APPENDIX D
Performance Incentive Supporting Documentation

Shareholder Incentive Calculation Summary

National Grid Electric 2010 Performance						SHAREHOLDER INCENTIVE CALCULATION			
	Evaluated Annual Mwh Savings	Evaluated Total Benefits	Total Program Cost + Participant Cost	% Net Benefits	Adjusted Net Benefits	Savings	Value	Performance Metric	Total
A - Residential	**98,276**	**$ 149,801,552**	**$ 51,379,520**		**$ 98,422,032**	**$ 1,072,247**	**$ 793,260**	**$ 808,922**	**$ 2,674,429**
Residential New Construction & Major Renovation	2,179	$ 4,769,946	$ 1,838,120	2.8%	$ 2,796,368	$ 34,142	$ 22,538	$ 22,983	$ 79,663
Residential Cooling & Heating Equipment	1,732	$ 4,616,442	$ 2,293,086	2.3%	$ 2,216,010	$ 33,043	$ 17,861	$ 18,213	$ 69,117
Multi-Family Retrofit	7,748	$ 14,991,233	$ 6,482,987	8.2%	$ 8,115,140	$ 107,304	$ 65,406	$ 66,698	$ 239,408
MassSAVE	15,426	$ 72,787,235	$ 17,811,103	53.3%	$ 52,436,073	$ 520,995	$ 422,624	$ 430,967	$ 1,374,586
O Power	25,622	$ 3,299,020	$ 1,391,790	1.8%	$ 1,819,111	$ 23,614	$ 14,662	$ 14,951	$ 53,226
ENERGY STAR Lighting	39,941	$ 42,881,781	$ 12,941,665	29.0%	$ 28,556,795	$ 306,938	$ 230,162	$ 234,706	$ 771,806
ENERGY STAR Appliances	5,628	$ 6,455,894	$ 3,853,102	2.5%	$ 2,482,536	$ 46,210	$ 20,009	$ 20,404	$ 86,622
Residential Education Program	-	$ -	$ 115,709			$ -	$ -		$ -
Workforce Development	-	$ -	$ 79,543			$ -	$ -		$ -
Heat Loan Program	-	$ -	$ 3,163,184			$ -	$ -		$ -
Deep Energy Retrofit	-	$ -	$ 340,834			$ -	$ -		$ -
Power Monitor Pilot	-	$ -	$ -			$ -	$ -		$ -
Residential New Construction & Major Renovation - Major Renovation statewide pilot	-	$ -	$ 34,968			$ -	$ -		$ -
Residential New Construction Multi Family (4-8 story) statewide pilot	-	$ -	$ 121,943			$ -	$ -		$ -
Residential New Construction Lighting Design statewide pilot	-	$ -	$ 12,385			$ -	$ -		$ -
Residential New Construction V3 Energy Star Homes statewide pilot	-	$ -	$ 11,096			$ -	$ -		$ -
Heat Pump Water Heater Pilot	-	$ -	$ 34,235			$ -	$ -		$ -
Residential Technical Development	-	$ -	$ -			$ -	$ -		$ -
Hot Roofs	-	$ -	$ -			$ -	$ -		$ -
Home Automation	-	$ -	$ -			$ -	$ -		$ -
Community based Pilot	-	$ -	$ -			$ -	$ -		$ -
Statewide Marketing & Education	-	$ -	$ 570,285			$ -	$ -		$ -
EEAC Consultants	-	$ -	$ -			$ -	$ -		$ -
DOER Assessment	-	$ -	$ 281,975			$ -	$ -		$ -
Sponsorships & Subscriptions	-	$ -	$ 1,511			$ -	$ -		$ -
B - Low Income	**6,563**	**32,826,734**	**10,678,639**		**$ 22,148,095**	**$ 234,967**	**$ 178,509**	**$ 720,681**	**$ 1,134,156**
Low-Income Residential New Construction	222	$ 612,307	$ 124,824	2.2%	$ 481,607	$ 4,383	$ 3,882	$ 15,671	$ 23,935
Low-Income 1 to 4 Family Retrofit	4,102	$ 24,446,525	$ 7,445,762	75.8%	$ 16,795,814	$ 174,983	$ 135,371	$ 546,522	$ 856,875
Low-Income MultiFamily Retrofit	2,239	$ 7,767,902	$ 2,837,794	22.0%	$ 4,870,674	$ 55,601	$ 39,257	$ 158,488	$ 253,345
Statewide Marketing & Education	-	$ -	$ 51,403			$ -	$ -		$ -
Low-Income Energy Affordability Network Funding	-	$ -	$ 85,523			$ -	$ -		$ -
DOER Assessment	-	$ -	$ 133,333			$ -	$ -		$ -
C - Commercial & Industrial	**190,072**	**279,036,690**	**72,486,146**		**$ 206,550,543**	**$ 1,997,284**	**$ 1,664,753**	**$ 720,681**	**$ 4,382,717**
C&I New Construction and Major Renovation	24,369	$ 44,031,842	$ 10,794,604	16.0%	$ 33,125,164	$ 315,170	$ 266,982	$ 115,578	$ 697,730
C&I Large Retrofit	140,441	$ 196,339,522	$ 49,768,871	70.7%	$ 146,076,426	$ 1,405,355	$ 1,177,345	$ 509,679	$ 3,092,379
C&I Small Retrofit	25,262	$ 38,665,326	$ 11,223,843	13.2%	$ 27,348,953	$ 276,758	$ 220,427	$ 95,424	$ 592,609
C&I New Construction and Major Renovation - Government	-	$ -	$ -			$ -	$ -		$ -
Large C&I Retrofit - Government	-	$ -	$ -			$ -	$ -		$ -
C&I Small Retrofit - Government	-	$ -	$ -			$ -	$ -		$ -
Community based Pilot	-	$ -	$ -			$ -	$ -		$ -
Statewide Marketing & Education	-	$ -	$ 158,177			$ -	$ -		$ -
EEAC Consultants	-	$ -	$ -			$ -	$ -		$ -
DOER Assessment	-	$ -	$ 539,099			$ -	$ -		$ -
Sponsorships & Subscriptions	-	$ -	$ 1,552			$ -	$ -		$ -
Total	**294,910**	**$ 461,664,975**	**$ 134,544,305**		**$ 327,120,670**	**$ 3,304,497**	**$ 2,636,523**	**$ 2,250,283**	**$ 8,191,302**

2010 Savings as percent of 2010 goal	**101.77%**	
2010 Benefits as percent of 2010 goal	**91.07%**	**Must be at least 75%**
2010 Net Benefits as percent of 2010 goal	**98.37%**	**Must be at least 75%**

Savings	**Savings Payout Rate**	**$**	**0.0072**	As Approved in Plan
Net Benefits	**Value Payout Rate**	**$**	**0.0081**	As Approved in Plan

Notes:
The savings and value portions of the performance incentive were calculated based on evaluated electric savings and allocated to programs based on evaluated net benefits.
The performance metric portion of the performance incentive calulation was allocated to programs based on 2011 MTM assumptions.

National Grid Gas 2010 Performance						SHAREHOLDER INCENTIVE CALCULATION			
	Preliminary Annual Therm Savings	Preliminary Total Benefits	Total Program Cost + Participant Cost	% Net Benefits	Adjusted Net Benefits	Savings	Value	Performance Me	Total
A - Residential	**3,871,275**	**63,845,006**	**24,361,011**		**$ 39,483,995**	**$ 471,972**	**$ 406,726**	**$ 168,833**	**$ 1,047,531**
Residential New Construction & Major Renovations	109,723	$ 3,334,530	$ 1,761,081	3.7%	$ 1,461,116	$ 24,650	$ 15,051	$ 6,248	$ 45,949
Residential Heating and Water Heating	2,167,520	$ 47,051,098	$ 8,431,273	90.8%	$ 35,862,630	$ 347,824	$ 369,422	$ 153,348	$ 870,594
MassSAVE	-	$ -	$ 1,637,620			$ -	$ -	$ -	$ -
Weatherization Program	447,677	$ 10,634,840	$ 9,273,069	3.2%	$ 1,264,550	$ 78,618	$ 13,026	$ 5,407	$ 97,051
Multifamily Retrofit	416,355	$ 2,132,082	$ 1,203,964	2.2%	$ 861,857	$ 15,761	$ 8,878	$ 3,685	$ 28,325
O Power	730,000	$ 692,456	$ 656,012	0.1%	$ 33,842	$ 5,119	$ 349	$ 145	$ 5,612
Deep Energy Retrofit	-	$ -	$ 485,682			$ -	$ -	$ -	$ -
Residential Building Practices and Demonstration Program	-	$ -	$ 85,815			$ -	$ -	$ -	$ -
Energy Analysis: Internet Audit Program	-	$ -	$ 151,963			$ -	$ -	$ -	$ -
Community based pilots	-	$ -	$ 135,153			$ -	$ -	$ -	$ -
Workforce Development	-	$ -	$ -			$ -	$ -	$ -	$ -
Statewide Marketing & Education	-	$ -	$ 157,586			$ -	$ -	$ -	$ -
EEAC Consultants	-	$ -	$ 95,519			$ -	$ -	$ -	$ -
DOER Assessment	-	$ -	$ 286,276			$ -	$ -	$ -	$ -
B - Low Income	**219,547**	**14,192,140**	**6,682,057**		**$ 7,510,083**	**$ 104,915**	**$ 77,362**	**$ 192,952**	**$ 375,228**
Low-Income Single Family Retrofit	158,615	$ 12,273,913	$ 5,598,019	86.5%	$ 6,496,724	$ 90,735	$ 66,923	$ 166,916	$ 324,574
Low-Income MultiFamily Retrofit	60,932	$ 1,918,226	$ 876,921	13.5%	$ 1,013,359	$ 14,180	$ 10,439	$ 26,036	$ 50,655
Statewide Marketing & Education	-	$ -	$ 27,408			$ -	$ -		$ -
Low Income Energy Affordability Network Funding	-	$ -	$ 90,513			$ -	$ -		$ -
DOER Assessment	-	$ -	$ 89,196			$ -	$ -		$ -
C - Commercial & Industrial	**3,235,246**	**58,397,109**	**27,298,616**		**$ 31,098,493**	**$ 431,699**	**$ 320,347**	**$ 156,934**	**$ 908,980**
C&I New Construction & Major Renovation	1,597,318	$ 31,791,384	$ 9,279,488	71.4%	$ 22,205,421	$ 235,017	$ 228,739	$ 112,057	$ 575,812
C&I Retrofit	1,537,432	$ 25,944,844	$ 17,470,273	26.9%	$ 8,359,199	$ 191,796	$ 86,108	$ 42,184	$ 320,088
C&I Direct Install	100,497	$ 660,881	$ 119,640	1.7%	$ 533,873	$ 4,886	$ 5,499	$ 2,694	$ 13,079
Workforce Development	-	$ -	$ 11			$ -	$ -		$ -
Business Energy Analyzer	-	$ -	$ 130,979			$ -	$ -		$ -
Deep Energy Retrofit	-	$ -	$ 36,065			$ -	$ -		$ -
Statewide Marketing & Education	-	$ -	$ 14,686			$ -	$ -		$ -
EEAC Consultants	-	$ -	$ -			$ -	$ -		$ -
DOER Assessment	-	$ -	$ 247,474			$ -	$ -		$ -
Total	**7,326,067**	**136,434,255**	**58,341,684**		**$ 78,092,571**	**$ 1,008,586**	**$ 804,435**	**$ 518,719**	**$ 2,331,739**

2010 Savings as percent of 2010 goal	**101.16%**	
2010 Benefits as percent of 2010 goal	**98.40%**	**Must be at least 75%**
2010 Net Benefits as percent of 2010 goal	**118.5%**	**Must be at least 75%**

Savings	**Savings Payout Rate**	**$**	**0.0074**	As Approved in Plan
Net Benefits	**Value Payout Rate**	**$**	**0.0103**	As Approved in Plan

Notes:
The savings and value portions of the performance incentive were calculated based on preliminary gas savings and allocated to programs based on preliminary net benefits.
The performance metric portion of the performance incentive calulation was allocated to programs based on 2011 MTM assumptions.
Preliminary results are being used for the calculation of the 2010 gas PI based on the approved 3 Year plan. Future years should use evaluted results

National Grid 2010 Performance Metrics Summary

	National Grid Electric Final 2010 Production	National Grid Gas Final 2010 Production
RESIDENTIAL		
RES #1 MassSAVE/Weatherization:	Increase in # of Customers**: Design**	Increase in # of Customers: **None -did not meet.**
Deeper Savings	Increase in Savings: **Exemplary**	Increase in Savings**: Exemplary**
RES #2 MassSAVE/Weatherization: Increase Direct Installation (DI) bulb penetration	**Exemplary**	**Exemplary**
RES #3 CoolSmart	**Threshold**	**N/A**
RES #4 Community Initiatives	**Exemplary**	**Exemplary**
RES #5 MassSAVE: Facilitate Inclusion of Independent Energy Auditors	**Exemplary**	**Exemplary**
LOW INCOME		
Low Income #1. Hard to Reach Landlords	**Exemplary**	**Exemplary**
Low Income #2. New Measures	**Exemplary**	**Exemplary**
Low Income #3. Multi-family Building Inventory	**Exemplary**	**Exemplary**
COMMERCIAL AND INDUSTRIAL		
C&I #1 Small Business Electric and Gas Integration	**Exemplary**	**Exemplary**
C&I #2 Targeted Customer Segments	**Exemplary**	**Threshold**
C&I #3 Combined Heat & Power (CHP)	**Exemplary**	**None -did not meet.**
C&I #4 Retrofit Depth of Savings	**Exemplary**	**Threshold**
C&I #5 N/C Comprehensiveness and Depth of Savings	**Exemplary**	**Design**
OTHER FUNDING		
Other Program Funding	**None -did not meet.**	**None -did not meet.**
Other Financing Capital	**Exemplary**	**None -did not meet.**

National Grid Electric MA Performance Metrics and Incentives for 2010

	Target Levels								
	Threshold		Design		Exemplary				
	Units/ Task	Dollars	Units/ Task	Dollars	Units/ Task	Dollars	Actual Units/Task Achieved To Date	Level Achieved To Date	Pre Tax Incentive Achieved To Date
RESIDENTIAL METRICS									
Residential #1: MassSAVE/Weatherization: Deeper Savings (Electric & Gas)									
Threshold (1): Achieve an increase in number of customers installing major measures* in 2010 of 2.5%**, as compared with 2009, and/or achieve an increase in average MMBTU savings per customer installing one or more major measures in 2010 of 2.5%***, as compared with customers who installed major measures in 2009.**** Each PA to submit documentation showing performance relative to targets.	2.5%	$61,090							
	2.5%	$61,090							
Design (2): Achieve an increase in number of customers installing major measures in 2010 of 5%, as compared with 2009, and/or achieve an increase in average MMBTU savings per customer installing one or more major measures in 2010 of 5%, as compared with customers who installed major measures in 2009. Each PA to submit documentation showing performance relative to targets.			5%	$81,454					
			5%	$81,454					
Exemplary (3): Achieve an increase in number of customers installing major measures in 2010 of 7.5%, as compared with 2009, and/or achieve an increase in average MMBTU savings per customer installing one or more major measures in 2010 of 7.5%, as compared with customers who installed major measures in 2009. Each PA to submit documentation showing performance relative to targets.					7.5%	$101,817			
					7.5%	$101,817			
MassSAVE/Weatherization: Deeper Savings (Electric & Gas) increase of customer results:								None	$0
MassSAVE/Weatherization: Deeper Savings (Electric & Gas) increase of savings results:							7.5%	Exemplary	$101,817
Residential #2: MassSAVE/Weatherization: Increase Direct Installation (DI) bulb penetration (Electric & Gas)									
Threshold (1): Coordinate among all of the residential direct-installation lighting efforts and the Products program on the availability of specialty bulbs for direct installation. Produce a memo from all PA's proposing a strategy to use the current direct-installation bulb procurement process, or an alternative, to ensure the availability of consistent quality specialty bulbs across al PA programs promoting efficient residential lighting. Memo focusing on specialty bulbs to EEAC consultants by 4/30/10. EEAC consultant comments by 5/15/10. Final memo by 5/30/10.	1	$122,180							
Design (2): Achieve an overall average increase in number of DI bulbs installed per customer served in Q3-Q4 2010 of 25% or an average total of 11 bulbs, which is greater. Base year will be 2009.			2	$162,907					
Exemplary (3): Achieve an overall average increase in number of DI bulbs installed per customer served in Q3-Q4 2010 of 40% or an average total of 12 bulbs, which is greater. Base year will be 2009.					3	$203,634			
MassSAVE/Weatherization: Increase Direct Installation (DI) bulb penetration (Electric & Gas) results:							3	Exemplary	$203,634
Residential #3: Coolsmart: Increase % of correct installations (Electric)									
Threshold (1): 16% of homes participating in the CoolSmart program that receive an efficient equipment rebate for ducted systems will have equipment installations that include both QI (charge & airflow) and proper sizing (based on completed Manual J) services.	16%	$54,302							
Design (2): 18% of homes participating in the CoolSmart program that receive an efficient equipment rebate for ducted systems will have equipment installations that include both QI (charge & airflow) and proper sizing (based on completed Manual J) services.			18%	$72,403					
Exemplary (3): 20% (Tier 1) of homes participating in the CoolSmart program that receive an efficient equipment rebate for ducted systems will have equipment installations that include both QI (charge & airflow) and proper sizing (based on completed Manual J) services. Of these 20% of homes receiving equipment rebates and combined QI and sizing/manual J services, 10% (Tier 2) must also participate in the program's duct sealing of ESQI component.					20%, w/ 10%	$90,504			
Coolsmart: Increase % of correct installations (Electric) results:							16%	Threshold	$54,302
Residential #4: Community Initiatives (Electric & Gas)									
Threshold (1): Each PA will develop and implement at least one (1) community-based initiative, in collaboration with community-based personnel, to deliver energy efficient services in at least six (6) communities (eg. Cities, towns, neighborhoods) in the Commonwealth. Gas and electric PA's will cooperate, as appropriate, on initiatives in shared towns. A shared initiative will be counter as one (1) initiative for each PA.	1	$122,180							
Design (2): Establish a PA Community Initiatives working Group to coordinate with any pertinent EEAC working groups, and to coordinate on-going community initiative efforts.			2	$162,907					
Exemplary (3): Produce a final report documenting the results of the initiatives, includes lessons learned, by January 31, 2011. Each PA to submit a memo to EEAC consultants and DOER by January 31, 2011 detailing their distinct and clear role in accomplishing this activity.					3	$203,634			
Community Initiatives (Electric & Gas) results:							3	Exemplary	$203,634

National Grid Electric MA Performance Metrics and Incentives for 2010

	Target Levels								
	Threshold		Design		Exemplary				
	Units/ Task	**Dollars**	**Units/ Task**	**Dollars**	**Units/ Task**	**Dollars**	**Actual Units/Task Achieved To Date**	**Level Achieved To Date**	**Pre Tax Incentive Achieved To Date**
Residential #5: MassSAVE Facilitate Inclusion of Independent Energy Auditors (Electric & Gas)									
Threshold (1): To address the need to engage independent energy auditors in the auditing services of the RCS auditing service of the MassSAVE program, the PA's will: 1) Document the standards for vendor services (eg. accreditation/certifications, cost-effectiveness, administration, reporting to DOER and PA's, training requirements, pricing) and provide a detailed specification on each component of the new program audit process. 2) Prepare and send an RFQ to independent energy auditors to determine the approximate pool of qualified individuals and companies. Each PA to submit a memo to EEAC consultants and DOER by May 1, 2010 detailing their distinct and clear role in accomplishing this activity.	**1**	**$122,180**							
Design (2): Each PA will work to expand the pool of independent auditors, identified through the RFQ process, qualified to deliver auditing services in the Commonwealth. Each PA will coordinate with their primary vendor to integrate customers brought to the program by pre-qualified independent energy auditors. Each PA to submit a memo to EEAC consultants and DOER by July 1, 2010 detailing their distinct and clear role in accomplishing this activity.			**2**	**$162,907**					
Exemplary (3): Prepare a statewide multi-PA report documenting the initiative to be delivered to EEAC consultants and DOER by January 15, 2011. Include in the report lessons learned and recommendations for continuing efforts to expand the program services delivery base. Each PA to submit a memo to EEAC consultants and DOER by January 31, 2011, detailing their distinct and clear role in preparing the report.					**3**	**$203,634**			
MassSAVE Facilitate Inclusion of Independent Energy Auditors (Electric & Gas) results:							**3**	**Exemplary**	$203,634
Subtotal for Residential Metrics:		$543,024		$724,033		$905,041			$767,022
LOW INCOME METRICS									
Low Income #1: Hard to Reach Landlords (Electric & Gas)									
Threshold (1): Establish a subcommittee consisting of members of the Best Practices Working Group with representatives from all gas and electric program administrators to design and develop a cost-effective statewide landlord early retirement high efficiency heating incentive initiative. Incentive plan should target single family (1-4 units) and should be completed by August 1, 2010.	**1**	**$135,756**							
Design (2): Each program administrator to develop a database consisting of landlords in their respective service territories of low-income tenants that pay their own heating bills by September 30, 2010.			**2**	**$181,008**					
Exemplary (3): Working group to develop and initiate a statewide marketing plan prior to 2010-2011 heating season. Each program administrator to use their individual database to target market and submit a final report of participation and any lessons learned to the Best Practices Working Group by January 30, 2011.					**3**	**$226,260**			
Hard to Reach Landlords (Electric & Gas) results:							**3**	**Exemplary**	$226,260
Low Income #2: New Measures									
Threshold (1): In coordination with LEAN, implement best practices to achieve deeper energy savings. Best Practices meets monthly, with each PA participating, to discuss and persue new technologies and deeper measure penetration, and to select new measures for review. PA's will provide written updates on meetings, technical analyses performed, and additional best practices implemented. Each PA will accept an assignment with respsect to written products.	**1**	**$135,756**							
Design (2): Study possible new program measures that are above and beyond the DOE measure list, specifically including, but not limited to: 1) micro-combined-heat-and-power (with emphasis on three-deckers, six-flats and single family furnaces), 2) indirect water heating, 3) demand control measures (if feasible and available), 4) LED lighting, and 5) outdoor resets for new heating systems. Cost-effectiveness analysis will be conducted by the PA common assumptions group, or the equivalent, which shall include LEAN for this purpose, within eight weeks of referral by Best Pracitces, with first reports of analysis no later than June 15, 2010.			**2**	**$181,008**					
Exemplary (3): For each measure that passes the common assumptions group cost-effectiveness screening, implement field testing of new program measures in 2010. Document results and findings in a memo to EEAC consultants by April 1, 2011, including measurement of savings per home due to each measure. Where field testing indicates it is appropriate to do so, there will be re-screening by Common Assumptions and/or a second field test. Each PA will conduct field testing with respect to each such measure and provide a memo documenting results. PA field tests will include a sufficient number of installations for each measure, resonable in proportion to the size of each utility budget, to yield reliable field test results, as set out in table, and will begin no later than two months after the relevant Common Assumption report: NGrid Electric: MicroCHP=1, Indirect DHW= Standard measure, Demand Control=TBD, LED Lighting=Standard measure and Outdoor Resets=Standard Measure NGrid Gas: MicroCHP=1, Indi					**3**	**$226,260**			
New Measures results:							**3**	**Exemplary**	$226,260
Low Income #3: Multi-family Building Inventory									

National Grid Electric MA Performance Metrics and Incentives for 2010

	Target Levels								
	Threshold		Design		Exemplary				
	Units/ Task	Dollars	Units/ Task	Dollars	Units/ Task	Dollars	Actual Units/Task Achieved To Date	Level Achieved To Date	Pre Tax Incentive Achieved To Date
Threshold (1): Develop and support a low-income non-profit multi-family bldg inventory in order to facilitate benchmarking for project identification of energy retrofit potential and screening of potential projects. This will be a three year project, beginning approx 7/1/10 with milestones each yr consisting of the addition of 250 bldgs per month to the database.Allocations are established on a monthly basis since it is not known precisely when the project will begin, and will be allocated objectively among utilities in proportion to their customer count of non-profit low-income multi-family buildings, which allocation will be completed by 3/24 based upon initial data to be provided by LEAN. In coordination with LEAN, each PA will develop the scope, design and contracting for the low-income multi-family building inventory in its service teritory and commit to its implementation. This will include consensus agreement on the allocation of non-profit low-income multi-family buildings among the utility service territories. It is anticipated that there will be one statewide procurement.	1	$135,756							
Design (2): In coordination with LEAN, each PA will implement the Inventory in its service territory, reaching the designated milestone number of buildings.			2	$181,008					
Exemplary (3): By January 1, 2011, in coordination with LEAN, each PA will submit a status report of the implementary of the Inventory, together with recommendations going forward. The status report will include a summary of what has been learned to-date relating to energy consumption in non-profit, low-income, multi-family buildings (eg. average BTUs/square foot, reasonable target consumption, reasonable threshold consumption for treatment.)					3	$226,260			
Multi-family Buidling Inventory results:							3	Exemplary	$226,260
Subtotal for Low Income Metrics:		$407,268		$543,024		$678,781			$678,781
COMMERCIAL & INDUSTRIAL METRICS									
C&I #1: Small Business Electric and Gas Integration: In 2010, completed Direct Install (DI) projects will achieve a total of X THERM gas savings for each PA. For Electric PA's, X=THERM gas savings among projects within its electric territory regardless									
Threshold: NGrid Electric	94,887	$81,454							
Design: NGrid Electric			105,429	$108,605					
Examplary: NGrid Electric					115,972	$135,756			
Small Business Electric Integration results:							136,000	Exemplary	$135,756
C&I #2: Targeted Customer Segments: During 2010, develop projects not initiated prior to 1/1/10 and obtain commitments to follow through with implementation from X data centers, high performance labs/clean rooms or industrial facilities. To qualify, ass									
Threshold (20% increase): NGrid Electric	36	$40,727							
Design (30% increase): NGrid Electric			39	$ 54,302					
Examplary (40% increase): NGrid Electric					42	$67,878			
Targeted Customer Segments (Electric) results:							56	Exemplary	$67,878
C&I #3: Combined Heat & Power: Each PA will complete X Combined Heat & Power commitments in 2010. A commitment either a signed application or MOU between the PA and customer. Targets are not additive. Electric and Gas PA targets reflec the same									
Threshold: NGrid Electric	8	$81,454							
Design: NGrid Electric			10	$108,605					
Examplary: NGrid Electric					12	$135,756			
Combined Heat & Power (Electric) results:							15	Exemplary	$135,756
C&I #4: Retrofit -- Depth of Savings: Begin implementation of efforts at capturing whole-building (defined as the whole space under mgmt & control of the customer, which can include tenant space in a larger bldg), deep savings of both electric and gas.									
Threshold: NGrid Electric X	13	$101,817							
Threshold: NGrid Electric Y	20%								
Design: NGrid Electric X			15	$ 135,756					
Design: NGrid Electric Y			20%						
Exemplary: NGrid Electric X					13	$ 169,695			
Exemplary: NGrid Electric Y					25%				
Retrofit - Depth of Savings Electric "X" results:							17	Exemplary	$169,695
Retrofit - Depth of Savings Electric "Y" results:							25%		

National Grid Electric MA Performance Metrics and Incentives for 2010

	Target Levels								
	Threshold		Design		Exemplary				
	Units/ Task	Dollars	Units/ Task	Dollars	Units/ Task	Dollars	Actual Units/Task Achieved To Date	Level Achieved To Date	Pre Tax Incentive Achieved To Date
C&I #5: New Construction - Comprehensiveness and depth of savings: Each PA must achieve in a minimum of X% of new construction or substantial/major renovation projects at least an estimated Y% whole building (definated as the whole space under the mgmt &									
Threshold: NGrid Electric X	18%	$101,817							
Threshold: NGrid Electric Y	20%								
Design: NGrid Electric X			20%	$ 135,756					
Design: NGrid Electric Y			20%						
Exemplary: NGrid Electric X					18%	$ 169,695			
Exemplary: NGrid Electric Y					25%				
New Construction - Comprehensiveness and depth of savings Electric "X" results:							20%	Exemplary	$169,695
New Construction - Comprehensiveness and depth of savings Electric "Y" results:							25%		
Subtotal for Commercial & Industrial Metrics:		$407,268		$543,024		$509,085			$678,781
FINANCING & FUNDING METRICS									
Other Funding Metric: Actively participate with DOER, EEAC and/or other stakeholders to aggressively pursue potential sources of other program funding for 2010 by applying for federal, state, municipal or private grants independetly or in conjunction with the DOER to acquire other program funding. Submit documentation detailing actions undertaken specifically by the PA to obtain other program funding. Each PA must successfully attain $X in other funding to offset such PA's energy efficiency program costs in 2010.									
Threshold: NGrid Electric X	$ 2,514,088	$75,420							
Design: NGrid Electric X			$ 2,742,641	$ 100,560					
Exemplary: NGrid Electric X					$ 2,971,195	$ 125,700			
Other Funding Metric - Other Funding "$X" Results:							$ -	None	$0
Other Financing Capital metric: Each PA must expand its current financial products and actively investigate, design and deplo new financial products that, when combined, provide $Y in other financing capital for loans through the energy efficiency programs that are issued in 2010 for customer energy efficiency investments. Submit documentation detailing actions specifically undertaken by the PA and dollars achieved in accordance with this metric.									
Threshold: NGrid Electric Y	$ 10,511,563	$75,420							
Design: NGrid Electric Y			$ 11,197,213	$ 100,560					
Exemplary: NGrid Electric Y					$ 11,882,863	$ 125,700			
Other Financing Metric - Other Financing Y Results							$ 12,755,448	Exemplary	$125,700
Subtotal for Financing and Funding Metric:		$150,840		$201,120		$251,400			$125,700
Total for all Performance Metrics:		$1,508,401		$2,011,202		$2,344,307			$2,250,283

National Grid Gas MA Performance Metrics and Incentives for 2010

	Target Levels								
	Threshold		Design		Exemplary				
	Units/ Task	Dollars	Units/ Task	Dollars	Units/ Task	Dollars	Actual Units/Task Achieved	Level Achieved	Pre Tax Incentive Achieved To Date
RESIDENTIAL METRICS									
Residential #1: MassSAVE/Weatherization: Deeper Savings (Electric & Gas)									
Threshold (1): Achieve an increase in number of customers installing major measures* in 2010 of 2.5%**, as compared with 2009, and/or achieve an increase in average MMBTU savings per customer installing one or more major measures in 2010 of 2.5%***, as compared with customers who installed major measures in 2009.**** Each PA to submit documentation showing performance relative to targets.	2.5%	$14,471							
	2.5%	$14,471							
			5%	$19,295					
Design (2): Achieve an increase in number of customers installing major measures in 2010 of 5%, as compared with 2009, and/or achieve an increase in average MMBTU savings per customer installing one or more major measures in 2010 of 5%, as compared with customers who installed major measures in 2009. Each PA to submit documentation showing performance relative to targets.			5%	$19,295					
Exemplary (3): Achieve an increase in number of customers installing major measures in 2010 of 7.5%, as compared with 2009, and/or achieve an increase in average MMBTU savings per customer installing one or more major measures in 2010 of 7.5%, as compared with customers who installed major measures in 2009. Each PA to submit documentation showing performance relative to targets.					7.5%	$24,119			
					7.5%	$24,119			
MassSAVE/Weatherization: Deeper Savings (Electric & Gas) increase of customer results:							0.0%	None	$0
MassSAVE/Weatherization: Deeper Savings (Electric & Gas) increase of savings results:							7.5%	Exemplary	$24,119
Residential #2: MassSAVE/Weatherization: Increase Direct Installation (DI) bulb penetration (Electric & Gas)									
Threshold (1): Coordinate among all of the residential direct-installation lighting efforts and the Products program on the availability of specialty bulbs for direct installation. Produce a memo from all PA's proposing a strategy to use the current direct-installation bulb procurement process, or an alternative, to ensure the availability of consistent quality specialty bulbs across al PA programs promoting efficient residential lighting. Memo focusing on specialty bulbs to EEAC consultants by 4/30/10. EEAC consultant comments by 5/15/10. Final memo by 5/30/10.	1	$28,943							
Design (2): Achieve an overall average increase in number of DI bulbs installed per customer served in Q3-Q4 2010 of 25% or an average total of 11 bulbs, which is greater. Base year will be 2009.			2	$38,590					
Exemplary (3): Achieve an overall average increase in number of DI bulbs installed per customer served in Q3-Q4 2010 of 40% or an average total of 12 bulbs, which is greater. Base year will be 2009.					3	$48,238			
MassSAVE/Weatherization: Increase Direct Installation (DI) bulb penetration (Electric & Gas) results:							3	Exemplary	$48,238
Residential #4: Community Initiatives (Electric & Gas)									
Threshold (1): Each PA will develop and implement at least one (1) community-based initiative, in collaboration with community-based personnel, to deliver energy efficient services in at least six (6) communities (eg. Cities, towns, neighborhoods) in the Commonwealth. Gas and electric PA's will cooperate, as appropriate, on initiatives in shared towns. A shared initiative will be counter as one (1) initiative for each PA.	1	$28,943							
Design (2): Establish a PA Community Initiatives working Group to coordinate with any pertinent EEAC working groups, and to coordinate on-going community initiative efforts.			2	$38,590					
Exemplary (3): Produce a final report documenting the results of the initiatives, includes lessons learned, by January 31, 2011. Each PA to submit a memo to EEAC consultants and DOER by January 31, 2011 detailing their distinct and clear role in accomplishing this activity.					3	$48,238			
Community Initiatives (Electric & Gas) results:							3	Exemplary	$48,238
Residential #5: MassSAVE Facilitate Inclusion of Independent Energy Auditors (Electric & Gas)									
Threshold (1): To address the need to engage independent energy auditors in the auditing services of the RCS auditing service of the MassSAVE program, the PA's will: 1) Document the standards for vendor services (eg. accreditation/certifications, cost-effectiveness, administration, reporting to DOER and PA's, training requirements, pricing) and provide a detailed specification on each component of the new program audit process. 2) Prepare and send an RFQ to independent energy auditors to determine the approximate pool of qualified individuals and companies. Each PA to submit a memo to EEAC consultants and DOER by May 1, 2010 detailing their distinct and clear role in accomplishing this activity.	1	$28,943						
Design (2): Each PA will work to expand the pool of independent auditors, identified through the RFQ process, qualified to deliver auditing services in the Commonwealth. Each PA will coordinate with their primary vendor to integrate customers brought to the program by pre-qualified independent energy auditors. Each PA to submit a memo to EEAC consultants and DOER by July 1, 2010 detailing their distinct and clear role in accomplishing this activity.			2	$38,590					

National Grid Gas MA Performance Metrics and Incentives for 2010

	Target Levels								
	Threshold		Design		Exemplary				
	Units/ Task	Dollars	Units/ Task	Dollars	Units/ Task	Dollars	Actual Units/Task Achieved	Level Achieved	Pre Tax Incentive Achieved To Date
Exemplary (3): Prepare a statewide multi-PA report documenting the initiative to be delivered to EEAC consultants and DOER by January 15, 2011. Include in the report lessons learned and recommendations for continuing efforts to expand the program services delivery base. Each PA to submit a memo to EEAC consultants and DOER by January 31, 2011, detailing their distinct and clear role preparing the report.					3	$48,238			
MassSAVE Facilitate Inclusion of Independent Energy Auditors (Electric & Gas) results:							3	Exemplary	$48,238
Subtotal for Residential Metrics:		$115,771		$154,361		$192,952			$168,833
LOW INCOME METRICS									
Low Income #1: Hard to Reach Landlords (Electric & Gas)									
Threshold (1): Establish a subcommittee consisting of members of the Best Practices Working Group with representatives from all gas and electric program administrators to design and develop a cost-effective statewide landlord early retirement high efficiency heating incentive initiative. Incentive plan should target single family (1-4 units) and should be completed by August 1, 2010.	1	$38,590							
Design (2): Each program administrator to develop a database consisting of landlords in their respective service territories of low-income tenants that pay their own heating bills by September 30, 2010.			2	$51,454					
Exemplary (3): Working group to develop and initiate a statewide marketing plan prior to 2010-2011 heating season. Each program administrator to use their individual database to target market and submit a final report of participation and any lessons learned to the Best Practices Working Group by January 30, 2011.					3	$64,317			
Hard to Reach Landlords (Electric & Gas) results:							3	Exemplary	$64,317
Low Income #2: New Measures									
Threshold (1): In coordination with LEAN, implement best practices to achieve deeper energy savings. Best Practices meets monthly, with each PA participating, to discuss and persue new technologies and deeper measure penetration, and to select new measures for review. PA's will provide written updates on meetings, technical analyses performed, and additional best practices implemented. Each PA will accept an assignment with respsect to written products.	1	$38,590							
Design (2): Study possible new program measures that are above and beyond the DOE measure list, specifically including, but not limited to: 1) micro-combined-heat-and-power (with emphasis on three-deckers, six-flats and single family furnaces), 2) indirect water heating, 3) demand control measures (if feasible and available), 4) LED lighting, and 5) outdoor resets for new heating systems. Cost-effectiveness analysis will be conducted by the PA common assumptions group, or the equivalent, which shall include LEAN for this purpose, within eight weeks of referral by Best Pracitces, with first reports of analysis no later than June 15, 2010.			2	$51,454					
Exemplary (3): For each measure that passes the common assumptions group cost-effectiveness screening, implement field testing of new program measures in 2010. Document results and findings in a memo to EEAC consultants by April 1, 2011, including measurement of savings per home due to each measure. Where field testing indicates it is appropriate to do so, there will be re-screening by Common Assumptions and/or a second field test. Each PA will conduct field testing with respect to each such measure an provide a memo documenting results. PA field tests will include a sufficient number of installations for each measure, resonable in proportion to the size of each utility budget, to yield reliable field test results, as set out in table, and will begin no later than two months after the relevant Common Assumption report: NGrid Electric: MicroCHP=1, Indirect DHW= Standard measure, Demand Control=TBD, LED Lighting=Standard measure and Outdoor Resets=Standard Measure NGrid Gas: MicroCHP=1, Indirect DH					3	$64,317			
New Measures results:							3	Exemplary	$64,317
Low Income #3: Multi-family Building Inventory									
Threshold (1): Develop and support a low-income non-profit multi-family bldg inventory in order to facilitate benchmarking for project identification of energy retrofit potential and screening of potential projects. This will be a three year project, beginning approx 7/1/10 with milestones each yr consisting of the addition of 250 bldgs per month to the database.Allocations are established on a monthly basis since it is not known precisely when the project will begin, and will be allocated objectively among utilities in proportion to their customer count of non-profit low-income multi-family buildings, which allocation will be completed by 3/24 based upon initial data to be provided by LEAN. In coordination with LEAN, each PA will develop the scope, design and contracting for the low-income multi-family building inventory in its service territory and commit to its implementation. This will include consensus agreement on the allocation of non-profit low-income multi-family buildings among the utility service territories. It is anticipated that there will be one statewide procurement.	1	$38,590							
Design (2): In coordination with LEAN, each PA will implement the Inventory in its service territory, reaching the designated milestone number of buildings.			2	$51,454					

National Grid Gas MA Performance Metrics and Incentives for 2010

	Target Levels								
	Threshold		Design		Exemplary				
	Units/ Task	Dollars	Units/ Task	Dollars	Units/ Task	Dollars	Actual Units/Task Achieved	Level Achieved	Pre Tax Incentive Achieved To Date
Exemplary (3): By January 1, 2011, in coordination with LEAN, each PA will submit a status report of the implementary of the Inventory, together with recommendations going forward. The status report will include a summary of what has been learned to-date relating to energy consumption in non-profit, low-income, multi-family buildings (eg. average BTUs/square foot, reasonable target consumption, reasonable threshold consumption for treatment.)					3	$64,317			
Multi-family Buidling Inventory results:							3	Exemplary	$64,317
Subtotal for Low Income Metrics:		$115,771		$154,361		$192,952			$192,952
COMMERCIAL & INDUSTRIAL METRICS									
C&I #1: Small Business Electric and Gas Integration: In 2010, completed Direct Install (DI) projects will achieve a total of X THERM gas savings for each PA. For Electric PA's, X=THERM gas savings among projects within its electric territory regardless of the gas PA territory they occur in. For Gas PA's, X=THERM gas savings in its gas territory. (Gas measures were not included in the 2009 DI Program so baseline data is 0.)									
Threshold: NGrid Gas	107,875	$30,872							
Design: NGrid Gas			119,861	$41,163					
Exemplary: NGrid Gas					131,847	$51,454			
Small Business Gas Integration results:							136,000	Exemplary	$51,454
C&I #2: Targeted Customer Segments: During 2010, develop projects not initiated prior to 1/1/10 and obtain commitments to follow through with implementation from X data centers, high performance labs/clean rooms or industrial facilities. To qualify, assessments and commitments must include both electric and gas non-prescriptive measures where applicable (eg. customers with gas process usage). Measures for industrial facilities must be related to process. Data center and lab spaces can apply even if a subset of a larger building. Data center and lab measures must be related to those "processes" (ie related to HVAC or servers/lab equipment). A "commitment" is a completed custom application. For each PA, "X" is defined as a percent increase (Threshold=20%, Design=30%, Exemplary=40%) in commitments from the commitments that orginated from application projects in 2009. Note: NGrid Electric 2009 units = 30 and NGrid Gas 2009 units = 16									
Threshold (20% increase): NGrid Gas	19	$15,436							
Design (30% increase): NGrid Gas			21	$ 20,582					
Exemplary (40% increase): NGrid Gas					22	$25,727			
Targeted Customer Segments (Gas) results:							20	Threshold	$15,436
C&I #3: Combined Heat & Power: Each PA will complete X Combined Heat & Power commitments in 2010. A commitment is either a signed application or MOU between the PA and customer. Targets are not additive. Electric and Gas PA targets reflect the same CHP units. Each CHP project is counted twice - once by the electric PA and once by the gas PA. Note that the baseline data also reflects this double counting. Note: NGrid Electric 2009 units = 4 and NGrid Gas 2009 units = 12.									
Threshold: NGrid Gas	9	$40,727							
Design: NGrid Gas			12	$41,163					
Exemplary: NGrid Gas					15	$67,878			
Combined Heat & Power (Gas) results:							7	None	None
C&I #4: Retrofit -- Depth of Savings: Begin implementation of efforts at capturing whole-building (defined as the whole space under mgmt & control of the customer, which can include tenant space in a larger bldg), deep savings of both electric and gas. Perform assessments and obtain X customer commitments to follow-through with savings of at least Y% building energy savings (gas or electric). To be eligible, buildings must have fossil fuel (eg natural gas, oil) and electric measures and a minimum of 5% of savings from fossil fuel and electric. In order to reach exemplary, you must achieve design. A "commitment" is a signed application or MOU. Note: NGrid Electric 2009 units - X = 3, Y = 20% and NGrid Gas 2009 units - X = 8, Y = 20%									
Threshold: NGrid Gas X	15	$38,590							
Threshold: NGrid Gas Y	20%								
Design: NGrid Gas X			18	$ 51,454					
Design: NGrid Gas Y			20%						
Exemplary: NGrid Gas X					15	$ 64,317			
Exemplary: NGrid Gas Y					25%				
Retrofit - Depth of Savings Gas"X" results:							15	Threshold	$38,590

