appliances)			14			-84	25	25	25	100.00%	0	0	-29,769
C&I RFP: Lighting	1	1	2	400,000	142,997	390,000	13	13	13.0	100.00%	3,612,253	1,858,961	12,406,898
C&I RFP: Process	1	3	5	300,000	222,071	210,000	13	13	11.6	100.00%	5,160,363	8,414,152	12,333,468
C&I RFP: Cooling	3	1	2	100,000	238,383	195,000	13	10	10.5	100.00%	4,515,316	2,383,830	4,555,073

Planning Assumptions

A. Energy Star Homes - Geothermal & Air Source Heat Pump

1. GSHP = Ground Source (Geothermal) Heat Pump. ASHP = Air Source Heat Pump
2. 2009 Actual Budget exceeded to accommodate an additional 14 geothermal homes.
3. Home Energy Raters incorporating a new Heat Pump COP calculation for the rated home to more accurately account for pumping power requirements. This will reduce savings by 8%.
4. Bruce Harley to update the User Defined Reference Home for New Hampshire to reflect code changes. Revision will include a change to the efficiency of the reference heating system efficiency, resulting in a 5% reduction in savings.
5. Planning for additional homes to have Air Source Heat Pumps installed in 2011 due to their cold climate heating improvements.

B. C&I RFP Program

1. Upon further review, PSNH may have overstated the goals for 2011 in this program.

Filed on: 10/07/2010
Public Service Company of New Hampshire
Docket No. DE 10-188

Data Request STAFF-02
Dated: 09/22/2010
Q-STAFF-036
Page 1 of 2

Witness: Thomas R. Belair
Request from: New Hampshire Public Utilities Commission Staff

Question:

Follow-up to Staff 1-44, Energy Star Homes. Please include in your response a reconciliation of proposed lifetime kWh savings in 2009, actual achieved savings in 2009 and proposed savings in 2011, showing the side-by-side build-up of actual and proposed lifetime kWh values on a measure-by-measure basis. For purposes of this response, please use the final fourth quarter report covering the period January - December 2009.

Response:

Please see attached report.

(Until Response)

UES' Response:

See Table 2-36 below. Note that the measure level information used for this comparison was from the final SHI calculation. Quarterly reports are produced from the Company's tracking system with gross savings rolled up at the program level. When the SHI is calculated, raw data is extracted from the tracking system, reviewed for accuracy, and input into the Company's benefit cost model to produce net savings for the SHI calculation.

Table 2-36

ENERGY STAR Homes	2009		2011
	Proposed	Actual	Proposed
Measures	Lifetime kWh		
A02a E-STAR Homes - Heating	-	1,747,550	1,179,261
A02a E-STAR Homes - Cooling	-	36,100	32,184
A02a E-STAR Homes - Water Heating	-	74,265	-
A02a E-STAR Homes - CFLs	201,195	83,312	125,697
A02a E-STAR Homes - Fixtures	-	237,440	-
A02a E-STAR Homes - Dishwashers	14,635	8,514	25,059
A02a E-STAR Homes - Refrigerators	136,762	15,600	25,236
A02a E-STAR Homes - Clotheswashers	42,163	22,484	14,464
A02a E-STAR Homes - Thermostats	-	13,640	0
TOTAL	394,756	2,238,905	1,401,902

As stated in Staff 1-44, all categories of the Energy Star "Homes" Program budget saw increases to account for additional time spent on the program to achieve goals and for evaluation. Additionally, the rebate dollars are \$61K higher than 2009 actuals and these cover 15 additional homes. The HERS rater fee in 2011 increased by 20% and homes with furnaces must also have duct blasting which is an additional \$175/home. Therefore, the cost/home completed has increased.

At the same time forecast savings decreased as the 2011 estimates do not include some components that were installed in 2009, such as air source heat pumps and geothermal. These measures increased the overall savings/home in 2009. We are not expecting any of these measures to be completed in 2011. Additionally, one project in 2009 installed a significant number of fixtures which increased savings for 2009 but which are not expected in 2011.

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Data Request STAFF-02
Dated: 09/22/2010
Q-STAFF-037
Page 1 of 2

Witness: Thomas R. Belair
Request from: New Hampshire Public Utilities Commission Staff

Question:

Follow-up to Staff 1-45, Home Performance with Energy Star program. Please provide a reconciliation of proposed lifetime kWh savings in 2009, actual achieved savings in 2009 and proposed savings in 2011, showing the side-by-side build-up of actual and proposed lifetime kWh values on a measure-by-measure basis. For purposes of this response, please use the final fourth quarter report covering the period January - December 2009.