National Grid Gas MA Performance Metrics and Incentives for 2010

	Target Levels								
	Threshold		Design		Exemplary				
	Units/ Task	Dollars	Units/ Task	Dollars	Units/ Task	Dollars	Actual Units/Task Achieved	Level Achieved	Pre Tax Incentive Achieved To Date
Retrofit - Depth of Savings Gas "Y" results:							20%	Threshold	$38,590
C&I #5: New Construction - Comprehensiveness and depth of savings: Each PA must achieve in a minimum of X% of new construction or substantial/major renovation projects at least an estimated Y% whole building (definated as the whole space under the mgmt & control of the customer, which can include tenant space in a larger bldg) savings (gas & electric) compared to code. Projects completed in 2010 or signed commitments in 2010 with projects under construction can count. Core Performance projects will qualify at the threshold level and count at the Design level if they do at least one Enhanced Strategy and Examplary if they do at least two Enhanced Strategies. In order to reach exemplary, you must achieve design. If total number of new construction or substantial/major renovation projects for a specific PA is less than 4, the PA may meet the design or exemplary level with 1 project, or be exempt from this metric and allocate funds to other metrics proportionally. Note: NGrid Electric 2009 units - X = 8.5%, Y = 20% and NGrid Gas 2009 units - X = 10%, Y = 20%									
Threshold: NGrid Gas X	18%	$38,590							
Threshold: NGrid Gas Y	20%								
Design: NGrid Gas X			20%	$ 51,454					
Design: NGrid Gas Y			20%						
Exemplary: NGrid Gas X					18%	$ 64,317			
Exemplary: NGrid Gas Y					25%				
New Construction - Comprehensiveness and depth of savings Gas "X" results:							34%	Design	$51,454
New Construction - Comprehensiveness and depth of savings Gas "Y" results:							20%		
Subtotal for Commercial & Industrial Metrics:		$164,216		$205,815		$273,693			$156,934
FINANCING & FUNDING METRICS									
Other Funding Metric: Actively participate with DOER, EEAC and/or other stakeholders to aggressively pursue potential sources of other program funding for 2010 by applying for federal, state, municipal or private grants independetly or in conjunction with the DOER to acquire other program funding. Submit documentation detailing actions undertaken specifically by the PA to obtain other program funding. Each PA must successfully attain $X in other funding to offset such PA's energy efficiency program costs in 2010.									
Threshold: NGrid Electric X	$ 627,220	$27,565							
Design: NGrid Electric X			$ 684,240	$ 36,753					
Exemplary: NGrid Electric X					$ 741,260	$ 45,941			
Other Funding Metric - Other Funding "$X" Results:							$ -	None	$0
Other Financing Capital metric: Each PA must expand its current financial products and actively investigate, design and deploy new financial products that, when combined, provide $Y in other financing capital for loans through the energy efficiency programs that are issued in 2010 for customer energy efficiency investments. Submit documentation detailing actions specifically undertaken by the PA and dollars achieved in accordance with this metric.									
Threshold: NGrid Electric Y	$ 1,995,700	$27,565							
Design: NGrid Electric Y			$ 2,166,760	$ 36,753					
Exemplary: NGrid Electric Y					$ 2,337,820	$ 45,941			
Other Financing Metric - Other Financing "$Y" Results:							$ -	None	$0
Subtotal for Financing and Funding Metric:		$55,129		$73,505		$91,882			$0
Total for all Performance Metrics:		$450,887		$588,044		$751,479			$518,719

2010
Residential
Performance Metrics

RES #1
MassSAVE/Weatherization:
Deeper Savings {Electric and Gas} - Statewide

Metric Number	Metric Language
RES #1: MassSAVE/Weatherization: Deeper Savings {Electric and Gas} - Statewide	Achieve an increase in number of customers installing major measures* in 2010 of 2.5%, 5%, and 7.5%** (Threshold, Design, Exemplary) as compared with 2009, and/or achieve an increase in average MMBTU savings per customer installing one or more major measures in 2010 of 2.5%, 5%, and 7.5%*** (Threshold, Design, Exemplary), as compared with customers who installed major measures in 2009. ***

National Grid Acheivements		
Electric		
Increase in number of customers	5%	Design
Increase in average MMBTU savings	90%	Exemplary
Gas		
Increase in number of customers	-43%	Did not meet Threshold
Increase in average MMBTU savings	142%	Exemplary

National Grid Electric Residential Metric#1: MassSAVE/Weatherization: Deeper Savings Metric Report

2010					
MassSave program major measures count	Participants	ThermSavings/per customer	Total Therm Savings	MMBTuSavings	Average Savings/per Customer
Heating System Replacement					
Heating System Replacement, Oil	1,946	83	**161,128.8**	**16,112.9**	
Heating System Replacement, Other FF	50	83	**4,140.0**	**414.0**	
Insulation					
Insulation, Electric	124	88	**10,901.9**	**1,090.2**	
Insulation, Gas	768	298	**228,864.0**	**22,886.4**	
Insulation, Oil	2,351	287	**674,266.8**	**67,426.7**	
Insulation, Other FF	111	134	**14,907.3**	**1,490.7**	
Air Sealing, Electric	133	36	**4,788.0**	**478.8**	
Air Sealing, Gas	583	60	**34,980.0**	**3,498.0**	
Air Sealing, Oil	2,083	60	**124,980.0**	**12,498.0**	
Air Sealing, Other FF	140	60	**8,400.0**	**840.0**	
Indirect & Indirect Water Heater					
Indirect Water Heater, Oil	1,040	80	**83,200.0**	**8,320.0**	
Indirect Water Heater, Other FF	36	80	**2,880.0**	**288.0**	
Unique count Customers who install Major measures in MassSave*	**3,534**		**1,353,436.8**	**135,343.7**	**382.98**
2009 Baseline	**3,375**		**680,870.0**		**201.7**
Progress to GOAL - 2009 Baseline	**5%**		**99%**		**90%**

National Grid Gas Residential Metric #1: MassSAVE /Weatherization: Deeper Savings Metric Report					
	Participants	ThermSavings/per customer	Total Therm Savings	MMBTuSavings	Average Savings/per Customer
Gas Weatherization Participants 2010	4,131	234	966,654.0	96,665.4	
Gas Weatherization Participants also participated Gas Network HEHE&DHW within the year of 2010					
BOILER	34	141	4,794.0	479.4	
BOILERS_90*	185	150	27,750.0	2,775.0	
ECM_FURNACE	6	185	1,110.0	111.0	
ECM_FURNACE_92*****	96	196	18,816.0	1,881.6	
ECM_FURNACE_94**	0	236	0.0	0.0	
FURNACE	44	185	8,140.0	814.0	
FURNACE_92***	0	211	0.0	0.0	
INDIRECT_DHW	158	79	12,482.0	1,248.2	
ON_DEM_TANKLESS_DHW	75	79	5,925.0	592.5	
STEAM_BOILER	20	141	2,820.0	282.0	
STORAGE_WATER_HEATER***'	0	19	0.0	0.0	
Unique count Customers who participant Gas Weatherization/Gas Network	3,534		1,048,491.0	104,849.1	296.7
2009 Baseline	6,162		756,750.0		122.8
Progress to GOAL - 2009 Baseline	-43%		39%		142%

* ** *** **** ***** new measures that the program offered in 2010

MassSave excluded air sealing only but included the air sealing was done in combination with other major measures

RES #2

MassSAVE/Weatherization:
Increase Direct Installation (DI) bulb penetration
{Electric & Gas} – Statewide

Metric	Metric Language	National Grid Electric Targets	National Grid Gas Targets
	Coordinate among all of the residential direct-installation lighting efforts and the Products program on the availability of specialty bulbs for direct installation. Produce a memo from all PAs proposing a strategy to use the current direct-installation bulb procurement process, or an alternative, to ensure the availability of consistent quality specialty bulbs across all PA programs promoting efficient residential lighting. Memo focusing on specialty bulbs to EEAC consultants by April 30, 2010. EEAC consultant comments by May 15, 2010. Final memo by May 30, 2010. Each PA to submit documentation of performance relative to task. Achieve an overall average increase in number of DI bulbs installed per customer served in Q3-Q4 2010 of 25% or an average total of 11 bulbs, whichever is greater. Base year will be 2009. Each PA to submit documentation of performance relative to target.		
RES #2 MassSAVE/Weatherization: Increase Direct Installation (DI) bulb penetration {Electric & Gas} – Statewide	Achieve an overall average increase in number of DI bulbs installed per customer served in Q3-Q4 2010 of 25% or an average total of 11 bulbs, whichever is greater. Base year will be 2009. Each PA to submit documentation of performance relative to target.	**Exemplary: 18.51%**	**Exemplary: 15.26%**

National Grid 2010 CFL Metric Tracking

National Grid Electric	July	August	September	October	November	December	Jul - Dec Total
Screening Visits	571	677	941	1111	1029	1170	5499
Comprehensive Visits	36	33	76	114	103	90	452
Total Customers Served	607	710	1017	1225	1132	1260	5951
CFL's Installed *	10801	13531	19834	23265	20885	21815	110131
Average CFLs per Customer	17.794	19.058	19.502	18.992	18.450	17.313	18.506

National Grid Gas	July	August	September	October	November	December	Jul - Dec Total
Screening Visits	260	315	483	388	248	280	1974
Comprehensive Visits	94	83	134	133	37	17	498
Customers Served	354	398	617	521	285	297	2472
CFL's Installed **	5379	7309	9614	7965	3789	3580	37636
Average CFLs per Customer	15.195	18.364	15.582	15.288	13.295	12.054	15.225

National Grid 2010 CFL Metric

2010 Metric	2009 Baseline	Design (+25%)	Exemplary (+40%)	2010 Metric Results	Metric Achieved
National Grid (Electric)	12.00	15.00	16.80	**18.51**	**Exemplary**
National Grid (Gas)	9.70	12.13	13.58	**15.26**	**Exemplary**

RES #3

CoolSmart: Increase correct installations {Electric} – Statewide

Metric	Metric Language	National Grid Electric Targets	National Grid Electric Final 2010 Production
RES #3 CoolSmart: Increase % of correct installations {Electric} – Statewide	16% of homes participating in the CoolSmart program that receive an efficient equipment rebate for ducted systems will have equipment installations that include both QI (charge and airflow) and proper sizing (based on completed Manual J) services. Each PA to submit documentation of performance relative to target.	Threshold: 16% of Homes Design: 18% of Homes Exemplary: 20% of Homes	**Threshold: 16%**
	18% of homes participating in the CoolSmart program that receive an efficient equipment rebate for ducted systems will have equipment installations that include both QI (charge and airflow) and proper sizing (based on completed Manual J) services. Each PA to submit documentation of performance relative to target.		
	20% (Tier 1) of homes participating in the CoolSmart program that receive an efficient equipment rebate for ducted systems will have equipment installations that include both QI (charge and airflow) and proper sizing (based on completed Manual J) services. Of these 20% of homes receiving equipment rebates and combined QI and sizing/Manual J services 10% (Tier 2) must also participate in the program's duct sealing or ESQI component. Each PA to submit documentation of performance relative to target.		

Metric #3 CoolSmart: Increase % of correct installations (Electric)

National Grid has achieved the THRESHOLD Level for Metric # 3 increasing, by ***16%***, the number of homes participating in the Cool Smart program that received an efficient equipment rebate for ducted systems and had equipment installations that have included both QI (charge and airflow) and proper sizing (completed Manual J) services.

Below the production numbers confirming the 16% increase:

2010 EE Metric - Residential
National Grid COOL Smart Program - Increase % of correct installations
January - December 2010

	January - December 2010
Total Equipment Rebates*****	1562
Equipment Rebates with QI and Manual J (proper sizing)	256
% of Equipment Rebates with QI and Manual J	**16%**
Equipment Rebates with QI and Manual J + Duct Sealing or ESQI	3
% of Equipment Rebates with QI and Manual J + Duct Sealing or ESQI	**1.2%**

*****Excludes Ductless Minisplits

In addition, the following is a list of activities performed by National Grid to achieve the 16% increase resulting in meeting the THRESHOLD Level for this metric:

Activities performed to achieve Sponsor Metric for Packaged Incentives

- Provided 20 Intro to Cool Smart classes to 16 new companies
- Provided refresher classes in QIV to 349 technicians
- Provided 31 new training classes to 68 companies, 47 of which were new to Cool Smart in 2010. Total of 172 new technicians were trained.
- Email blast to all participating contractors about packages
- Follow-up phone calls to all contractors
- Outreach to distributors to enlist their help with reaching their contractors
- Creation and mailing of a certified letter to all contractors advising them of deadline for paperwork submission
- Field staff assisted with the following:
- Manual review of Contractor Incentive Packages, with real time status updates provided to Contractor
- Technical Assistance and training with Manual J Surveys
- Field Training Technicians on site with QIV to further contractor confidence with process

RES #4

Community Initiatives
{Electric & Gas} – Statewide

Metric Number	Metric Language	National Grid Electric Targets	National Grid Electric Final 2010 Production	National Grid Gas Targets	National Grid Gas Final 2010 Production
RES #4 Community Initiatives {Electric & Gas} – Statewide	Each PA will develop and implement at least one (1) community-based initiative, in collaboration with community-based personnel, to deliver energy efficiency services in at least six (6) communities (e.g. cities, towns, neighborhoods) in the Commonwealth. Gas and Electric PAs will cooperate, as appropriate, on initiatives in shared towns. A shared initiative will be counted as one (1) initiative for each PA. Each PA to submit documentation of performance relative to task.	Threshold		Threshold	
	Establish a PA Community Initiatives Working Group to coordinate with any pertinent EEAC working groups, and to coordinate on-going community initiative efforts. Each PA to submit documentation of performance relative to task.	Design		Design	
	Produce a final report documenting the results of the initiatives, including lessons learned, by January 31, 2011. Each PA to submit a memo to EEAC consultants and DOER by January 31, 2011 detailing their distinct and clear role in accomplishing this activity.	Exemplary	**Exemplary**	Exemplary	**Exemplary**

Community Initiatives (Electric and Gas) - Statewide

I. THRESHOLD

The Program Administrators (PAs) have been developing initiatives in conjunction with community partners to advance the aggressive savings goals of the Green Communities Act. The following list summarizes the various community initiatives as led by the PAs who met the Threshold Community Initiative Metric by having developed and implemented at least one community-based initiative to deliver energy-efficiency services with community personnel in at least six communities (e.g., cities, towns, neighborhoods) in the Commonwealth.

List of Community Initiatives and Organizations

Community Initiative	Organization Name	Organization Role Within the Program	Role Description
New Bedford	NSTAR	Electric PA	Program Administrator
	NSTAR	Gas PA	Program Administrator
	Green Jobs Green Economy /Marion Institute	Residential and small business outreach	Market programs to New Bedford businesses and residents
	City of New Bedford	Local Govt. Coordinator	Coordinate and facilitate program delivery with municipal offices
	YouthBuild New Bedford/ PACE, Inc.	Sub-contractors (installers)	Workforce training, weatherization
	Environment Northeast	EEAC representative	
Chelsea	National Grid	Gas PA	Program Administrator
	NSTAR	Electric PA	Program Administrator
	Green Justice Coalition/Community Labor United	Project Coordination	Coordinates program delivery, identifies geographic areas and local contractors
	Chelsea Collaborative	Residential outreach organization	Conducts outreach
	Conservation Services Group (CSG)	Lead Vendor	Audit scheduling, performing the audits, writing the contracts and work orders, providing quality control services, data tracking
	InsulPro	Implementation sub-contractor	Weatherization installer
	Town of Chelsea	City Contact	Assist in permitting; provide voter database information to outreach group
	New England Regional Council of Carpenters	Workforce Development	Establish recruitment goals, recruit Chelsea residents into NERCC Apprentice Training
	Environment Northeast	EEAC representative	EEAC representative

Boston Chinatown	NSTAR	Electric PA	Program Administrator
	National Grid	Gas PA	Program Administrator
	Chinese Progressive Assn.	Residential outreach organization	Conducts outreach
	Green Justice Coalition/Community Labor United	Project Coordination	Coordinates program delivery, identifies geographic areas and local contractors
	Conservation Services Group (CSG)	MultiFamily vendor	Performs MultiFamily Audits
	Next Step Living	1-4 Family vendor	Performs 1-4 Family Audits
	Mass Energy	Renew Boston Partner	Income Verification
	International Union of Painters and Allied Trades DC 35	Workforce Development	Runs "Green Collar Pathways" workforce development program
	Aulson Company	Implementation sub-contractor	Weatherization installer
Western Mass Saves Challenge: Four Towns Amherst Easthampton Ludlow Sunderland	WMECO	Electric PA	Program Administrator
	SmartPower	Project Coordination and outreach to contractors and community groups	Coordinates program delivery, identifies geographic areas, local contractors, and community partners
	Amherst Conservation Task Force	Local Govt. Coordinators	Work with SmartPower to promoting this program across their community.
	Easthampton Conservation Commission		
	Ludlow Conservation Commission		
	Sunderland Conservation Commission		
	Amherst Chamber of Commerce	Business community outreach	Work with SmartPower to promote community outreach through local business participation in Rewards program.
	Easthampton Chamber of Commerce		
	Amherst School Department	Community outreach through students	Working with SmartPower to promote program through student engagement
	Ludlow School Department		
	University of Massachusetts	Grass roots organizations performing outreach to members	Various organizations that are working with program to utilize this program to help them promote environmental stewardship
	Clean Water Action		
	Hitchcock Center for the Environment		
	Massachusetts Interfaith Power & Light		
	Sunderland Women's Club/Men's Club		
Springfield	WMECO	Electric PA	Program Administrator
	Columbia Gas of Massachusetts	Gas PA	Program Administrator
	Alliance to Develop Power	Residential Outreach	Conducts outreach
	United for Hire	Implementation Subcontractor	Weatherization Installer

Springfield	WMECO	Electric PA	Program Administrator
	Columbia Gas of Massachusetts	Gas PA	Program Administrator
	City of Springfield – Green Committee	Local Government coordinator	Conducts outreach
Athol	National Grid	Electric PA	Program Administrator
	Town of Athol Energy Committee	Residential, Small Business outreach and Municipal coordination	Market Programs to residents and small businesses. Coordinate municipal projects.
	North Quabbin Chamber of Commerce	Small Business Outreach	Conducts outreach to small businesses in Athol and surrounding towns
	Conservation Services Group (CSG)	Lead Vendor	Schedules and performs audits, writes the contracts and work orders, provides quality control services, data tracking

II. DESIGN

The PAs established a Community Initiatives Working Group to provide a venue for discussion of community initiatives being planned and implemented throughout the state. The working group also consisted of several members of the EEAC Council that were recommended by Consultant John Livermore. PAs share information on program design, goals and implementation strategies to try and identify best practices, minimize barriers and maximize program impact. The first CIWG meeting was convened on 9/30/2010 at NSTAR headquarters with PAs attending in-person and by phone. A second meeting occurred via teleconference on 11/30/2010. The group intends to meet at a minimum on a quarterly basis. The CIWG includes the following individuals:

NSTAR
Bill Stack
Jan Gudell
Tina Haggerty
Suzanne Farrington

National Grid
Monica Ibrahim
Ellen Pfeiffer
Robert O'Brien
Wendy Todd

Berkshire
Robert Gyurjan

Columbia
Kara Gray

New England Gas
Jim Carey

Unitil
Derek Kimball

Cape Light Compact
Margaret Song

WMECO
Aprille Soderman

Danah Tench ENE
John Livermore Livermore Energy Associates
Danielle Rathbun Attorney General's Office
Lyn Huckabee DOER
Paul Horowitz EEAC Consultant
Mike Guerard Opt Energy

Columbia Gas of Massachusetts and Berkshire Gas have achieved the DESIGN status for this metric.

III. EXEMPLARY

In consideration for the "Exemplary" rating, NSTAR Electric & Gas, WMECO and National Grid, the contributing PAs, submit the following overviews which documents the results of the initiatives and lessons learned. Individual, utility specific, detailed reports will be independently submitted from each PA to document its clear and distinct role in the respective community initiatives.

NSTAR Community Initiatives Overview
NSTAR participated in three community pilot initiatives in 2010: New Bedford, Chinatown and Chelsea. The New Bedford community pilot was the first to launch with NSTAR as the sole PA as NSTAR provides both electric and gas service to the City of New Bedford. The New Bedford pilot is the most mature of all the community pilots in which NSTAR has participated and thus has produced the most extensive body of data, highest participation levels and provided the deepest opportunities for lessons learned. The Chinatown and Chelsea pilots launched later (Fall 2010) and are jointly overseen by

NSTAR as the Electric Program Administrator and National Grid as the Gas Program Administrator. Each pilot is a unique collaboration with local community organizations and weatherization contractors. The community organizations perform outreach to local residents to increase participation levels in the Mass Save 1-4 family and multi-family programs. In addition to helping residents save money and energy, the New Bedford, Chinatown and Chelsea initiatives seek to provide employment opportunities and career pathways for community residents who are trained and qualified to perform residential weatherization work. Attached is a memo describing the New Bedford community initiative in detail, including program partner descriptions, goals, outreach efforts, training, results and lessons learned. The Chelsea and Chinatown pilots started in late 2010 and do not yet have significant results report on at this point.

NSTAR believes it has achieved exemplary status as it has participated in three community initiatives and assumed a leadership role in: creating the Community Initiatives Working Group, scheduling and hosting meetings conference calls, developing the basic procedures and criteria for the New Bedford, Chelsea and Chinatown pilots, developing this report and presenting a unique community grant funding distribution tool created by NSTAR.

Pilot Goals

The goals of each community initiative include:

- Installing weatherization measures in 50 1-4 family dwellings
- Installing weatherization and/or lighting fixtures in 4 multi-family buildings with 5-20 units each
- Provide lighting upgrades to 25 small businesses (New Bedford initiative only)

WMECO Community Initiatives Overview

WMECO participated in community mobilization pilot initiatives in six (6) communities in 2010: Amherst, Easthampton, Sunderland, Ludlow, Pittsfield and Springfield. The largest of the pilot initiatives was "Western Mass Saves Challenge" which combines on-the-ground marketing and outreach, direct mail, a website that engages and interacts with customers (www.westernmasssaves.com), and resources that address many of the barriers that traditionally impeded energy efficiency actions. As a pilot, "Western Mass Saves Challenge" will provide WMECO customers with targeted, personalized recommendations for reducing their home electricity usage, will encourage them to commit to personal savings plans, and will track their progress by analyzing their WMECO bills through a web portal service. When customers save energy relative to a personal baseline determined by their (seasonally-adjusted) energy usage over the course of the previous 12 months, the program will provide them with reward points for each kilowatt-hour they save. Reward points can be used for discounts and merchandise from retailers in Western Massachusetts as administered by RecycleBank. Customers who sign up will receive rewards points

during the pilot program. The pilot rolled out in November 2010 and will continue to grow and broaden throughout 2011. By end of December 2010, more than 1,000 customers had already signed up to engage, review and improve their energy savings through this web-based service. As of the time of this memo, the program continues to grow at a significant rate with close to 2,000 customers engaged by end of January 2011.

While all WMECO customers can utilize the "Western Mass Saves" program, 25,000 customers in nine towns have receive personalized recommendations via direct mail as a starting baseline. These towns include:

Challenge towns

- Amherst
- Easthampton
- Ludlow
- Sunderland

Control towns

- Agawam
- Montgomery
- West Springfield
- Springfield
- Huntington

The four challenge towns noted above will be participating in the "Western Mass Saves Challenge" as a whole community, an effort which offers an incentive in the form of a free 1kw solar PV system to each town that succeeds in achieving its residential energy reduction goals. Outreach has been ongoing to various municipal and local community groups in these towns to enhance local participation. The other towns will be a "control group" by which the pilot will be evaluating the results of the Challenge. Customers will be able to opt out of receiving further mailers using a toll-free number.

Western Mass Saves – (4) Town Challenge Timeline Synopsis:

- Week ending 11/5/10: Mailers sent to 25,000 customers in listed towns
- Week ending 11/12/10: Hard "roll-out" with press releases and other media
- December cycle billing: Bill insert to ALL WMECo customers describing "Western Mass Saves" program
- TBA: Other media and PR events to promote program continue in 2011

In addition to the Western Mass Saves Challenge, WMECO also developed a broad-based pilot for Pittsfield, MA in collaboration with Berkshire Gas, CET and local community organizations. This pilot was designed to educate and motivate residents of Pittsfield and surrounding communities to increase awareness and adoption of energy efficiency and renewable energy programs. In particular, efforts were made to reach underserved, hard-to-reach households. On behalf of WMECO and Berkshire Gas, CET employed multiple strategies to engage with such local stakeholder groups as the

Pittsfield Green Commission, Chamber of Commerce, Pittsfield Community TV, Berkshire County HR Directors, West Side Neighborhood Steering Committee, Pittsfield Rental Association and the Superintendent of Pittsfield Public Schools. The community organizations perform outreach to local residents to increase participation levels in the Mass Save 1-4 family and multi-family programs. In addition to helping residents save money and energy, this pilot also seeks to enhance awareness, education and career development for community residents who are trained and qualified to perform residential weatherization work. Neighborhood informational meetings, large employer presentations and outreach, and civic events will continue to be a focus throughout 2011, as this pilot continues to its community mission.

In the southern portion of its service territory, WMECO and Columbia Gas also began development in 2010 of a Springfield area pilot designed to engage collaboratively with community-based Alliance to Develop Power (ADP) as a weatherization subcontractor working with Environmental Compliance Services, of Agawam, MA as a newly registered Home Performance contractor for WMECO. Seventy-five (75) homes will be served with audit and weatherization services in the first phase of this pilot. It is expected that upon successful completion of these homes, ADP and ECS will revisit with WMECO, the future expansion of other neighborhood initiatives in greater Springfield, MA and surrounding communities.

National Grid Community Initiatives

In addition to the Chelsea and Chinatown community pilots jointly administered with NSTAR, National Grid participated in another community initiative in the western Massachusetts semi-rural town of Athol. Goals of this community initiative were to create a scalable model for a community driven, no-to-low cost community initiative using only pre-existing program design and delivery elements. This initiative also tested the viability of community outreach to increase residential and business energy efficiency participation in this underserved town. Further details on National Grid's involvement and lessons learned from the Chelsea Community Mobilization Initiative and Athol community initiative can be found in the National Grid specific memo.

INFRASTRUCTURE METRIC: COMMUNITY INITIATIVES

TO: EEAC CONSULTANTS AND DOER

FROM: NATIONAL GRID

SUBJECT: INFRASTRUCTURE METRIC: COMMUNITY INITIATIVES

DATE: 06/20/2011

The purpose of this memo is to satisfy the Exemplary Level of the Mass Save Metric: Community Initiatives for National Grid.

4. Community Initiatives {Electric & Gas} - Statewide	
Exemplary	Produce a final report documenting the results of the initiatives, including lessons learned, by January 31, 2011. Each PA to submit a memo to EEAC consultants and DOER by January 31, 2011 detailing their distinct and clear role in accomplishing this activity.

Overview

In consideration for the "Exemplary" rating, National Grid submits the following report which documents in detail the results and lessons learned from the Company's community initiatives involvement in 2010 and their distinct and clear role in accomplishing this activity. The joint Program Administrator (PA) memo to achieve exemplary status was submitted to EEAC consultants and the DOER on January 31, 2011.

In 2010, National Grid convened an internal working group in order to develop a standard process for organizing responses to community customer requests for National Grid support of energy efficiency and green activities. The goals of the working group are to drive energy efficiency program participation and savings achievement, drive energy efficiency program awareness and increase customer satisfaction. Through these efforts, the Company performed an extensive inventory of existing community projects, investigated peer utility models and best practices across the country and Canada, and is currently finalizing a comprehensive community response program to serve the needs of National Grid's 1.2 million customers within the state of Massachusetts. Also in 2010, the Company started and headed an AESP communities working group with utilities across the country in order to learn from best practices and share successes and challenges in managing community based programs. Both working groups continue into 2011.

In additional, National Grid believes it has achieved exemplary status as it has participated as an active member in two Community Mobilization Initiatives (CMI's) in 2010, serving as the Program Administrator (PA) lead in Chelsea and partnering with NStar in Chinatown. For the purposes of this metric, the Company will focus on their efforts in the town of Athol, a non-CMI, standard community outreach effort, and the Chelsea CMI. The report below describes the results of these two initiatives.

I. Athol

One initiative that arose in 2010 is in Athol, a community in which National Grid provides electric service. In 2010, Athol was designated a Green Community, and in that capacity, was eager to increase energy efficiency among its residents and businesses. In July 2010, National Grid began initial talks with the town of Athol and has been working in close partnership with the community to improve building energy performance and to advance the Green Community Action Plan for a sustainable energy future in the North Quabbin area.

A. Pilot Goals

The goals of the Athol Community Initiative are:

- Create a scalable model for a community driven, no-to-low cost community initiative using only pre-existing program design and delivery elements.

- Test viability of community outreach to increase residential and business energy efficiency participation in underserved semi-rural areas of Massachusetts.

B. Partners – Qualifications and Responsibilities

1. National Grid
   Qualifications
   National Grid is the Mass Save Program Administrator for Athol.

   Responsibilities
   National Grid is responsible for all aspects of program administration. Primary responsibilities include managing the process/program design effort and collecting and analyzing program data, especially as it pertains to customer behavior.

2. Town of Athol Energy Committee
   Qualifications
   The Town of Athol Energy Committee is extremely active and has the full support of the town manager. The committee demonstrated it's competence in gaining regional support and applying for Green Community status.

   Responsibilities
   Following initial meetings with National Grid, the committee developed a detailed action plan for educating citizens on energy efficiency and increasing energy efficiency program participation. Responsibilities outlined included residential and small business outreach effort including training, personnel management, data tracking, media outreach and event planning, as well as coordination of municipal projects.

3. North Quabbin Chamber of Commerce
   Qualifications
   The Chamber of Commerce fully supports Athol's goals as a green community. It has an active membership from nine towns in the region, including Athol.

   Responsibilities
   The Chamber of Commerce is responsible for outreach to small business customers.

C. Training

1. National Grid

   National Grid staff trained Athol town manager, energy committee members, and North Quabbin Chamber of Commerce on National Grid efficiency programs and incentives, as well as best practices in low cost/no cost energy efficiency community outreach from across the country.

D. Outreach

1. Go Green Event / North Quabbin Buy Local Fair

   National Grid partnered with Athol to host a Go Green Event for families in conjunction with the annual North Quabbin Buy Local Vendor Fair on December 11, 2010. National Grid staff trained Athol Volunteers to work at several tables highlighting family oriented energy efficiency education and arts and crafts as well as Residential and Small Business energy assessment sign ups.

   a. As part of the Whole Building Assessment (WBA) Program noted below, National Grid donated 500 CFLs and cookies with the Athol town seal. People who bought an Athol cookie for $1, also received a free gift of a CFL. Proceeds of the fundraiser go to Athol to execute an Energy efficiency related project of their choice.

   b. Children learned about leaky windows and doors by making their own draft block critters. They also created magnets with friendly reminders to their families to turn off lights, only start the dishwasher when it is full, etc.

   c. National Grid Staff and Athol Volunteers used kill-o-watts to teach all ages about the energy consumption of various household appliances. A kill-o-watt is an electricity usage monitor that connects to appliances and shows how efficient they are.

   d. National Grid lighting specialists were on hand to educate residents and small businesses about choices in efficient lighting as well as smart strips technology.

   e. Interested customers signed up to participate for free home energy assessments and National Grid's lead vendor, Conservation Services Group, followed up with all interested participants.

2. North Quabbin Chamber of Commerce Small Business Meeting

   The Chamber hosted a breakfast meeting where small businesses could learn about National Grid's direct install program and sign up to participate.

3. Main Streets Program

   In coordination with the town of Athol and the North Quabbin Chamber of Commerce, National Grid sponsored a main streets promotion for Athol. National Grid small business vendor, PRISM, sent a mailing to all small businesses in Athol, alerting them of a special sign-up opportunity for their town only, the week of December 12th. Athol volunteers did personal outreach to let businesses know of the opportunity and encourage them to sign up. The week of December 12th, Prism auditors canvassed the town and audited all those businesses which had signed up. In addition, they stopped in any additional businesses that did not sign up to give them a personal invitation to get an audit.

4. WJDF Radio Partnership

   After attending the Go Green Event and being impressed with National Grid's presence, local radio station WJDF offered a corporate sponsorship of their non-stop Christmas music

program on December 24th and 25th. National Grid was mentioned each half hour as the sponsor of the initiative.

5. Whole Building Assessment
   Athol Energy committee and the town manager have committed to move forward with a Whole Building Assessment of their town buildings. The Town Hall and the high school will be audited in Q1 of 2011. Each WBA also highlights education for building occupants, bridging the gap between C&I and Residential. The Athol Energy Committee will be responsible for locating and training energy efficiency champions in each of the buildings to assist in the education of building occupants. The education will include National Grid's award-winning Power to Save educational campaign for students and their families.

E. Results for 2010

2010 has been primarily a start up year for the Athol community initiative, beginning in mid summer. The Buy Local Vendor Fair attracted over 200 visitors. For the Direct Install program, Athol had a baseline of 16 audits out of 386 businesses in 2009. In 2010, there were no audits scheduled until the kick-off of small business outreach in November. At the Chamber of Commerce event, there were 48 participants, a very high turnout for these types of meetings. There have been historically low small business participation numbers in the Athol community, with a maximum of 16 small business audits in 2009. Since the direct-install pilot launched in November 2010, average monthly participation rates have increased by 300%. As a result of the community efforts made in Athol in 2010, the town also committed to a Whole Building Assessment of its town hall and high school in Q1 of 2011.

In the residential sector, the town of Athol increased its 1-4 family audit count from 49 audits completed between July to December 2009 to 64 audits completed within the same months of the pilot running in 2011, a 23% increase in completed audits in the same timeframe. With a dedicated insulation contractor operating in the community, weatherization rates have continued to remain stable as residents of this semi rural region have participated in the program. As the pilot progresses, residential outreach will be tracked and monitored further in 2011. National Grid looks forward to furthering their community partnership with Athol in 2011.

F. Lessons Learned: Athol

- Personal attention and assistance to the community group is essential for a successful initiative.
- Efforts to partner with communities through in-kind services can substantially increase customer awareness, participation and satisfaction.
- Even through a non-standard Community Mobilization Initiative (CMI), setting clear and quantifiable participation goals will help the community evaluate their own success and mobilize accordingly.
- Towns designated as MA Green Communities are good candidates for further efficiency outreach, education and partnership.
- Additional strategies such as increased consulting, displaying public artwork, small business main streets pilots, public relations, contests, duel-branded collateral, and community events are effective in garnering increased interest and participation in National Grid's efficiency programs.

II. Chelsea

The Chelsea pilot is jointly overseen by National Grid as the Gas Program Administrator and NStar as the Electric Program Administrator. Initial discussions began in Spring 2010 with the Chelsea Collaborative as the local residential outreach organization, Community Labor United as the Green Justice Coalition representative, and National Grid and NStar. Once finalizing the contract and receiving a final proposal from the Chelsea Collaborative in the fall, a training session with outreach staff took place in November 2010. Conservation Services Group (CSG) participated in the training along with the utilities, in educating the Chelsea Collaborative about all facets of the outreach and tracking the Collaborative would be performing. The pilot officially kicked off in December 2010 with 28 customer audits scheduled within the month.

A. Pilot Goals

The goals of the Chelsea Community Initiative, as in the other CMI's include:

- Installing weatherization measures in 50 1-4 family dwellings
- Installing weatherization and/or lighting fixtures in 4 multi-family buildings with 5-20 units each

B. Partners – Qualifications and Responsibilities

1. National Grid
   Qualifications
   National Grid is the Mass Save Program Administrator for gas customers in Chelsea.

   Responsibilities
   As the lead for the Chelsea CMI, primary responsibilities for National Grid include managing the process/program design effort and collecting and analyzing program data, especially as it pertains to customer behavior.

2. NSTAR Electric & Gas
   Qualifications
   NStar is the Mass Save Program Administrator for electric customers in Chelsea.

   Responsibilities
   NStar is working with National Grid in delivering this pilot in Chelsea.

3. The Chelsea Collaborative
   Qualifications
   The Chelsea Collaborative, working for twenty-three years within the Chelsea community, has a mission to enhance the social, environmental and economic health of the community and its people. The mission is carried out by various programs at the Collaborative. In a given year, the Collaborative mobilizes more than 3,000 people for its various campaigns and projects. The CMI is led by the Chelsea Collaborative's Green Space and Recreation Committee (Green Space), a Committee working on improving Chelsea's urban environment for the past 16 years. The Chelsea Collaborative has the reputation and experience to knock on doors, engage the community and ensure their experience will be a positive one with any and all projects being sponsored or co-sponsored by the Collaborative. Their office is well known, recognized and publically accessible in the heart of the city with staff as residents of Chelsea.

Responsibilities
The Chelsea Collaborative's responsibilities include hiring and managing Chelsea residents to conduct outreach as part of the CMI. The Collaborative oversees all aspects of the outreach effort including training, personnel management, data tracking, media outreach and event planning.

4. Green Justice Coalition and Community Labor United
Qualifications
Through a program of coalition building, research and policy development, public education and grassroots mobilization, the Green Justice Coalition and Community Labor United move forward policies that promote quality jobs, secure healthcare and affordable housing for all of the Boston area's working people.

Responsibilities
The Green Justice Coalition and Community Labor United coordinate program delivery, make sure the goals are met, identify geographic areas and identify local contractors.

5. New England Regional Council of Carpenters (NERCC)
Qualifications
The New England Regional Council of Carpenters represents 22,000 carpenters, pile drivers, shop and millmen, and floorcoverers working in the New England states of Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont.

Responsibilities
The New England Regional Council of Carpenters (NERCC) is a union partner in training and workforce development objectives for the CMI.

6. Chelsea Bank
Qualifications
Chelsea Bank is a mutual, community bank serving the financial needs of Chelsea and surrounding communities. The Bank strives to provide customer oriented products and service while maintaining financial stability and soundness. The Bank's Board, management and staff will maintain a working partnership with its community, keeping in mind the good corporate citizen philosophy. The bank was incorporated in 1885. All deposits are fully insured by FDIC (Federal Deposit Insurance Corp.) and SIF (Share Insurance Fund), and they are an equal opportunity lender.

Responsibilities
The Chelsea Bank is a partner in providing gap financing from the David Rockefeller Foundation, New World Foundation and the Surdna Foundation. The bank has made $100,000 available for micro-loans to Chelsea residents. The bank provided information to the Chelsea Collaborative on mortgage-owners that meet the requirement of 60% -120% of area median income for a Chelsea Collaborative mailing to community residents.

6. City of Chelsea
Qualifications
The City of Chelsea is a strong supporter of the Chelsea Collaborative and the weatherization goals associated with the Chelsea CMI pilot.

Responsibilities

The role of the City Manager in the pilot is to coordinate city services that support the pilot, through receiving weatherization specs from the participating contractor to determine what permits are required.

7. Conservation Services Group (CSG)

Qualifications

Conservation Services Group (CSG) has several decades of experience in the field of energy efficiency services. CSG is currently serving as the Lead Vendor for the Mass Save program services offered in the National Grid service territory.

Responsibilities

CSG continued with their role as Lead Vendor, just as they do for the traditional Mass Save program. This requires audit scheduling, performing the audits, writing the contracts and work orders and providing quality control services. In Chelsea's case, each week CSG opens up extra capacity for the outreach group to schedule audits as part of their outreach in the community. CSG is also responsible for data tracking.

8. Insul Pro Inc.

Qualifications

Insul Pro has been working in the field of residential weatherization for several years and is a qualified subcontractor under lead vendor CSG.

Responsibilities

Insul-Pro is the contractor for measure installation in Chelsea. Insul-Pro supplies insulation to homeowners and numerous insulation & building contractors. More than 50% of Insul-Pro, Inc.'s business is from insulation and supplying light density fiberglass batt insulation. In an effort to keep up with the newest and latest trends in insulation, Insul-Pro, Inc. began spraying Icynene and Wall Spray Cellulose. Icynene spray-in-place foam and Wall Spray Cellulose make up a considerable portion of Insul-Pro, Inc's business and looks to grow in the future. Insul-Pro, Inc. also installs: gutters & downspouts, roofing and vinyl siding.

E. Training

1. Outreach

Technical Training – National Grid/NStar/CSG

National Grid, NStar and CSG collaborated to develop training. In November 2010, National Grid and NStar provided information on the Mass Save program and the process to be used for the pilot. CSG presented product samples used in the program and gave an overview of the audit and weatherization process.

2. Audit and Weatherization Shadowing

Audit and Weatherization participation

Members of the Chelsea Collaborative Green Space and Recreation Committee attend CSG audits on a weekly basis to get a better understanding of the process and recommendations made to Chelsea residents.

F. Outreach

1. Cable TV Show

In early December 2010, a taped cable TV session began airing, informing Chelsea residents of the Chelsea CMI pilot and weatherization opportunities, while providing contact information for viewers.

2. Chelsea Collaborative Open House
A welcome event for Chelsea residents took place in December 2010, and many attendees signed up for audits; a strong start for the Chelsea Collaborative outreach efforts.

3. Neighborhood group event
100 families attended this event where Chelsea CMI fliers were distributed.

4. Chelsea Collaborative Holiday Gala
This fundraising event was held as an opportunity for the Chelsea Collaborative to recognize the many volunteers and projects taking place that sustain the community throughout the year. National Grid participated as an attendee and financial sponsor of the event.

5. Three Kings Day Event
This holiday celebration was held in January 2011 as an opportunity to spread news of Chelsea pilot and get further audit signups.

6. Chelsea Collaborative Membership Retreat
This retreat, held in late January 2011 served as an additional opportunity to spread news of Chelsea pilot.

7. Hiring of Additional Staff
The Chelsea Collaborative has brought on additional staff to perform data entry and income verification so that the outreach staff can spend additional time on their outreach work.

G. Air Sealing and Insulation Work

As the program was only running for one month by years end, there were no air sealing or insulation work orders in the pipeline. With continued outreach in 2011, the Company anticipates further air sealing and insulation jobs scheduled in 2011.

H. Program Oversight and Decision Making

Led by National Grid, the steering committee was comprised of CSG Business Development, Chelsea Collaborative Green Space members, NStar program manager, and a Community Labor United representative. The purpose of the Steering Committee was to monitor progress and resolve issues. Weekly agendas and meeting notes were distributed by National Grid.

I. Results for 2010

28 1-4 family audits were scheduled and completed by December 31, 2010. There were no completed multi-family audits by years end. Because the pilot began in late 2010, full metrics on success are not fully comprehensive, but the following information exists to date.

Summary of Chelsea Collaborative Outreach and Program Participation in Chelsea Mobilization Initiative to date, as of January 26, 2011

Category	Total
Low Income Households Reached	12 households
60% - 120% Income Households Reached	30 households – (participating in program)
120% Income Households Reached	None
In- Process/Awaiting Documentation	15 households
Rejected Weatherization Program	1 household
Received Initial Screening Audit (1-4 family)	28 households (as of 12/31/10)

Received Initial Screening Audit (MultiFamily)	0 households (as of 12/31/10)

Outreach/Events	Estimated/Reached
Initial meetings with different Chelsea Collaborative committees	60 persons
FUEL meeting – 2 meetings	150 persons
Thanksgiving Day Dinner with CUDE: Chelsea United in Defense of Education	58 persons
Thanksgiving Day Lunch (Centro)	150 persons
Initial mailing bilingual flyer to Chelsea Collaborative list	406 households
Chelsea Collaborative Open House	45 persons
Flyers distributed at Chelsea Bank	100 persons
City of Chelsea: All Chelsea Awards Night	100 persons
Outreach to MultiFamily Property Owners (5-20 Units)	5 property owners
Second mailing: Bilingual flyer (to a specific Chelsea neighborhood)	330 households
Three Kings Day Event	75 persons
Chelsea Collaborative Membership Retreat	90 persons
Third mailing Bilingual Flyer	426 households
Town manager email to Chelsea residents	500 persons/households
Chelsea CMI flier in town water and sewer bills	5000 persons/households
Chelsea Cable TV Interview	Unable to be tracked
Bilingual Press Release: 2 times in Chelsea Ledger Twice, 1 time in Siglo21 Hispanic Newspaper in New England	Unable to be tracked

J. Lessons Learned: Chelsea

- While various stakeholders want to be involved in a community-based effort, not everyone has the training and resources necessary to participate.

- Subcontractors must be equipped with the training and qualifications necessary to participate as part of the MassSave program before committing to a community based pilot program.

- Establishing a timeline prior to pilot launch is essential, and flexibility must exist by all stakeholders. A clear understanding of everyone's scope of work is key and scheduling must be adhered to in order to move forward. Maintaining the right balance in frequency of communication and meetings with all stakeholders is important.

- It is key to get full buy-in and support from the city government or local community group. Their resources, participation and trust within the community are essential for a successful initiative.

- Documenting Best Practices of outreach and audit scheduling and documenting questions faced is useful in maintaining clear scopes of work and priorities.

- Marketing must be mutually developed. In the case of distinct communities local input should be encouraged. Co-branding is essential to mitigate any chance of brand confusion.

- It is essential to work out logistics around scheduling of audits and maintain an open communication with utility sponsor and lead vendor performing the audits.

- Outreach staff must be equipped with the knowledge and resources necessary to address pre-weatherization barriers with interested participants.

- With older housing stock and landlord identification challenges, it is difficult to reach certain segments in a community. Outreach staff must be very vigilant in following up with owners of multi-family properties in order to ensure follow through.

- Outreach groups have a strong influence in the community. When their mission is not just a green mission but community growth and civil service, they have greater success and buy-in from the community they serve.

- Buy-in and support of lead vendor is essential in pilot success. CSG providing the Outreach staff with blocks of time for scheduling audits is the most effective strategy.

Conclusion

National Grid will continue the Athol community initiative into 2011 and will investigate further opportunities for community partnership through the Company's internal community working group, while continuing to be a key player in the joint PA communities working group and the AESP working group, sharing best practices and strategies with fellow PA's. The Chinatown and Chelsea pilots will continue into 2011 until project goals are reached or the project deadlines are reached, whichever comes first. In 2011, National Grid anticipates heading a National Grid only CMI in the town of Lynn, serving as the gas and electric Program Administrator. In conclusion, National Grid feels that with their community efforts in the town of Athol, as well as their active involvement in the Chinatown CMI and leadership in the Chelsea CMI in 2011, the Company is deserving of exemplary status on this metric.

RES #5

MassSAVE: Facilitate Inclusion of Independent Energy Auditors {Electric & Gas} – Statewide

Metric Number	Metric Language	National Grid Electric Targets	National Grid Electric Final 2010 Production	National Grid Gas Targets	National Grid Gas Final 2010 Production
RES #5 MassSAVE: Facilitate Inclusion of Independent Energy Auditors {Electric & Gas} – Statewide	To address the need to engage independent energy auditors in the auditing services of the RCS auditing service of the MassSAVE program, the PAs will: Document the standards for vendor services (e.g. accreditation/certifications, cost-effectiveness, administration, reporting to DOER and PAs, training requirements, pricing) and provide a detailed specification on each component of the new program audit process. Prepare and send an RFQ to independent energy auditors to determine the approximate pool of qualified individuals and companies. Each PA to submit a memo to EEAC consultants and DOER by May 1, 2010 detailing their distinct and clear role in accomplishing these activities.	Threshold	**Exemplary**	Threshold	**Exemplary**
	Each PA will work to expand the pool of independent auditors, indentified through the RFQ process, qualified to deliver auditing services in the Commonwealth. Each PA will coordinate with their primary vendor to integrate customers brought to the program by pre-qualified independent energy auditors. Each PA to submit a memo to EEAC consultants and DOER by July 1, 2010 detailing their distinct and clear role in accomplishing this activity.	Design		Design	
	Prepare a statewide multi-PA report documenting the initiative to be delivered to EEAC consultants and DOER by January 15, 2011. Include in the report lessons learned and recommendations for continuing efforts to expand the program services delivery base.	Exemplary		Exemplary	

National Grid
2010 Residential Metric # 5
Threshold 5/1/10 Memo

Metric 5. MassSave: Facilitate Inclusion of Independent Energy Auditors (Electric & Gas) – Statewide

Threshold: To address the need to engage independent auditors in the auditing services of the RCS auditing service of the MassSave program, the PA's will:
Document the standards for vendor services (e.g. accreditation/certification, cost-effectiveness, administration, reporting to DOER and PA's, training requirements, pricing) and provide a detailed specification on each component of the new program and audit process.

Prepare and send an RFQ to independent energy auditors to determine the approximate pool of qualified individuals and companies.

Each PA to submit a memo to EEAC consultants and DOER by May 1, 2010 detailing their distinct and clear role in accomplishing these activities.

National Grid Response:

National Grid worked with its lead vendor Conservation Services Group to create a pilot process whereby independent auditors could work in the MassSave program. To that end:

3/10/10 - RFQ sent out answered by 19 respondents.

3/25/10 - RFP # 10-002 was issued to 9 respondents.

4/30/10 – RFP process completed by 8 of the respondents.

5/12/10, and 5/14/10 Interviews set up for final 8 candidates.

June, 2010 Finalists should start auditing.

From: Hanna, Jerome
Sent: Friday, July 09, 2010 2:48 PM
To: Mallett, Graceann J.
Subject: FW: MassSave Metric: Explore inclusion of Energy Professionals Statewide

FYI

From: Hanna, Jerome
Sent: Thursday, July 01, 2010 7:40 PM
To: 'jglivermore@yahoo.com'; 'jerrylyn.huchabee@state.ma.us'; O'Brien, Robert P. (US-NBRO-RS)
Subject: MassSave Metric: Explore inclusion of Energy Professionals Statewide

National Grid in accordance to the following Metric is reporting on its completion of reaching the Design level.

Design: Each PA will work to expand the pool of independent auditors, identified through the RFQ process, qualified to deliver auditing services in the Commonwealth. Each PA will coordinate with there primary Vendor to integrate customers brought to the program by pre-qualified independent energy auditors. Each PA to submit a memo to EEAC consultants and DOER by July 1, 2010 detailing their distinct and clear role in accomplishing this activity.

Results: National Grids, lead vendor, in the April of 2010, initiated an RFQ to approximately 50 companies 19 companies showed interest in continuing the process. The next step to follow was an RFP to the 19 interested companies. This resulted in 8 companies successfully completing the RFP process and moving on to be interviewed.

National Grids lead vendor conducted interviews with the 8 companies and chose 3 to participate in the audit program.

The independent audit companies were trained by National Grids lead vendor in June 2010 and will start in the field July 6, 2010.

I believe the actions taken by National Grid and its lead vendor achieve the intent of the design level of this metric.

Yours truly,

Jerry Hanna
National Grid
Principal Analyst
MassSave Program manager.

MASS SAVE® METRIC: FACILITATE INCLUSION OF INDEPENDENT ENERGY AUDITORS (ELECTRIC & GAS) STATEWIDE

TO: EEAC CONSULTANTS AND DOER

FROM: PARTICIPATING MASSACHUSETTS PROGRAM ADMINISTRATORS

SUBJECT: MASS SAVE METRIC: FACILITATE INCLUSION OF INDEPENDENT ENERGY AUDITORS – EXEMPLARY LEVEL MEMO

DATE: 1/14/2011

The purpose of this memo is to satisfy the Exemplary Level of the Mass Save Metric: Facilitate Inclusion of Independent Audit Providers (IAPs).

5. MassSAVE: Facilitate Inclusion of Independent Energy Auditors (Electric & Gas) – Statewide	
Exemplary	Prepare a statewide multi-PA report documenting the initiative to be delivered to EEAC consultants and DOER by January 15, 2011. Include in the report lessons learned and recommendations for continuing efforts to expand the program services delivery base. Each PA to submit a memo to EEAC consultants and DOER by January 31, 2011 detailing their distinct and clear role in preparing the report.

OVERVIEW

The Massachusetts Electric and Gas Program Administrators (PAs) are committed to providing pathways for the inclusion of qualified energy professionals in utility sponsored programs. The PAs began planning for the inclusion of Independent Audit Providers (IAPs) in the Residential Conservation Services (RCS) program in early 2010.

Through a competitive procurement process, each PA maintains a contract with a Lead RCS Implementation Vendor.

Organization	Lead Vendor
NSTAR Electric & Gas	Conservation Services Group (CSG)
National Grid Electric & Gas	Conservation Services Group
Western Massachusetts Electric Company	Center for Ecological Technology (CET)
Berkshire Gas Company	Center for Ecological Technology
Columbia Gas of Massachusetts	Honeywell
New England Gas Company	Honeywell
Unitil	Energy Efficient Investments (EEI)

Included in the PAs' contracts with their respective Lead Vendors is the delivery of residential home energy assessments. In order to maximize participation of eligible IAPs in the RCS program, participating PAs engaged their Lead Vendor to partner in developing a Request for Qualifications

(RFQ) and some of the PAs issued a subsequent Request for Proposals (RFP) to potential Independent Audit Providers.

The RFP solicited IAPs to perform all levels of home energy assessments offered via the RCS program as a subcontractor to the PA Lead Vendors for the period of July, 2010 through December, 2010. PAs requested that their Lead Vendors provide programmatic training, software, hardware, collateral, as well as, technical and data transfer support to all selected bidders.

Throughout this initiative, the PAs remained highly engaged in this process, working collaboratively with their Lead Vendors to maximize the effectiveness of IAP inclusion. The PAs have collaborated with their Lead Vendors to understand the challenges and lessons learned via this pilot. The lessons learned were used to develop recommendations for the future RCS program re-design model.

INTRODUCTION

To begin the IAP integration process, bids were solicited on behalf of the PAs for the role of Independent Audit Providers only. However, feedback from interested organizations suggested that the bidders were not interested in solely providing energy audits, but to also provide implementation of weatherization measures. The PAs considered the bidders' request and concluded that it was reasonable to incorporate these organizations as audit and weatherization subcontractors. As a result of this change, the organizations were integrated into the program in a Home Performance Contractor (HPC) role, rather than solely as audit providers.

In order to facilitate the capability of the HPCs to implement weatherization measures, HPCs were subcontracted as audit providers in the pilot, as well as weatherization installers to the PAs' Lead Vendor. All weatherization measures implemented by HPCs were installed at PA specific program prices. Although the work was offered and implemented by the HPCs, under the contract of the Lead Vendor, PAs Lead Vendors were ultimately responsible to ensure the work was completed to program standards.

Below is a summary of each participating PA's information related to this initiative.

Participating Program Administrator Organization	**Number of IAPs**	**Dates IAPs Provided Services**	**Number of Jobs IAPs Performed (as of Y/E 2010)**	
			# of Audits	**# of Wx Jobs**
NSTAR Electric & Gas	3	July 2010 – Present	897	73
National Grid Electric & Gas	3	July 2010 – Present	522	31
Western Massachusetts Electric Company	5	October 2010 - Present	173	16
Berkshire Gas Company	4	October 2010 - Present	12	0

**Please Note: Additional information regarding HPC production can be found in Attachment A

LESSONS LEARNED AND RECOMENDATIONS

The following are eight identified areas where PAs believe enhancements can be made to the HPC integration process for the future RCS program model. Each area includes summaries of lessons learned throughout this initiative with supporting recommendations for improvement.

I. Training

Lessons Learned

Based upon the qualifications presented by the HPCs through the RFP process, the HPCs selected possessed adequate knowledge and proficiency in completing whole house, fuel blind assessments. Therefore, the PAs directed their Lead Vendors to focus training on programmatic and procedural elements. Training was provided by the Lead Vendor to HPC in-field energy auditors, as well as, administrative/back office staff. The HPC staff received classroom training on software, program offerings, (including incentives and the HEAT Loan) expectations for data transfers, reporting, creating contracts, accurately filling out paperwork, and dealing with health and safety concerns. Throughout this initiative, Lead Vendors provided ongoing training and support for technical, software, reporting, and programmatic related questions.

Recommendations

Although HPCs underwent five days of classroom training during the start up phase of the pilot, the Lead Vendor continued to provide training and support throughout the engagement. The HPCs possessed qualifications such as BPI Building Analyst or Envelope Professional certifications and/or company accreditation. While these credentials are important from a building science perspective related to the development of work scopes for energy efficiency improvements; certifications alone do not guarantee an individual is skilled in all aspects of whole house auditing, sales, or customer service. In addition to training the HPCs prior to the program start; it is important that Lead Vendors provide a direct line of communication for ongoing training, mentoring and all other aspects of program delivery.

II. Consistency

Lessons Learned

With multiple market actors involved in implementing the program, it is important to maintain consistency in the services provided to support the integrity of the Mass Save program. It was the expectation of the PAs that HPCs were to offer the program to customers in a manner consistent with the current RCS program design and offerings. This includes conveying a consistent message, distributing consistent materials and offering customers consistent services. (Dependent on customer need and cost-effectiveness of offerings)

Recommendations

Providing appropriate training and maintaining adequate oversight of HPCs will be necessary going forward to ensure all market actors are conveying a consistent message to customers. It is important that HPCs represent themselves appropriately as participating Mass Save contractors to avoid any customer confusion. As the RCS program evolves in 2011 to expand the number of HPCs working within the program, it is recommended that information regarding HPCs association with the PAs programs and oversight of the HPCs operation be available to customers via the Mass Save website

and other program collateral. It is critical that it is made clear to the marketplace that HPCs are contractors working under the direction of the PAs through their Lead Vendors providing approved RCS program services in an integrated manner and not independent service providers in competition with the RCS program. HPCs must be appropriately monitored to assure that consistent and accurate information is being provided to customers. A high level of oversight will minimize the inevitable market confusion that should be anticipated as the RCS program transitions to an open market model.

III. Customer Confusion

Lessons Learned

Customer service in all facets is of the highest priority to the PAs. PAs strive to avoid any confusion related to the various steps and the multiple parties involved. HPCs are expected to guide customers throughout the entire process including customer follow up as necessary and timely submission of all customer related data. HPCs are expected to be respectful and courteous to the customer in all situations including all customer interactions. Implementation of the program should be as seamless as possible for all customers.

Recommendations

A clear distinction should be made to customers that all contractors and subcontractors represent Mass Save Home Energy Services and although there are various parties involved, program offerings need to be represented to consumers as being provided by their local utility and not the independent contractors.

It is the intention of the PAs to develop clear guidelines related to HPC logo use, HPCs articulation of their engagement with the program, approval of marketing materials, control over services offered, and terms of service to minimize confusion in the marketplace and to maintain the Mass Save brand.

Detailed guidelines should be put in place outlining PAs' expectations regarding HPC customer service. Additionally, HPCs will be expected to meet the audit volume submitted to the PAs and Lead Vendors, which will be one of several metrics that will be necessary to monitor HPC performance.

IV. Customer Service

Lessons Learned

Customer service should be well defined; maintaining an excellent level of customer service is expected of all representatives and contractors. HPCs may have competing interests in balancing deployment of staff and resources for their engagement with the RCS program versus other aspects of their businesses. Therefore, it must be clearly articulated to the HPCs that commitments made to the RCS program must be met. For example, last minute cancellations of customer appointments for audits or installations due to competing priorities are unacceptable and should be monitored through customer surveys and follow-up.

Recommendations

Clear guidelines for expectations of customer service should be defined, and performance monitored. In addition to in-process and post inspections of work done by the Lead Vendor, follow-up surveys should be conducted to gather important feedback regarding the customer experience. This follow-up is important to ensure customers are being offered consistent program services and that a high level of customer satisfaction is being achieved. Furthermore, HPCs are expected to make customers aware of the one point of contact for all related questions or concerns.

V. Integration of Existing Systems

Lessons Learned

HPCs were provided with the Lead Vendors' audit software and trained on its use. The audit and workflow systems the Lead Vendors currently have in place were not designed for the integration of external service providers. The current contracts under which the Lead Vendors were operating in 2010 were for turnkey services. The PAs requested that their Lead Vendors work with HPCs on a pilot basis to gain a better understanding related to the process of seamlessly incorporating qualified HPCs on a larger scale in the future. The lessons learned will assist HPC integration into the new market model being discussed and designed through the multi year planning process with the EEAC and DOER.

The PAs recognized that it was not plausible for their Lead Vendors to make significant investment in information technology systems in 2010. The decision of PAs to eliminate any requirement of Lead Vendors to implement costly technology upgrades was based on the planned pilot representing a relatively low number of projected HPC audits. The term of existing Lead Vendor contracts and the fact that the new market model was still under development also guided the PA decisions.

Recommendations

As the market of external service providers expands, systems and/or procedures should be put in place to accommodate and optimize data sharing, as well as, create an efficient integration process. Work flow management should be incorporated in order for PAs and the Lead Vendors to view what stage of the process customers are engaged in. The PAs have articulated the new market model and requirements for integration of qualified HPCs in their current RFPs for Lead Vendors.

* HPCs in the Berkshire Gas pilot program were not trained on audit software use due to the small size of the pilot program. Software training time would have exceeded the time spent performing audits. The Lead Vendor entered the data from audits based on the HPC paperwork.

VI. Broad Knowledge of Residential Program Offerings

Lessons Learned

The local utilities offer a multitude of programs to our customers. This requires that auditors maintain a broad knowledge of all residential programs and details to ensure they are advising the customers on the most cost-effective energy efficiency improvements available. Understanding the volume of program offerings requires auditors to expand their professional knowledge beyond their particular specialty to incorporate appropriate recommendations made available by all residential programs.

Recommendations

Auditors should be well versed on the array of residential program offerings and understand when those recommendations are appropriate for customers. Lead Vendors must be tasked with providing ongoing communication and training to the HPCs related to all residential program offerings as the conduit between the PAs and the HPCs. The PAs are continually working to improve and enhance all of their programs. Therefore, information on current offerings must be consistently provided to the customer.

VII. Quality Control (QC)

Lessons Learned

To maintain a high quality program, robust QC is necessary when many market actors are working within a program. QC of data, audits, and implementation should be done in order to ensure our customers are receiving consistent, safe, and cost-effective energy efficiency recommendations. Throughout this initiative a high level of QC was required despite the credentials of the IAPs.

Recommendations

QC of installed measure and billing data within the HPC organization is necessary prior to data submittal to the Lead Vendor in order to avoid arduous administrative burden. Additionally, in-process and post inspections should be completed by the Lead Vendor for work done by HPCs in order to ensure consistent and high quality service. In the future, extensive QC will be completed by the Lead Vendor and an independent third party QC vendor. In order to maintain this robust level of QC, HPCs must maintain transparency and communication with the Lead Vendor to ensure a seamless and efficient process.

VIII. Metrics

Lessons Learned

Setting clear metrics is another important lesson learned throughout this initiative. HPCs must be required to meet certain metrics to ensure the broader goals of the program are achieved rather than the goals of each individual participating HPC. Guidelines should be developed that outline tracking, incentives, and any corrective action that could result if program goals are not achieved.

Recommendations

HPCs must be provided with clear expectations as to the performance metrics of which they will be evaluated. HPC metrics should be similar to the metrics of Lead Vendors. The metrics attributed to HPCs should reflect the ability of HPCs to selectively recruit and properly serve designated customer segments. To achieve the PAs aggressive goals for participation and energy savings in 2011; all service providers must be provided with clear expectations related to performance metrics. Performance against defined metrics should be tied to the number of customers HPCs can serve to allow the PAs to effectively manage their budgets and assure that the RCS program meets cost effectiveness expectations.

CONCLUSION

The Massachusetts Electric and Gas Program Administrators look forward to implementing the future design of the Residential Conservation Services program to incorporate the inclusion of additional HPCs. The PAs found this engagement to be extremely valuable in identifying potential barriers and allowing time for appropriate recommendations to be incorporated for future engagements. It is the expectation of the PAs that these lessons learned will be used to maximize the effectiveness of the inclusion of HPCs. This initiative, continuous communication between PAs, Lead Vendors and HPCs will provide insight to improve HPC integration in the future. The lessons learned and recommendations listed above will be considered by the PAs to integrate HPCs more seamlessly as the 2011 RCS market model is deployed.

Home Performance Contractor Production Analysis

NSTAR

	Number of Audits*	Number of Completed Weatherization Jobs**
Green Guild	190	17
Next Step Living	634	42
Wellhome	73	14
Total	897	73

National Grid

	Number of Audits*	Number of Completed Weatherization Jobs**
Green Guild	250	14
Next Step Living	182	12
Wellhome	90	5
Total	522	31

Berkshire Gas

	Number of Audits*	Number of Completed Weatherization Jobs
Co-op Power	4	0
Cozy Home Performance	6	0
Environmental Compliance Services (ECS)	0	0
Energia	2	0
Total	12	0

Western Massachusetts Electric Company

	Number of Audits*	Number of Completed Weatherization Jobs**
Co-op Power	26	1
Cozy Home Performance	14	0
Environmental Compliance Services	10	1
Energia	18	0
Next Step Living	89	14
Total	157	16

**The number of audits includes all site visits and does not indicate the number of distinct customers served.*

***Please Note: The weatherization jobs noted have been completed as of this report and additional completed weatherization jobs are expected to occur beyond this date. Additionally, 11 NSTAR weatherization jobs and 6 National Grid weatherization jobs are in various stages of verification related to invoicing discrepancies and/or QC related issues.*

2010
Low Income Performance Metrics

Low Income #1

Hard to Reach Landlords

Metric Number	Metric Language	National Grid Electric Targets	National Grid Electric Final 2010 Production	National Grid Gas Targets	National Grid Gas Final 2010 Production
Low Income #1. Hard to Reach Landlords {Electric & Gas} – Statewide	Establish a subcommittee consisting of members of the Best Practices Working Group with representatives from all gas and electric program administrators to design and develop a cost-effective statewide landlord early retirement high efficiency heating incentive initiative. Incentive Plan should target single family (1-4 units) and should be completed by August 1st, 2010.	Threshold	**Exemplary**	Threshold	**Exemplary**
	Each program administrator to develop a database consisting of landlords in their respective service territories of low-income tenants that pay their own heating bills by September 30th 2010.	Design		Design	
	Working group to develop and initiate a statewide marketing plan prior to 2010-2011 heating season. Each program administrator to use their individual database to target market and submit a final report of participation and any lessons learned to the Best Practices Working Group by January, 30th 2011.	Exemplary		Exemplary	

2010 Low Income Metric One

NSTAR Electric & Gas, National Grid, Western Massachusetts Electric Company, Fitchburg Gas & Electric Company, Columbia Gas of Massachusetts, Berkshire Gas Company and New England Gas Company are submitting this report to update the Low Income Energy Affordability Network (LEAN) on the status of the 2010 low income metric number one.

1. Hard to Reach Landlords {Electric & Gas} – Statewide	
Threshold	Establish a subcommittee consisting of members of the Best Practices Working Group with representatives from all gas and electric program administrators to design and develop a (cost-effective) statewide landlord early retirement high efficiency heating incentive initiative. Incentive Plan should target single family (1-4 units) and should be completed by August 1st, 2010.
Design	Each program administrator to develop a database consisting of landlords in their respective service territories of low-income tenants that pay their own heating bills by September 30th 2010.
Exemplary	Working group to develop and initiate a statewide marketing plan prior to 2010 heating season. Each program administrator to use their individual database to target market and submit a final report of participation and any lessons learned to the Best Practices Working Group by January, 30th 2011.

We believe that by completion and documentation of these tasks, NSTAR Electric & Gas, National Grid, Western Massachusetts Electric Company, Fitchburg Gas & Electric Company, Columbia Gas of Massachusetts, Berkshire Gas Company and New England Gas Company have completed the 2010 low income metric number one as described at the exemplary level.

Respectfully submitted by:

Diane M. Lopes
Residential Program Manager
NSTAR Electric & Gas

Diana Duffy
Senior Program Manager
National Grid

Deborah E. Sas
Senior Project Administrator
Western Massachusetts Electric Company

Derek T. Kimball
Residential Programs Coordinator
Unitil Service Corporation

Kara A. Gray
Program Manager
Columbia Gas of Massachusetts

Robert Gyurjan
Lead Analyst – Energy Services
The Berkshire Gas Company

Jeanne B. Cherry
Lead Energy Efficiency Programs Administrator
New England Gas Company

Marketing Plan for Landlord Heating Incentive Initiative for 1-4 units

The development of a **Statewide Marketing Plan** began when PAs determined how best to reach this historically elusive and specific customer segment in time for the 2010 heating season, starting in September. With the support of LEAN, the PAs agreed to launch its marketing campaign using direct mail to connect with potential landlords. The PA's sought a direct connection to potential metric candidates using data on these customers that each PA could generate.

Targeted Direct Mailing – Developmental Process

Specific Target Audience:

- Landlords with low-income tenants, where tenants pay for heat

Specific Method:

- Query landlords of low-income tenants from internal PA databases
- Establish data queries to generate information to yield at least 5% of landlords identified by database

Determine Outreach Frequency:

Varies by PA based on number of landlords in database, as well as the availability of local agency staff, who are best equipped to verify quality of leads

Medium – finalized in September

- Direct mail issued from each PA, designed specifically for their territory, and quality of leads from each database. (See attached for PA specific letters/flyers)
- PAs mailed PA specific letter to landlords in their service territory

Content:

Letter/flyer released by each PA

Enhanced Marketing Effort:

When possible, attend landlord association-type meetings
- Sept. 29 – Greenfield Landlord Association
- Oct. 9 – Springfield Residential Landlord Association
- Nov. 18 – Westfield Landlord Business Association

Metric 1: Hard to Reach Landlords

Subcommittee of the members of the Best Practices Working Group, which included representatives from all gas and electric utilities, develop, market and execute a statewide landlord early retirement high efficiency heating incentive initiative for single family (1-4 units)

Metric Achievements
THRESHOLD

- Established a Best Practices subcommittee which included representatives from all gas and electric Program Administrators
- Initial meeting held on April 13, 2010
    - initiated a sub-committee of PAs and lead agency vendors to work collaboratively on this effort
    - Reviewed NSTAR pilot
    - Discussed ways to obtain data for this initiative
- Other meetings/conference calls held:
    - May 4, 2010
    - May 24, 2010
    - June 2, 2010
    - June 8, 2010
    - July 16, 2010
    - September 16, 2010
    - September 21, 2010
    - September 27, 2010
    - October 7, 2010
    - October 13, 2010
    - October 15, 2010
    - November 9, 2010

- Developed a statewide plan in collaboration and approved by LEAN (See The Low-Income 1-4 Family Building Heating System Early Retirement Initiative Description attached)
    - Achieved Threshold status on June 8,2010

DESIGN
Each utility worked with their internal departments to identify where sources of data existed.

- Each PA had similar data mining methods
    - PAs worked with their IT departments to identify the best methods to extract appropriate data
    - Berkshire Gas– worked with IT to extract names and addresses for landlords with tenant accounts on the low-income rate for marketing outreach

- Columbia Gas – worked with IT to extract names and addresses for landlords with tenant accounts on the low-income rate for marketing outreach
- National Grid - worked closely with its Lead agency to come up with a targeted list of landlord properties with gas heat that received low income weatherization services during 2010
- New England Gas – Collaborated with local landlord representatives to compile a community list of landlords
- NSTAR- worked with IT to extract any residential discount electric/gas customer account from our CIS system with owner information on the account, scrubbed the data removing incomplete, unusable or duplicate information and created a database for marketing outreach
- Unitil– used the local yellow pages and worked with IT to extract names and addresses for landlords with tenant accounts on the low-income rate for marketing outreach
- WMECO - worked with IT to extract any residential discount electric customer account from our CS2 system with landlord information on the account along with data mining from the CLMTRS internal database

- Design level achieved varies per utility
  - Berkshire Gas-August
  - Columbia Gas -July
  - National Grid - September
  - New England Gas - August
  - NSTAR - August
  - Unitil - August
  - WMECO-August

EXEMPLARY

Outreach activities

- PAs developed a generic letter to target landlord (See attached for PA specific letters/flyers)
- Attended landlord association meeting
  - Sept. 29 – in Springfield – Greenfield Landlord Association
  - Oct. 9 – in Springfield – Springfield Residential Landlord Association
  - Nov. 18 – in Westfield – Westfield Landlord Business Association
- Approximately six MMI referrals were redirected to the local Community Action Agencies (CAA)
- Finalized marketing plan in late September
  - PAs mailed PA specific letter to LL in their service territory. Some starting in October
    - Berkshire Gas-November 19
    - Columbia Gas – October 18
    - National Grid – November 29
    - New England Gas – December 20
    - NSTAR – October 15
    - Unitil – December 20
    - WMECO-October 15

	Number of Landlords Identified	Number of letters sent	Tenant Heating systems replaced*
Berkshire	1500	19	0
Columbia Gas	197	197	0
National Grid	89	40	0
New England Gas	25	3	0
NSTAR	7000	600	58
Unitil	5	5	0
Wmeco	3000	600	0

*As of this writing, tenant systems have been replaced but cannot be traced definitive to program because 1) qualifying leads and the subsequent installation can take several weeks/months and 2) There is no existing tracking system in place to report this to the utilities.

Some utilities opted to limit the number of letters sent to landlords in order to better manage demand. There was some concern that an uptick in this initiative might divert too many resources away from the overall goals and objectives of the Low-Income Program.

Barriers/Lessons Learned

In the Fall and Winter of 2010, the utilities and their Community Action Agency (CAA) partners have been actively marketing the Heating System Early Retirement Initiative to landlords through direct mailings and presentations at local landlord association events. One newspaper, the Berkshire Eagle, ran an article about the initiative in a November 2010 issue.
The Electric and Gas utilities have compiled the following observations and recommendations regarding the 2010 Metric. These categories highlight the experience the utilities have collectively had since the initiative's inception.

Utility & Landlord Data Reliability:

- Seeking qualifying customer information through fuel assistance and utility databases is more difficult due to current privacy laws.

- Due to confidentiality requirements, tenant LIHEAP information cannot be shared with landlords without consent from tenants or with utilities for marketing purposes.
- Landlord data may be incorrect. Utility databases may not capture most current landlord/owner name and address. In addition, the data is not typically updated. Landlord information is not available unless landlord requests to be put on the account in case of a unit vacancy.
- The process for requesting and receiving customer data from some utility companies is tedious. IT department's priorities have been established per IT management. Incoming data requests of this nature may not be a high priority thus information can take a considerable amount of time. Specialty queries may have to be written to identify landlord information and the results may not be complete.
- Heating system installations being installed through Metric # 1 are not tracked directly to specific marketing efforts.
- Utilities do not have one standard method to track and report this Metric result.

Utility & Landlord Budgets & Costs:

UTILITY:

- Lack of specific budget – this metric was contemplated after budgets were approved and not included in the Statewide 3-year Energy Efficiency Plan for low income programs.
- General concern that the utility weatherization programs will become heating system replacement programs. The dollars spent for this Metric alone will diminish the total dollars available for all other weatherization services and heating system replacements for low income customers.
- Smaller utilities can provide fewer systems to fewer landlords. There is a question of the prioritization and equity to qualified landlords and tenants. Should 1 house receive 4 new heating systems at a total cost of $18,000 or should 4 landlords receive one system each? How many per building/address can be installed if qualified? How many per landlord with multiple sites?

LANDLORD:

- Landlord Return on Investment - Some landlords want to upgrade the current heating system but cannot afford the upfront dollars for the co-pay or the pre-installation work that may be required. For example asbestos removal and chimney liners are additional costs that would need to be covered by the landlord. These expensive add-ons may be beyond what a landlord would spend if they replaced the current system with a less efficient model.

Resources:

- Each CAA that administers their utility weatherization programs has different levels of expertise and staffing capabilities (time, resources, etc) for handling the landlord initiative. More detailed information is required to review and

approve/disapprove a candidate with multiple heating systems and/or properties.
- Current utility mailings are creating the CAA's to chase bad leads which is diverting resources from the core goals and objectives of the program and the initiative.
- Prioritization of CAA limited staffing resources that may take away resources from current utility weatherization programs.

Exposure/Liability:
- Any mass marketing efforts have and could generate high demand. This could potentially put PAs at risk to exceed budgets.
- Misinformation could be disseminated about the program that leads to distrust and frustration with utility conservation programs not being able to meet the needs of landlords and tenants.

Other Issues:
- The 2 year rent freeze is a barrier to sign up and cannot be enforced by the utilities.
- The installation of a new heating system requires the heating contractor to pull a permit. This opens the door to code officials inspecting the building(s). Some landlords don't want exposure if additional code violations are identified and they incur additional costs as a result of the heating system upgrade.
- Some landlords have expressed interest in switching from oil to gas. This is not allowed under the HEARTWAP or initiative guidelines.
- Landlords that have made inquiries have included owners of 4 units to 400 unit buildings. Landlords with more than 4 units are now looking for the same incentive through other weatherization programs.
- Several interested landlords have empty apartments in their buildings. This initiative was not designed to address these units which are not occupied by low-income tenants.
- Installing heating systems in an un-insulated 1-4 family building may not accomplish the desired energy savings without a whole building approach. Through better, more qualified leads the initiative can address this issue.
- In some locations, multiple agencies administer heating system replacement programs. This causes confusion to landlords seeking these services.

Observations and Recommendations based on Lesson Learned:
- The landlord heating system campaign has received more responses that anticipated. Some utilities and CAA's have attended local landlord association events. They have been well received and all flyers describing the program were taken. There is a need a definite need and interest from landlords.
- Landlords that are advocates for energy efficiency have been an asset to getting the word out about all programs through word of mouth.
- This is initiative has very stringent requirements which is hard to address in a mass marketing appeal.

- The Community Action Agencies are a trusted local resource in their communities.
- Based upon the barriers and lessons learned, the utilities believe the local CAA's are better equipped to manage a tenant/landlord relationship, determine heating system eligibility, marketing the program to qualified landlords and tenants versus utility database lists and mailings, and manage this program and their workloads throughout the year. The most appropriate candidates will be identified and the process will be smoother and easier to manage budgets and resources. This will allow PAs to control cost, quantity, exposure and relieve resources of following poor leads.

The Low Income 1 to 4 Family Building Heating System Early Retirement Initiative Description

Background:

In many instances landlords of low income one to four family rental housing may not invest in heating system replacements for their income producing properties until the existing heating equipment becomes degraded to the point that it is totally inoperable and no longer repairable. If they do replace the heating system, typically an energy efficient unit is not installed. In both situations, this directly impacts the tenant's energy use. Tenants have no choice other than to pay high heating bills during the coldest winter months and beyond as a direct result of old, inefficient heating equipment and choose between basic essentials and keeping their families warm. Across all Massachusetts communities, a large number of low income tenants live in aging housing stock with old and inefficient heating systems.

Currently, all weatherization funding sources only allow replacement of owner occupied heating systems. Therefore, the Massachusetts utility Program Administrators (PA's) believe one of the best ways to reduce these tenants' high heating bills is to introduce a plan encouraging landlords in this housing sector to replace or retire inefficient heating systems with new, reliable, high efficiency models.

Plan Overview & Design:

The PA's plan to implement a heating system early retirement program to encourage landlords to replace inefficient heating equipment with high efficiency heating equipment (e.g., ENERGY STAR rated or equivalent). The Massachusetts utility programs propose to adopt and operate using the standards and protocols currently used by the Department of Housing and Community Development (DHCD) HEARTWAP Heating System Program, which is implemented statewide by the Low Income Energy Affordability Network (LEAN). The financial incentive per heating system will be 100% of the total installed cost up to $4500.00. Landlords will be required to agree to a 2 year rent freeze on all units benefitting from the new heating system installation and subsequent lower utility bills.

The PA's plan to offer the financial incentive through an approved delivery mechanism negotiated and supported by LEAN and its low income vendors. Processing and administration of the incentives and installed equipment inspections will be the responsibility of the low income vendors.

Cost Effectiveness:

All Massachusetts utilities Low Income Weatherization Programs were tested for cost effectiveness using the Total Resource Cost Test as specified by the Department in Energy Efficiency Guidelines, D.P.U. 08-50-B, specifically page 48, section 3.4.3 and were found to be cost effective.

Proposed Implementation Date:

The PA's plan to begin the Heating System Early Retirement Program in the fall of 2010.

Proposed Budget:

Funding for the incentives will not be specifically earmarked for this program and the proposed budget will be incorporated into the existing utility low income budgets and measure offering portfolio.

NSTAR ACCTS

Account	Customer	Street Address	Street	St/Rd	Town	Landlord Name	Landlord Address	City	State	Zip

NGRID

sample headings

Client Name	Client City	[redacted]	CAP contact	Job Total	Own/ Rent	Landlord Name	Landlord Address	Landlord City	Landlord Zip

2010 WMECO LIMF Landlord/CLMTRS Tracking system categories

wo_num	canc_code	ep_code	status	elec_code	cap_code	dwell_code	last_name	first_name	middle_ini	address	city	state	zip	apt	floor
Work Order number	Cancel Code	Sub Program Code	Complete/ Cancelled	Electric Co name	CAA name	Structure type	Customer Last Name								

h_phone	w_phone	best_time	elec_acct	gas_acct	gas_code	hincome	hsize	hchildren	hhandicap	helderly	**lrdname**	**lrdaddress**
Home Phone	Work Phone	Best time to Call				Household Income	Household size	# of children	# of disabled	# of elderly	landlord name	

lrdcity	lrdstate	lrdzip	lrdpermisn	signature	lastwinter	thiswinter	date_comp	date_tocap	date_keyec	date_canc	custno	primaryfue
			Landlord Permissio n yes/no	landlord Signature	If on fuel last winter	If on fuel this winter	Date Completed	Work Order issue Date	Date key entered	Date cancelled	Customer Number	Primary Fuel Type

secondaryf	hotwater	program	rentown	cust_ts	sbest_time	scorapprov	ssource	mcomments	progdispla
Secondary fuel type	Fuel that heats hot water	WMECO	Rent or own	Customer date	Best time to call	Yes	Accounting code	Comments	WMECO

LIST OF ALL ACTIVE LANDLORD TENANT ACCOUNTS ON BSG LOW INCOME RATE

LANDLORD CUST AC(unique	LANDLORD NAME	MAILING /	MAILING /	LANDLOR PHONE	TENANT CUST AC(	TENANT SERV AC(	SERVICE PLAN	SERVICE PLAN OPT	SERVICE PLAN OPT DESC	TENANT NAME	SERVICE ADDRE	SERVICE ADDRESS LINE2	TENANT PHONE	SITE ID	Agency

BERKSHIRE GAS

Location No	Person No	Relationshp Type	Owner True/False	Start Dt	End Dt	Relationship Name	Relationship Mailling Address	Relationship Mailling City	Location Address	Location City

NEW ENGLAND GAS

Salutation	First Name	Last Name	Business Name	Business Address - Street	City	State	ZIP	Phone #	Service Address	# units (for srvc add)	Master Metered (Y/N)	# Gas Heat Meters	Rate Code(s)

NSTAR ELECTRIC GAS
One NSTAR Way
Westwood, Massachusetts 02090

Date

RE: Tenant Heating System Replacement Program

Dear Owner:

NSTAR is offering a program which will pay up to $4,500 to install a new, energy efficient heating system for income eligible tenants you may be interested in taking advantage of.