Response:

Please see attached report.

(Until Response)

UES' Response:

See Table 2-37 below. Note that the measure level information used for this comparison was from the final SHI calculation. Quarterly reports are produced from the Company's tracking system with gross savings rolled up at the program level. When the SHI is calculated, raw data is extracted from the tracking system, reviewed for accuracy, and input into the Company's benefit cost model to produce net savings for the SHI calculation.

Table 2-37

Home Performance w/ ENERGY STAR Measures	2009		2011
	Proposed	Actual	Proposed
	Lifetime kWh		
A03a HES Insulation, Electric	452,258	562,625	382,685
A03a HES Air Sealing, Electric	154,809	106,200	-
A03a HES DHW, Electric	18,601	97,715	-
A03a HES Thermostats, Electric	133,392	100,688	-
A03a HES Lighting	207,339	180,442	112,842
A03a HES Fixtures - Exterior	-	12,708	-
A03a HES Fixtures - Interior		27,640	-
A03a HES Fixtures - Comm T8		815,776	-
TOTAL	966,400	1,903,794	112,842

As stated in the response to Staff 1-45, planned completions in 2009 included 85 audits with a 62% follow-through rate. All planned 85 audits included 6 bulb installs. In 2011, the Company narrowed down the number of audits to be completed down 65 with a 76% follow-through rate. Nearly the same number of homes will have major measures installed, but with 20 less homes receiving only audits but not following through.

The assumed rebate/home in 2011 has been increased by approximately \$1,000 more than in 2009 as trends have been towards homes receiving higher rebates than in the past as the HPwES program delivers deeper and more comprehensive services.

Savings assumptions per electric home in 2011 appear to be underestimated and do not include other electric measures that may be installed such as thermostats and DHW measures. These assumptions will be reassessed for purposes of finalizing the 2011 and 2012 plan.

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Data Request STAFF-02
Dated: 09/22/2010
Q-STAFF-038
Page 1 of 2

Witness: Thomas R. Belair
Request from: New Hampshire Public Utilities Commission Staff

Question:
Follow-up to Staff 1-46, Home Energy Assistance program. Please provide a reconciliation of proposed lifetime kWh savings in 2009, actual achieved savings in 2009 and proposed savings in 2011, showing the side-by-side build-up of actual and proposed lifetime kWh values on a measure-by-measure basis. For purposes of this response, please use the final fourth quarter report covering the period January - December 2009.

Response:
Please see attached report.

(Until Response)

UES' Response:

See Table 2-38 below. Note that the measure level information used for this comparison was from the final SHI calculation. Quarterly reports are produced from the Company's tracking system with gross savings rolled up at the program level. When the SHI is calculated, raw data is extracted from the tracking system, reviewed for accuracy, and input into the Company's benefit cost model to produce net savings for the SHI calculation.

Table 2-38

Home Energy Assistance Measures	2009		2011
	Proposed	Actual	Proposed
B03a HEA HVAC, Electric	68,345	270,955	249,696
B03a HEA Air Sealing	-	114,119	
B03a HEA Hot Water	-	30,167	
Thermostats	-	114,133	
B03a HEA Refrigerator	172,295	637,064	629,473
B03a HEA Lighting	169,873	51,520	129,297
Fixtures	-	23,256	-
TOTAL	410,513	1,241,214	1,008,466

As stated in the response to Staff 1-46, all categories of the budget saw increases to account for additional time spent on the program to achieve goals. Additionally, the rebate dollars are \$26K higher than 2009 actuals to account for the higher incentives being paid for comprehensive services.

Average savings for homes is averaged from three years of data. This program does not see a significant number of electric homes go through the program each year so one year of savings is not representative of savings that would be achieved the next year. In the 2011 plan, 10% of homes weatherized are assumed to be electric with average savings 9% below 2009 actual savings. Additionally, the 2009 savings included several thermostats installed in the electric space heat homes, accounting for 14% of total savings. Thermostats were not included in the 2011 planned savings.