We've developed this incentive program to encourage the replacement of old, inefficient heating systems to significantly reduce energy consumption and high bills for our neediest rental customers. The program will be administered by local community action agencies and will install high efficiency heating equipment using protocols and standards established through the Department of Housing and Community Development HEARTWAP Program.

To be eligible for an oil or gas heating system replacement, projects must meet the following criteria:

1 – The oil or gas heating system to be replaced must:
: be operational
: be grossly inefficient
: be installed in a 1-4 family home
: serve only one unit versus multiple units

2 – Tenant must:
: Pay their own oil or gas bill
: Be an NSTAR customer
: Qualify for fuel assistance

Note: if the cost of heating is included in the rent, these systems do not qualify.

3 – Landlord must:
: Agree to freeze rents for two years at their current level for units that receive a new heating system
: Pay for costs not covered by NSTAR. (Depending on the local agency, there may be other sources of funds available.)

4 – Replacement equipment must be certified by ENERGY STAR and the replacement project must be done in accordance with Massachusetts standards (contractor must have insurance and a license; three bids are required before hiring a contractor, etc.) Your Community Action Program will manage the securing of contractors and provide a quality verification of the installation after the project is complete.

If you have a tenant(s) that qualifies for Fuel Assistance and are interested in this great opportunity, please contact the community action agency for your tenant's town by calling 866-537-7267 and entering the 5 digit zip code for that property.

Sincerely,

NSTAR Electric and Gas

NGRID LETTER

ATTENTION LANDLORDS

You may qualify for up to $4500.00 towards a new, efficient heating system for your tenants!

For a VERY limited time, National Grid and its Massachusetts community action agencies can offer qualified landlords

a Complete Heating System Replacement

(gas models only)

The Details:

- The **Existing Heating System for your tenants** must be operating at below 70% AFUE.
- The heating system can only serve **one apartment/unit.** Heating systems that serve more than one unit will not qualify

Your Tenants must:

- Pay their own GAS heating bills. (**Heating cannot be included in rental payment**).
- Have received weatherization measures through National Grid's Income-eligible weatherization program during 2010, and be the National Grid customer of record at the address where those services were delivered.

The Landlord must:

- Pay for all costs not covered by National Grid. This would include any fees above $4,500 that National Grid would provide for the installed heating system.
- Agree to have the heating system replacement installed by March 1st 2011.

Local community action agencies that partner with National Grid will manage the project, secure contractors, and provide post-installation quality verification inspections.

All replacements will be completed in accordance with state codes and standards (e.g., Energy Star or equivalent equipment, appropriate contractor license and insurance, three bids, etc.)

Want to learn more?

Email Diana.Duffy@us.ngrid.com, or
Call 781-907-1573
We'll connect you to the CAP that can serve your qualified rental property

Western Massachusetts Electric

A Northeast Utilities Company

RE: **NEW Landlord/Tenant Oil or Propane Heating System Replacement Program**

Dear Owner:

Western Massachusetts Electric Company has a **NEW program** which will pay **up to $4,500** to install a new energy efficient **oil or propane** heating system for income eligible tenants. This program is specifically for income eligible tenants and is administered by local community action agencies. The purpose of the program is to help tenants who live in housing that has old and inefficient oil or propane heating systems to significantly lower their energy costs.

To be eligible for an oil or propane heating system replacement, projects must meet the following criteria:

1 – The oil or propane heating system to be replaced must:
- : be grossly inefficient.
- : be operational.
- : be installed in a 1-4 family home.
- : serve only one unit versus multiple units.

2 – Tenant must:
- : pay their own oil/propane heating bill and be a WMECO customer.
- : be qualified for fuel assistance and/or WMECO's Discount Electric Rate.

Note: if the cost of heating is included in the rent, these systems do not qualify.

3 – Landlord must:
- : agree to freeze all rents for two years at their current level for the units that receive a new heating system.
- : pay for all costs in excess of $4,500 not covered by WMECO.

Note: Depending on the local community action agency, there may be other sources of funding available to supplement the cost of the heating system replacement. Contact your local community action agency for further information.

4 – Replacements must be done in accordance with state and local standards (e.g., Energy Star equipment, appropriate contractor insurance and license, 3 bids). Your local community action agencies will manage the securing of the contractors, oversee the installation and will provide a post quality verification installation.

If you are interested in this great opportunity, please contact the appropriate community action agency for your town by calling 866-537-7267 and entering the 5 digit zip code for your property. You may also visit the www.masssave.com website under the "home" tab and click on Income Eligible Programs and the "Get Started" tab.

Find out about this great opportunity today!

Sincerely,

Western Massachusetts Electric Company

October, 2010

LL name
LL address
LL town, state zip

RE: Tenant Heating System Replacement Program

Dear Landlord Name:

Columbia Gas of Massachusetts – the new name Bay State Gas – is offering a limited time program which will pay up to $4,500 to install a new, energy efficient heating system for income eligible tenants.

We've developed this incentive program to encourage the replacement of old, inefficient heating systems to significantly reduce energy consumption and high bills for our neediest rental customers. The program will be administered by local community action agencies and will install high efficiency heating equipment using protocols and standards established through the Department of Housing and Community Development HEARTWAP Program.

To be eligible for natural gas heating system replacement, projects must meet the following criteria:

1) The natural gas heating system to be replaced must:
- Be operating and functional
- Be grossly inefficient

2) Tenant must:
- Pay their own natural gas bill
- Be a Columbia Gas customer
- Certified for fuel assistance

3) Landlord must:
- Agree to freeze rent increases for two years
- Pay for costs not covered by Columbia Gas (Depending on the local agency, there may be other sources of funds available.)

4) Replacements must be done in accordance with state standards (e.g., Energy Star equipment, appropriate contractor insurance and license, 3 bids). Local community action agencies will manage the securing of the contractors and provide a post quality verification installation.

If you have a tenant that qualifies for Fuel Assistance and are interested in this great opportunity, please contact the community action agency for your tenant's town by calling 866-537-7267 and entering the 5 digit zip code for your property. This is a limited time offer and all requests should be made **no later than December 31, 2010.**

Sincerely,

Kara Gray
Program Manager
Columbia Gas of Massachusetts

November, 2010

LL name
LL address
LL town, state zip

RE: Tenant Heating System Replacement Program

Dear Landlord Name:

Berkshire Gas Company is offering a limited time program which will pay up to $4,500 towards the installation of a new, energy efficient heating system for income eligible tenants.

We've developed this incentive program to encourage the replacement of old, inefficient heating systems to significantly reduce energy consumption and heating bills for our low income customers. The program will be administered by local Community Action Agencies (Berkshire Community Action Council or Community Action of the Franklin, Hampshire and North Quabbin Regions. The agencies will coordinate the installation of high efficiency heating equipment using protocols and standards established through the Department of Housing and Community Development HEARTWAP Program.

To be eligible for natural gas heating system replacement, projects must meet the following criteria:

1) The natural gas heating system to be replaced must:
- Be operating and functional
- Be grossly inefficient

2) Tenant must:
- Pay their own natural gas bill
- Be a Berkshire Gas heating customer
- Be certified for fuel assistance

3) Landlord must:
- Agree to freeze rent increases for two years
- Pay for costs not covered by Berkshire Gas (Depending on the local agency, there may be additional sources of funding available.)

4) Replacements must be done in accordance with state standards (e.g., Energy Star equipment, appropriate contractor insurance and license, 3 bids). Local community action agencies will manage the securing of the contractors and provide a post quality verification installation.

If you have a tenant that qualifies for Fuel Assistance and are interested in this unique opportunity, please contact the Community Action Agency covering your tenant's town by calling 866-537-7267 and entering the 5 digit zip code for your property. This is a limited time offer and all requests should be made to the local agency **no later than December 31, 2010.**

Sincerely,

Robert Gyurjan
The Berkshire Gas Company

December 21, 2010

New England Gas Company

[redacted]

FILE COPY

RE: Tenant Heating System Replacement Program

Dear [redacted]:

New England Gas Company is offering a limited time program which will pay up to $4,500 towards the installation of a new, energy efficient heating system for income eligible tenants.

We've developed this incentive program to encourage the replacement of old, inefficient heating systems to significantly reduce energy consumption and heating bills for our low income customers. The program will be administered by local our Community Action Agency (Citizens for Citizens - CFC). CFC will coordinate the installation of high efficiency heating equipment using protocols and standards established through the Department of Housing and Community Development HEARTWAP Program.

To be eligible for natural gas heating system replacement, projects must meet the following criteria:

1) The natural gas heating system to be replaced must:
   - Be operating and functional
   - Be grossly inefficient

2) Tenant must:
   - Pay their own natural gas bill
   - Be a New England Gas heating customer
   - Be certified for fuel assistance

3) Landlord must:
   - Agree to freeze rent increases for two years
   - Pay for costs not covered by New England Gas (Depending on the local agency, there may be additional sources of funding available.)

4) Replacements must be done in accordance with state standards (e.g., Energy Star equipment, appropriate contractor insurance and license, 3 bids). Local community action agencies will manage the securing of the contractors and provide a post quality verification installation.

If you have a tenant that qualifies for Fuel Assistance and are interested in this unique opportunity, please contact the Community Action Agency covering your tenant's town by calling 866-537-7267 and entering the 5 digit zip code for your property. This is a limited time offer and all requests should be made to the local agency **no later than December 31, 2010.**

Sincerely,

James J. Carey
Marketing Manager

Cc: Trish Walker – New England Gas, Joe Silvia - CFC

Special Offer for Landlords

Tenant heating system replacement program

NSTAR will pay up to **$ 4,500 to install an efficient new heating system** for income eligible tenants.

Attached is information about the oil and gas heating system replacement program for low income tenants recently introduced by NSTAR and administered by local energy assistance agencies. The purpose of the program is to help tenants who have inefficient heating systems to significantly lower their energy costs and thereby free-up money for other basic needs.

To be eligible for an oil or gas heating system replacement, projects must meet the following criteria:

1. The oil or gas heating system to be replaced must be grossly inefficient.

2. Tenant must:
   - pay their own oil or gas bill and be a NSTAR electric or gas customer;
   - be qualified for fuel assistance.

3. Landlord must:
   - agree to limit rent increases for 2 years;
   - pay for costs not covered by NSTAR. Depending on the local agency, there may be other sources of funds available.

4. Replacements must be done in accordance with state standards (e.g., Energy Star equipment, appropriate contractor insurance and license, 3 bids). Low income energy assistance agencies will manage the securing of the contractors, and will provide a post installation energy efficiency inspection.

If any of your members are interested please contact the appropriate person for your town listed on the information sheet which will be emailed to all board members and is available on www.massrha.com members only area.

If you need further information, please contact:
Bruce Ledgerwood (617) 780-6759

This is an excellent opportunity for MRHA members that are NSTAR customers. You may forward this offer to other interested landlords.

Sincerely,
Massachusetts Rental Housing Association

Landlords Tenants Home Buyers Home Owners

Come Talk to the Experts!

Rental Housing Association of Berkshire County (RHABC) is inviting you to an event with service professionals to help answer your questions and network your needs.

The RHABC has brought together the following Community Resources:

Berkshire County Regional Housing Authority
Berkshire Housing Development Corp.
Berkshire Gas
Berkshire Pest Control
Carr Hardware
Center for Ecological Technology
Childhood Lead Poisoning Prevention Program
Coakley, Pierpan & Dolan Insurance **
Colt Insurance **
Greylock Federal Credit Union
Habitat for Humanity
Hashim & Spinola Attorney
Mass Fair Housing
National Vinyl Products
New England Fence Company
Pittsfield Community Development Office
V&L Cleaning Service
Western Mass Electric Company
WJ Blueprints & Digital Graphics

** **Bring a copy of your homeowner's insurance policy. The policy will be reviewed for you at no charge.**

Zucchini's Restaurant

Refreshments will be served.

November 16, 2010

6:00-8:00pm

Who to bring: Everyone!

This event is open to the public

www.RHABC.com Landlords Helping Landlords Through Education and Communication

Western Massachusetts Electric
A Northeast Utilities Company

berkshire gas

Columbia Gas of Massachusetts
A NiSource Company

nationalgrid
The power of action.

ATTENTION LANDLORDS!

Western Massachusetts Electric Company
Columbia Gas of Massachusetts (Formerly Bay State Gas)
Berkshire Gas Company and National Grid
Are offering
A New Oil or Gas Heating System Replacement Program

You May Qualify for up to $4500.00 towards a new heating system!

The Details:

The **Existing Heating System** must be operating and grossly inefficient. The heating system can only serve one apartment/unit. (Heating systems that serve more than one unit will not qualify for this program).

The **Tenants** must:

- Pay for their heat (gas or oil). (Heating cannot be included in rental payment).
- Be a WMECO, Columbia Gas, Berkshire Gas or National Grid customer of record.
- Live in a 1-4 family home. (5 or more attached units do not qualify for this program).
- Qualify for their utility Discount Rate and/or be determined eligible/certified for fuel assistance for the 2011 heating season.

The **Landlord** must:

- Agree to freeze rent at its existing level for 2 years from the date of the installation.
- Pay for all costs not covered by WMECO, Columbia Gas, Berkshire Gas or National Grid. (Note: Speak to your local community action agency to see if you qualify for additional funding sources).
- Contact the local community action agency to confirm eligibility and participate.

Local community action agencies (Springfield Partners for Community Action, Berkshire Community Action Council and Community Action!) will manage the project, secure contractors and provide post installation quality verification inspections. All replacements must be done in accordance with Mass codes and standards (e.g., Energy Star or equivalent equipment, appropriate contractor license and insurance, 3 bids, etc.)

Call Peter Wingate @ FCAC
At: 413-376-1119
Don't Hesitate. Call Today!

111619JTW/DES

Low Income #2

New Measures

Metric Number	Metric Language	National Grid Electric Targets	National Grid Electric Final 2010 Production	National Grid Gas Targets	National Grid Gas Final 2010 Production
	In coordination with LEAN, implement best practices to achieve deeper energy savings. Best Practices meets monthly, with each PA participating, to discuss and pursue new technologies and deeper measure penetration, and to select new measures for review. PAs will provide written updates on meetings, technical analyses performed, and additional best practices implemented. Each PA will accept an assignment with respect to written products. Each PA to submit documentation showing performance relative to these tasks.	Threshold		Threshold	
	Study possible new program measures that are above and beyond the DOE measure list, specifically including, but not limited to: (1), micro-combined-heat-and-power (with emphasis on three-deckers, six-flats, and single family furnaces), (2) indirect water heating, (3) demand control measures (if feasible and available), (4) LED lighting, and (5) outdoor resets for new heating systems. Cost-effectiveness analysis will be conducted by the PA common assumptions group, or the equivalent, which shall include LEAN for this purpose, within eight weeks of referral by Best Practices, with first reports of analysis no later than June 15, 2010. Each PA to submit documentation showing performance relative to these tasks.	Design		Design	
Low Income #2. New Measures	For each measure that passes the common assumptions group cost-effectiveness screening, implement field testing of new program measures in 2010. Document results and findings in a memo to EEAC consultants by April 1, 2011, including measurement of savings per home due to each measure. Where field testing indicates it is appropriate to do so, there will be re-screening by Common Assumptions and/or a second field test. Each PA will conduct field testing with respect to each such measure and provide a memo documenting results. PA field tests will include a sufficient number of installations for each measure, reasonable in proportion to the size of each utility budget, to yield reliable field test results, as set out in the table below, and will begin no later than two months after the relevant Common Assumptions report:	Exemplary	**Exemplary**	Exemplary	**Exemplary**

2010 Low Income Metric Two

Included in this report are the following:

Page 1 & 2 – Overview of the metric and level each utility reached

Pages 3 – 8 – Explanation of each status and how it was accomplished including PA's assigned role in documenting each of the measures/technologies

Page 9 – 95 – Includes written updates/agendas on the Best Practices meetings, technical and cost-effectiveness analysis conducted by the Common Assumptions group.

2010 Low Income Metric Two

NSTAR Electric & Gas, National Grid, Western Massachusetts Electric Company, Fitchburg Gas & Electric Company, Columbia Gas of Massachusetts, Berkshire Gas Company and New England Gas Company are submitting this report to update the Low Income Energy Affordability Network (LEAN) on the status of the 2010 low income metric number two.

<table>
<tr><th colspan="2">2. New Measures</th></tr>
<tr><td>Threshold</td><td>In coordination with LEAN, implement best practices to achieve deeper energy savings. Best Practices meets monthly, with each PA participating, to discuss and pursue new technologies and deeper measure penetration, and to select new measures for review. PAs will provide written updates on meetings, technical analyses performed, and additional best practices implemented. Each PA will accept an assignment with respect to written products. Each PA to submit documentation showing performance relative to these tasks.</td></tr>
<tr><td>Design</td><td>Study possible new program measures that are above and beyond the DOE measure list, specifically including, but not limited to: (1), micro-combined-heat-and-power (with emphasis on three-deckers, six-flats, and single family furnaces), (2) indirect hot water heating, (3) demand control measures (if available), (4) LED lighting, and (5) outdoor resets for new heating systems. Cost-effectiveness analysis will be conducted by the PA common assumptions group, or the equivalent, which shall include LEAN for this purpose, within six weeks of referral by Best Practices, with first reports of analysis no later than June 15, 2010. Each PA to submit documentation showing performance relative to these tasks.</td></tr>
<tr><td>Exemplary</td><td>For each measure that passes the common assumptions group cost-effectiveness screening, implement field testing of new program measures in 2010. Document results and findings in a memo to EEAC consultants by April 1, 2011, including measurement of increased savings per home due to each measure. Where field testing indicates it is appropriate to do so, there will be re-screening by Common Assumptions and/or a second field test. Each PA will conduct field testing with respect to each such measure and provide a memo documenting results. PA field tests will include a sufficient number of installations for each measure, reasonable in proportion to the size of each utility budget, to yield reliable field test results, as set out in the table below, and will begin no later than two months after the relevant Common Assumptions report:
<table>
<tr><th>Measures/ PA</th><th>MicroCHP*</th><th>Indirect DHW</th><th>Demand Control**</th><th>LED Lighting</th><th>Outdoor Resets</th></tr>
<tr><td>NSTAR Electric</td><td>1</td><td>Standard measure</td><td></td><td>Standard measure</td><td>Standard measure</td></tr>
<tr><td>NGRID Electric</td><td>1</td><td>Standard measure</td><td></td><td>Standard measure</td><td>Standard measure</td></tr>
</table>
</td></tr>
</table>

	WMECO	-	Standard measure		Standard measure	Standard measure
	Unitil Electric	-	Standard measure		Standard measure	Standard measure
	NSTAR Gas	1	Standard measure	-	-	Standard measure
	NGRID Gas	1	Standard measure	-	-	Standard measure
	Columbia Gas of Massachusetts	1	Standard measure	-	-	Standard measure
	Berkshire Gas	-	Standard measure	-	-	Standard measure
	New England Gas	-	Standard measure	-	-	Standard measure
	Unitil Gas	-	Standard measure	-	-	Standard measure

We believe that by completion and documentation of these tasks each utility has reached the level of the metric listed below.

NSTAR Electric & Gas – exemplary
National Grid – design
Western Massachusetts Electric Company – design
Unitil Service Company – design
Berkshire Gas – design
New England Gas – design
Columbia Gas of Massachusetts - design

Respectfully submitted by:

Diane M. Lopes
Residential Program Manager
NSTAR Electric & Gas

Robert P. O'Brien
Manager
National Grid

Deborah E. Sas
Senior Project Administrator
Western Massachusetts Electric Company

Derek T. Kimball
Residential Programs Coordinator
Unitil Service Corporation

Kara A. Gray
Program Manager
Columbia Gas of Massachusetts

Robert Gyurjan
Lead Analyst – Energy Services
The Berkshire Gas Company

Jeanne B. Cherry
Lead Energy Efficiency Programs Administrator
New England Gas Company

Explanation of Threshold, Design and Exemplary Status of Metric Two

Metric 2: New Measures

Threshold

In coordination with LEAN, PAs to implement best practices in achieving deeper energy savings by pursuing new technologies, deeper measure penetration and selecting new measures for review.

- New measures and technical analysis performed was discussed at Best Practices meetings
- PAs worked collectively to ensure that these measures were reviewed in a thorough and timely manner by the Common Assumptions Group at each Best Practices meeting
- Each PA, in participation in the Best Practices working group, selected and agreed to have the Common Assumptions working group screen the following measures.

Design

The initial request for measure screening was submitted to the Common Assumptions group on May 24, 2010 during a PA Metrics Meeting scheduled that day. Questions were answered for the Common Assumptions group, and measures were provided to screening.

Working in conjunction with LEAN, GDS, and the MA Common Assumptions group, PAs met the June 15th, 2010 deadline for the report analysis. Each PA was assigned a lead role in documenting each of the measures/technologies below.

- **LEDs lights (WMECO)** – A light-emitting-diode lamp is a solid-state lamp that uses light-emitting diodes (LEDs) as the source of light. The light output of individual light-emitting diodes is small compared to incandescent and compact fluorescent lamps so multiple diodes are often used together. LED lamps offer long service life and high energy efficiency. This measure is deemed cost effective by the common assumptions group for LED down/task lighting fixtures when replacing a 75w fixture with a 6.0 LED down light (69w diff).
- **Indirect Water Heaters (CMA)** – Indirect water heaters offer a more efficient choice for most homes, even though they require a storage tank. An indirect water heater uses the main boiler to heat a fluid that's circulated through a heat exchanger in the storage tank. The energy stored by the water tank allows the boiler to turn off and on less often, which saves energy. Therefore, an indirect water heater is used with a high-efficiency boiler and well-insulated tank can be the least expensive means of providing hot water. This measure was deemed cost effective by the common assumptions group when it is installed in conjunction with an oil or gas boiler.
- **MCHP (NSTAR)** – combines two technologies, a natural gas fired engine generator with an energy-efficient warm air furnace or a boiler. The unit generates significant levels of electricity for the home and also recycles most of the heat generated to produce domestic heat and/or hot water.

MCHP systems lower energy consumption, reduce electricity demand and reduce costs for residential customers. The benefits of the installed measure are greater than the cost concluding this measure is cost effective.

- **Demand Control Measures (Unitil)** – This measure is a Behavior/Feedback technology that integrates behavioral change principles with web, mobile and mail applications. It consists of a (branded) web site enabling customers to log in using a unique username and password. Through a website customers can set energy saving goals, compare their monthly energy usage to similar households, get energy saving recommendations and earn points redeemable for rewards. Method for follow-ups and an innovative approach to creating the behavioral changes required to achieve greater levels of persistent, sustained savings. Grounded Power's technology and program – analyzed for cost effectiveness – is designed to provide a new follow-up service and a means for engaging low income populations over time to develop more effective energy savings habits. The system provides an energy saving planning process that is integrated with education, social gaming and monthly feedback, based on bill data, on energy consumption and energy savings. The tool delivers a "turn-key" program and technology to address the issue of behavior change as a follow-up service to existing energy audits. The program also functions as a follow-up service to the existing energy efficiency audit and retrofit services. The goal of the approach is to deliver a higher level of savings through engagement, education and persistent behavior change and provides a multi channel outreach and feedback process. Regardless of whether internet or mobile access is available, the client would still be able to participate in a chosen follow-up program. The proposal assumed a target number of 1500 households. It is assumed that 20% of those households will not have internet or mobile phone. This population will have access to the monthly paper-based report and phone support. Grounded Power proposal was found not to be cost effective using common assumptions including Non-energy benefits. Assuming a one-year program, however, this measure will be re-analyzed in 2011 as a possible pilot for a program with a longer life.
- **Outdoor Reset for new heating systems (Berkshire/New England Gas)** – Outdoor reset is a weather-responsive control rather than a weather controller. Based on changes in outdoor temperature, it automatically adjusts boiler water temperature. If the temperature is colder outside, it takes more heat to overcome its effect inside the building than if the weather is warmer. Outdoor reset is the same as turning down the boiler water aquastat in the spring and fall — automatically. The Common Assumption group found that the measure was not cost effective.
- **Window Quilts/Shades (National Grid)** - The Common Assumptions group screened both cellular shades and window quilts for possible energy savings installations in 2010. Their screenings found that window shades can be cost effective when installed in electrically heated homes. Certain cellular shades can reduce heat loss from a home's interior, and restrict the

flow of cold air from the exterior. Customers can raise and lower the shades, like other window blinds, to help maximize passive solar heating or keep warm air inside the home.

- **Smartstrips (WMECO)** – Many home electronic devices continue to use electricity to power peripherals such as remote controls or clock display even when turned off creating "phantom" or "vampire load".
  Using an advance power strip to turn off electronics or office equipment when not in use saves energy and money for the customer. Typical home products include computers, ink jet printers, fax machines, digital cable and satellite boxes as well as DVRs. Power strips have 3 types of outlets; a main control outlet (primary or control units) automatically switched outlets (secondary) and outlets that are always on. The power strip works by cutting power to connected to the secondary outlets (such as a DVD play, satellite box, etc) when the TV is switched off or goes into standby or sleep mode. The Common Assumption group found that the measure was cost effective and recommended for the Low Income Program.

Exemplary

These measures have passed the cost effectiveness screening and have become standard measures in the program when specific parameters are met. It should be noted that adopting these measures is a significant accomplishment and further distinguishes the Massachusetts Low-Income program as a leader in the industry. These measures put the program on the forefront of achieving deeper savings in customers' homes.

- **MCHP**- In 2010, four MCHP units were installed in the NSTAR/National Grid territory as customer heating system replacements. These systems were installed in individual and 3-unit dwellings. Participating customers indicated their satisfaction with the installation of the measure, as well as the work of the contractors.

  Projected energy savings is approximately 3,000 kWh on the electric side per month, as well as an average of 150 therms per month on the gas side. The utilities will monitor these systems to determine actual savings.

  Initial billing data shows the customers experienced a savings of one third on their actual energy consumption, and their actual energy bills were reduced by half. As a result, customers were satisfied with the MCHP installations and the associated energy savings, and would recommend the measure to future program participants.

- **Indirect Water Heating** - Ninety-five indirect water heaters were installed across the state by NSTAR, National Grid, Columbia Gas of Massachusetts and WMECO. Indirect water heaters are not a stand alone measure; an indirect water heater is only installed in conjunction with an oil or gas boiler when warranted. Field results shows that customers are extremely satisfied and appreciative of the utility program. They are not

only pleased with the efficiency (energy savings) of the system, but also the amount of hot water and the quietness of the systems. In addition, the local CAP agencies report having very positive experiences with the installation contractor in terms of their acceptance and installation of the technology. Auditors state that some of these customers were in desperate situations and would not have had hot water without the assistance of the utilities.

- **LED lighting** – WMECO conducted LED in-field testing in partnership with NGrid, NSTAR and Unitil. WMECO installed four CREE CR6 LED recessed downlights in a customer's home in Pittsfield, MA. The LED's were installed into existing kitchen soffit downlights, replacing four 100-watt flood type bulbs used for general and task lighting. The lighting was being used for 8 or more hours a day. The CR6 was chosen as it was designed for use in residential settings and fits into most standard 6" recessed housings.

  The CREE CR6 bulbs may be installed in two ways; by removing the existing bulb from the existing downlight fixture housing and installing the new LED bulb/unit into the existing housing or removing the existing bulb/unit and housing trim ring and inserting the new LED bulb into the existing housing. The CREE CR6 includes the LED bulb, the housing and trim ring as one unit. The components are one piece and cannot be separated. If the LED unit is installed into an existing downlight fixture, it is operable. If it is installed in this manner, a double trim ring will be visible which may or may not be suitable for all customers and applications. The preferred installation method, as recommend by the manufacturer, would be to remove the existing fixture trim ring and install the LED unit into the existing recessed housing.

  In the field test, the customer's soffit is painted sheetrock with no texture. The existing down light trim rings and the ceiling were both painted at the same time. This is typically done. An auditor/contractor installing the replacement CREE CR6 will need to break the paint seal very carefully so as to not tear the sheetrock and the paint. If this is accomplished successfully, the Owner will have to be advised that once the new CREE unit is installed, the paint may no longer match the paint under the old trim ring and touch up may be needed.

  An additional consideration for installation is the CREE unit trim ring is smaller than the older 6" downlight trim rings. The auditor/contractor will have to determine if the ceiling material was installed close enough to the existing fixture. If it is not, there may be an unfinished ceiling edge or gap in the ceiling material that will show. This would most likely not be

acceptable to a customer and therefore not an appropriate installation for the LED unit.

The customer reported that they did like the CREE LED units. Their appearance was attractive and the quality of the light was excellent. The light spread was wide which illuminated the kitchen room quite nicely. They said the color of the light at night, a warm yellow, was warm and comfortable.

The customer highly recommended the CREE CR6 units. They also recommended that prior to installation the Owners's be advised about the possible paint and trim ring issues.

This technology was adopted by the Massachusetts electric utilities in 2010.

- **Smart strips** – Although the utilities have adopted this measure into the low income weatherization programs, several concerns have been raised. Firstly, if the main power experienced a power surge or was suddenly turned off due to a power outage, and the electronic devices plugged into the strip were damaged, would the customer have recourse to recover the cost of the items? Research showed that the manufacturers of the strips do warrantee damaged products under these conditions but the concern is the customers would expect the utilities to replace the damaged items. Secondly, the weatherization programs install all of the measures in customer's homes. Auditors expressed concern that in order to install advances power strips, they would have to unplug and then reprogram electronic devices such as TV's cable boxes, computers, etc. This could expose them to potential liability for customer's equipment beyond what the typical and customary weatherization products installations would be. The auditor's concern was not able to be addressed fully by the Best Practices Group in 2010, therefore no advanced power strips were installed.

- **Window cellular shades (electric only)** - 2010 field research revealed reservations from some PAs and CAP agencies for this measure. Concerns have been raised given that window shades do not have guaranteed energy savings. The success of the measure depends on the continuous participation of the customer to use the blinds as intended. As a result, this measure has not been tested beyond the auditor and local agency teams. Discussion of window shades will continue to be discussed in 2011 with the possibility of leaving the option to install this measure at the CAPs discretion for the appropriate customer.

These measures did not pass cost effectiveness screening and will not be offered in the Low-Income single-family program:

- Window quilts
- Window cellular shades– gas only
- Outdoor reset control

Back-up to support meetings, technical analysis and Best Practices implemented

Lopes, Diane

From: Lopes, Diane
Sent: Monday, January 18, 2010 8:55 AM
To: 'Peter Wingate'
Subject: FW: Best Practices meetings and agenda - Jan. 20 at 10 at NSTAR

Needed to change your email.....

From: Lopes, Diane
Sent: Monday, January 18, 2010 8:41 AM
To: 'Jerrold Oppenheim'; 'Briana Kane'; 'AMickee@GLCAC.Org'; 'artwillcox@yahoo.com'; 'bruceledgerwood@comcast.net'; 'craig@actioninc.org'; 'Danielle Rathbun'; 'DBuchler@nisource.com'; 'sasde@nu.com'; 'Duffy, Diana'; 'Elj@actioninc.org'; 'Jeanne Cherry'; 'John Livermore'; 'jhowat@nclc.org'; 'walshj@nu.com'; 'Ken.Rauseo@ocd.state.ma.us'; 'kgray@nisource.com'; 'kimball@unitil.com'; 'Rossacci, Michael F.'; 'msommer@berkshiregas.com'; 'NDAVISON@haconcapecod.org'; 'pjackson@smoc.org'; 'pwingate@mocinc.org'; 'rbechtold@haconcapecod.org'; 'oswalrl@nu.com'; 'ritac@actioninc.org'; 'Kate Agin'; 'Tackey Chan'; 'tobin@bostonabcd.org'; 'John Wells'
Subject: RE: Best Practices meetings and agenda - Jan. 20 at 10 at NSTAR

Just a reminder.....please use the West entrance....we will be in W2A. Security will call me upon your arrival. Thanks Diane

---

Good Morning....the call in number for those whom need it will be 781-441-3101, access code 3875#. The conference room will be West 2 A. Come into the West side of the building and sign in with the security guard. I will have a list with them of whom may be coming. See you then....thanks Diane

We will have a full meeting on Wednesday, January 20, starting at 10 am.

Many thanks to Diane Lopes at NSTAR for agreeing to host.

Cheers,

Jerry

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Here are the assignments for our next two meetings:

Art – SDHW cost-effectiveness (with Briana); Smart Strip protocol; update of measure universality list
Bruce – Clean Energy Centre re mobile home training; landlord heating system replacements (promotion for 2010?)
Debi – circulate WMECo evaluation of repair pilot
Diane and Diana – top- and front-load clothes washers
Kate – use of unemployment benefit system to inform potential clients of program
Ken and/or Craig – procurement RFP status
Ruth – cellulose window shade sample

Here is a proposed agenda for the two meetings, which we will only get partially through in December:

GAS & ELECTRIC

1. Rotating Notetaker, next meeting, amendments

2. Procurement (Craig, Ken)
   a. timing of RFP
   b. lead
   c. other issues

3. Enhancing visibility of Best Practices at PAs

4. Contractor training and recruitment (Bruce)
   a. Status
   b. New contractor requirements
   c. Mobile homes walls and bellies
   d. Repairs (avoiding undue expense -- see 5b below)
   e. **2010 Metric 2**:

In coordination with LEAN and, if feasible, the Massachusetts Department of Housing and Community Development (DHCD), contribute sufficient funding and logistical support of LEAN's efforts and those of the DHCD to continue and expand efforts to recruit and train weatherization and heating contractors to support network activities sufficient for the ramp up of the program, and to assure all needed training is funded. Specifically, working closely with LEAN and the Massachusetts Department of Housing and Community Development (DHCD), strongly support their recruitment of weatherization and heating contractors in numbers appropriate to meet the requirements of Energy Efficiency funding and who demonstrate the ability to meet US DOE standards.

5. Auditor training (Ken)
   a. Status
   b. **2009 Metric 2**: funding and logistical support; training materials re plug loads, air conditioning (Art, Dave), ducts (Art, Dave)
   c. **2010 Metric 2**: Contribute funding and logistical support of LEAN's efforts and, if feasible, those of the Massachusetts Department of Housing and Community Development (DHCD) for auditor training and explore common protocols in areas identified through the Best Practices Working Group.

This will include developing and distributing new auditor training materials.

d. Kate circulated Fire Marshall's handout re space heater safety (Feb. 2 e-mail). Bruce and Kate will circulate PC Power Management piece to auditors. Add recycling update to topics.

4. DHCD (Ken)
   a. Recovery Act
   b. Davis Bacon update
   c. Other

5. Repairs
   a. Status (Unitil?)
   b. Training to avoid undue expense
   c. extend to protect EE installation if within, say, one year?

6. Compare measure lists across administrators -- Art's draft survey results showed a few measures not shared universally -- Art updating
   a. 2010-2012 update .
   b. Multi-family update update

7. New measures

a. SDHW --Electric utilities previously agreed to cost-share solar hot water with MTC (assuming an MTC grant) where cost-effective (i.e., larger water users). Nothing to report yet from MTC. This consideration is a 2009 and 2010 performance **metric**.

b. Window quilts? Cellulose window shades (cheaper)? (Ruth, Art) -- approved for DOE; Art computing cost-effectiveness

c.. Bruce re recruiting landlords for heating system replacement. We have agreed that Bruce will continue marketing efforts for landlord heating system pilots at NGrid Electric and NSTAR G&E. At last report, eliminating the co-pay did not generate response, perhaps because of the fact that it was still winter. This consideration is a 2009 and 2010 performance **metric**.

d. MicroCHPs (Bruce and Art)-- Gas pilots are underway and preliminary evaluation results have been circulsted showing furnaces to be cost-effective. This consideration is a 2009 and 2010 performance **metric**.

e. Clothes washers and drying racks (Diane and Diana) -- 2010 **metric**.

f. TLC kit -- 2010 **metric**. Reviewed in 2009; any need for additional review?

g. Indirect water heating -- 2010 **metric**. Review approval; all aboard?

h. LEDs -- 2010 **metric**.

i. Smart strips -- we agreed to include where appropriate, Art to determine what is appropriate (e.g., VCR, DVD, games) and draft protocol, some education needed re: what to plug in each socket.

j. Demand control -- 2009 and 2010 **metric**.

Grounded Power proposal: Pilot feedback approach whereby auditors develop target reductions with clients by use, clients receive monthly report via internet comparing their usage from utility billing system with their target and with community results (to be defined) -- could also include gas (Action, Cape Light, others have expressed interest in participating in pilot). Awaits definhitive Grounded Power proposal. (Jerry)

k. Outdoor resets -- 2010 **metric**. Rejected in 2009; any need to revisit?

l. Deep retrofit (super-insulation, fo9undation insulation) -- 2010 **metric**.

m. Pilots -- 2010 **metric**. Two measures in 2010, DER in 2011.

n. **2009 Metric 1**: assess and possibly adopt: *micro CHP*, landlord heating systems where tenant pays for heat, *SDHW*, single family horizontal axis clothes washers, measures to be incuded in TLC kit, indirect DHW, demand control measures.

o. **2010 Metric 1**: Explore and consider adoption of new cost-effective program measures, specifically including, but not limited to: *solar domestic hot water heating*, single family energy efficient clothes washers, *clothes drying racks*, *micro-combined-heat-and-power,* landlord heating systems where tenants pay for heat, measures to be included in TLC Kit, *indirect hot water heating, demand control measures, LED lighting,* outdoor resets for new heating systems, *super-insulation of walls and attics, foundation wall and slab insulation.*

Implement a limited *pilot* to test at least two (2) of these new program measures in 2010. Document results and findings in a memo to EEAC consultants by January 30, 2011.

p. **2010 Metric 3**: Note: A *Deep Energy Retrofit* is a project that involves super-insulating the building shell, and which achieves over 50% energy savings.

Convene a planning forum with key members of LEAN, the Best Practices working group and the Deep Energy Retrofit (DER) Pilot working group to discuss collaborating on a deep retrofit project in 2010. Explore potential synergies in marketing, training, incentives, QA/QC, etc. Document the proposed coordination in a memo. Draft memo to EEAC consultants by April 1, 2010. Consultant comments by April 8, 2010. Final memo by April 15, 2010.
Collaborate with LEAN agencies and Deep Energy Retrofit (DER) working group to identify properties with opportunities for Deep Energy Retrofit treatment.
Contract with at least one (1) landlord to implement a Deep Energy Retrofit project in 2011.

8. 2008-09-10 Annual Reports and Compendia -- collect and republish all best practice protocols and other agreements. **2009 and 2010 Metric 1.**

FOR REFERENCE: 2010 METRICS:

1. Low-income Best Practices Working Group {Electric & Gas}	
Threshold	In coordination with LEAN, implement best practices as agreed in 2009. Continue at least quarterly discussions and technology analysis. This will include providing written updates on meetings, analyses and additional best practices implemented.
Design	Explore and consider adoption of new cost-effective program measures, specifically including, but not limited to: solar domestic hot water heating, single family energy efficient clothes washers, clothes drying racks, micro-combined-heat-and-power, landlord heating systems where tenants pay for heat, measures to be included in TLC Kit, indirect hot water heating, demand control measures, LED lighting, outdoor resets for new heating systems, super-insulation of walls and attics, foundation wall and slab insulation.

Exemplary	Implement a limited pilot to test at least two (2) of these new program measures in 2010. Document results and findings in a memo to EEAC consultants by January 30, 2011.

2. Low-income Auditor Training & Contractor Recruitment/Support {Elec. & Gas}	
Threshold	N/A
Design	Contribute funding and logistical support of LEAN's efforts and, if feasible, those of the Massachusetts Department of Housing and Community Development (DHCD) for auditor training and explore common protocols in areas identified through the Best Practices Working Group. This will include developing and distributing new auditor training materials.
Exemplary	In coordination with LEAN and, if feasible, the Massachusetts Department of Housing and Community Development (DHCD), contribute sufficient funding and logistical support of LEAN's efforts and those of the DHCD to continue and expand efforts to recruit and train weatherization and heating contractors to support network activities sufficient for the ramp up of the program, and to assure all needed training is funded. Specifically, working closely with LEAN and the Massachusetts Department of Housing and Community Development (DHCD), strongly support their recruitment of weatherization and heating contractors in numbers appropriate to meet the requirements of Energy Efficiency funding and who demonstrate the ability to meet US DOE standards.

3. Low-income 1-4 Retrofit: Deep Energy Retrofit {Electric & Gas}	
Threshold	Convene a planning forum with key members of LEAN, the Best Practices working group and the Deep Energy Retrofit (DER) Pilot working group to discuss collaborating on a deep retrofit project in 2010. Explore potential synergies in marketing, training, incentives, QA/QC, etc. Document the proposed coordination in a memo. Draft memo to EEAC consultants by April 1, 2010. Consultant comments by April 8, 2010. Final memo by April 15, 2010.
Design	Collaborate with LEAN agencies and Deep Energy Retrofit (DER) working group to identify properties with opportunities for Deep Energy Retrofit treatment.
Exemplary	Contract with at least one (1) landlord to implement a Deep Energy Retrofit project in 2011.

Note: A Deep Energy Retrofit is a project that involves super-insulating the building shell, and which achieves over 50% energy savings.

Metric Weighting – Electric & Gas (proposed)

1. Low-income Best Practices Working Group (33.33%)
2. Low-income Auditor Training & Contractor Recruitment/Support (33.33%)
3. Low-income 1-4 Retrofit: Deep Energy Retrofit (33.34%)

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LIBP Meeting at NSTAR January 20, 2010 (FINALIZED 02/10/10)

NEXT MEETING 02/23/10 from 10-2 at BSG

Attendees: Mike Rossacci (NGRID), Diana Duffy (NGRID), Diane Lopes (NSTAR), Art Willcox (LEAN), Briana Kane (CLC), Al Mickee (GLCAC), Kim Crossman (NGRID), Craig Brown (ACTION), Rita Carvalho (ACTION), Elliott Jacobson (LEAN), Ruth Bechtold (HAC), Deb Sass (WMECO), Jeanne Cherry (NE Gas), Kara Gray (BSG), John Livermore (consultant), Derek Kimball (UNITIL), Jerry Oppenheim (LEAN). On the phone John Walsh (WMECO)

Distribution list—

Briana and Diane to work on new distribution list. ~~**(Due February 03, 2010 Finalized February 10, 2010)**~~ **(DONE 02/10/10)** Add DER dist list, MF dist list, update Peter Wingate

LIMF –

This group (LIBP) needs to be the group to make the decisions on the program not the advisory committee. The advisory helps to make the selection but not design the program

LEAN to provide MF contact for MF advisory committee (from Dec meeting)

All PA's need to send LIMF requests to John Wells

Jerry to describe the three committees (MF advisory--operations, MF working group, LIBP—policy) **(Due as an attachment to the next agenda emailed prior to the meeting on February 23, 2010)**

MF Market Integrator (MMI) – RFP to go out mid-February

MF auditors and contractors to work with projects specific needs

PA's need to try to leverage funds

Heating systems out to bid

Insulation / fridges etc., contracted network pricing use what is already in place

LEAN—

Elliot to reach out to Ken so we can get regular DHCD representation at the meetings. Worst case scenario an email an update before the meeting. We haven't had DHCD representation in the last 8-12 months.

Invoicing detail is going to be required for LEAN invoices going forward for all utilities. PAs will need a summary of hours and activities to back up all costs.

DER—

Deep Energy Retrofit (DER)—metric #3

Next DER meeting to be held at NGRID on 02/10/10 9:30 – 12:30

Working Group List— **BK to get info to John Livermore (DONE 01/20) John to send out finalized list ?**

Trainings—

Auditors / training – all set

Contractors / training – ongoing, every contractor has to have new training by April 22, 2010

Craig to reach out to DHCD for list of 2010 trainings and provide a list to Diane ~~**(due By February 01, 2010)**~~ **(DONE 02/08/10)** then as trainings come up, each PA or agency will be responsible to send Diane Lopes an email of those trainings for metric tracking

CORI—

CORI affidavits' kept on file at some agencies; each contractor CORI's their employees, not the agency

Procurement—

Network in process of procuring, most agencies have a deadline of this Friday for contractors to return RFP's with pricing. Then the agencies will meet and submit pricing to DHCD. Hopeful to have pricing by mid-February and will be good through March of 2012

Repairs (major)—

John Walsh to provide evaluation report on WMECO's major repair pilot and hopes to have it out **by the end of the month**

Measure list review—

Art will follow up with agencies not here to see if they are ok with the omission list to Jerry by **February 15, 2010**

SDHW—

For homeowners with electric hot water with a family of 4 or more, equipment must be SRCC certified, roof must be in good condition; initial site review to qualify the site, 3 bids needed, replacement/repair to be handled like a heating system, customer needs to be educated. **OK FOR ELECTRIC PA's SF and MF**

Art will do an analysis of the maintenance issues and MF and oil /gas to Jerry by **February 15, 2010**

Window treatments—

Art Willcox will look into window blinds to see if there are any independent studies to Jerry by **February 15, 2010**

Smart Strips—

Deb Sass to explore possible fire issues report to Jerry by **February 15, 2010**

Lopes, Diane

From: Jerrold Oppenheim [jerroldopp@democracyandregulation.com]

Sent: Monday, February 22, 2010 9:02 AM

To: Briana Kane; tobin@bostonabcd.org; wells@bostonabcd.org; maclellan@bostonabcd.org; craig@actioninc.org; ritac@actioninc.org; Elj@actioninc.org; DBuchler@nisource.com; kgray@nisource.com; msommer@berkshiregas.com; Ken.Rauseo@ocd.state.ma.us; AMickee@GLCAC.Org; rbechtold@haconcapecod.org; NDAVISON@haconcapecod.org; bruceledgerwood@comcast.net; JerroldOpp@DemocracyAndRegulation.com; artwillcox@yahoo.com; PWingate@communityaction.us; jhowat@nclc.org; James.Carey@sug.com; Diana.Duffy@us.ngrid.com; Lynn.Ross@us.ngrid.com; michael.rossacci@us.ngrid.com; DAVE.LEGG@us.ngrid.com; Beth.Lonergan@us.ngrid.com; Azulay, Gail; Lopes, Diane; pjackson@smoc.org; kimball@unitil.com; aginkt@nu.com; oswalrl@nu.com; sasde@nu.com; walshj@nu.com; tachey.chan@state.ma.us; danielle.rathbun@state.ma.us; jeanne.cherry@sug.com; James.Carey@sug.com; jglivermore@yahoo.com

Subject: Low Income Best Practices agenda -- tomorrow (Tuesday, Feb. 22) at 10 AM at Bay State Gas, Westborough

Here is my proposed agenda for tomorrow's meeting.

GAS & ELECTRIC
SINGLE FAMILY & MULTI-FAMILY

1. Rotating Notetaker, next meeting, amendments to agenda, corrections to notes of last meeting

2. Procurement update (Craig, Ken)

3. Metrics update -- meeting directly after this (JO)

4. Contractor training and recruitment update (Bruce; Craig reporting re individual contractor training)

5. Auditor training and DHCD updates (Ken)

6. Compare measure lists across administrators -- Art's final survey of agencies

7. Repairs -- WMECo evaluation (John Walsh)

8. New measures

NOTE -- Brad Steele will join us at 12.30 to discuss LEDs and other measures.

a. SDHW --Electric utilities previously agreed to cost-share solar hot water with MTC (assuming an MTC grant) where cost-effective (i.e., larger water users). Art to report re repairs.
b. Window quilts? Cellulose window shades (cheaper)? (Ruth, Art) -- Art reporting re cost-effectiveness
c. Bruce re recruiting landlords for heating system replacement.
d. MicroCHPs (Bruce and Art)
e. Clothes washers and drying racks (Diane and Diana) -- 2010 **metric**.
f. TLC kit -- 2010 **metric**. Reviewed in 2009; any need for additional review?

g. Indirect water heating -- 2010 **metric**. Review approval; all aboard?
h. LEDs -- 2010 **metric**. Brad Steele presentation.
i. Smart strips -- Deb Sas to report re possible fire danger.
j. Demand control -- 2009 and 2010 **metric**.

Grounded Power proposal: Pilot feedback approach whereby auditors develop target reductions with clients by use, clients receive monthly report via internet comparing their usage from utility billing system with their target and with community results (to be defined) -- could also include gas (Action, Cape Light, others have expressed interest in participating in pilot). Awaits definhitive Grounded Power proposal. (Jerry)

k. Outdoor resets -- 2010 **metric**. Rejected in 2009; any need to revisit?
l. Deep retrofit (super-insulation, foundation insulation) -- 2010 **metric**.
m. Pilots -- 2010 **metric**. (Metric to be revised)

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From: Briana Kane <bkane@capelightcompact.org>
To: tobin@bostonabcd.org; wells@bostonabcd.org; maclellan@bostonabcd.org; craig@actioninc.org; ritac@actioninc.org; Elj@actioninc.org; DBuchler@nisource.com; kgray@nisource.com; msommer@berkshiregas.com; Briana Kane <bkane@capelightcompact.org>; Ken.Rauseo@ocd.state.ma.us; AMickee@GLCAC.Org; rbechtold@haconcapecod.org; NDAVISON@haconcapecod.org; bruceledgerwood@comcast.net; JerroldOpp@DemocracyAndRegulation.com; artwillcox@yahoo.com; PWingate@communityaction.us; jhowat@nclc.org; James.Carey@sug.com; Diana.Duffy@us.ngrid.com; Lynn.Ross@us.ngrid.com; michael.rossacci@us.ngrid.com; DAVE.LEGG@us.ngrid.com; Beth.Lonergan@us.ngrid.com; gail.azulay@nstar.com; diane.lopes@nstar.com; pjackson@smoc.org; kimball@unitil.com; aginkt@nu.com; oswalrl@nu.com; sasde@nu.com; walshj@nu.com; tachey.chan@state.ma.us; danielle.rathbun@state.ma.us; jeanne.cherry@sug.com; James.Carey@sug.com; jglivermore@yahoo.com
Sent: Wed, February 10, 2010 2:16:21 PM
Subject: Low Income Best Practices updates

LIBP Meeting at NSTAR February 23, 2010

NEXT MEETING April 06, 2010 from 10-2 at BSG (Kara to confirm room availability)

Attendees: Beth Lonergan (NGRID), Mike Rossacci (NGRID), Diana Duffy (NGRID), Art Willcox (LEAN), Ken Rauseo (DHCD), Briana Kane (CLC), Al Mickee (GLCAC), Craig Brown (ACTION), Rita Carvalho (ACTION), David MacLellan (ABCD), Elliott Jacobson (LEAN), Peter Wingate (Community Action), Ruth Bechtold (HAC), Deb Sass (WMECO), Jeanne Cherry (NE Gas), Kara Gray (BSG),Robert Gyurjan (Berkshire), Paul Jackson (SMOC), Jerry Oppenheim (LEAN), Bruce Ledgerwood (LEAN). On the phone John Livermore (Consultant), Derek Kimbal (Unitil)

Distribution list—

Briana circulated list for final updates and will send out revised list with today's meeting notes.

Working Group List— BK to get info to John Livermore (DONE 01/20) Updated/Circulated on 02/23/2010

Procurement—

Pricing has been sent to PA's if there are questions, contact your Lead Agency. If all approve, new pricing could start mid-March.

Metric update—

PA's will have a meeting today at 1:30, followed by a meeting with Jerry at 2:00 need to be completed by March 04, 2010. Up for discussion:

Building Inventory

LIMF

How to deal with ARRA (?)

Trainings—

Recruitment-- will have a booth at the NESEA conference

Each PA or agency will be responsible to send Diane Lopes an email of those trainings for metric tracking

Mattapan BootCamp– first class starting next week

MassGreen—DHCD looking to provide 1 million in ARRA funding

CORI Checks—

NGRID has as a procurement requirement

BSG has required checks since 2004 and the Lead Agency gets a letter from contractor(s) to certify checks were done

Each company/agency runs their own checks

Repairs (major)—

John Walsh to provide evaluation report on WMECO's major repair pilot and hopes to have it out **prior to the next meeting on 04/06/10**

Unitil has agreed to offer major repairs

Measure list—roofs, knob and tube / wiring issues, heating distribution (limited basis), structural and moisture mitigation (each PA to decide what they want to offer)

New measures—

Blown Cellulose—Borate vs. Ammonium Sulfate and Borate mix (contractor makes decision) **Briana** circulated email to Jerry and Deb with links on borate vs. ammonium sulfate and borate mix. (Emailed out on 02/23/10). **Deb** to look into Maine's concerns for 04/06/10 mtg to circulate info by 04/01/10

Fiberglass—talked about blown fiberglass...looking for specs etc., looking for independent third party evaluation (contractor makes decision)

SDHW—

For homeowners with electric hot water with a family of 4 or more, equipment must be SRCC certified, roof must be in good condition; initial site review to qualify the site, 3 bids needed, replacement/repair to be handled like a heating system, customer needs to be educated. **OK FOR ELECTRIC PA's SF and MF Warranty coverage to be at least 5 years.**

Window treatments—

Art Willcox will look into window blinds to see if there are any independent studies to Jerry by **February 15, 2010 (completed)...NEXT STEP: Art and Ruth to propose protocol and lifetime analysis by 04/01/10 circulated to group**

Smart Strips—

Deb Sass to explore possible fire issues report to Jerry by **February 15, 2010 (completed)...update no direct correlation between power strips and house fires. However, LI housing stock at greater risk for fire.** Art to look into overload protection by 04/01/10...Brad Steele confirmed that the BITS model has overload protection.

Residential Lighting update (Brad Steele)

Items for next meeting:

Savings calculations for heating systems

Lopes, Diane

From: Jerrold Oppenheim [jerroldopp@democracyandregulation.com]

Sent: Tuesday, April 06, 2010 3:24 PM

To: tobin@bostonabcd.org; wells@bostonabcd.org; maclellan@bostonabcd.org; craig@actioninc.org; ritac@actioninc.org; Elj@actioninc.org; DBuchler@nisource.com; kgray@nisource.com; msommer@berkshiregas.com; rgyurjan@berkshiregas.com; bkane@capelightcompact.org; Ken.Rauseo@state.ma.us; AMickee@GLCAC.Org; rbechtold@haconcapecod.org; NDAVISON@haconcapecod.org; bruceledgerwood@comcast.net; JerroldOpp@DemocracyAndRegulation.com; artwillcox@yahoo.com; PWingate@communityaction.us; jhowat@nclc.org; Diana.Duffy@us.ngrid.com; Lynn.Ross@us.ngrid.com; dave.legg@us.ngrid.com; michael.rossacci@us.ngrid.com; Beth.Lonergan@us.ngrid.com; Azulay, Gail; Lopes, Diane; pjackson@smoc.org; kimball@unitil.com; aginkt@nu.com; oswalrl@nu.com; sasde@nu.com; walshj@nu.com; tackey.chan@state.ma.us; danielle.rathbun@state.ma.us; jeanne.cherry@sug.com; James.Carey@sug.com; trish.walker@sug.com; jglivermore@yahoo.com; pahorowitz@earthlink.com; Mary Gianetti

Subject: Re: Low Income Best Practices agenda (with assignments and agreements from April 6)-- Wednesday, July 7 at 10 AM at Bay State Gas, Westborough

LOW INCOME BEST PRACTICES DRAFT AGENDA FOR July 7, 2010
Assignments in bold
APRIL 6 DECISIONS IN BOLD CAPS

1. Notetaker, next meeting (September on Cape?), amendments to agenda, corrections to notes of last meeting, corrections to e-list

2. List of Working Groups (John L circulated res. 2/23) -- other WGs?

3. Procurement update (Craig)
CAPE LIGHT, BERKSHIRE OK. GRID WILL OK VIA DIANA. NSTAR AND WMECO OK AFTER FINAL CHECK. BSG?
PAs to respond, preferably by this Friday, April 9. PAs to notify LEAN of cost-effectiveness issues.

4. Metrics updates
   a. 2010
   b. 2009 - **Diana will send JO revised cover memo**

5. Contractor training and recruitment (Craig)

6. Auditor training (Craig)

7. DHCD (Ken)

8. Repairs
   a. WMECO evaluation (Debi, John Walsh)

9. New measures

a. Hybrid electric water heaters **(Art will circulate material from utilities group and update re: manufacturer response)**

b. SDHW - PAs agreed last two meetings on cost-effectiveness parameters; discussion of agreed cost-sharing with RET, assuming funding

c. Cellulose - safety of ammonium sulfate **(Debi will ask Maine program for written DOE blessing, see 3/25 e-mail) (Paul Jackson will circulate data re: borate cheaper per R-value because it packs more densely) PREFERENCE IS TO BAN AMMONIUM SULFATE**

d. Blown Fibreglass - **ANY MATERIAL THAT MEETS SPECS (INCLUDING DENSITY) IS OK**

e. Window quilts **(Art will propose protocol)**
COST-EFFECTIVE IF INSTALLED IN SELECTED PLACES. BEST OPPORTUNITIES ARE MF, SLIDERS, AND DRAFTY WINDOWS. MUST INCLUDE TRACKS AND EDUCATION/SCREENING.

f. Landlord heating systems -- N.B.: Metric
Committee led by Diane will develop proposal for July meeting. Other members: Craig, David, Diana, Kara, Peter, Debi, Robert, Al, Jeanne)
In the meantime, PAs will develop SF Landlord databases where tenants pay for heat
Later, plan marketing for next winter

g. MicroCHPs **(Bruce, Art)** -- NB: Metric
AGREED.
Art will send report (with narrative) to JO.
Diane will identify Common Assumptions lead to JO.
JO will submit report to Common Assumptions lead as referral from BP, for analysis no later than 8 weeks/June 15, 2010.

h. Indirect water heaters, previously approved -- all aboard? **YES** NB: Metric
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i. Smart strips - EFI model includes overload protection against fire
Agreed on cost-effectiveness two meetings ago where there are 3+switchable units.
Ready to approve? **YES, PROVIDED OVERLOAD PROTECTION**

j. LEDs - Brad Steele of EFI advised us that LEDs were not as efficient or cost-effective as CFLs, though there may be some cost-effective specialty applications such as downlights. NB:

Metric
AGREED - SPECIAL APPLICATIONS ARE DOWNLIGHTS AND TASK LIGHTING
Art will gather data, evidence re: niche applications, and information about quality, then draft report to send to JO for Common Assumptions.
JO will submit to Common Assumptions as referral from BP, for analysis within 8 weeks.
After Common Assumptions reports and approves, special applications become standard measure.

k. Outdoor re-sets -- rejected in 2009, any need to revisit? **NO** (NB: Metric)
Art will draft report to send to JO for Common Assumptions.
JO will submit to Common Assumptions as referral from BP, for analysis within 8 weeks/June 15, 2010.
After Common Assumptions reports and agrees, consideration is complete.

l. Indoor re-sets **(Art)**

m. Super-insulation -- NB: no metric -- further discussion of potential more economic and equitable measures, e.g., 2" instead of 4" (David), super-insulate roof being replaced anyway (Kara), new roofing materials (Debi)
Debi will research new roofing materials

n. Demand control -- Grounded Power is not responding very quickly and it is not clear they will do so at all. DEFER. NB: Metric.

o. Glow in the dark panels (Find A Light) instead of night lights for TLC Kit. -- Will they stay on through the night?
Debi will gather information re purchasing.

10. MF Building Inventory -- NB: Metric

2010 METRICS (pending at DPU)

1. Hard to Reach Landlords {Electric & Gas} – Statewide	
Threshold	Establish a subcommittee consisting of members of the Best Practices Working Group with representatives from all gas and electric program administrators to design and develop a (cost-effective) statewide landlord early retirement high efficiency heating incentive initiative. Incentive Plan should target single family (1-4 units) and should be completed by August 1st, 2010.

Design	Each program administrator to develop a database consisting of landlords in their respective service territories of low-income tenants that pay their own heating bills by September 30th 2010.
Exemplary	Working group to develop and initiate a statewide marketing plan prior to 2010 heating season. Each program administrator to use their individual database to target market and submit a final report of participation and any lessons learned to the Best Practices Working Group by January, 30th 2011.

2. New Measures

Threshold	In coordination with LEAN, implement best practices to achieve deeper energy savings. Best Practices meets monthly, with each PA participating, to discuss and pursue new technologies and deeper measure penetration, and to select new measures for review. PAs will provide written updates on meetings, technical analyses performed, and additional best practices implemented. Each PA will accept an assignment with respect to written products. Each PA to submit documentation showing performance relative to these tasks.
Design	Study possible new program measures that are above and beyond the DOE measure list, specifically including, but not limited to: (1), micro-combined-heat-and-power (with emphasis on three-deckers, six-flats,and single family furnaces), (2) indirect water heating, (3) demand control measures (if feasible and available), (4) LED lighting, and (5) outdoor resets for new heating systems. Cost-effectiveness analysis will be conducted by the PA common assumptions group, or the equivalent, which shall include LEAN for this purpose,within eight weeks of referral by Best Practices, with first reports of analysis no later than June 15, 2010. Each PA to submit documentation showing performance relative to these tasks.
Exemplary	For each measure that passes the common assumptions group cost-effectiveness screening, implement field testing of new program measures in 2010. Document results and findings in a memo to EEAC consultants by April 1, 2011, including measurement of savings per home due to each measure. Where field testing indicates it is appropriate to do so, there will be re-screening by Common Assumptions and/or a second field test. Each PA will conduct field testing with respect to each such measure and provide a memo documenting results. PA field tests will include a sufficient number of

installations for each measure, reasonable in proportion to the size of each utility budget, to yield reliable field test results, as set out in the table below, and will begin no later than two months after the relevant Common Assumptions report:

Measures/ PA	MicroCHP*	Indirect DHW	Demand Control**	LED Lighting	Outdoor Resets
NSTAR Electric	1	Standard measure		Standard measure	Standard measure
NGRID Electric	1	Standard measure		Standard measure	Standard measure
WMECO	-	Standard measure		Standard measure	Standard measure
Unitil Electric	-	Standard measure		Standard measure	Standard measure
NSTAR Gas	1	Standard measure	-	-	Standard measure
NGRID Gas	1	Standard measure	-	-	Standard measure
Bay State Gas	1	Standard measure	-	-	Standard measure
Berkshire Gas	-	Standard measure	-	-	Standard measure
New England Gas	-	Standard measure	-	-	Standard measure
Unitil Gas	-	Standard measure	-	-	Standard measure

Note: Where technically appropriate, indirect domestic water heating, LED lighting, and Outdoor resets will become standard measures if they pass cost-effectiveness screening. In the case of LED lighting, it is possible that only specialty lights or applications will pass screening.

* Each Micro CHP installation in a shared Gas and Electric PA territory counts as one (1) installation for each of the two PAs for the purposes of this metric.

** If this measure is feasible and available, Best Practices will develop a statistically reliable number of participants statewide, but no fewer than 500, to be allocated among the electric PAs in proportion to the number of low-income customers in each service territory.

Each PA to submit documentation showing performance relative to targets.

3. Multi-family Building Inventory

<table>
<tr>
<td>Threshold</td>
<td>Develop and support a low-income non-profit multi-family building inventory in order to facilitate benchmarking for project identification of energy retrofit potential and screening of potential projects. It is anticipated that the three-year cost will be $360,000 and that it will provide building square footage and at least a year of energy consumption data with respect to buildings identified by LEAN that are majority-occupied by low-income tenants. This information is currently available only on a limited basis, with respect to public housing authority buildings, and virtually non-existent for other non-profit-owned buildings. This coordinated and comprehensive project will make it possible to better identify maximum achievable efficiency savings, as well as to refine rollout of the Low Income MultiFamly Retrofit program. It will also support development of an energy efficiency standard (e.g., BTUs of energy per square foot of heated space) for low-income multi-family buildings. LEAN estimates that there are approximately 8,300 buildings of low-income multi-family housing in the Commonwealth. Each utility will support the inventory on an allocated basis.

This will be a three-year project, beginning approximately July 1, 2010, with milestones each year consisting of the addition of 250 buildings per month (allocated by utility) to the database. Allocations are established on a monthly basis (each year ending November 30) since it is not known precisely when the project will begin and will be allocated among utilities in proportion to their customer count of non-profit low-income multifamily buildings in the following format:

<table>
<tr><th>PA</th><th>% Allocation</th><th># of Buildings/Year</th></tr>
<tr><td>NSTAR Electric</td><td></td><td></td></tr>
<tr><td>NGRID Electric</td><td></td><td></td></tr>
<tr><td>WMECO</td><td></td><td></td></tr>
<tr><td>Unitil Electric</td><td></td><td></td></tr>
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<tr><td>Unitil Gas</td><td></td><td></td></tr>
</table>
</td>
</tr>
</table>

	The current metric for this three-year project only covers 2010, but it is anticipated that there will be customized metrics consistent with the current metric with respect to this project for 2011 and 2012 based on the status of the project at the end of years 2010 and 2012, respectively. In coordination with LEAN, each PA will develop the scope, design, and contracting for the low-income multi-family building inventory in its service territory and commit to its implementation. This will include consensus agreement on the allocation of non-profit low-income multifamily buildings among the utility service territories. It is anticipated that there will be one statewide procurement.
Design	In coordination with LEAN, each PA will implement the Inventory in its service territory, reaching the designated milestone number of buildings.
Exemplary	By January 1, 2011, in coordination with LEAN, each PA will submit a status report of the implementation of the Inventory, together with recommendations going forward. The status report will include a summary of what has been learned to-date relating to energy consumption in non-profit low-income multifamily buildings (e.g., average BTUs/square foot, reasonable target consumption, reasonable threshold consumption for treatment).

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U.S. mail. Thank you.

Lopes, Diane

From: Jerrold Oppenheim [jerroldopp@democracyandregulation.com]

Sent: Monday, July 05, 2010 4:38 PM

To: tobin@bostonabcd.org; wells@bostonabcd.org; maclellan@bostonabcd.org; craig@actioninc.org; ritac@actioninc.org; Elj@actioninc.org; DBuchler@nisource.com; kgray@nisource.com; msommer@berkshiregas.com; rgyurjan@berkshiregas.com; Briana Kane; Ken.Rauseo@state.ma.us; AMickee@GLCAC.Org; rbechtold@haconcapecod.org; NDAVISON@haconcapecod.org; bruceledgerwood@comcast.net; JerroldOpp@DemocracyAndRegulation.com; artwillcox@yahoo.com; PWingate@communityaction.us; jhowat@nclc.org; Diana.Duffy@us.ngrid.com; Lynn.Ross@us.ngrid.com; dave.legg@us.ngrid.com; michael.rossacci@us.ngrid.com; Beth.Lonergan@us.ngrid.com; Azulay, Gail; Lopes, Diane; pjackson@smoc.org; kimball@unitil.com; aginkt@nu.com; oswalrl@nu.com; sasde@nu.com; walshj@nu.com; tackey.chan@state.ma.us; danielle.rathbun@state.ma.us; jeanne.cherry@sug.com; James.Carey@sug.com; trish.walker@sug.com; jglivermore@yahoo.com; pahorowitz@earthlink.com; Mary Gianetti; Margaret M. Song; Debra Hall

Subject: Reminder: Low Income Best Practices agenda (updated, with assignments and agreements from April 6)--this Wednesday, July 7 at 10 AM at Bay State Gas, Westborough

LOW INCOME BEST PRACTICES DRAFT AGENDA FOR July 7, 2010

Assignments in bold

UPDATES OF APRIL 6 DECISIONS IN BOLD CAPS

1. Notetaker, next meeting (September on Cape ?), amendments to agenda, corrections to notes of last meeting, corrections to e-list

NOTE RE TODAY'S SCHEDULE -- TWO PRESENTATIONS

~11.30 - Paul Nahass, Austin Aerogels (new insultation product suitable for masonry sidewalls) [Art]

~12.30 - Ed Connelly, New Ecology re WEGOWISE (used in MF program; proposed for use re: MF building inventory)

2. List of Working Groups (John L circulated res. 2/23) -- other WGs?

3. Procurement update (Craig)

EVERYONE HAS NOW OK'D/

4. Metrics updates

a. 2010

b. 2009 - **DONE**

5. Contractor training and recruitment (Craig)

6. Auditor training (Craig)

7. DHCD (Ken)

8. Repairs

a. WMECO evaluation (Debi, John Walsh; Art)

b. Review of menu of approved measures (local option; must make Wx or EE possible): roof, K&T and other electrical, heating-related including occasional distribution. moisture control, structural

9. Program issues

a. MF - building inventory (metric), process flow at WMECo (defer to MF screening comm.?)

b. 60-80% update

c. Building Permits required

10. New measures - minimum Metric 2 met

a. Hybrid electric water heaters **(Art will circulate material from utilities group and update re: manufacturer response)**

b. SDHW - PAs agreed last two meetings on cost-effectiveness parameters; discussion of agreed cost-sharing with RET, assuming funding

c. Cellulose - safety of ammonium sulfate **(Debi will ask Maine program for written DOE blessing, see 3/25 e-mail) (Paul Jackson will circulate data re: borate cheaper per R-value because it packs more densely) PREFERENCE IS TO BAN AMMONIUM SULFATE**

d. Blown Fibreglass - **ANY MATERIAL THAT MEETS SPECS (INCLUDING DENSITY) IS OK**

e. Window quilts **(Art will propose protocol)**

COST-EFFECTIVE IF INSTALLED IN SELECTED PLACES. BEST OPPORTUNITIES ARE MF, SLIDERS, AND DRAFTY WINDOWS. MUST INCLUDE TRACKS AND EDUCATION/SCREENING.

COMMON ASSUMPTIONS, ASSUMING 5 YEAR LIFE, REJECTED QUILTS AND APPROVED CELLULOSE ONLY RE: ELECTRIC HEAT.

f. Landlord heating systems -- N.B.: Metric

Committee led by Diane will develop proposal for July meeting. Other members: Craig, David, Diana, Kara, Peter, Debi, Robert, Al, Jeanne

In the meantime, PAs will develop SF Landlord databases where tenants pay for heat -- assemble data via agencies?

Later, plan marketing for next winter

g. MicroCHPs **(Bruce, Art)** -- NB: Metric

AGREED.

Art will send report (with narrative) to JO.

Diane will identify Common Assumptions lead to JO.

JO will submit report to Common Assumptions lead as referral from BP, for analysis no later than 8 weeks/June 15, 2010.

COMMONB ASSUMPTIONS APPROVED.

h. Indirect water heaters, previously approved -- all aboard? **YES** NB: Metric

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COMMON ASSUMPTIONS APPROVED, ONLY FOR OIL.

i. Smart strips - EFI model includes overload protection against fire

Agreed on cost-effectiveness two meetings ago where there are 3+switchable units. Ready to approve? **YES, PROVIDED OVERLOAD PROTECTION**

j. LEDs - Brad Steele of EFI advised us that LEDs were not as efficient or cost-effective as CFLs, though there may be some cost-effective specialty applications such as downlights. NB: Metric

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Art will gather data, evidence re: niche applications, and information about quality, then draft report to send to JO for Common Assumptions.

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After Common Assumptions reports and agrees, consideration is complete.

COMMON ASSUMPTIONS DID NOT ACT -- SO RE-SUBMIT.

l. Indoor re-sets **(Art)**

m. Super-insulation -- NB: no metric -- further discussion of potential more economic and equitable measures, e.g., 2" instead of 4" (David), super-insulate roof being replaced anyway (Kara), new roofing materials (Debi)

Debi will research new roofing materials

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o. Glow in the dark panels (Find A Light) instead of night lights for TLC Kit. -- Will they stay on through the night?

Debi will gather information re purchasing.

p. Electric heat alternatives - DHCD Ductless Air Source Hedal Pump Demonsgtration

Project (Debra Hall), see attachment

from Debra:

Ductless Air Source Heat Pump Demonstration Project in an all-electric elderly development at Winthrop Housing Authority, which is served by NGRID.

Background
DHCD and housing authorities have been challenged in finding ways to save energy in the substantial portfolio of electrically-heated public housing. This portfolio includes approximately 15,000 one-bedroom, elderly apartments statewide. Each apartment is usually less than 450 square feet. The average annual electrical consumption to heat the apartment is 8,500 kWh. At a state wide average cost of $0.18 per kWh, the annual cost to heat the apartments is $1,530 -- a $20 million operating expense statewide! Most of these apartments have electric baseboard resistance heat, but some have original radiant wall or ceiling heat panels (that usually have been painted over many times) or electric radiators with bricks that retain heat. Weatherization of building envelopes can help make these units somewhat more efficient, as can setback thermostats, if they are easy for elders to use. However, we are also interested in exploring other all-electric technologies.

Current DHCD policy does not require housing authorities to provide cooling in apartments, but most housing authorities air condition community rooms to provide a cool refuge for elders during hot weather. Nonetheless, many tenants install inefficient window AC in their apartments, and the housing authority pays for the cooling on the common electric bill. Air Source Heat Pumps may be an option for providing heating and cooling at a lower total electricity cost than the authority currently pays year-round.

Winthrop Housing Authority Demonstration Project

Winthrop Housing Authority is very interested in hosting a demonstration project that would involve metering 4 buildings that include 32 housing units in their 176-unit Golden Drive Elderly development 667-2. Two of the buildings (16 units), would have ductless ASHP installed. The performance of the 2 buildings with electric resistance heat and window air conditioners and would be compared with the 2 buildings that have ASHP installed.

The buildings at 2, 4, 6, and 8 Golden Drive are identical in size, shape and geographical orientation. There are 8 apartments per building and a front and rear foyer. All apartments have one bedroom and are less than 450 square feet. The foyers are equivalent in square feet to an apartment. Buildings 2 and 4 Golden Drive are served by one three phase electrical service; Buildings 6 and 8 Golden Drive are served by one three phase electrical service. This would make it easy to study these buildings separate from the larger development.

DHCD is hiring Norian Siani Engineering, Inc. to assist with design.

We also have this project on the ARRA WAP public housing project list. We would like to propose participation from LEAN / NGRID as follows:

-- Air seal and weather strip 32 units to achieve building envelope performance improvement in both the electric resistance heat and ASHP units (approx $1000 per unit or $32,000) [Note: this would be through the MF program, if approved; ARRA funds would pay for the heat pumps]

-- Real time interval metering of the each of the four buildings which would allow much more detailed electric use information to this research effort. (approx $20,000?)

Air Source Heat Pumps Can Work in New England

Air Source Heat Pumps (ASHP) are estimated to save 50% or more on heating kWh, and the utility companies have promoted them primarily as a source of cooling through their COOL SMART incentive program for homeowners.
The Single Phase ASHP with inverter technology is currently rated to operate down to 17 F. Three Phase ASHP with

both inverter and variable refrigeration flow technology operate as low as 0 F. The three phase ASHP also have the capability of heating and cooling at the same time. Air source heat pumps have been of interest to MA Dept. of Energy Resources (DOER) for some time now, as a potential alternative or supplement to electric resistance heat.

The Northwest Energy Efficiency Alliance launched the Northwest Ductless Heat Pump Project to demonstrate the use of single phase invert driven ductless heat pumps to displace electric resistance heat in single family homes across the Northwest, Washington , Oregon , Idaho and Montana in 2009. www.nwductless.com The project current has 4586 approved installations. Their consumer webpage www.GoingDuctless.com has a Frequently Asked Questions page that provides good background information on single phase ductless heat pumps. Due to the fact that single family homes are seldom served by three phase power, this project focuses on single phase equipment.

I have attached the detailed work order that DHCD Engineer John Donoghue prepared for this project.

2010 METRICS (pending at DPU)

1. Hard to Reach Landlords {Electric & Gas} – Statewide	
Threshold	Establish a subcommittee consisting of members of the Best Practices Working Group with representatives from all gas and electric program administrators to design and develop a (cost-effective) statewide landlord early retirement high efficiency heating incentive initiative. Incentive Plan should target single family (1-4 units) and should be completed by August 1st, 2010.
Design	Each program administrator to develop a database consisting of landlords in their respective service territories of low-income tenants that pay their own heating bills by September 30th 2010.
Exemplary	Working group to develop and initiate a statewide marketing plan prior to 2010 heating season. Each program administrator to use their individual database to target market and submit a final report of participation and any lessons learned to the Best Practices Working Group by January, 30th 2011.

2. New Measures

Threshold	In coordination with LEAN, implement best practices to achieve deeper energy savings. Best Practices meets monthly, with each PA participating, to discuss and pursue new technologies and deeper measure penetration, and to select new measures for review. PAs will provide written updates on meetings, technical analyses performed, and additional best practices implemented. Each PA will accept an assignment with respect to written products. Each PA to submit documentation showing performance relative to these tasks.
Design	Study possible new program measures that are above and beyond the DOE measure list, specifically including, but not limited to: (1), micro-combined-heat-and-power (with emphasis on three-deckers, six-flats,and single family furnaces), (2) indirect water heating, (3) demand control measures (if feasible and available), (4) LED lighting, and (5) outdoor resets for new heating systems. Cost-effectiveness analysis will be conducted by the PA common assumptions group, or the equivalent, which shall include LEAN for this purpose,within eight weeks of referral by Best Practices, with first reports of analysis no later than June 15, 2010. Each PA to submit documentation showing performance relative to these tasks.
Exemplary	For each measure that passes the common assumptions group cost-effectiveness screening, implement field testing of new program measures in 2010. Document results and findings in a memo to EEAC consultants by April 1, 2011, including measurement of savings per home due to each measure. Where field testing indicates it is appropriate to do so, there will be re-screening by Common Assumptions and/or a second field test. Each PA will conduct field testing with respect to each such measure and provide a memo documenting results. PA field tests will include a sufficient number of installations for each measure, reasonable in proportion to the size of each utility budget, to yield reliable field test results, as set out in the table below, and will begin no later than two months after the relevant Common Assumptions report:

Measures/ PA	MicroCHP*	Indirect DHW	Demand Control**	LED Lighting	Outdoor Resets
NSTAR Electric	1	Standard measure		Standard measure	Standard measure
NGRID Electric	1	Standard measure		Standard measure	Standard measure
WMECO	-	Standard measure		Standard measure	Standard measure

Unitil Electric	-	Standard measure		Standard measure	Standard measure
NSTAR Gas	1	Standard measure	-	-	Standard measure
NGRID Gas	1	Standard measure	-	-	Standard measure
Bay State Gas	1	Standard measure	-	-	Standard measure
Berkshire Gas	-	Standard measure	-	-	Standard measure
New England Gas	-	Standard measure	-	-	Standard measure
Unitil Gas	-	Standard measure	-	-	Standard measure

Note: Where technically appropriate, indirect domestic water heating, LED lighting, and Outdoor resets will become standard measures if they pass cost-effectiveness screening. In the case of LED lighting, it is possible that only specialty lights or applications will pass screening.

* Each Micro CHP installation in a shared Gas and Electric PA territory counts as one (1) installation for each of the two PAs for the purposes of this metric.

** If this measure is feasible and available, Best Practices will develop a statistically reliable number of participants statewide, but no fewer than 500, to be allocated among the electric PAs in proportion to the number of low-income customers in each service territory.

Each PA to submit documentation showing performance relative to targets.

3. Multi-family Building Inventory

Threshold	Develop and support a low-income non-profit multi-family building inventory in order to facilitate benchmarking for project identification of energy retrofit potential and screening of potential projects. It is anticipated that the three-year cost will be $360,000 and that it will provide building square footage and at least a year of energy consumption data with respect to buildings identified by LEAN that are majority-occupied by low-income tenants. This information is

currently available only on a limited basis, with respect to public housing authority buildings, and virtually non-existent for other non-profit-owned buildings. This coordinated and comprehensive project will make it possible to better identify maximum achievable efficiency savings, as well as to refine rollout of the Low Income MultiFamly Retrofit program. It will also support development of an energy efficiency standard (e.g., BTUs of energy per square foot of heated space) for low-income multi-family buildings. LEAN estimates that there are approximately 8,300 buildings of low-income multi-family housing in the Commonwealth. Each utility will support the inventory on an allocated basis.

This will be a three-year project, beginning approximately July 1, 2010, with milestones each year consisting of the addition of 250 buildings per month (allocated by utility) to the database. Allocations are established on a monthly basis (each year ending November 30) since it is not known precisely when the project will begin and will be allocated among utilities in proportion to their customer count of non-profit low-income multifamily buildings in the following format:

PA	% Allocation	# of Buildings/Year
NSTAR Electric		
NGRID Electric		
WMECO		
Unitil Electric		
NSTAR Gas		
NGRID Gas		
Bay State Gas		
Berkshire Gas		
New England Gas		
Unitil Gas		

The current metric for this three-year project only covers 2010, but it is anticipated that there will be customized metrics consistent with the current metric with respect to this project for 2011 and 2012 based on the status of the project at the end of years 2010 and 2012, respectively.

In coordination with LEAN, each PA will develop the scope, design, and contracting for the low-income multi-family building inventory in its service territory and commit to its implementation. This will include consensus agreement on the allocation of non-profit low-income multifamily buildings among the utility service territories. It is anticipated that there will be one statewide procurement.

Design	In coordination with LEAN, each PA will implement the Inventory in its service territory, reaching the designated milestone number of buildings.
Exemplary	By January 1, 2011, in coordination with LEAN, each PA will submit a status report of the implementation of the Inventory, together with recommendations going forward. The status report will include a summary of what has been learned to-date relating to energy consumption in non-profit low-income multifamily buildings (e.g., average BTUs/square foot, reasonable target consumption, reasonable threshold consumption for treatment).

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LOW INCOME BEST PRACTICES MEETING NOTES FOR July 7, 2010

Attendees: Jerry Oppenheim, Bruce Ledgerwood, Mike Rossacci, Debra Hall, Craig Brown, Peter Wingate, Dave Fuller, Ken Rauseo, Deb Sas, Kate Agin, Derek Kimball, Robert Gyurjan, Dave MacLellan, Paul Jackson, Kara Gray, Jeanne Cherry, Art Willcox, John Donahue, Ruth Bechtold, Diana Duffy, Diane Lopes

By phone: Biana Kane and Margaret Song

Next meeting date. October 13 at 10am at HAC – actual location to be determined.

LIHEAP funding issues. Diana Duffy referenced a National Article on the need for greater prevention controls for LIHEAP funding. There was an article that stated 7 states are identified and using LIHEAP funds improperly. No issues found in MA to date.

Procurement. Complete

2009 Metrics. Document complete

Training and Recruitment – This is an ongoing process. Bruce Torrey and Jules Junker are doing lots of training that is paid for with ARRA/WAP funds at this point in time but may be addressed to the PAs once ARRA money in gone.