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Data Request STAFF-02
Dated: 09/22/2010
Q-STAFF-039
Page 1 of 2

Witness: Thomas R. Belair
Request from: New Hampshire Public Utilities Commission Staff

Question:
Follow-up to Staff 1-47. Energy Star Lighting Program. Please provide a reconciliation of proposed lifetime kWh savings in 2009, actual achieved savings in 2009 and proposed savings in 2011, showing the side-by-side build-up of actual and proposed lifetime kWh values on a measure-by-measure basis. For purposes of this response, please use the final fourth quarter report covering the period January - December 2009.

Response:
Please see attached report.

(Unutil Response)

UES' Response:

See Table 2-39 below. Note that the measure level information used for this comparison was from the final SHI calculation. Quarterly reports are produced from the Company's tracking system with gross savings rolled up at the program level. When the SHI is calculated, raw data is extracted from the tracking system, reviewed for accuracy, and input into the Company's benefit cost model to produce net savings for the SHI calculation.

Table 2-39

ENERGY STAR Lighting	2009		2011
Measures	Proposed	Actual	Proposed
	Lifetime kWh		
A04a E-STAR Light Retail CFLs	10,673,269	9,929,005	8,516,156
A04a E-STAR Light Catalog CFLs (12%)	1,736,263	-	-
A04a E-STAR Light Interior Fixtures	3,016,918	1,651,111	17,944
A04a E-STAR Light Exterior Fixtures	156,362	3,705	465,357
A04a E-STAR Light Torchieres	91,063	781	-
A04a E-STAR Light LEDs	-	-	19,694
TOTAL	15,673,876	11,584,602	9,019,151

As stated in the response to Staff 1-47, the primary driver for the variation in lifetime savings between 2009 and 2011 is a change to measure life for interior fixtures. The measure life in 2009 for fixtures was 20 years. In 2011 the measure life was changed to 5 years. So while it accounts for a large difference in a comparison of lifetime savings, annual savings comparison between the two years differ by 18%.

Additionally, the quantity of fixtures in the 2011 plan is less than the 2009 plan because the number fixtures rebated has been declining and actual came in 45% below planned levels in 2009.

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Data Request STAFF-02
Dated: 09/22/2010
Q-STAFF-040
Page 1 of 2

Witness: Thomas R. Belair
Request from: New Hampshire Public Utilities Commission Staff

Question:
Follow-up to Staff 1-48, Large C&I Retrofit program. Please provide a reconciliation of proposed lifetime kWh savings in 2009, actual achieved savings in 2009 and proposed savings in 2011, showing the side-by-side build-up of actual and proposed lifetime kWh values on a measure-by-measure basis. For purposes of this response, please use the final fourth quarter report covering the period January - December 2009.

Response:
Please see attached report.

(Unutil Response)

UES' Response:

See Table 2-40 below. Note that the measure level information used for this comparison was from the final SHI calculation. Quarterly reports are produced from the Company's tracking system with gross savings rolled up at the program level. When the SHI is calculated, raw data is extracted from the tracking system, reviewed for accuracy, and input into the Company's benefit cost model to produce net savings for the SHI calculation.

Table 2-40

Large C&I Retrofit Measures	2009		2011
	Proposed	Actual	Proposed
C03a Lg C&I Retrofit -Rolled Up	19,058,974	-	
C03a Lg C&I Retrofit -Non-Lighting			7,465,898
C03a Lg C&I Retrofit -Lighting	-	28,376,176	23,642,010
C03a Lg C&I Retrofit -HVAC	-	347,296	
C03a Lg C&I Retrofit -Motors/Drives	-	1,465,873	
C03a Lg C&I Retrofit -Refrigeration	-	2,874,172	
C03a Lg C&I Retrofit -Compressed Air	-	990,404	
C03a Lg C&I Retrofit - Occupancy Sensors	-	64,116	
TOTAL	19,058,974	34,118,037	31,107,908

As stated in the response to Staff 1-48, all categories of the budget saw increases to account for additional time spent on the program to achieve goals.

Savings for this program is forecasted by going back several years and averaging projects by end-use type. Program savings vary from year to year depending on the types of projects completed. In general, lighting averages about 80% of total savings each year with project sizes and costs/kwh varying from year. For 2011 planning, lighting for this program has a higher planned cost/kwh than 2009 which resulted in 17% less planned savings for this end-use. Additionally, because there is variation in the other types of projects completed from year to year (non-lighting), an average of these projects is used to forecast the savings and cost/kwh. In 2011, the planned cost/kwh is increased slightly resulting in slightly lower savings (6%) from 2009.