There are 113 contractors in the networks - not including additional crews. Currently there are about 250 crews. The networks is adding 1-2 contractors a week.

To date, no one has spent out ARRA and if they do then more ARRA money may be available. So far, 800 jobs are being paid for with ARRA money (not all new) this includes contractors and all supporting staff. There are currently 80 auditors in the program which has grown from 40 originally.

ARRA update and discussion - 122 million was received by MA. It was a 3 year program scheduled to end Mar 31, 2012 but may be extended due to the late start caused by the Davis Bacon wage issue . 86 million was directed to the traditional network, 25 million to state public housing for 4000 units, and 6 million to affordable housing for 963 units. There was

also a Governmental service agreement with STCC to train auditors and contractors.

The State weatherization program is ahead of their production goal thru June putting them at 105% of goal. In the fall they will look at reallocation of funds.

PAs mentioned how this is impacting utility/energy efficiency provider program. DHCD states we will need to get more contractors and auditors into the program. Many independent contractors don't want to work on the LI program due to LI pricing and stringent requirements. Can we mandate independents to work on residential and LI program in order to work for utility/EE provider programs?

In some PA territories, customers are calling to be served thru the residential program due to long waiting times. Priority becomes an issue. Agencies are able to serve these customers under PA program funds only to avoid prioritization.

Can PA claim DOE savings? Some PAs use deemed savings and others use site specific. Can PAs claim DOE savings if they leverage the job? Can we set a leverage requirement to help spend PA money? Jerry what is the next step if we want to pursue this?

DHCD states many problems would go away if WX programs were to be an exact mirror of each other but that is not likely possible due to cost effectiveness and savings requirements put on the PAs.

Shifting of funds. Do we reallocate from SF to MF? PAs to discuss with local caps/LV to see if SF is in jeopardy of not spending out. PAs are awaiting resolution on a request as to whether they will be able to shift funds within a program sector.

Windows are a hot topic. DOE is questioning windows on one hand and promoting them on the other. They are out of the MA program as of right now. And steps are being taken to work them back in. In order to continue agencies will need to use the DOE audit tool and the SIR must be at least 1.0. Window pricing is putting this under the 1.0 SIR requirement. DHCD may try a window buydown approach to put windows over the 1.0 SIR. Can PAs pay for the air sealing and insulation required around the window but not the actual window? LEAN to propose an approach to address windows.

At this point Mass Save is not impacting the LI program as far as contractors are concerned.

Repairs- Menu of approved repair measures (local option; must make Wx or EE possible): roof, K&T and other electrical, heating-related including occasional distribution. $10,000 is the maximum per wx job but agencies are required to maintain an average of $5500. For repairs, the max is $2500 with an average of no more than $500. Wmeco repairs evaluation is complete. Repairs were found to be cost effective. Deb Sas to share with group.

Multifamily. Process flow for MF for Western MA and BSG is not clear. First step is to have one entity qualify projects. How the work gets done is a separate issue. The intent is to work through existing channels. ABCD role will be funded by LEAN and allocated appropriately to the correct entities.

Building inventory metric. WEGO WISE to present software later in meeting.

60-80%. Serving the 60-80% population has been proposed to the council for consideration. It would work the same way as it does for the current program. Not 100% sure how customers would be qualified but it would likely go through the FA agency. The proposal is looking to provide a grant to those in the 60-80 range. Funding would come out of the residential sector funds. LEAN stated that work in 2011 would lead up to the transition of ARRA funding going away,so agencies will be in a better position to utilize the PA dollars. CLC is currently running 80% program. CLC uses a simple income form that the customer fills out and the customer receive 100% up to $2000 thru the residential program. Do agencies have the capacity to handle this jump to 80%?

Building permits - Building permit requirements are slowing things down for contractors. Some cities and towns are more stringent than others, there is no consistency. (Permits appear to be a money maker for municipals.)

New measures- Hybrid electric water heaters had a series of issues including: reliability, noise, and condensation. Some products have addressed some of the issues. Cost effectiveness in our climate is not ideal for this technology. No need for Best Practices Working Group (BP) to pursue any further at this time. Some electric PAs are pursuing a pilot in the

non-LI arena. BP will wait on results that are expected to be available next year (2011).

SDHW. Defer to next meeting. Waiting for information on CEC grant (renewable energy trust)

Ammonium Sulfate. 50/50 mix of contractors using this material in MA. DHCD has no position at this point. Price differential is not significant but may be enough for contractors to go with the cheaper product. Product does meet federal standards. Consenus is to continue status quo. This is also consistent with the RCS group decision.

Outdoor resets. Needs to be resubmitted to common assumptions group. Art to provide any necessary info to Common assumptions group.

Window quilts. Rejected quilts and approved cellulose for electric heat only. Art to challenge some of the assumptions used by PA common assumptions group. Art will work with the Common Assumptions group.

Indirect water heaters. Approved for oil but not for gas. Art to provide any necessary info to the Common assumptions group. INWH will only be replaced with the boiler which is causing it not to pass - assuming end of useful life replacement – on the gas side.

Smart strips, LED, MCHP. Approved.

Indoor resets. Not a lot of products out there that are reliable and the cost is high. Not viable at this time.

Find a light. Samples provided by Deb Sas for people to use and see if it is worth putting in the TLC kit.

Super Insulation – Art to do some modeling in regards to 2 inch vs. 4 inch wall insulation and super insulated roof vs. new roof with attic insulation. Deb Sas spoke about some new technologies where manufacturers are experimenting with coatings for roof shingles. One is made from recycled cooking oils that are designed for our specific climate. There are also a photovoltaic film made for shingles that collect solar energy. Deb to update group on the costs of these technologies.

Demand Control. Art did some prelimnary research on Grounded Power - a behavior modification program. If PAs were to accept the entire package

(all options) it would cost approximately $125,000 and would serve approximately 1,500 customers with savings of 174 kwh. Using a 5 year life, Art calculated the BCR to be 1 with no Non energy benefits (NEBS) and 1.5 with NEBs. LEAN will circulate the Grounded power proposal and forward information to the Common Assumptions group for screening.

LI metrics – on target.

LL design level is with Jerry O for comment. **Due August 1.**

Presentation by Aerogel – Paul Nahass

Art to get information to the Common Assumptions group re: this new measure.

Presentation by New Ecology re: WEGOWISE (used in MF program; proposed for use re: MF building inventory)

Presentation by DHCD – re: Ductless Air source Heat Pump by Debra Hall and John Donahue
ANY ACTION ITEMS HERE?

Lopes, Diane

From: Jerrold Oppenheim [jerroldopp@democracyandregulation.com]

Sent: Thursday, July 08, 2010 9:33 AM

To: tobin@bostonabcd.org; wells@bostonabcd.org; maclellan@bostonabcd.org; craig@actioninc.org; ritac@actioninc.org; Elj@actioninc.org; DBuchler@nisource.com; kgray@nisource.com; msommer@berkshiregas.com; rgyurjan@berkshiregas.com; Briana Kane; Ken.Rauseo@state.ma.us; AMickee@GLCAC.Org; rbechtold@haconcapecod.org; NDAVISON@haconcapecod.org; bruceledgerwood@comcast.net; artwillcox@yahoo.com; PWingate@communityaction.us; jhowat@nclc.org; Diana.Duffy@us.ngrid.com; Lynn.Ross@us.ngrid.com; dave.legg@us.ngrid.com; michael.rossacci@us.ngrid.com; Beth.Lonergan@us.ngrid.com; Azulay, Gail; Lopes, Diane; pjackson@smoc.org; kimball@unitil.com; aginkt@nu.com; oswalrl@nu.com; sasde@nu.com; walshj@nu.com; danielle.rathbun@state.ma.us; jeanne.cherry@sug.com; James.Carey@sug.com; trish.walker@sug.com; jglivermore@yahoo.com; pahorowitz@earthlink.com; Mary Gianetti; Margaret M. Song; Debra Hall

Subject: Low Income Best Practices agenda (with assignments and agreements from July 7)-- October 13 at 10 AM at HAC, Hyannis

LOW INCOME BEST PRACTICES DRAFT AGENDA FOR October 13, 2010
At Housing Assistance Corp., Hyannis
Assignments in bold
JULY 7 DECISIONS IN BOLD CAPS

ATTACHED: Grounded Power proposal (2 files).
NOTE: FYI, National Energy Assistance Directors' Association (NEADA) press release at the very bottom of this e-mail re: GAO LIHEAP report. Call with any questions.

1. Notetaker, next meeting, amendments to agenda, corrections to notes of last meeting, corrections to e-list

2. List of Working Groups (John L circulated res. 2/23) -- other WGs?

3. Contractor training and recruitment (Craig)

4. Auditor training (Craig)

5. DHCD (Ken)

6. Repairs
   a. Final WMECO evaluation (Debi, John Walsh)
   b. **Review of menu of approved measures (local option; must make Wx or EE possible): roof, K&T and other electrical, heating-related including occasional distribution. moisture control, structural**

9. Program issues
   a. MF - building inventory (metric) – WEGOWISE?

10. New measures - minimum Metric 2 almost met, except outdoor resets

a. Hybrid electric water heaters **(Art: marginal cost-effectiveness, manufacturers have not addressed issues raised by utilities) (CLC, NS, and NG conducting a 14-site pilot under DOE Building America – results in 2011 (Margaret))**

b. SDHW - PAs agreed on cost-effectiveness parameters; discussion of agreed cost-sharing with RET, assuming funding

c. Cellulose - safety of ammonium sulfate **ALTHOUGH PREFERENCE IS TO BAN AMMONIUM SULFATE, WE WILL FOLLOW DHCD LEAD AND RELY ON STATE CODE (current product is about 50-50)**

d. Window quilts **(ART WILL PROPOSE PROTOCOL)**
WE DECIDED COST-EFFECTIVE IF INSTALLED IN SELECTED PLACES. BEST OPPORTUNITIES ARE MF, SLIDERS, AND DRAFTY WINDOWS. MUST INCLUDE TRACKS AND EDUCATION/SCREENING.
BUT COMMON ASSUMPTIONS, ASSUMING 5 YEAR LIFE AND 80%-EFFICIENT HEATING, REJECTED QUILTS AND APPROVED CELLULOSE ONLY RE: ELECTRIC HEAT. ART WILL RESPOND TO COMMON ASSUMPTIONS.

e. Landlord heating systems -- N.B.: Metric
COMMITTEE LED BY DIANE DEVELOPED PROPOSAL, WHICH DIANE WILL CIRCULATE. OTHER MEMBERS: CRAIG, DAVID, DIANA, KARA, PETER, DEBI, ROBERT, AL, JEANNE
IN THE MEANTIME, PAS WILL DEVELOP SF LANDLORD DATABASES WHERE TENANTS PAY FOR HEAT BY SETEMBER 30.-- ASSEMBLE DATA VIA AGENCIES?
AT NEXT MEETING, COMMITTEE WILL PRESENT MARKETING PLANFOR NEXT WINTER.

f. MicroCHPs **(Bruce, Art)** -- NB: Metric
COMMON ASSUMPTIONS APPROVED.

g. Indirect water heaters, previously approved -- all aboard? **YES** NB: Metric
COMMON ASSUMPTIONS APPROVED, ONLY FOR OIL. ART WILL FOLLOW-UP RE: GAS. NOTE THAT NGRID GAS HAS APPROVED. THERE MAY BE AN ISSUE RE: ASSUMING END-OF-LIFE REPLACEMENT. NOTE THAT COULD ARGUE AVOIDED CHIMNEY LINER AS BENEFIT.

h. LEDs - Brad Steele of EFI advised us that LEDs were not as efficient or cost-effective as CFLs, though there may be some cost-effective specialty applications such as downlights. NB: Metric
AGREED - SPECIAL APPLICATIONS ARE DOWNLIGHTS AND TASK LIGHTING

COMMON ASSUMPTIONS APPROVED.

i. Outdoor re-sets -- rejected in 2009, any need to revisit? **NO** (NB: Metric)
COMMON ASSUMPTIONS DID NOT ACT -- SO RE-SUBMIT. ART WILL CONTACT.

j. Indoor re-sets **(Art)—NO RELIABLE, ECONOMIC PRODUCTS.**

k. Super-insulation -- NB: no metric -- further discussion of potential more economic and equitable measures, e.g., 2" instead of 4" (David), super-insulate roof being replaced anyway (Kara), new roofing materials (Debi)
ART WILL MODEL2" V 4" AND r-60 V R-38
ROBERT WILL PROVIDE COSTS AND BVENEFITS OF WHITE ROOFS
DEBI WILL RESEARCH COMMERCIAL ROOF COATINGS BENEFITS AND COSTS

l. Demand control -- NB: Metric. Grounded Power has made a proposal, which Art is analyzing. **ART WILL PRPOVIDE ANALYSIS TO COMMON ASSUMPTIONS. JERRY WILL CIRCULATE GROUNDED POWER PROPOSAL [ATTACHED]. FURTHER DISCUSSION OF PILOT AT NEXT MEETING.**

m. Glow in the dark panels (Find A Light) instead of night lights for TLC Kit. -- Will they stay on through the night?
DEBI DISTRIBUTED FOR TESTING; COST IS $1.30/3

n. Ductless Air Source Heat Pump Demonstration Project (DHCD proposing ARRA-NGrid project Project in an all-electric elderly development at Winthrop Housing Authority, with some real-toime metering to measure efficiency v temperature) – **WATCH PROGRESS FOR COST-EFFECTIVENESS**

o. Paul Nahass and Steve (last name?), Austin Aerogels, presented Spaceloft, a new insulation product suitable for masonry sidewalls). **STEVE AND PAUL SENDING PRESENTATION, HANDOUT, THIRD-PARTY REVIEW, OTHER MATERIAL. ART SENDING THAT MATERIAL AND HIS BCR ANALYSIS TO COMMO ASSUMPTIONS. FURTHER DISCUSSION AT NEXT MEETING ABOUT WHICH LIMITED APPLICATIONS MAY BE SUITABLE FOR.**

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Sent: Mon, July 5, 2010 4:38:24 PM
Subject: Reminder: Low Income Best Practices agenda (updated, with assignments and agreements from April 6)-- this Wednesday, July 7 at 10 AM at Bay State Gas, Westborough

LOW INCOME BEST PRACTICES DRAFT AGENDA FOR July 7, 2010

Assignments in bold

UPDATES OF APRIL 6 DECISIONS IN BOLD CAPS

1. Notetaker, next meeting (September on Cape ?), amendments to agenda, corrections to notes of last meeting, corrections to e-list

NOTE RE TODAY'S SCHEDULE -- TWO PRESENTATIONS

~11.30 - Paul Nahass, Austin Aerogels (new insultation product suitable for masonry sidewalls) [Art]

~12.30 - Ed Connelly, New Ecology re WEGOWISE (used in MF program; proposed for use re: MF building inventory)

2. List of Working Groups (John L circulated res. 2/23) -- other WGs?

3. Procurement update (Craig)

EVERYONE HAS NOW OK'D/

4. Metrics updates

a. 2010

b. 2009 - **DONE**

5. Contractor training and recruitment (Craig)

6. Auditor training (Craig)

7. DHCD (Ken)

8. Repairs

a. WMECO evaluation (Debi, John Walsh; Art)

b. Review of menu of approved measures (local option; must make Wx or EE possible): roof, K&T and other electrical, heating-related including occasional distribution. moisture control, structural

9. Program issues

a. MF - building inventory (metric), process flow at WMECo (defer to MF screening comm.?)

b. 60-80% update

c. Building Permits required

10. New measures - minimum Metric 2 met

a. Hybrid electric water heaters **(Art will circulate material from utilities group and update re: manufacturer response)**

b. SDHW - PAs agreed last two meetings on cost-effectiveness parameters; discussion of agreed cost-sharing with RET, assuming funding

c. Cellulose - safety of ammonium sulfate **(Debi will ask Maine program for written DOE blessing, see 3/25 e-mail) (Paul Jackson will circulate data re: borate cheaper per R-value because it packs more densely) PREFERENCE IS TO BAN AMMONIUM SULFATE**

d. Blown Fibreglass - **ANY MATERIAL THAT MEETS SPECS (INCLUDING DENSITY) IS OK**

e. Window quilts **(Art will propose protocol)**

COST-EFFECTIVE IF INSTALLED IN SELECTED PLACES. BEST OPPORTUNITIES ARE MF, SLIDERS, AND DRAFTY WINDOWS. MUST INCLUDE TRACKS AND EDUCATION/SCREENING.

COMMON ASSUMPTIONS, ASSUMING 5 YEAR LIFE, REJECTED QUILTS AND APPROVED CELLULOSE ONLY RE: ELECTRIC HEAT.

f. Landlord heating systems -- N.B.: Metric

Committee led by Diane will develop proposal for July meeting. Other members: Craig, David, Diana, Kara, Peter, Debi, Robert, Al, Jeanne

In the meantime, PAs will develop SF Landlord databases where tenants pay for heat -- assemble data via agencies?

Later, plan marketing for next winter

g. MicroCHPs **(Bruce, Art)** -- NB: Metric

AGREED.

Art will send report (with narrative) to JO.

Diane will identify Common Assumptions lead to JO.

JO will submit report to Common Assumptions lead as referral from BP, for analysis no later than 8 weeks/June 15, 2010.

COMMONB ASSUMPTIONS APPROVED.

h. Indirect water heaters, previously approved -- all aboard? **YES** NB: Metric

Art will send report (with narrative) to JO.

Diane will identify Common Assumptions lead to JO.

JO will submit report to Common Assumptions lead as referral from BP, for analysis no later than 8 weeks/June 15, 2010.

COMMON ASSUMPTIONS APPROVED, ONLY FOR OIL.

i. Smart strips - EFI model includes overload protection against fire

Agreed on cost-effectiveness two meetings ago where there are 3+switchable units. Ready to approve? **YES, PROVIDED OVERLOAD PROTECTION**

j. LEDs - Brad Steele of EFI advised us that LEDs were not as efficient or cost-effective as CFLs, though there may be some cost-effective specialty applications such as downlights. NB: Metric

AGREED - SPECIAL APPLICATIONS ARE DOWNLIGHTS AND TASK LIGHTING

Art will gather data, evidence re: niche applications, and information about quality, then draft report to send to JO for Common Assumptions.

JO will submit to Common Assumptions as referral from BP, for analysis within 8 weeks.

After Common Assumptions reports and approves, special applications become standard measure.

COMMON ASSUMPTIONS APPROVED.

k. Outdoor re-sets -- rejected in 2009, any need to revisit? **NO** (NB: Metric)

Art will draft report to send to JO for Common Assumptions.

JO will submit to Common Assumptions as referral from BP, for analysis within 8 weeks/June 15, 2010.

After Common Assumptions reports and agrees, consideration is complete.

COMMON ASSUMPTIONS DID NOT ACT -- SO RE-SUBMIT.

l. Indoor re-sets **(Art)**

m. Super-insulation -- NB: no metric -- further discussion of potential more economic and equitable measures, e.g., 2" instead of 4" (David), super-insulate roof being replaced anyway (Kara), new roofing materials (Debi)

Debi will research new roofing materials

n. Demand control -- NB: Metric. Grounded Power has made a proposal, which Art is analyzing. (Art)

o. Glow in the dark panels (Find A Light) instead of night lights for TLC Kit. -- Will they stay on through the night?

Debi will gather information re purchasing.

p. Electric heat alternatives - DHCD Ductless Air Source Hedal Pump Demonsgtration Project (Debra Hall), see attachment

from Debra:

Ductless Air Source Heat Pump Demonstration Project in an all-electric elderly development at Winthrop Housing Authority, which is served by NGRID.

Background
DHCD and housing authorities have been challenged in finding ways to save energy in the substantial portfolio of electrically-heated public housing. This portfolio includes approximately 15,000 one-bedroom, elderly apartments statewide. Each apartment is usually less than 450 square feet. The average annual electrical consumption to heat the apartment is 8,500 kWh. At a state wide average cost of $0.18 per kWh, the annual cost to heat the apartments is $1,530 -- a $20 million operating expense statewide! Most of these apartments have electric baseboard resistance heat, but some have original radiant wall or ceiling heat panels (that usually have been painted over many times) or electric radiators with bricks that retain heat. Weatherization of building envelopes can help make these units somewhat more efficient, as can setback thermostats, if they are easy for elders to use. However, we are also interested in exploring other all-electric technologies.

Current DHCD policy does not require housing authorities to provide cooling in apartments, but most housing authorities air condition community rooms to provide a cool refuge for elders during hot weather. Nonetheless, many tenants install inefficient window AC in their apartments, and the housing authority pays for the cooling on the common electric bill. Air Source Heat Pumps may be an option for providing heating and cooling at a lower total electricity cost than the authority currently pays year-round.

Winthrop Housing Authority Demonstration Project
Winthrop Housing Authority is very interested in hosting a demonstration project that would involve metering 4 buildings that include 32 housing units in their 176-unit Golden Drive Elderly development 667-2. Two of the buildings (16 units), would have ductless ASHP installed. The performance of the 2 buildings with electric resistance heat and window air conditioners and would be compared with the 2 buildings that have ASHP installed.

The buildings at 2, 4, 6, and 8 Golden Drive are identical in size, shape and geographical orientation. There are 8 apartments per building and a front and rear foyer. All apartments have one bedroom and are less than 450 square feet. The foyers are equivalent in square feet to an apartment. Buildings 2 and 4 Golden Drive are served by one three phase electrical service; Buildings 6 and 8 Golden Drive are served by one three phase electrical service. This would make it easy to study these buildings separate from the larger development.

DHCD is hiring Norian Siani Engineering, Inc. to assist with design.

We also have this project on the ARRA WAP public housing project list. We would like to propose participation from LEAN / NGRID as follows:

-- Air seal and weather strip 32 units to achieve building envelope performance improvement in both the electric resistance heat and ASHP units (approx $1000 per unit or $32,000) [Note: this would be through the MF program, if approved; ARRA funds would pay for the heat pumps]

-- Real time interval metering of the each of the four buildings which would allow much more detailed electric use information to this research effort. (approx $20,000?)

Air Source Heat Pumps Can Work in New England

Air Source Heat Pumps (ASHP) are estimated to save 50% or more on heating kWh, and the utility companies have promoted them primarily as a source of cooling through their COOL SMART incentive program for homeowners.

The Single Phase ASHP with inverter technology is currently rated to operate down to 17 F. Three Phase ASHP with both inverter and variable refrigeration flow technology operate as low as 0 F. The three phase ASHP also have the capability of heating and cooling at the same time. Air source heat pumps have been of interest to MA Dept. of Energy Resources (DOER) for some time now, as a potential alternative or supplement to electric resistance heat.

The Northwest Energy Efficiency Alliance launched the Northwest Ductless Heat Pump Project to demonstrate the use of single phase invert driven ductless heat pumps to displace electric resistance heat in single family homes across the Northwest, Washington , Oregon , Idaho and Montana in 2009. www.nwductless.com The project current has 4586 approved installations. Their consumer webpage www.GoingDuctless.com has a Frequently Asked Questions page that provides good background information on single phase ductless heat pumps. Due to the fact that single family homes are seldom served by three phase power, this project focuses on single phase equipment.

I have attached the detailed work order that DHCD Engineer John Donoghue prepared for this project.

2010 METRICS (pending at DPU)

1. Hard to Reach Landlords {Electric & Gas} – Statewide	
Threshold	Establish a subcommittee consisting of members of the Best Practices Working Group with representatives from all gas and electric program administrators to design and develop a (cost-effective) statewide landlord early retirement high efficiency heating incentive initiative. Incentive Plan should target single family (1-4 units) and should be completed by August 1st, 2010.
Design	Each program administrator to develop a database

	consisting of landlords in their respective service territories of low-income tenants that pay their own heating bills by September 30th 2010.
Exemplary	Working group to develop and initiate a statewide marketing plan prior to 2010 heating season. Each program administrator to use their individual database to target market and submit a final report of participation and any lessons learned to the Best Practices Working Group by January, 30th 2011.

2. New Measures

Threshold	In coordination with LEAN, implement best practices to achieve deeper energy savings. Best Practices meets monthly, with each PA participating, to discuss and pursue new technologies and deeper measure penetration, and to select new measures for review. PAs will provide written updates on meetings, technical analyses performed, and additional best practices implemented. Each PA will accept an assignment with respect to written products. Each PA to submit documentation showing performance relative to these tasks.
Design	Study possible new program measures that are above and beyond the DOE measure list, specifically including, but not limited to: (1), micro-combined-heat-and-power (with emphasis on three-deckers, six-flats,and single family furnaces), (2) indirect water heating, (3) demand control measures (if feasible and available), (4) LED lighting, and (5) outdoor resets for new heating systems. Cost-effectiveness analysis will be conducted by the PA common assumptions group, or the equivalent, which shall include LEAN for this purpose,within eight weeks of referral by Best Practices, with first reports of analysis no later than June 15, 2010. Each PA to submit documentation showing performance relative to these tasks.
Exemplary	For each measure that passes the common assumptions group cost-effectiveness screening, implement field testing of new program measures in 2010. Document results and findings in a memo to EEAC consultants by April 1, 2011, including measurement of savings per home due to each measure. Where field testing indicates it is appropriate to do so, there will be re-screening by Common Assumptions and/or a second field test. Each PA will conduct field

testing with respect to each such measure and provide a memo documenting results. PA field tests will include a sufficient number of installations for each measure, reasonable in proportion to the size of each utility budget, to yield reliable field test results, as set out in the table below, and will begin no later than two months after the relevant Common Assumptions report:

Measures/ PA	MicroCHP*	Indirect DHW	Demand Control**	LED Lighting	Outdoor Resets
NSTAR Electric	1	Standard measure		Standard measure	Standard measure
NGRID Electric	1	Standard measure		Standard measure	Standard measure
WMECO	-	Standard measure		Standard measure	Standard measure
Unitil Electric	-	Standard measure		Standard measure	Standard measure
NSTAR Gas	1	Standard measure	-	-	Standard measure
NGRID Gas	1	Standard measure	-	-	Standard measure
Bay State Gas	1	Standard measure	-	-	Standard measure
Berkshire Gas	-	Standard measure	-	-	Standard measure
New England Gas	-	Standard measure	-	-	Standard measure
Unitil Gas	-	Standard measure	-	-	Standard measure

Note: Where technically appropriate, indirect domestic water heating, LED lighting, and Outdoor resets will become standard measures if they pass cost-effectiveness screening. In the case of LED lighting, it is possible that only specialty lights or applications will pass screening.

* Each Micro CHP installation in a shared Gas and Electric PA territory counts as one (1) installation for each of the two PAs for the purposes of this metric.

** If this measure is feasible and available, Best Practices will develop a statistically reliable number of participants statewide, but no fewer than 500, to be allocated among the electric PAs in proportion to the number of low-income customers in each service territory.

Each PA to submit documentation showing performance relative to targets.

3. Multi-family Building Inventory

<table>
<tr>
<td>Threshold</td>
<td>Develop and support a low-income non-profit multi-family building inventory in order to facilitate benchmarking for project identification of energy retrofit potential and screening of potential projects. It is anticipated that the three-year cost will be $360,000 and that it will provide building square footage and at least a year of energy consumption data with respect to buildings identified by LEAN that are majority-occupied by low-income tenants. This information is currently available only on a limited basis, with respect to public housing authority buildings, and virtually non-existent for other non-profit-owned buildings. This coordinated and comprehensive project will make it possible to better identify maximum achievable efficiency savings, as well as to refine rollout of the Low Income MultiFamly Retrofit program. It will also support development of an energy efficiency standard (e.g., BTUs of energy per square foot of heated space) for low-income multi-family buildings. LEAN estimates that there are approximately 8,300 buildings of low-income multi-family housing in the Commonwealth. Each utility will support the inventory on an allocated basis.

This will be a three-year project, beginning approximately July 1, 2010, with milestones each year consisting of the addition of 250 buildings per month (allocated by utility) to the database. Allocations are established on a monthly basis (each year ending November 30) since it is not known precisely when the project will begin and will be allocated among utilities in proportion to their customer count of non-profit low-income multifamily buildings in the following format:

<table>
<tr><th>PA</th><th>% Allocation</th><th># of Buildings/Year</th></tr>
<tr><td>NSTAR Electric</td><td></td><td></td></tr>
<tr><td>NGRID Electric</td><td></td><td></td></tr>
<tr><td>WMECO</td><td></td><td></td></tr>
<tr><td>Unitil Electric</td><td></td><td></td></tr>
<tr><td>NSTAR Gas</td><td></td><td></td></tr>
<tr><td>NGRID Gas</td><td></td><td></td></tr>
<tr><td>Bay State Gas</td><td></td><td></td></tr>
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<tr><td>New England Gas</td><td></td><td></td></tr>
<tr><td>Unitil Gas</td><td></td><td></td></tr>
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</td>
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</table>

	The current metric for this three-year project only covers 2010, but it is anticipated that there will be customized metrics consistent with the current metric with respect to this project for 2011 and 2012 based on the status of the project at the end of years 2010 and 2012, respectively. In coordination with LEAN, each PA will develop the scope, design, and contracting for the low-income multi-family building inventory in its service territory and commit to its implementation. This will include consensus agreement on the allocation of non-profit low-income multifamily buildings among the utility service territories. It is anticipated that there will be one statewide procurement.
Design	In coordination with LEAN, each PA will implement the Inventory in its service territory, reaching the designated milestone number of buildings.
Exemplary	By January 1, 2011, in coordination with LEAN, each PA will submit a status report of the implementation of the Inventory, together with recommendations going forward. The status report will include a summary of what has been learned to-date relating to energy consumption in non-profit low-income multifamily buildings (e.g., average BTUs/square foot, reasonable target consumption, reasonable threshold consumption for treatment).

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transmission to us at the address above by
U.S. mail. Thank you.

States Develop Task Force with HHS to Address Fraud Prevention in the Low Income Home Energy Assistance Program

July 2, 2010 : Contact: Mark Wolfe 202-237-5199, Cell: 202-320-9046

State energy officials today announced the formation of a joint task force to address issues concerning waste, fraud and abuse in the Low Income Home Energy Assistance Program (LIHEAP). Established by National Energy Assistance Directors' Association (NEADA) in conjunction with the US Department of Health and Human Services (HHS), the task force is a response to a recent report by the US General Accounting Office (GAO) revealing the risk of fraud and abuse in the program due to a lack of systematic checking of applications and payments to utility vendors.

"There is no question that all of the state LIHEAP directors strongly support the accurate and appropriate awarding of grants funds," says Jo-Ann Choate, chair of NEADA. "Any dollar wasted is a dollar that cannot be used to help a needy family have access to energy assistance."

To that end, the states are requesting full access from GAO to the files in question in order to assess the accuracy of the review, develop appropriate measures to prevent waste, and eliminate weaknesses in the in-take system.

The task force will work with HHS to strengthen internal controls to ensure these funds are used properly.

While the purpose of the Task Force is to prevent waste, fraud and abuse in LIHEAP, it can only do so by addressing serious questions about the rate of error identified in the GAO report.

- Because the states have not had an opportunity to review the files GAO identified as suspicious, it is possible many of these cases are issues of paperwork, not fraud. For example, a recently widowed elderly woman who qualifies for LIHEAP might include her

husband's name on the application so that it is consistent with the billing information her utility company has. Though the paperwork is inaccurate and must be updated, she is still eligible.

- The GAO study reported that LIHEAP programs give low-income residents checks made out to "Your Heating Supplier." In fact, vendor payments are generally marked with specific instructions to the bank that they are only to be deposited by the supplier. Some states pay LIHEAP benefits through the gas, electric and heating companies. A qualifying client's account is credited with the benefit they are eligible for. No payment is issued directly to the client. In rare instances - generally during a home-energy emergency - a two-party check may be issued to the vendor and the client jointly. However, in all cases, the payment is provided only for the purpose intended.

- In a letter to GAO commenting on their review of its program, the State of Ohio pointed out that draft report could be interpreted as finding widespread fraud in Ohio. However, the GAO identified only four questionable cases, with payments totaling $1,400.

- New York State also submitted a letter commenting on the GAO report that raised an important issue: federally mandated deadlines for the delivery of emergency assistance. As stated in the GAO report, federal LIHEAP funds are provided to assist households "in meeting their immediate home energy needs." States have to move fast to meet household energy crises—within 18 to 48 hours, according to federal statutory requirements. The timeframe can make immediate fraud detection difficult. The state recommended, "Additional fraud and abuse prevention measures must take into account the need for states to be responsive to the immediate needs of eligible applicants."

- Lastly, one of the key issues raised by the GAO report is the lack of Social Security numbers required on LIHEAP applications. Because of privacy concerns, until recently HHS would not allow states to require Social Security numbers on applications. HHS has since clarified that states can now do so. Officials believe this will be a significant help in identifying ineligible applicants. New York's letter also recommended this measure.

For the states, the bottom line is that all funds should be spent accurately and in accordance with program regulations, according to Mark Wolfe, executive director of NEADA. "We will be working closely with the HHS to identify all potential strategies to support this outcome," Wolfe said.

The National Energy Assistance Directors' Association (NEADA) represents the state LIHEAP directors. www.neada.org.

Lopes, Diane

From: Jerrold Oppenheim [jerroldopp@democracyandregulation.com]

Sent: Tuesday, October 12, 2010 12:18 PM

To: tobin@bostonabcd.org; wells@bostonabcd.org; maclellan@bostonabcd.org; craig@actioninc.org; ritac@actioninc.org; Elj@actioninc.org; DBuchler@nisource.com; kgray@nisource.com; msommer@berkshiregas.com; rgyurjan@berkshiregas.com; Briana Kane; Ken.Rauseo@state.ma.us; AMickee@GLCAC.Org; rbechtold@haconcapecod.org; NDAVISON@haconcapecod.org; bruceledgerwood@comcast.net; artwillcox@yahoo.com; PWingate@communityaction.us; jhowat@nclc.org; Diana.Duffy@us.ngrid.com; Lynn.Ross@us.ngrid.com; dave.legg@us.ngrid.com; michael.rossacci@us.ngrid.com; Azulay, Gail; Lopes, Diane; pjackson@smoc.org; kimball@unitil.com; aginkt@nu.com; oswalrl@nu.com; sasde@nu.com; walshj@nu.com; danielle.rathbun@state.ma.us; jeanne.cherry@sug.com; James.Carey@sug.com; trish.walker@sug.com; jglivermore@yahoo.com; pahorowitz@earthlink.com; Mary Gianetti; Margaret M. Song; Debra Hall

Subject: Low Income Best Practices agenda (with assignments and agreements from July 7)-- TOMORROW, October 13 at 10 AM at HAC, Hyannis

Assignments and notes from last meeting follow this updated agenda.

Updated proposed agenda:

LOW INCOME BEST PRACTICES DRAFT AGENDA FOR October 13, 2010

At Housing Assistance Corp., Hyannis

Directions: http://www.haconcapecod.org/directions.htm

Call-in: 712-432-0220 + 102 1979

Lunch: selections: contact Margaret Song if you have not done so already -- MSong@CapeLightCompact.org

1. Preliminaries: note taker, next meeting, amendments to agenda, corrections to notes of last meeting, corrections to e-list

2. List of Working Groups: John L. circulated res. WGs 2/23; others?

3. Contractor training and recruitment, Auditor training, DHCD Report -- Craig and Ken

   a. NEW MEASURE: air sealing of windows

4. Health and cost issues regarding borate and aluminum sulfate in insulation products -- presentation by Chris White, National Insulation Products, and discussion of relative costs, what DOE does and does not require, i.e., State Code (15 minutes)

5. Repairs -- DEFER discussion of WMECo evaluation

6. Program issues
   a. Aluminum sulfate (above)

   b. Cost of building permits

c. SDHW - coordinate with CEC?

d. MF status report

e. Other?

7. New measures, incuding consideration for 2011 Metric
a. Hybrid electric water heaters, ductless air source heat pump -- Art

b. Window cellular shades for oil and gas homes, discussion of evaluation assumptions and insstallation protocols -- Art and Craig

c. Indirect water heaters for gas -- Art, NSTAR

d. Outdoor re-sets (need Common Assumptions to confirm rejection)

e. Roofing materials, super insulation (when roof replaced anyway) -- Kara, Debi

f. Grounded Power demand control pilot -- Art, Jerry

g. Find A Light for TLC kits? -- Debi

h. Options for 2" foam on foundation -- Peter

i. Air sealing around windows (above)

j. Other measures to review in 2011?

8. 2010 Metrics -- see metrics at the very end of this e-mail
a. #1 (Landlords) -- update (statewide program design, PA databases, statewide marketing plan and PA initiatives)

b. #2 (New Measures) -- approved and adopted as standard measure: smart strips (prior to metric), indirect water heating (oil), window cellular shades (electric), LED down light (electric);
rejected: window quilts, outdoor re-sets (needs Common Assumptions confirmation), indoor resets)
status re micro CHP installations (approved)
pending at Commn Assumptions: indirect water heating (gas), window cellular shades (gas, oil), outdoor resets (reject), Grounded power demand control pilot

c. #3 (MF Building Inventory) -- status

9. 2011 metrics
a. #1 (Landlords)

b. #2 (New Measures)

c. #3 (MF Building Inventory)

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Gesendet: Donnerstag, den 8. Juli 2010, 9:33:23 Uhr
Betreff: Low Income Best Practices agenda (with assignments and agreements from July 7)-- October 13 at 10 AM at HAC, Hyannis

LOW INCOME BEST PRACTICES DRAFT AGENDA FOR October 13, 2010
At Housing Assistance Corp., Hyannis
Assignments in bold
JULY 7 DECISIONS IN BOLD CAPS

ATTACHED: Grounded Power proposal (2 files).
NOTE: FYI, National Energy Assistance Directors' Association (NEADA) press release at the very bottom of this e-mail re: GAO LIHEAP report. Call with any questions.

1. Notetaker, next meeting, amendments to agenda, corrections to notes of last meeting, corrections to e-list

2. List of Working Groups (John L circulated res. 2/23) -- other WGs?

3. Contractor training and recruitment (Craig)

4. Auditor training (Craig)

5. DHCD (Ken)

6. Repairs
   a. Final WMECO evaluation (Debi, John Walsh)
   b. **Review of menu of approved measures (local option; must make Wx or EE possible): roof, K&T and other electrical, heating-related including occasional distribution. moisture control, structural**

9. Program issues
   a. MF - building inventory (metric) – WEGOWISE?

10. New measures - minimum Metric 2 almost met, except outdoor resets
   a. Hybrid electric water heaters **(Art: marginal cost-effectiveness, manufacturers have not addressed issues raised by utilities) (CLC, NS, and NG conducting a 14-site pilot under DOE Building America – results in 2011 (Margaret))**

   b. SDHW - PAs agreed on cost-effectiveness parameters; discussion of agreed cost-sharing with RET, assuming funding

   c. Cellulose - safety of ammonium sulfate **ALTHOUGH PREFERENCE IS TO BAN AMMONIUM SULFATE, WE WILL FOLLOW DHCD LEAD AND RELY ON STATE CODE (current product is about 50-50)**

   d. Window quilts **(ART WILL PROPOSE PROTOCOL)**
WE DECIDED COST-EFFECTIVE IF INSTALLED IN SELECTED PLACES. BEST OPPORTUNITIES ARE MF, SLIDERS, AND DRAFTY WINDOWS. MUST INCLUDE TRACKS AND EDUCATION/SCREENING.
BUT COMMON ASSUMPTIONS, ASSUMING 5 YEAR LIFE AND 80%-EFFICIENT HEATING, REJECTED QUILTS AND APPROVED CELLULOSE ONLY RE: ELECTRIC HEAT. ART WILL RESPOND TO COMMON ASSUMPTIONS.

   e. Landlord heating systems -- N.B.: Metric
COMMITTEE LED BY DIANE DEVELOPED PROPOSAL, WHICH DIANE WILL CIRCULATE. OTHER MEMBERS: CRAIG, DAVID, DIANA, KARA, PETER, DEBI, ROBERT, AL, JEANNE
IN THE MEANTIME, PAS WILL DEVELOP SF LANDLORD DATABASES WHERE TENANTS PAY FOR HEAT BY SETEMBER 30.-- ASSEMBLE DATA VIA

AGENCIES?
AT NEXT MEETING, COMMITTEE WILL PRESENT MARKETING PLANFOR NEXT WINTER.

f. MicroCHPs **(Bruce, Art)** -- NB: Metric
COMMON ASSUMPTIONS APPROVED.

g. Indirect water heaters, previously approved -- all aboard? **YES** NB: Metric
COMMON ASSUMPTIONS APPROVED, ONLY FOR OIL. ART WILL FOLLOW-UP RE: GAS. NOTE THAT NGRID GAS HAS APPROVED. THERE MAY BE AN ISSUE RE: ASSUMING END-OF-LIFE REPLACEMENT. NOTE THAT COULD ARGUE AVOIDED CHIMNEY LINER AS BENEFIT.

h. LEDs - Brad Steele of EFI advised us that LEDs were not as efficient or cost-effective as CFLs, though there may be some cost-effective specialty applications such as downlights. NB: Metric
AGREED - SPECIAL APPLICATIONS ARE DOWNLIGHTS AND TASK LIGHTING
COMMON ASSUMPTIONS APPROVED.

i. Outdoor re-sets -- rejected in 2009, any need to revisit? **NO** (NB: Metric)
COMMON ASSUMPTIONS DID NOT ACT -- SO RE-SUBMIT. ART WILL CONTACT.

j. Indoor re-sets **(Art)—NO RELIABLE, ECONOMIC PRODUCTS.**

k. Super-insulation -- NB: no metric -- further discussion of potential more economic and equitable measures, e.g., 2" instead of 4" (David), super-insulate roof being replaced anyway (Kara), new roofing materials (Debi)
ART WILL MODEL2" V 4" AND r-60 V R-38
ROBERT WILL PROVIDE COSTS AND BVENEFITS OF WHITE ROOFS
DEBI WILL RESEARCH COMMERCIAL ROOF COATINGS BENEFITS AND COSTS

l. Demand control -- NB: Metric. Grounded Power has made a proposal, which Art is analyzing. **ART WILL PRPOVIDE ANALYSIS TO COMMON ASSUMPTIONS. JERRY WILL CIRCULATE GROUNDED POWER PROPOSAL [ATTACHED]. FURTHER DISCUSSION OF PILOT AT NEXT MEETING.**

m. Glow in the dark panels (Find A Light) instead of night lights for TLC Kit. -- Will they stay on through the night?
DEBI DISTRIBUTED FOR TESTING; COST IS $1.30/3

n. Ductless Air Source Heat Pump Demonstration Project (DHCD proposing ARRA-NGrid project Project in an all-electric elderly development at Winthrop Housing Authority, with some

real-toime metering to measure efficiency v temperature) – **WATCH PROGRESS FOR COST-EFFECTIVENESS**

o. Paul Nahass and Steve (last name?), Austin Aerogels, presented Spaceloft, a new insulation product suitable for masonry sidewalls). **STEVE AND PAUL SENDING PRESENTATION, HANDOUT, THIRD-PARTY REVIEW, OTHER MATERIAL. ART SENDING THAT MATERIAL AND HIS BCR ANALYSIS TO COMMO ASSUMPTIONS. FURTHER DISCUSSION AT NEXT MEETING ABOUT WHICH LIMITED APPLICATIONS MAY BE SUITABLE FOR.**

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jglivermore@yahoo.com; pahorowitz@earthlink.com; Mary Gianetti <mgiannetti@mocinc.org>; Margaret M. Song <msong@capelightcompact.org>; Debra Hall <Debra.Hall@state.ma.us>
Sent: Mon, July 5, 2010 4:38:24 PM
Subject: Reminder: Low Income Best Practices agenda (updated, with assignments and agreements from April 6)-- this Wednesday, July 7 at 10 AM at Bay State Gas, Westborough

LOW INCOME BEST PRACTICES DRAFT AGENDA FOR July 7, 2010

Assignments in bold

UPDATES OF APRIL 6 DECISIONS IN BOLD CAPS

1. Notetaker, next meeting (September on Cape ?), amendments to agenda, corrections to notes of last meeting, corrections to e-list

NOTE RE TODAY'S SCHEDULE -- TWO PRESENTATIONS

~11.30 - Paul Nahass, Austin Aerogels (new insultation product suitable for masonry sidewalls) [Art]

~12.30 - Ed Connelly, New Ecology re WEGOWISE (used in MF program; proposed for use re: MF building inventory)

2. List of Working Groups (John L circulated res. 2/23) -- other WGs?

3. Procurement update (Craig)

EVERYONE HAS NOW OK'D/

4. Metrics updates

a. 2010

b. 2009 - **DONE**

5. Contractor training and recruitment (Craig)

6. Auditor training (Craig)

7. DHCD (Ken)

8. Repairs

a. WMECO evaluation (Debi, John Walsh; Art)

b. Review of menu of approved measures (local option; must make Wx or EE possible): roof, K&T and other electrical, heating-related including occasional distribution. moisture control, structural

9. Program issues

a. MF - building inventory (metric), process flow at WMECo (defer to MF screening comm.?)

b. 60-80% update

c. Building Permits required

10. New measures - minimum Metric 2 met

a. Hybrid electric water heaters **(Art will circulate material from utilities group and update re: manufacturer response)**

b. SDHW - PAs agreed last two meetings on cost-effectiveness parameters; discussion of agreed cost-sharing with RET, assuming funding

c. Cellulose - safety of ammonium sulfate **(Debi will ask Maine program for written DOE blessing, see 3/25 e-mail) (Paul Jackson will circulate data re: borate cheaper per R-value because it packs more densely) PREFERENCE IS TO BAN AMMONIUM SULFATE**

d. Blown Fibreglass - **ANY MATERIAL THAT MEETS SPECS (INCLUDING DENSITY) IS OK**

e. Window quilts **(Art will propose protocol)**

COST-EFFECTIVE IF INSTALLED IN SELECTED PLACES. BEST OPPORTUNITIES ARE MF, SLIDERS, AND DRAFTY WINDOWS. MUST INCLUDE TRACKS AND EDUCATION/SCREENING.

COMMON ASSUMPTIONS, ASSUMING 5 YEAR LIFE, REJECTED QUILTS AND APPROVED CELLULOSE ONLY RE: ELECTRIC HEAT.

f. Landlord heating systems -- N.B.: Metric

Committee led by Diane will develop proposal for July meeting. Other members: Craig, David, Diana, Kara, Peter, Debi, Robert, Al, Jeanne

In the meantime, PAs will develop SF Landlord databases where tenants pay for heat -- assemble data via agencies?

Later, plan marketing for next winter

g. MicroCHPs **(Bruce, Art)** -- NB: Metric

AGREED.

Art will send report (with narrative) to JO.

Diane will identify Common Assumptions lead to JO.

JO will submit report to Common Assumptions lead as referral from BP, for analysis no later than 8 weeks/June 15, 2010.

COMMONB ASSUMPTIONS APPROVED.

h. Indirect water heaters, previously approved -- all aboard? **YES** NB: Metric

Art will send report (with narrative) to JO.

Diane will identify Common Assumptions lead to JO.

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COMMON ASSUMPTIONS APPROVED, ONLY FOR OIL.

i. Smart strips - EFI model includes overload protection against fire

Agreed on cost-effectiveness two meetings ago where there are 3+switchable units. Ready to approve? **YES, PROVIDED OVERLOAD PROTECTION**

j. LEDs - Brad Steele of EFI advised us that LEDs were not as efficient or cost-effective as CFLs, though there may be some cost-effective specialty applications such as downlights. NB: Metric

AGREED - SPECIAL APPLICATIONS ARE DOWNLIGHTS AND TASK LIGHTING

Art will gather data, evidence re: niche applications, and information about quality, then draft report to send to JO for Common Assumptions.

JO will submit to Common Assumptions as referral from BP, for analysis within 8 weeks.

After Common Assumptions reports and approves, special applications become standard measure.

COMMON ASSUMPTIONS APPROVED.

k. Outdoor re-sets -- rejected in 2009, any need to revisit? **NO** (NB: Metric)

Art will draft report to send to JO for Common Assumptions.

JO will submit to Common Assumptions as referral from BP, for analysis within 8 weeks/June 15, 2010.

After Common Assumptions reports and agrees, consideration is complete.

COMMON ASSUMPTIONS DID NOT ACT -- SO RE-SUBMIT.

l. Indoor re-sets **(Art)**

m. Super-insulation -- NB: no metric -- further discussion of potential more economic and equitable measures, e.g., 2" instead of 4" (David), super-insulate roof being replaced anyway (Kara), new roofing materials (Debi)

Debi will research new roofing materials

n. Demand control -- NB: Metric. Grounded Power has made a proposal, which Art is analyzing. (Art)

o. Glow in the dark panels (Find A Light) instead of night lights for TLC Kit. -- Will they stay on through the night?

Debi will gather information re purchasing.

p. Electric heat alternatives - DHCD Ductless Air Source Hedal Pump Demonsgtration Project (Debra Hall), see attachment

from Debra:

Ductless Air Source Heat Pump Demonstration Project in an all-electric elderly development at Winthrop Housing Authority, which is served by NGRID.

Background
DHCD and housing authorities have been challenged in finding ways to save energy in the substantial portfolio of electrically-heated public housing. This portfolio includes approximately 15,000 one-bedroom, elderly apartments statewide. Each apartment is usually less than 450 square feet. The average annual electrical consumption to heat the apartment is 8,500 kWh. At a state wide average cost of $0.18 per kWh, the annual cost to heat the apartments is $1,530 -- a $20 million operating expense statewide! Most of these apartments have electric baseboard resistance heat, but

some have original radiant wall or ceiling heat panels (that usually have been painted over many times) or electric radiators with bricks that retain heat. Weatherization of building envelopes can help make these units somewhat more efficient, as can setback thermostats, if they are easy for elders to use. However, we are also interested in exploring other all-electric technologies.

Current DHCD policy does not require housing authorities to provide cooling in apartments, but most housing authorities air condition community rooms to provide a cool refuge for elders during hot weather. Nonetheless, many tenants install inefficient window AC in their apartments, and the housing authority pays for the cooling on the common electric bill. Air Source Heat Pumps may be an option for providing heating and cooling at a lower total electricity cost than the authority currently pays year-round.

Winthrop Housing Authority Demonstration Project

Winthrop Housing Authority is very interested in hosting a demonstration project that would involve metering 4 buildings that include 32 housing units in their 176-unit Golden Drive Elderly development 667-2. Two of the buildings (16 units), would have ductless ASHP installed. The performance of the 2 buildings with electric resistance heat and window air conditioners and would be compared with the 2 buildings that have ASHP installed.

The buildings at 2, 4, 6, and 8 Golden Drive are identical in size, shape and geographical orientation. There are 8 apartments per building and a front and rear foyer. All apartments have one bedroom and are less than 450 square feet. The foyers are equivalent in square feet to an apartment. Buildings 2 and 4 Golden Drive are served by one three phase electrical service; Buildings 6 and 8 Golden Drive are served by one three phase electrical service. This would make it easy to study these buildings separate from the larger development.

DHCD is hiring Norian Siani Engineering, Inc. to assist with design.

We also have this project on the ARRA WAP public housing project list. We would like to propose participation from LEAN / NGRID as follows:

-- Air seal and weather strip 32 units to achieve building envelope performance improvement in both the electric resistance heat and ASHP units (approx $1000 per unit or $32,000) [Note: this would be through the MF program, if approved; ARRA funds would pay for the heat pumps]

-- Real time interval metering of the each of the four buildings which would allow much more detailed electric use information to this research effort. (approx $20,000?)

Air Source Heat Pumps Can Work in New England

Air Source Heat Pumps (ASHP) are estimated to save 50% or more on heating kWh, and the utility companies have promoted them primarily as a source of cooling through their COOL SMART incentive program for homeowners.

The Single Phase ASHP with inverter technology is currently rated to operate down to 17 F. Three Phase ASHP with both inverter and variable refrigeration flow technology operate as low as 0 F. The three phase ASHP also have the capability of heating and cooling at the same time. Air source heat pumps have been of interest to MA Dept. of Energy Resources (DOER) for some time now, as a potential alternative or supplement to electric resistance heat.

The Northwest Energy Efficiency Alliance launched the Northwest Ductless Heat Pump Project to demonstrate the use of single phase invert driven ductless heat pumps to displace electric resistance heat in single family homes across the Northwest, Washington , Oregon , Idaho and Montana in 2009. www.nwductless.com The project current has 4586 approved installations. Their consumer webpage www.GoingDuctless.com has a Frequently Asked Questions page that provides good background information on single phase ductless heat pumps. Due to the fact that single family homes are seldom served by three phase power, this project focuses on single phase equipment.

I have attached the detailed work order that DHCD Engineer John Donoghue prepared for this project.

2010 METRICS (pending at DPU)

1. Hard to Reach Landlords {Electric & Gas} – Statewide	
Threshold	Establish a subcommittee consisting of members of the Best Practices Working Group with representatives from all gas and electric program administrators to design and develop a (cost-effective) statewide landlord early retirement high efficiency heating incentive initiative. Incentive Plan should target single family (1-4 units) and should be completed by August 1st, 2010.
Design	Each program administrator to develop a database consisting of landlords in their respective service territories of low-income tenants that pay their own heating bills by September 30th 2010.
Exemplary	Working group to develop and initiate a statewide marketing plan prior to 2010 heating season. Each program administrator to use their individual database to target market and submit a final report of participation and any lessons learned to the Best Practices Working Group by January, 30th 2011.

2. New Measures

Threshold	In coordination with LEAN, implement best practices to achieve deeper energy savings. Best Practices meets monthly, with each PA participating, to discuss and pursue new technologies and deeper measure penetration, and to select new measures for review. PAs will provide written updates on meetings, technical analyses performed, and additional best practices implemented. Each PA will accept an

	assignment with respect to written products. Each PA to submit documentation showing performance relative to these tasks.
Design	Study possible new program measures that are above and beyond the DOE measure list, specifically including, but not limited to: (1), micro-combined-heat-and-power (with emphasis on three-deckers, six-flats,and single family furnaces), (2) indirect water heating, (3) demand control measures (if feasible and available), (4) LED lighting, and (5) outdoor resets for new heating systems. Cost-effectiveness analysis will be conducted by the PA common assumptions group, or the equivalent, which shall include LEAN for this purpose,within eight weeks of referral by Best Practices, with first reports of analysis no later than June 15, 2010. Each PA to submit documentation showing performance relative to these tasks.
Exemplary	For each measure that passes the common assumptions group cost-effectiveness screening, implement field testing of new program measures in 2010. Document results and findings in a memo to EEAC consultants by April 1, 2011, including measurement of savings per home due to each measure. Where field testing indicates it is appropriate to do so, there will be re-screening by Common Assumptions and/or a second field test. Each PA will conduct field testing with respect to each such measure and provide a memo documenting results. PA field tests will include a sufficient number of installations for each measure, reasonable in proportion to the size of each utility budget, to yield reliable field test results, as set out in the table below, and will begin no later than two months after the relevant Common Assumptions report:

Measures/ PA	MicroCHP*	Indirect DHW	Demand Control**	LED Lighting	Outdoor Resets
NSTAR Electric	1	Standard measure		Standard measure	Standard measure
NGRID Electric	1	Standard measure		Standard measure	Standard measure
WMECO	-	Standard measure		Standard measure	Standard measure
Unitil Electric	-	Standard measure		Standard measure	Standard measure
NSTAR Gas	1	Standard measure	-	-	Standard measure
NGRID Gas	1	Standard measure	-	-	Standard measure
Bay State Gas	1	Standard measure	-	-	Standard measure
Berkshire Gas	-	Standard measure	-	-	Standard measure
New	-	Standard	-	-	Standard

	England Gas		measure			measure
	Unitil Gas	-	Standard measure	-	-	Standard measure

Note: Where technically appropriate, indirect domestic water heating, LED lighting, and Outdoor resets will become standard measures if they pass cost-effectiveness screening. In the case of LED lighting, it is possible that only specialty lights or applications will pass screening.

* Each Micro CHP installation in a shared Gas and Electric PA territory counts as one (1) installation for each of the two PAs for the purposes of this metric.

** If this measure is feasible and available, Best Practices will develop a statistically reliable number of participants statewide, but no fewer than 500, to be allocated among the electric PAs in proportion to the number of low-income customers in each service territory.

Each PA to submit documentation showing performance relative to targets.

3. Multi-family Building Inventory

Threshold	Develop and support a low-income non-profit multi-family building inventory in order to facilitate benchmarking for project identification of energy retrofit potential and screening of potential projects. It is anticipated that the three-year cost will be $360,000 and that it will provide building square footage and at least a year of energy consumption data with respect to buildings identified by LEAN that are majority-occupied by low-income tenants. This information is currently available only on a limited basis, with respect to public housing authority buildings, and virtually non-existent for other non-profit-owned buildings. This coordinated and comprehensive project will make it possible to better identify maximum achievable efficiency savings, as well as to refine rollout of the Low Income MultiFamly Retrofit program. It will also support development of an energy efficiency standard (e.g., BTUs of energy per square foot of heated space) for low-income multi-family buildings. LEAN estimates that there are approximately 8,300 buildings of low-income multi-family housing in the Commonwealth. Each utility will support the inventory on an allocated basis. This will be a three-year project, beginning approximately July 1,

	2010, with milestones each year consisting of the addition of 250 buildings per month (allocated by utility) to the database. Allocations are established on a monthly basis (each year ending November 30) since it is not known precisely when the project will begin and will be allocated among utilities in proportion to their customer count of non-profit low-income multifamily buildings in the following format:

PA	% Allocation	# of Buildings/Year
NSTAR Electric		
NGRID Electric		
WMECO		
Unitil Electric		
NSTAR Gas		
NGRID Gas		
Bay State Gas		
Berkshire Gas		
New England Gas		
Unitil Gas		

The current metric for this three-year project only covers 2010, but it is anticipated that there will be customized metrics consistent with the current metric with respect to this project for 2011 and 2012 based on the status of the project at the end of years 2010 and 2012, respectively.

In coordination with LEAN, each PA will develop the scope, design, and contracting for the low-income multi-family building inventory in its service territory and commit to its implementation. This will include consensus agreement on the allocation of non-profit low-income multifamily buildings among the utility service territories. It is anticipated that there will be one statewide procurement.

Design	In coordination with LEAN, each PA will implement the Inventory in its service territory, reaching the designated milestone number of buildings.
Exemplary	By January 1, 2011, in coordination with LEAN, each PA will submit a status report of the implementation of the Inventory, together with recommendations going forward. The status report will include a summary of what has been learned to-date relating to energy consumption in non-profit low-income multifamily buildings (e.g., average BTUs/square foot, reasonable target consumption, reasonable threshold consumption for treatment).

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States Develop Task Force with HHS to Address Fraud Prevention in the Low Income Home Energy Assistance Program

July 2, 2010 : Contact: Mark Wolfe 202-237-5199, Cell: 202-320-9046

State energy officials today announced the formation of a joint task force to address issues concerning waste, fraud and abuse in the Low Income Home Energy Assistance Program (LIHEAP). Established by National Energy Assistance Directors' Association (NEADA) in conjunction with the US Department of Health and Human Services (HHS), the task force is a response to a recent report by the US General Accounting Office (GAO) revealing the risk of fraud and abuse in the program due to a lack of systematic checking of applications and payments to utility vendors.

"There is no question that all of the state LIHEAP directors strongly support

the accurate and appropriate awarding of grants funds," says Jo-Ann Choate, chair of NEADA. "Any dollar wasted is a dollar that cannot be used to help a needy family have access to energy assistance."

To that end, the states are requesting full access from GAO to the files in question in order to assess the accuracy of the review, develop appropriate measures to prevent waste, and eliminate weaknesses in the in-take system.

The task force will work with HHS to strengthen internal controls to ensure these funds are used properly.

While the purpose of the Task Force is to prevent waste, fraud and abuse in LIHEAP, it can only do so by addressing serious questions about the rate of error identified in the GAO report.

- Because the states have not had an opportunity to review the files GAO identified as suspicious, it is possible many of these cases are issues of paperwork, not fraud. For example, a recently widowed elderly woman who qualifies for LIHEAP might include her husband's name on the application so that it is consistent with the billing information her utility company has. Though the paperwork is inaccurate and must be updated, she is still eligible.

- The GAO study reported that LIHEAP programs give low-income residents checks made out to "Your Heating Supplier." In fact, vendor payments are generally marked with specific instructions to the bank that they are only to be deposited by the supplier. Some states pay LIHEAP benefits through the gas, electric and heating companies. A qualifying client's account is credited with the benefit they are eligible for. No payment is issued directly to the client. In rare instances - generally during a home-energy emergency - a two-party check may be issued to the vendor and the client jointly. However, in all cases, the payment is provided only for the purpose intended.

- In a letter to GAO commenting on their review of its program, the State of Ohio pointed out that draft report could be interpreted as finding widespread fraud in Ohio. However, the GAO identified only four questionable cases, with payments totaling $1,400.

- New York State also submitted a letter commenting on the GAO report that raised an important issue: federally mandated deadlines for the delivery of emergency assistance. As stated in the GAO report, federal LIHEAP funds are provided to assist households "in meeting their immediate home energy needs." States have to move fast to meet household energy crises—within 18 to 48 hours, according to federal statutory requirements. The timeframe can make immediate fraud detection difficult. The state recommended, "Additional fraud and abuse prevention measures must take into account the need for states to be responsive to the immediate needs of eligible applicants."

- Lastly, one of the key issues raised by the GAO report is the lack of Social Security numbers required on LIHEAP applications. Because of privacy concerns, until recently HHS would not allow states to require Social Security numbers on applications. HHS has since clarified that states can now do so. Officials believe this will be a significant help in identifying ineligible applicants. New York's letter also recommended this measure.

For the states, the bottom line is that all funds should be spent accurately and in accordance with program regulations, according to Mark Wolfe, executive director of NEADA. "We will be working closely with the HHS to identify all potential strategies to support this outcome," Wolfe said.

The National Energy Assistance Directors' Association (NEADA) represents the state LIHEAP directors. www.neada.org.

LI Best Practices – October 13, 2010 – Draft Meeting Notes

Margaret Song
Deb Sas
Diane Lopes
Riley Hastings
Chris White, National Fiber
Paul Jackson
Craig Brown
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Peter Wingate
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Nancy Davison
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Debra Hall
Art Wilcox
Bruce Ledgerwood

Preliminaries – remove Beth Lonergan and Briana Kane; Add Riley Hastings (christine.hastings@nstar.com)
– Meeting – January 10th, WMECO, Springfield

Chris White – National Fiber – Presentation in electronic form attached –
- Wet applications can be an issue with hybrid
- Cellulose with borate is better quality
- All borate jobs would be about $30 more.

Ammonium Sulfate Insulation – Leads will ask their contractors what they currently use and ask them to change to borate product for **next meeting**. Craig to speak with Ken.

Trainings – Jules Junker and Bruce Torrey – going pretty well.
- BPI certification – Analyst training through DHCD at North Shore Community College.
- BootCamp – Mattapan – still running folks through this – City of Boston owns it.
- Some distributors of insulation products have been giving scholarships for BPI Analyst and Envelope
- DHCD – Other half of ARRA funds went through.

Windows are coming in close to $390 – not pass NEAT with that cost – may need to be bid out in case-by-case basis. Riley Hastings to review the screening for windows and installation for **next meeting**. LEAN (Paul and Art) to spec a loose window for **next meeting**.

Repairs – are cost-effective – per WMECO

Program Issues

- Cost of building permits – universal – Did anyone not pay?
- SDHW – coordinate with CEC – may be cost-effective
- MF – You don't to hear about it.
- Aerogel – tried a product (david and art) – .04 BCR with benefits BCR as .7 – might only work on gut rehab and new construction – wait for grant results

Hybrid electric water heaters – how to deal with noise, condensation, and temperature recovery – DOE Building America – NGRID, NSTAR, and CLC – EPRI is getting data from us. – Wait until data next year.

Window Quilt/Shades – DOE funds to pay for this – remove agenda item

Cellular shades – lifetime is the issue and hours of use. – remove agenda item

Indirect water heaters for gas – Riley to check for **next meeting**

Outdoor resets – Riley to check for **next meeting**.

Super insulation – roofing materials when replacement – remove this.

Brushless Fan Motors – for future years?

Grounded Power pilot? – Need to file for MTMs? Why not amortize over 5 years? Issue is behavior program usually has 1 year. – **Art to send to Riley, Wendy Todd, Gail, and Jerry**.

TLC Kits – Find a Lights - glow in the dark wall sockets – not good – remove this.

2" foam – Thermax – Class A fire rated – $3-4 per sq ft. (labor included) versus the R-7 number for perimeter $1.82 sq ft. – may help with homes that have moisture issues. – price needs clarification for fire code – **Art to do this for next meeting**.

Landlord – Tenant Heating Systems – If need report by January 30th, then needs to be installed by the end of the year. Each PA has different information from systems. Some presentations to landlord associations.

LED Downlights – more on list. Perhaps look at Cree CR6 (rather than LR6)

MicroCHP – at least one in Cambridge and maybe others – **Bruce Ledgerwood to check on this**.

2011 Metric – May include: Aerogel – HPWH – incremental roof – foundation foam – LED CR6 – roof materials – ductless mini-splits – brushless fan motors – Will some of this be in grants?

Building Inventory – All except for NGRID Electric

LI Best Practices – October 13, 2010 – Draft Meeting Notes

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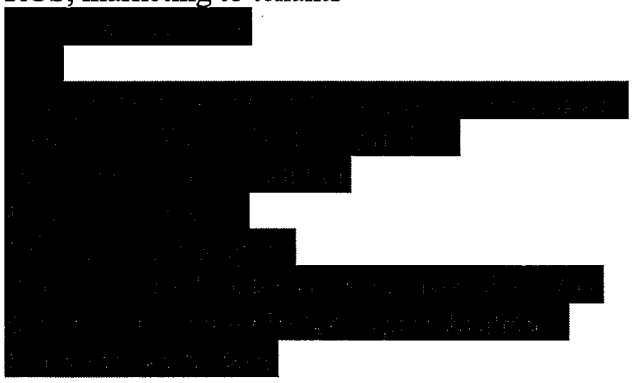
[redacted]

2011 Metrics approv:d
#1 – Hart-to-Reach Landlords (continue) – need to supplement databases, possible collaboration with RCS, marketing to tenants



#3 - Building Inventory (continue) – may need to adjust total for NGRID Electric

Lopes, Diane

From: Azulay, Gail

Sent: Tuesday, June 15, 2010 3:39 PM

To: 'Jerrold Oppenheim'; artwillcox@yahoo.com; pahorowitz@earthlink.net; 'SchlegelJ@aol.com'

Cc: 'Duffy, Diana'; 'kgray@nisource.com'; 'Rossacci, Michael F.'; 'Briana Kane'; 'sasde@nu.com'; 'Kimball, Derek'; 'artwillcox@yahoo.com'; 'Crossman, Kimberly'; 'Jenn Kallay'; 'walshj@nu.com'; 'beaurce@nu.com'; 'glover@unitil.com'; 'sasde@nu.com'; Lopes, Diane; Olsson, Charles; Shea, Lisa; 'DBuchler@NiSource.com'; oswalrl@nu.com

Subject: Metric 2 - New Measures

In accordance with the Design portion of the New Measures Metric the attached memo documents the completed measure screening and the attachments describe the measures and assumptions used. Working in conjunction with LEAN and GDS the MA common Assumptions working group has met the June 15 deadline for a first report analysis.

If you have any questions, let us know.

Gail

Gail Azulay
Sr. Research Analyst
NSTAR Electric & Gas
Ph #781-441-8024

NSTAR ELECTRIC GAS

To: Jerry Oppenheim

Art Wilcox

From: MA Common Assumptions Working Group

GDS

Date: June 15, 2010

Subject: Low Income Metric 2 – New Measures

Each year, as part of the Massachusetts Utilities Energy Efficiency Plan we are assigned Metrics; either individual company or statewide which are tied to company goals and incentives. One of the Statewide Metrics the PA's has is to achieve deeper energy savings. This memo is documentation to meet the first report of analysis by June 15, 2010 in the design portion of Metric 2.

New Measures Metric

Design	Study possible new program measures that are above and beyond the DOE measure list, specifically including, but not limited to: (1) , micro-combined heat and power (with emphasis on three-deckers, six-flats, and single family furnaces), (2) indirect water heating, (3) demand control measures (if feasible and available), (4) LED lighting, and (5) outdoor resets for new heating systems. Cost – effectiveness analysis will be conducted by the PA common assumptions group, or the equivalent, which shall include LEAN for this purpose, within eight weeks of referral by Best Practices, with first reports of analysis no later than June 15, 2010. Each PA to submit documentation showing performance related to these tasks.

On May 24, 2010 the MA Common Assumptions Working Group participated on a call with LEAN and the Best Practices Working Group to discuss measure screening. On this call it was decided that we would not screen demand control measures and outdoor resets at the current time but may be asked to do so at a later date. In addition to the above list we were asked to screen Window Quilts. Subsequent e-mail correspondence and follow up calls were held with LEAN. The statewide working group in conjunction with LEAN analysed the measures to be screened and documented assumptions used in the attached reports. From these reports each of the PA's screened the measures in the individual Benefit Cost Screening models for electric. In addition, National Grid and

Unitil performed screening in their gas models while GDS screened for the remainder of the Gas PA's.

All PA's are in agreement that the measures screened as follows:

Measure	Electric Screening
Micro CHP	Measure is cost effective based on current information and average pilot program savings.
Indirect Water Heating	The measure is cost effective when installing in conjunction with an oil boiler. This measure is not cost effective in the GDS screening model.
Window Quilts	NOT cost effective as benefits are not greater than costs. Window Cellular shades are cost effective when installed in an electrically heated home only.
LED lighting (down light)	The benefits are greater than the costs so this measure is cost effective. Electric Only.

As mentioned above, documentation associated with this screening is attached. If the PA's and Lean determine they would like to offer these measures a determination will need to be made where the savings should be claimed electric or gas.

Review of MCHP systems
Kimberly Crossman, National Grid
Gail Azuley, NSTAR

Introduction:

Micro combined heat and power (MCHP) systems are designed to replace an existing warm air furnace. The system uses natural gas to provide heat and electricity to a home.

The systems screened here are the Climate Energy Freewatt systems. Savings and cost information was provided by Art Wilcox based on his analysis of 25 homes that participated in the pilot.

Based on Art's analysis of the pilot data the average savings per home is 3,854 kWh and 158 therms.[1] These systems were looked at from a retrofit perspective rather than time of replacement.

Approval for Use:

The benefits of the installed measure are greater than the cost using the following assumptions:

- Benefits are assigned dollar value based on current avoided costs.[2]
- Measure lifetime is 15 years.
- Cost of the MCHP system (furnace and MCHP unit) is no more than $12,000 (total cost including installation, extended warranty and lifetime maintenance is $14,113)
- An annual avoided discount on reduced sales (Low Income NEB) of $0.24/therm[3] and 2.728 cents/kWh were used when screening.
- A one time property value benefit is used based on the theory that energy efficiency investments improve the property value of low-income participants homes.[4]

Unit Costs:

The average full cost of installing a system was $14,113:

$5,000 for the furnace
$7,000 for the generator
$1,600 for modifications to accommodate installations
$270 for the extended warranty
$243 for the lifetime maintenance cost for generator

Conclusions and Recommendations:

Measure is cost effective based on current information and average pilot program savings and costs.

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1 Spreadsheet provide by Art Wilcox called Mchp_CE_5_26_10F3.xls

2 Synapse Energy Economics, Avoided Energy Supply Costs in New England: 2009 Final Report, August 21, 2009.

3 When a participant's usage is reduced, the discount provided to the participant is also reduced. The benefit to the utility is the value of the participant's kWh or therms savings multiplied by the per kWh or per therm discount. The difference between the R3 and R4 rate is $0.24/therm and the difference between the R2 and R1 rate is 2.728cents/kWh based on National Grid rates.

4 Value is calculated as annual savings per unit times avg. cost per kWh or therm times $20.70 increase in property value per $ of annual savings. The $20.70 property value increase per $ of annual energy savings is a report result supplied by J. Oppenheim. Avg cost of kWh is $0.1415/kWh and avg cost per therm is $1.27

Review of Indirect Water Heaters
Kimberly Crossman, National Grid
Gail Azuley, NSTAR

Introduction:

Indirect water heaters use a home's heating system to heat water. They're part of what's called integrated or combination water and space heating systems.

Indirect water heaters offer a more efficient choice for most homes, even though they require a storage tank. An indirect water heater uses the main boiler to heat a fluid that's circulated through a heat exchanger in the storage tank. The energy stored by the water tank allows the boiler to turn off and on less often, which saves energy. Therefore, an indirect water heater is used with a high-efficiency boiler and well-insulated tank can be the least expensive means of providing hot water.[1]

Approval for Use:

The benefits of the installed measure are greater than the cost using the following assumptions for oil water heat:

- Benefits are assigned dollar value based on current avoided costs.[2]
- Measure lifetime is 20 years.[3]
- Annual energy savings of 5.44 MMBTu per year.[4]

The measure is not cost effective for gas water heating.

Unit Costs:

The installed cost of a unit is approximately $1,350.[5]

Conclusions and Recommendations:

Measure is cost effective when installing in conjunction with an oil boiler.

1 http://www.eere.energy.gov/consumer/your_home/water_heating/index.cfm/mytopic=13020

2 Synapse Energy Economics, Avoided Energy Supply Costs in New England: 2009 Final Report, August 21, 2009.

3 Natural Gas Energy Efficiency Potential in Massachusetts: April 22, 2009 GDS Associates

4 Natural Gas Energy Efficiency Potential in Massachusetts: April 22, 2009 GDS Associates. Baseline is a 1991 code stand alone 40 gallon gas storage water heater

5 Natural Gas Energy Efficiency Potential in Massachusetts: April 22, 2009 GDS Associates (VT TRM No. 2008-43)

Review of Window Quilts and Cellular Shades
Kimberly Crossman, National Grid
Gail Azulay, NSTAR

Introduction:

Window Quilts® and Cellular Shades are insulating window shades. They block air infiltration and temperature penetration.

Approval for Use:

The Window Quilt is NOT approved for use as the benefits are not greater than the costs. The Window Cellular Shade is approved for use only in electrically heated homes.

Unit Costs:

The cost for the Window Quilt Panel Quilt is $14 per sq ft. We assume an average window is 15 sq ft so the cost is $210 per window.[1]

The cost for the Window Cellular Shade is $121. [NEED SOURCE FROM ART]

Conclusions and Recommendations:

These measures are not cost effective.

- Based on the brochure from Window Quilts a single pane window has an R-value of 0.87 and a Window Quilt would increase the R-value to 5.88. A cellular shade would increase the R-value to 4.1 [NEED SOURCE FROM ART]. To calculate therm savings the following formula was used:
  - Area (sq ft) * (1/Initial R value – 1/Final R value) *12 *HDD/100,000 BTU/therm/AFUE
  - The quilt is assumed to be down 12 hours per day
  - AFUE is assumed to be 78%, federal standard for a furnace
  - HDD is assumed to be 6,000
  - A lifetime of 5 years was assumed
- Using the formula and assumptions above a quilt would save 13.5 therms and a cellular shade would save 12.5 therms. This is equivalent to 9.6 and 8.9 gallons of oil or 396 and 366 kWh, respectively.
- An annual avoided discount on reduced sales (Low Income NEB) of $0.24/therm[2] was used when screening for gas heated homes.
- An annual avoided discount on reduced sales (Low Income NEB) of 2.728 cents/kWh[3] was used when screening for electric heated homes.

[1] https://www.windowquilt.com/wqstore/index.php?main_page=product_info&cPath=2&products_id=2

[2] When a participant's usage is reduced, the discount provided to the participant is also reduced. The benefit to the utility is the value of the participant's therms savings multiplied by the per therm discount. The difference between the R3 and R4 rate is $0.24/therm based on National Grid rates

[3] When a participant's usage is reduced, the discount provided to the participant is also reduced. The benefit to the utility is the value of the participant's kWh savings multiplied by the per kWh discount. The difference between the R2 and R1 rate is 2.728cents/kWh based on National Grid rates.

Review of LED Down Light Fixtures
Gail Azulay, NSTAR
Kimberly Crossman, National Grid

Introduction:

The fixture is for one specific single bulb down/task lighting fixture. Product ranges from $35 - $120.

Approval for Use:

The LED down light fixture is approved for use as the benefits are greater than the costs.

Unit Costs:

The cost for the LED down light fixture is $40 material plus $120 labor.
[NEED LABOR SOURCE FROM ART]

Conclusions and Recommendations:

This measure is cost effective.

- Replacing a 75w fixture with a 6.0 LED down light (69w diff). To calculate savings the following formula was used:
    - The fixture is assumed to operate 4 hours per day; 365 days per year.
    - 69w/1000 *1,460 hours of use = 101 kWh savings.
    - A lifetime of 25 years was assumed
- Using the formula and assumptions above an LED down light would save 101 kWh and .069 kW.
- An annual non resource avoided discount on reduced sales (Low Income NEB) of $3.90 was used.
- A one time non resource avoided discount on reduced sales (Low Income NEB) of $4.00 was used.

Review of Boiler Reset Controls (Low Income Gas)
Riley Hastings, NSTAR
Gail Azulay, NSTAR
Wendy Todd, National Grid

Introduction:

This technology works by monitoring the outdoor temperature and adjusting the frequency with which the boiler responds to the demand. For example, on a relatively mild winter day, the thermostat won't call for heat as often, so the boiler will not need to work as hard. The reset control adjusts the water supply temperature allowing it to drop to lower temperatures before firing.

Approval for Use:

Outdoor boiler reset controls are NOT approved for use as the costs of the installed gas measure are greater than the benefits using the following assumptions:

- Benefits are assigned dollar value based on current avoided costs.[1]
- Measure lifetime is 5 years.[2]
- Annual MMBTu savings of 7.9.[3]

Unit Costs:

- The installed cost of a unit is approximately $600.[4]

Non-Energy Benefits:

- Annual Low Income Monetary Savings difference between R4 and R3 rates of $0.25/therm or $19.75/participant. When a participant's usage is reduced, the discount provided to the participant is also reduced resulting in a benefit to the utility of the value of the participant's annual therm savings.

Conclusions and Recommendations:

Boiler reset controls are not cost effective...

- The TRC benefit-cost ratio is 0.97 slightly below 1.
- Using a 5 year measure life instead of a 15-year measure life from the CEEE Report because of the remaining life of the boilers in the low income housing on which these controls are being installed.
- Using a $600 installed unit cost instead of $500 from the CEEE Report because there are often additional costs to install this measure on older heating systems in low income housing stock.

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1 Synapse Energy Economics, Avoided Energy Supply Costs in New England: 2009 Final Report, August 21, 2009.

2 Based on Art Wilcox's discussions with the Best Practices committee a measure life of 5 years was determined to be more appropriate then the measure life of 15 years from the "CEEE Emerging Technologies Report: Advanced Boiler Controls-2006" Report because of the remaining life of the boilers in the low income housing on which these controls are being installed.

3 ACEEE (2006). Emerging Technologies Report: Advanced Boiler Controls. Prepared for ACEEE; Page 2.

4 Based on Art Wilcox's discussions with the Best Practices committee an installed cost of $600 was determined to be more appropriate then the $500 cost from the "CEEE Emerging Technologies Report: Advanced Boiler Controls-2006" Report because there are often additional costs to install this measure on older heating systems in low income housing stock.

---------- Forwarded message ----------
From: **Jerrold Oppenheim** <jerroldopp@democracyandregulation.com>
Date: Mon, Jul 18, 2011 at 6:35 PM
Subject: 2010 Low Income Metrics
To: "O'Brien, Robert P. (US-NBRO-RS)" <ROBERT.OBRIEN@us.ngrid.com>, Michael Rossacci <michael.rossacci@us.ngrid.com>, jglivermore@yahoo.com, Bill Stack <william.stack@nstar.com>, "\"Kara Gray\"" <kgray@nisource.com>, "\"Derek Buchler\"" <dbuchler@nisource.com>, Derek Kimball <kimball@unitil.com>, Jeanne Cherry <Jeanne.cherry@sug.com>, Robert Gyurian <RGyurian@berkshiregas.com>, Debi Sas <sasde@nu.com>
Cc: Elliott Jacobson <elj@actioninc.org>, ritac@actioninc.org, John Wells <john.wells@bostonabcd.org>

This is to confirm LEAN's acknowledgement that metric achievements are accurately stated in the attached documents, with the exception that National Grid achieved exemplary in Metric Two.

Please let me know if there are any questions.

Please forward this to whomever needs it in your organization.

Thank you.

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Low Income #3

Multi-family Building Inventory

Metric Number	Metric Language	National Grid Electric Targets	National Grid Electric Final 2010 Production	National Grid Gas Targets	National Grid Gas Final 2010 Production
	Develop and support a low-income non-profit multi-family building inventory in order to facilitate benchmarking for project identification of energy retrofit potential and screening of potential projects. It is anticipated that the three-year effort will provide building square footage and at least a year of energy consumption data with respect to buildings identified by LEAN that are majority-occupied by low-income tenants. This information is currently available only on a limited basis, with respect to public housing authority buildings, and virtually non-existent for other non-profit-owned buildings. This coordinated and comprehensive project will make it possible to better identify maximum achievable efficiency savings, as well as to refine rollout of the Low Income MultiFamly Retrofit program. It will also support development of an energy efficiency standard (e.g., BTUs of energy per square foot of heated space) for low-income multi-family buildings. LEAN estimates that there are approximately 8,300 buildings of low-income multi-family housing in the Commonwealth. Each utility will support the inventory on an allocated basis. This will be a three-year project, beginning approximately July 1, 2010, with m	Threshold		Threshold	
	In coordination with LEAN, each PA will implement the Inventory in its service territory, reaching the designated milestone number of buildings.	Design		Design	
Low Income #3. Multi-family Building Inventory	By January 1, 2011, in coordination with LEAN, each PA will submit a status report of the implementation of the Inventory, together with recommendations going forward. The status report will include a summary of what has been learned to-date relating to energy consumption in non-profit low-income multifamily buildings (e.g., average BTUs/square foot, reasonable target consumption, reasonable threshold consumption for treatment).	Exemplary	**Exemplary**	Exemplary	**Exemplary**

2010 Low Income Metric Three

NSTAR Electric & Gas, National Grid, Western Massachusetts Electric Company, Fitchburg Gas & Electric Company, Columbia Gas Company, Berkshire Gas Company and New England Gas Company are submitting this report to update the Low Income Energy Affordability Network (LEAN) on the status of the 2010 low income metric number three.

3. Multi-family Building Inventory

Threshold

Develop and support a low-income non-profit multi-family building inventory in order to facilitate benchmarking for project identification of energy retrofit potential and screening of potential projects. It is anticipated that the three-year effort will provide building square footage and at least a year of energy consumption data with respect to low-income buildings identified by LEAN. This information is now available only on a limited basis with respect to public housing authority buildings and barely at all for other non-profit-owned buildings. This will make it possible to pinpoint maximum achievable efficiency savings, as well as to refine rollout of the Low Income Multifamily Retrofit program. It will also support development of an energy efficiency standard (e.g., BTUs of energy per square foot of heated space) for low-income multi-family buildings. LEAN estimates that there are approximately 8300 buildings of low-income multi-family housing in the Commonwealth. Each utility will support the inventory on an allocated basis.

This will be a three-year project, beginning approximately July 1, 2010, with milestones each year consisting of the addition of 350 buildings per month (allocated by utility) to the database. Allocations are established on a monthly basis (each year ending November 30) since it is not known precisely when the project will begin and will be allocated among utilities in proportion to their customer count of non-profit low-income multifamily buildings in the following format:

PA	% Allocation	# of Buildings/Mth
NSTAR Electric	17%	43
NGRID Electric	23%	59
WMECO	6%	15
Unitil Electric	1%	1
NSTAR Gas	9%	23
NGRID Gas	25%	63
Bay State Gas	13%	32
Berkshire Gas	2%	5
New England Gas	2%	4
Unitil Gas	1%	2

	In coordination with LEAN, each PA will develop the scope, design, and contracting for the low-income multi-family building inventory in its service territory and commit to its implementation. This will include consensus agreement on the allocation of non-profit low-income multifamily buildings among the utility service territories. It is anticipated that there will be one statewide procurement.
Design	In coordination with LEAN, each PA will implement the Inventory in its service territory, reaching the designated milestone number of buildings.
Exemplary	By December 31, 2010, in coordination with LEAN, each PA will submit a status report of the implementation of the Inventory, together with recommendations going forward. The status report will include a summary of what has been learned to date about energy consumption in non-profit low-income multifamily buildings (e.g., average BTUs/square foot, reasonable target consumption, reasonable threshold consumption for treatment).

We believe that by completion and documentation of these tasks each utility has reached the level of the metric listed below.

NSTAR Electric & Gas – exemplary
National Grid – exemplary
Western Massachusetts Electric Company – exemplary
Unitil Service Company – did not participate in this metric
Berkshire Gas – did not participate in this metric
New England Gas – did not participate in this metric
Columbia Gas - Threshold

Respectfully submitted by:

Diane M. Lopes
Residential Program Manager
NSTAR Electric & Gas

Diana Duffy
Senior Program Manager
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Deborah E. Sas
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Unitil Service Corporation

Kara A. Gray
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The Berkshire Gas Company

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Lead Energy Efficiency Programs Administrator
New England Gas Company

Metric 3: Multi-Family Building Inventory

In coordination with LEAN, the PAs will develop and support a low-income non-profit multi-family building inventory in order to facilitate benchmarking for project identification of energy retrofit potential and screening of potential projects.

Metric Achievements

THRESHOLD

- Contracted with, through LEAN, New Ecology to develop this building inventory metric
- New Ecology selected by LEAN based on memo by Tohn Environmental Strategies
- Developed the scope, design and contracting for the inventory
- Approved the WEGOWise application used in the multi-family program
- Began project in September 2010

DESIGN

In coordination with LEAN, each PA implemented the Inventory in its service territory.

EXEMPLARY

Received status report (attached) of the implementation of the Inventory, together with recommendations going forward from New Ecology by due date of December 31, 2010.

Number of Buildings per Month by PA					
	Monthly Target	**Sept**	**Oct**	**Nov**	**Dec**
Berkshire Gas	5	0	0	0	0
Columbia Gas of Massachusetts	32	0	0	6	14
National Grid Electric	59	59	59	59	59
National Grid Gas	63	63	63	65	65
New England Gas	4	0	0	0	0
NSTAR Electric	43	43	43	43	43
NSTAR Gas	23	23	23	23	23
Unitil Electric	1	0	0	0	0
Unitil Gas	2	0	0	0	0
WMECo	15	15	15	15	16

MTHLY REPTS

NSTAR Electric September 2010

	Project Name	Address	City	# Units	Electric Utility	Total ft2	Conditioned ft2	Common area ft2	kWh/bldg ft2	kWh/common ft2
1	Clarendon Hill Towers	1366 Broadway	Somerville	167	NSTAR	158,925	146700	43,808	8.74	N/A
2		1374 Broadway	Somerville	167	NSTAR	158,925	146700	43,808	6.28	N/A
3		1370 Broadway	Somerville	167	NSTAR	158,925	146700	43,808	5.93	N/A
4	Brighton Allston Apts	499 Washington	Allston	6	NSTAR	6724	5043	2181	N/A	3.93
5		495 Washington	Allston	6	NSTAR	6724	5043	2181	N/A	3.72
6		493 Washington	Allston	11	NSTAR	10330	8204	2126	N/A	2.00
7		497 Washington	Allston	6	NSTAR	6724	5043	2181	N/A	0.40
8		1387 Comm Ave.	Allston	20	NSTAR	24250	20200	7113	N/A	3.09
9	Long Glen II	48 Glenville Ave	Allston	18	NSTAR	13392	13392	5200	N/A	3.58
10		58 Glenville Ave	Allston	15	NSTAR	17360	17360	5600	N/A	4.31
11	Broadway II	579-583 Broadway	Chelsea	5	NSTAR	5050	5050	1553	N/A	4.67
12	Chelsea Homes LP	110-112 Chestnut Ave	Chelsea	7	NSTAR	5388	2893	2495	N/A	4.46
13		14 Shawmut St.	Chelsea	7	NSTAR	5616	3804	1812	N/A	2.66
14		61 Library St.	Chelsea	3	NSTAR	3357	3357	606	N/A	1.37
15	Janus Highland LP	27 Gerrish Ave	Chelsea	12	NSTAR	6192	6192	0	6.27	N/A
16		21 Gerrish Ave	Chelsea	6	NSTAR	12766	12766	0	0.03	N/A
17	Spencer Green	113 Spencer Ave	Chelsea	27	NSTAR	1972	1972	0	32.14	N/A
18		1-23 Eleanor St.	Chelsea	12	NSTAR	1972	1972	0	6.91	N/A
19	Commonwealth Apts	1289 Commonwealth	Allston	8	NSTAR	9520	7680	2960	N/A	19.28
20		1301 Commonwealth	Allston	16	NSTAR	18095	14575	5747	N/A	17.36
21		1309 Commonwealth	Allston	16	NSTAR	16440	13284	5001	N/A	17.96
22		1295 Commonwealth	Allston	16	NSTAR	17600	14080	5252	N/A	15.50
23		1305 Commonwealth	Allston	16	NSTAR	18095	14575	5747	N/A	13.89
24		1299 Commonwealth	Allston	16	NSTAR	18095	14575	5747	N/A	13.45
25		1285 Commonwealth	Allston	8	NSTAR	10366	10366	1870	N/A	23.39
26		1293 Commonwealth	Allston	8	NSTAR	8450	6760	2391	N/A	12.66
27	Glenville Apts	62 Glenville	Allston	16	NSTAR	15750	12600	5100	N/A	14.50
28		90 Glenville	Allston	16	NSTAR	15750	13450	2340	N/A	27.36
29	Devine	10 Devine Way	South Boston	2	NSTAR	3852	2889	1248	3.79	1.50
30	West Broadway	363 W. Broadway	South Boston	7	NSTAR	10747	8067	5560	N/A	0.42
31	Daly House	318-320 Dudley St.	Roxbury	19	NSTAR	7104	7104	4444	N/A	13.82
32	Cortes St.	11-15 Cortes St.	Boston	36	NSTAR	12000	12000	6538	N/A	19.98
33		7 Cortes St.	Boston	12	NSTAR	4000	4000	2407	N/A	14.17
34	Mainstay House	258 Main St.	Charlestown	14	NSTAR	7856	7356	5056	N/A	9.89
35	LaConcha	27 Mt. Pleasant	Roxbury	4	NSTAR	4400	3520	1350	N/A	8.12
36		29 Mt. Pleasant	Roxbury	4	NSTAR	4400	3520	1350	N/A	3.96
37		23 Mt. Pleasant	Roxbury	4	NSTAR	4400	3520	1350	N/A	4.36
38		25 Mt. Pleasant	Roxbury	4	NSTAR	4400	3520	1350	N/A	51.97
39		30 Magnolia St.	Roxbury	10	NSTAR	10416	8680	3616	N/A	1.76
40		1 Forest	Roxbury	8	NSTAR	11935	9548	3935	N/A	2.85
41		62 Forest	Roxbury	8	NSTAR	13992	10494	5142	N/A	1.36
42		9 Alaska	Roxbury	12	NSTAR	16320	12240	8070	N/A	2.71
43		15 Alaska	Roxbury	13	NSTAR	16320	13540	6770	N/A	1.31

NSTAR Electric Usage Oct-Dec 2010

#	Project Name	Address	City	# Units	Electric Utility	Total ft2	Conditioned ft2	Common area ft2	kWh/bldg ft2	kWh/Common ft2
1	LaConcha	3 Alaska	Roxbury	12	NSTAR	19520	14640	10820	N/A	0.87
2		112 Magnolia	Roxbury	18	NSTAR	30188	22641	13388	N/A	2.67
3	Sargent Prince	37-51 Roxbury St.	Roxbury	30	NSTAR	30000	24000	20250	N/A	6.58
4	Adams Court B	435 River St.	Mattapan	15	NSTAR	13912	13912	2107	N/A	14.15
5		439 River St.	Mattapan	15	NSTAR	13912	13912	2107	N/A	13.69
6		437 River St.	Mattapan	15	NSTAR	13912	13912	2107	N/A	13.47
7	Adams Court A	431 River St.	Mattapan	15	NSTAR	13912	13912	3706	N/A	10.13
8		415 River St.	Mattapan	35	NSTAR	34668	34668	11140	N/A	4.14
9	Infill	15 Kinsington St.	Roxbury	3	NSTAR	6084	4563	2205	N/A	3.07
10		169 Martin Luther King Blvd	Roxbury	7	NSTAR	9708	7368	2340	N/A	5.79
11		165 Martin Luther King Blvd	Rozbury	3	NSTAR	6084	4563	2364	N/A	3.21
12	West Newton	35-37 West Newton	Boston	29	NSTAR	21600	21600	14800	N/A	5.99
13	Dartmouth Hotel	144 Dudley St.	Roxbury	45	NSTAR	81500	81500	58190	N/A	3.54
14		39 Warren St.	Roxbury	20	NSTAR	21000	21000	4940	N/A	10.16
15	Vila Nova	383 Dudley St.	Roxbury	3	NSTAR	6000	4800	4050	N/A	0.54
16		377 Dudley St.	Roxbury	3	NSTAR	6000	4800	3950	N/A	0.41
17		379 Dudley St.	Roxbury	3	NSTAR	6000	4800	4050	N/A	2.32
18		5 Burton Ave	Roxbury	7	NSTAR	16800	12600	7280	N/A	1.26
19	Grand Families	214 Harvard St.	Dorchester	27	NSTAR	36352	36352	9620	N/A	9.29
20	Four Forest	4 Forest	Dorchester	6	NSTAR	9800	7350	4768	N/A	0.79
21	Boston Hope	17-19 Browning	Dorchester	2	NSTAR	4608	3072	1536	N/A	0.08
22		88 Nightingale St.	Dorchester	12	NSTAR	21600	16200	12968	N/A	3.28
23		71 Kingsdale St.	Dorchester	18	NSTAR	29280	21960	16704	N/A	2.36
24		219-221 Harvard St.	Dorchester	2	NSTAR	4608	3072	1536	N/A	0.08
25	517 Winter St	517 Winter St	Framingha	12	NSTAR	10152	10152	9952	10.72	N/A
26	54 Berkshire Street	54-56 Berkshire Street		6	NSTAR	9256	7102	2794	N/A	1.31
27	58 7th St	58 7th Street	Cambridge	6	NSTAR	7620	7620	4222	N/A	0.15
28	72 Elm	72 Elm Street	Cambridge	6	NSTAR	11926	9220	3720	N/A	1.83
29	George Close	243 Broadway	Cambridge	61	NSTAR	62428	62428	14176	7.36	N/A
30	Green St	205-207 Green	Cambridge	10	NSTAR	4259	2606	0	10.60	N/A
31	Linwood Court	1-6 Linwood Place	Cambridge	6	NSTAR	9027	6059	3573	N/A	5.36
32		200 Columbia Street	Cambridge	6	NSTAR	10824	8118	2706	N/A	4.77
33		204 Columbia Street	Cambridge	8	NSTAR	15750	12600	3150	N/A	2.93
34		210 Columbia Street	Cambridge	8	NSTAR	15750	12600	3150	N/A	3.96
35		261/263 Broadway	Cambridge	4	NSTAR	7650	5100	2550	N/A	1.40
36		269 Broadway	Cambridge	6	NSTAR	11960	8970	2990	N/A	4.15
37		40 Market Street	Cambridge	6	NSTAR	8198	6111	2698	N/A	2.26
38	Cottage Brook Apts	626 Dudley St	Dorchester	4	NSTAR	6092	5092	2015	N/A	4.26
39		622 Dudley St	Dorchester	3	NSTAR	5077	4077	1000	N/A	3.29
40		616 Dudley St	Dorchester	4	NSTAR	5976	4976	1529	N/A	3.14
41		614 Dudley St	Dorchester	4	NSTAR	5976	4976	1529	N/A	2.34
42		589 Dudley St	Dorchester	4	NSTAR	5508	5508	1431	N/A	2.32
43		591 Dudley St	Dorchester	4	NSTAR	5508	5508	1431	N/A	4.21

Nstar Electric Usage November 2010

#	Project Name	Address	City	Units	Electric Utility	Total ft2	Conditioned ft2	Common area ft2	kWh/bldg ft2	kWh/common ft2
1	Cottage Brook Apts	593 Dudley St	Dorchester	4	Nstar	5508	5508	1431 N/A		7.92
2		595 Dudley St	Dorchester	4	Nstar	5508	5508	1431 N/A		3.99
3		132 Brook Ave	Dorchester	3	Nstar	2475	2475	689 N/A		2.57
4		130 Brook Ave	Dorchester	3	Nstar	2475	2475	689 N/A		1.98
5		128 Brook Ave	Dorchester	3	Nstar	2475	2475	689 N/A		6.49
6		126 Brook Ave	Dorchester	3	Nstar	2475	2475	689 N/A		2.07
7		124 Brook Ave	Dorchester	3	Nstar	2580	2580	794 N/A		1.60
8		88 Brook Ave	Dorchester	1	Nstar	2952	2452	1873 N/A		2.23
9		18 W Cottage St	Dorchester	2	Nstar	3670	3670	1111 N/A		2.19
10		11 W Cottage St	Dorchester	2	Nstar	3059	3059	500 N/A		4.22
11		9 E Cottage St	Dorchester	3	Nstar	3978	3078	900 N/A		7.98
12		11 E Cottage St	Dorchester	3	Nstar	4500	3500	1422 N/A		2.11
13		61 Normandy St	Dorchester	3	Nstar	3978	3078	900 N/A		3.25
14		119 Intervale St	Dorchester	3	Nstar	4078	3078	1000 N/A		3.06
15		95 Intervale St	Dorchester	3	Nstar	3000	2500	1701 N/A		1.56
16		95 Woodledge St	Dorchester	3	Nstar	4572	3672	1812 N/A		2.28
17	Geneva Apartments	221/223/225 Geneva Ave	Dorchester	14	Nstar	18149	12099	18148 N/A		1.46
18		227/229 Geneva Ave	Dorchester	9	Nstar	5911	4611	5910 N/A		3.23
19		211/213 Geneva Ave	Dorchester	9	Nstar	4318	3118	3838 N/A		7.29
20		251/253/255 Geneva Ave	Dorchester	6	Nstar	3492	3492	2910 N/A		4.55
21	Dudley Terrace Apts	2-12 Dudley Terrace	Dorchester	14	Nstar	14861	11146	14860 N/A		2.02
22		1129 Dorchester Ave	Dorchester	15	Nstar	8806	8806	8805 N/A		1.99
23		20-24 Roach St	Dorchester	9	Nstar	7560	5040	7559 N/A		1.84
24	CAST	3 Columbia Terrace	Cambridge	18	Nstar	15524	15224	1500	1.44 N/A	
25	Dudley Terrace Apts	14-16 Roach St	Dorchester	6	Nstar	4748	3165	4747		1.44
26	CAST	4 Columbia Terrace	Cambridge	15	Nstar	13672	11672	3677	1.72	
27	Dudley Village South	600-610 Dudley St (Bldg III)	Dorchester	10	Nstar	14444	13544	2874		8.38
28	CAST	55 Columbia Terrace	Cambridge	9	Nstar	9955	9955	1455	1.64	
29	Dudley Village South	630 Dudley St (Bldg V)	Dorchester	8	Nstar	10651	10532	2120		11.59
30	Trolley Square	2393-2401 Mass Ave (Bldgs 1 &	Cambridge	14	Nstar	19797	19797	1797	3.86	
31	Trolley Square	2 Cameron Avenue (Bldg 3)	Cambridge	6	Nstar	7404	7404	904 N/A		3.54
32	Dudley Village South	571 Dudley St (Bldg IV)	Dorchester	8	Nstar	13793	12875	4580 N/A		4.48
33	Trolley Square	4-8 Cameron Avenue (Bldg 4)	Cambridge	12	Nstar	15828	15828	2828 N/A		2.42
34	Auburn Park	1 Brookline Place	Cambridge	34	Nstar	34000	34000	9000	5.45 N/A	
35	UE - UELP	130 Day	Jamaica Plain	3	Nstar	5852	4389	2671 N/A		0.46
36	UE - UELP	60 Seaver	Jamaica plain	6	Nstar	6080	4560	2949 N/A		0.49
37	1460 House	1460 Dorchester Ave	Dorchester	43	Nstar	32292	32292	7691 N/A		0.24
38	Blue Mountain	46 Cheney	Dorchester	12	Nstar	15424	11568	5424	452.00 N/A	
39	Blue Mountain	68 Cheney	Dorchester	6	Nstar	12688	9516	4688	781.33 N/A	
40	Blue Mountain	75 Elm Hill	Dorchester	6	Nstar	8821	8821	721	120.17 N/A	
41	Blue Mountain	141 Homestead	Dorchester	10	Nstar	14692	11019	4775	477.50 N/A	
42	Ceylon Field Apts	14-14A Circuit St	Dorchester	8	Nstar	9117	7092	3039 N/A		0.33
43	Roslindale House	120 Poplar St	Roslindale	83	Nstar	80590	80590	38208	460.34 N/A	

NStar Electric Usage December 2010

#	Project Name	Address	City	Units	Electric Utility	total ft2	conditioned ft2	common area ft2	kWh/bldg ft2	kWh/common ft2
1	Ceylon Field Apts	286-88 Columbia Rd	Dorchester	9		10205	7279	3402	N/A	5.92
2	Longfellow House	885 South St	Hyannis	45		44990	44990	20240	7.20	N/A
3	Ceylon Field Apts	52-54 Stanwood St	Hyannis	6		7263	5071	2421	N/A	4.18
4	Farnsworth House	90 South St	Hyannis	76		75648	75648	18912	6.11	N/A
5	Ceylon Field Apts	48-50 Stanwood St	Hyannis	6		7278	5086	2426	N/A	7.44
6	Spencer House	2053R Columbus Ave	Cambridge	46		51897	51897	27057	3.34	N/A
7	Ceylon Field Apts	44-46 Stanwood St	Dorchester	12		14202	10415	4734	N/A	1.23
8	Joy Street Residence	56 Joy St	Dorchester	21		20900	20900	9920	8.46	N/A
9	Ceylon Field Apts	40-42 Stanwood St	Dorchester	6		6254	4170	2327	N/A	5.56
10	Ceylon Field Apts	255 Magnolia St	Dorchester	3		3389	2449	1130	N/A	3.28
11	Council Tower	2875 Washington St	Dorchester	145		110566	110566	27641	9.56	N/A
12	Ceylon Field Apts	259 Magnolia St	Dorchester	3		3389	2449	1130	N/A	3.24
13	Ceylon Field Apts	93 Intervale St	Dorchester	3		3600	2686	1200	N/A	2.77
14	Ceylon Field Apts	70 Harvard St	Dorchester	6		6777	4806	2259	N/A	0.78
15	Ceylon Field Apts	30 Thane St	Dorchester	6		8136	5636	2712	N/A	3.59
16	Columbia Road Apts	461 Columbia Road	Dorchester	4		6120	4896	2465	N/A	5.42
17	Columbia Road Apts	477 Columbia Road	Dorchester	8		9670	7736	3355	N/A	5.63
18	UE - UELP	132 Day	Dorchester	3		6496	4872	2835	N/A	1.07
19	Columbia Road Apts	414 Columbia Road	Dorchester	15		9272	9272	2912	N/A	6.75
20	UE - UELP	2 Jess	Dorchester	3		2844	2133	1116	N/A	1.17
21	UE - UELP	4 Jess	Dorchester	3		3264	2448	1321	N/A	1.65
22	Columbia Road Apts	418 Columbia Road	Dorchester	16		10862	7950	4502	N/A	5.11
23	UE - UELP	1899 Columbus	Dorchester	3		5024	3768	1899	N/A	0.78
24	Columbia Road Apts	475 Columbia Road	Dorchester	8		9670	7736	3355	N/A	5.63
25	UE - UELP	1901 Columbus	Dorchester	3		3392	2544	1392	N/A	0.87
26	Wilder Gardens	20 Bishop Joe L. Smith Wa	Dorchester	12		14160	10620	4160	5.21	N/A
27	UE - UELP	7-9 Dixwell	Dorchester	6		7692	5769	3313	N/A	1.92
28	Champ Homes	82 School Street	Dorchester	26		12801	12801	4925	1.90	N/A
29	Wilder Gardens	24 Bishop Joe L. Smith Wa	Dorchester	12		14032	10524	4032	5.79	N/A
30	Champ Homes	83B School Street	Dorchester	4		1036	1036	100	5.84	N/A
31	Wilder Gardens	28 Bishop Joe L. Smith Wa	Dorchester	12		14268	10701	4268	5.22	N/A
32	Champ Homes	75 School Street	Dorchester	8		3972	2648	1324	0.29	N/A
33	Wilder Gardens	32 Bishop Joe L. Smith Wa	Boston	12		14136	14136	4136	6.23	N/A
34	Champ Homes	83 School Street	Boston	6		2749	2195	554	2.87	N/A
35	Wilder Gardens	36 Bishop Joe L. Smith Wa	Boston	13		14160	10620	4160	5.55	N/A
36	Uphams Corner	481-485 Columbia Road	Boston	16		20856	15642	5736	N/A	4.76
37	Uphams Corner	3 Bird St/21 Hancock St	Boston	12		15870	12516	5290	N/A	3.17
38	Uphams Corner	14 Magnolia St	Boston	2		3467	3467	1156	N/A	1.34
39	Uphams Corner	10-12 Bird St	Boston	6		8220	5870	2740	N/A	3.57
40	Auburn Park	70 Brookline St	Boston	16		19156	19156	2156	0.25	N/A
41	Cottage Brook Apts	45 Stoughton St	Boston	8		8225	7725	1871	N/A	5.20
42	Cottage Brook Apts	93 Brook Ave	Boston	3		5840	4840	1801	N/A	2.15
43	Cottage Brook Apts	95 Brook Ave	Boston	3		4840	3840	1603	N/A	4.98

NSTAR Gas September 2010

#	Project Name	Address	City	# Units	Gas Utility	Total ft2	Conditioned ft2	Common area ft2	Btu/Conditioned ft2	Annual therms	Therms/ft2
1	Stratton Hill Park	161 W Mountain, A	Worcester	76	NSTAR	66245	66245	5304	79458	52637	0.79458
2		161 W Mountain, B	Worcester	80	NSTAR	67732	67732	5184	79458	53819	0.79458
3	Dismas House	30 Richards Street		8	NSTAR	2500	2500	900	117649	2941	1.17649
4	Brooks House	50 Arthur Street	Worcester	4	NSTAR	3500	3500	1250	70358	2463	0.70358
5	Clarendon Hill Tower	1366 Broadway	Somerville	167	NSTAR	158,925	146700	43,808	72302	106067	0.72302
6		1374 Broadway	Somerville	167	NSTAR	158,925	146700	43,808	72302	106067	0.72302
7		1370 Broadway	Somerville	167	NSTAR	158,925	146700	43,808	72302	106067	0.72302
8	517 Winter St	517 Winter St	Framingham	12	NSTAR	10152	10152	9952	104012	10559	1.04012
9	54 Berkshire Street	54-56 Berkshire Street		6	NSTAR	9256	7102	2794	2078	211	0.02078
10	58 7th St	58 7th Street	Cambridge	6	NSTAR	7620	7620	4222	18374.6	1305	0.18375
11	72 Elm	72 Elm Street	Cambridge	6	NSTAR	11926	9220	3720	2621.1	242	0.02621
12	73 Hollis St	73 Hollis St.	Framingham	53	NSTAR	15057	9867	14957	127644	12595	1.27644
13		84 Auburn Park	Cambridge	14	NSTAR	16441	16441	3171	69486	11424	0.69486
14		80 Auburn park	Cambridge	21	NSTAR	16441	16441	3171	50650	11055	0.5065
15		46 Pilgrim St.	Cambridge	12	NSTAR	13240	13240	2475	65889	11055	0.65889
16		45 Pilgrim St.	Cambridge	9	NSTAR	9618	9618	3627	69486	6683	0.69486
17		41 Pilgrim St.	Cambridge	6	NSTAR	6350	6350	595	69486	4412	0.69486
18		115 Pacific St.	Cambridge	6	NSTAR	6505	6505	595	65889	4286	0.65889
19		42 Pilgrim St.	Cambridge	6	NSTAR	6350	6350	2255	65889	4184	0.65889
20		117 Pacific St.	Cambridge	3	NSTAR	3949	3949	1629	65889	2602	0.65889
21	George Close	243 Broadway	Cambridge	61	NSTAR	62428	62428	14176	102,038	63,700	1.02
22	Green St	205-207 Green	Cambridge	10	NSTAR	4259	2606	0	122,428	122,428	1.22
23	Linwood Court	1-6 Linwood Place	Cambridge	6	NSTAR	9027	6059	3573	112,214	6,799	1.12214

NSTAR Gas Oct 2010

	Project Name	Address	City	# Units	Gas Utility	Total ft2	Conditioned ft2	Common area ft2	Btu/Conditioned ft2	Annual therms	Therms/Conditioned ft2
1	Linwood Court	200 Columbia Street	Cambridge	6	NSTAR	10824	8118	2706	74,712	6,065	0.747
2		204 Columbia Street	Cambridge	8	NSTAR	15750	12600	3150	53,695	6,766	0.537
3		210 Columbia Street	Cambridge	8	NSTAR	15750	12600	3150	76,020	9,579	0.760
4		261/263 Broadway	Cambridge	4	NSTAR	7650	5100	2550	76,147	3,883	0.761
5		267 Broadway	Cambridge	1	NSTAR	2149	1758	391	90,165	1,585	0.902
6		269 Broadway	Cambridge	6	NSTAR	11960	8970	2990	61,621	5,527	0.616
7		40 Market Street	Cambridge	6	NSTAR	8198	6111	2698	86,654	5,295	0.867
8	Clarendon Hill Towers	1366 Broadway	Somerville	167	NSTAR	158925	146700	43808	72302	106067	0.723
9		1370 Broadway	Somerville	167	NSTAR	158925	146700	43808	72302	106067	0.723
10		1374 Broadway	Somerville	167	NSTAR	158925	146700	43808	72302	106067	0.723
11	Central House	820 Massachusetts Ave	Boston	128	NSTAR	31000	31000	7960	46959	14557	0.470
12	Lee St.	47 Lee St	Cambridge	1	NSTAR	5127	3427	0	85110	2917	0.851
13	Norfolk St	193 Norfolk Street	Cambridge	3	NSTAR	3812	2542	0	80017	2034	0.800
14	Tribune	46 Irving Street	Framingham	53	NSTAR	59800	59800	24209	36559	21862	0.366
15	Auburn Park	70 Brookline St	Cambridge	16	NSTAR	19156	19156	2156	52949	10143	0.529
16	CAST	3 Columbia Terrace	Cambridge	18	NSTAR	15524	15224	1500	88112	13414	0.881
17	CAST	4 Columbia Terrace	Cambridge	15	NSTAR	13672	11672	3677	105418	12304	1.054
18	CAST	55 Columbia Terrace	Cambridge	9	NSTAR	9955	9955	1455	69096	6878	0.691
19	Trolley Square	2393-2401 Mass Ave (Bldgs 1 & 2)	Cambridge	14	NSTAR	19797	19797	1797	40715	8060	0.407
20		2 Cameron Avenue (Bldg 3)	Cambridge	6	NSTAR	7404	7404	904	40715	3015	0.407
21		4-8 Cameron Avenue (Bldg 4)	Cambridge	12	NSTAR	15828	15828	2828	40715	6444	0.407
22	58 7th St	58 7th Street	Cambridge	6	NSTAR	7620	7620	4222	17125	1305	0.171
23	Auburn Park	150 Franklin St	Cambridge	5	NSTAR	6652	6652	952	52949	3522	0.529
24	Scouting Way	144-154 Prospect Street	Cambridge	6	NSTAR	6834	6834	0	66525	4546	0.665
25		156 Prospect Street	Cambridge	3	NSTAR	3708	2658	1050	92804	2467	0.928
26		6-12 Scouting Way	Cambridge	4	NSTAR	4422	4422	0	66525	2942	0.665
27	Squirrel Brand	12 Boardman Street	Cambridge	18	NSTAR	19600	19600	4373	61906	12134	0.619
28	St Patrick's Place	50 York Street	Cambridge	16	NSTAR	30360	21910	11925	31287	6855	0.313
29		26 York Street	Cambridge	6	NSTAR	5591	4287	1605	117293	5028	1.173
30	Hovey Avenue Apartments	35 Hovey Avenue	Cambridge	17	NSTAR	12992	12992	32	67049	8711	0.670
31	Putnam Place	264 Putnam Place	Cambridge	8	NSTAR	9172	9172	26	58270	5345	0.583
32	Mission Springs Housing for the Elderly	100 Summer Street	Holliston	75	NSTAR	64500	64500	63996	54729	35300	0.547
33	Elderly Assisted Living	405 Alewife Brook Parkway	Somerville	99	NSTAR	105774	105774	52314	76474	80889	0.765
34		259 Lowell Street	Somerville	97	NSTAR	100000	100000	51500	18389	18389	0.184

NSTAR Ch. No. 2110

	Project Name	Address	City	# Units	Gas Utility	Total ft2	Conditioned ft2	Common area ft2	Btu/Conditioned ft2	Annual therms	Therms/Conditioned ft2
1	Scouting Way	144-154 Prospect Street		6	NSTAR	6834	6834	0	66525	4546	0.665
2	Scouting Way	156 Prospect Street		3	NSTAR	3708	2658	1050	92804	2467	0.928
3	Scouting Way	6-12 Scouting Way		4	NSTAR	4422	4422	0	66525	2942	0.665
4	Squirrel Brand	12 Boardman Street		18	NSTAR	19600	19600	4373	61906	12134	0.619
5	St Patrick's Place	50 York Street		16	NSTAR	30360	21910	11925	31287	6855	0.313
6	St Patrick's Place	26 York Street		6	NSTAR	5591	4287	1605	117293	5028	1.173
7	Hovey Avenue Apartments	35 Hovey Avenue		17	NSTAR	12992	12992	32	67049	8711	0.670
8	Putnam Place	264 Putnam Place		8	NSTAR	9172	9172	26	58270	5345	0.583
9	Mission Springs Housing for the Elderly	100 Summer Street		75	NSTAR	64500	64500	63996	54729	35300	0.547
10	Elderly Assisted Living	405 Alewife Brook Parkway		99	NSTAR	105774	105774	52314	76474	80889	0.765
11	Elderly Assisted Living	259 Lowell Street		97	NSTAR	100000	100000	51500	18389	18389	0.184
12	Anthony Haven	227 Main St.	Fairhaven	24	NSTAR	30400	29400	18400	28571	8400	0.286
13	Dana Court	180 Adams St.	Fairhaven	55	NSTAR	57600	57600	30100	21088	12147	0.211
14	Oxford Terrace	Oxford Terrace	Fairhaven	108	NSTAR	71712	71712	17712	63483	45525	0.635
15	Green Meadows	37-42 McGann Terrace	Fairhaven	6	NSTAR	2520	2520	2020	78455	1977	0.785
16	Green Meadows	33-36 McGann Terrace	Fairhaven	4	NSTAR	2520	2520	2020	78455	1977	0.785
17	Green Meadows	27-32 McGann Terrace	Fairhaven	6	NSTAR	2520	2520	2020	78455	1977	0.785
18	Green Meadows	23-26 McGann Terrace	Fairhaven	4	NSTAR	2520	2520	2020	78455	1977	0.785
19	Green Meadows	17-22 McGann Terrace	Fairhaven	6	NSTAR	2520	2520	2020	78455	1977	0.785
20	Green Meadows	10-16 McGann Terrace	Fairhaven	6	NSTAR	2520	2520	2020	78455	1977	0.785
21	Green Meadows	1-4 McGann Terrace	Fairhaven	4	NSTAR	2520	2520	2020	78455	1977	0.785
22	Green Meadows	100 McGann Terrace 2	Fairhaven	52	NSTAR	36720	36720	10720	78455	28809	0.785
23	Regency Tower Apartments	800 Pleasant St	New Bedford	129	NSTAR	153198	151690	44793	24771	37575	0.248

	Project Name	Address	City	#Units	Gas Utility	Total ft2	Conditioned ft2	Common area ft2	Btu/Conditioned ft2	Annual therms	Therms/Conditioned ft2
1	CCHI	160-164 Richdale	Cambridge	7	NSTAR	10249	7749	2947	3331	258	0.033
2	CCHI	54-56 Sclarappa Street	Cambridge	6	NSTAR	5830	5830	1512	13037	760	0.130
3	Elderly Assisted Living	259 Lowell Street	Somerville	97	NSTAR	100000	100000	51500	18358	18358	0.184
4	Canterbury Towers	6 Wachusett Street		156	NSTAR	129000	125750	32280	6722	8453	0.067
5	Greenwood St. Apartments	327 GREENWOOD ST - 1	Worcester	12	NSTAR	5020	5020		62034	3114	0.620
6		329 GREENWOOD ST - 2	Worcester	8	NSTAR	4332	4332		62034	2687	0.620
7		335 GREENWOOD ST - 3	Worcester	8	NSTAR	2112	2112		62034	1310	0.620
8		333 GREENWOOD ST - 4	Worcester	6	NSTAR	2812	2812		62034	1744	0.620
9		331 GREENWOOD ST - 5	Worcester	8	NSTAR	2600	2600		62034	1613	0.620
10		339 GREENWOOD ST - 6	Worcester	6	NSTAR	2240	2240		62034	1390	0.620
11		337 GREENWOOD ST - 7	Worcester	7	NSTAR	4500	4500		62034	2792	0.620
12		341 GREENWOOD ST - 8	Worcester	6	NSTAR	3724	3724		62034	2310	0.620
13	George F. Booth Apartments	16 Haven Lane 1	Worcester	5	NSTAR	2628	2628		91856	2414	0.919
14		16 Haven Lane 2	Worcester	4	NSTAR	3762	3762		91856	3456	0.919
15		16 Haven Lane 3	Worcester	4	NSTAR	2048	2048		91856	1881	0.919
16		16 Haven Lane 4	Worcester	5	NSTAR	3762	3762		91856	3456	0.919
17		16 Haven Lane 5	Worcester	4	NSTAR	3762	3762		91856	3456	0.919
18		Lincoln St. 6	Worcester	5	NSTAR	2628	2628		91856	2414	0.919
19		Lincoln St. 7	Worcester	5	NSTAR	2628	2628		91856	2414	0.919
20		16 Haven Lane 8	Worcester	4	NSTAR	1944	1944		91856	1786	0.919
21		16 Haven Lane 9	Worcester	4	NSTAR	1944	1944		91856	1786	0.919
22	Providence Apartments	201 Providence St.	Worcester	50	NSTAR	50604	50604		26239	13278	0.262
23	Lafayette Apartments	2 Lafayette St.	Worcester	71	NSTAR	48510	48510		33663	16330	0.337

National Grid Gas September 2010

#	Project Name	Address	City	# Units	Gas Utility	Total ft2	Conditioned ft2	Common area ft2	Btu/Conditioned ft2	Annual therms	Therms/ft2
1	Salem Fairweather	40R Highland Ave	Salem	127	National Grid	76033	74833	24251	102854	76969	1.02854
2	50-52 Andrew St.	50-52 Andrew St.	Lynn	48	National Grid	22000	16500	15528	2563	423	0.02563
3	Middlesex St. LP	56 Middlesex St.	Lowell	24	National Grid	23495	23495	5947	88924	20893	0.88924
4	Brighton Allston Apts	499 Washington	Allston	6	National Grid	6724	5043	2181	129368	6524	1.29368
5		495 Washington	Allston	6	National Grid	6724	5043	2181	129368	6524	1.29368
6		493 Washington	Allston	11	National Grid	10330	8204	2126	122169	10023	1.22169
7		497 Washington	Allston	6	National Grid	6724	5043	2181	129368	6524	1.29368
8		1387 Comm Ave.	Allston	20	National Grid	24250	20200	7113	61318	14870	0.61318
9	Long Glen II	48 Glenville Ave	Allston	18	National Grid	13392	13392	5200	41273	5527	0.41273
10		58 Glenville Ave	Allston	15	National Grid	17360	17360	5600	41273	7165	0.41273
11	Broadway II	579-583 Broadway	Chelsea	5	National Grid	5050	5050	1553	44125	2228	0.44125
12	Chelsea Homes LP	110-112 Chestnut Ave	Chelsea	7	National Grid	5388	2893	2495	129853	3757	1.29853
13		14 Shawmut St.	Chelsea	7	National Grid	5616	3804	1812	73641	2801	0.73641
14		61 Library St.	Chelsea	3	National Grid	3357	3357	606	43632	1465	0.43632
15	Janus Highland LP	27 Gerrish Ave	Chelsea	12	National Grid	6192	6192	0	63170	3911	0.6317
16		21 Gerrish Ave	Chelsea	6	National Grid	12766	12766	0	63170	8064	0.6317
17	Spencer Green	113 Spencer Ave	Chelsea	27	National Grid	1972	1972	0	582057	11478	5.82057
18		1-23 Eleanor St.	Chelsea	12	National Grid	1972	1972	0	191435	3775	1.91435
19	Hano Homes	37-39 Hano	Brighton	2	National Grid	2968	2200	768	68445	1506	0.68445
20		21-23 Hano	Brighton	2	National Grid	2968	2200	768	56240	1237	0.5624
21		13-15 Hano	Brighton	2	National Grid	2968	2200	768	54490	1199	0.5449
22		33-35 Hano	Brighton	2	National Grid	2968	2200	768	54274	1194	0.54274
23		5-7 Hano	Brighton	2	National Grid	2968	2200	768	50986	1122	0.50986
24		9-11 Hano	Brighton	2	National Grid	2968	2200	768	49245	1083	0.49245
25		17-19 Hano	Brighton	2	National Grid	2968	2200	768	48981	1078	0.48981
26		25-27 Hano	Brighton	2	National Grid	2968	2200	768	48015	1056	0.48015
27		29-31 Hano	Brighton	2	National Grid	2968	2200	768	38274	842	0.38274
28	Metropolitan	1 Nassau St.	Boston	251	National Grid	257600	257600	7600	59398	153010	0.59398
29	Oak Terrace	Oak St.	Boston	19	National Grid	25680	25680	1880	56743	24740	0.56743
30		Pine St.	Boston	19	National Grid	25680	25680	1880	56743	14572	0.56743
31		888 Washington St.	Boston	42	National Grid	43600	43600	5800	56743	14572	0.56743
32		Maple St.	Boston	8	National Grid	11144	11144	0	56743	6323	0.56743
33	Devine	10 Devine Way	South Boston	2	National Grid	3852	2889	1248	65312	1887	0.65312
34	West Broadway	363 W. Broadway	South Boston	7	National Grid	10747	8067	5560	48271	3894	0.48271
35	Daly House	318-320 Dudley St.	Roxbury	19	National Grid	7104	7104	4444	102260	7265	1.0226
36	Cortes St.	11-15 Cortes St.	Boston	36	National Grid	12000	12000	6538	75860	9103	0.7586
37		7 Cortes St.	Boston	12	National Grid	4000	4000	2407	76052	3042	0.76052
38	Mainstay House	258 Main St.	Charlestown	14	National Grid	7856	7356	5056	79232	5828	0.79232
39	LaConcha	27 Mt. Pleasant	Roxbury	4	National Grid	4400	3520	1350	102661	3614	1.02661
40		29 Mt. Pleasant	Roxbury	4	National Grid	4400	3520	1350	102661	3614	1.02661
41		23 Mt. Pleasant	Roxbury	4	National Grid	4400	3520	1350	102661	3614	1.02661
42		25 Mt. Pleasant	Roxbury	4	National Grid	4400	3520	1350	102661	3614	1.02661
43		30 Magnolia St.	Roxbury	10	National Grid	10416	8680	3616	91838	7972	0.91838
44		1 Forest	Roxbury	8	National Grid	11935	9548	3935	77870	7435	0.7787
45		62 Forest	Roxbury	8	National Grid	13992	10494	5142	83061	8716	0.83061
46		9 Alaska	Roxbury	12	National Grid	16320	12240	8070	64591	7906	0.64591
47		15 Alaska	Roxbury	13	National Grid	16320	13540	6770	58389	7906	0.58389
48		3 Alaska	Roxbury	12	National Grid	19520	14640	10820	64591	9456	0.64591
49		112 Magnolia	Roxbury	18	National Grid	30188	22641	13388	91772	20778	0.91772
50	Sargent Prince	37-51 Roxbury St.	Roxbury	30	National Grid	30000	24000	20250	54363	13047	0.54363
51	Adams Court B	435 River St.	Mattapan	15	National Grid	13912	13912	2107	51135	7114	0.51135
52		439 River St.	Mattapan	15	National Grid	13912	13912	2107	47808	6651	0.47808
53		437 River St.	Mattapan	15	National Grid	13912	13912	2107	43680	6077	0.4368
54	Adams Court A	431 River St.	Mattapan	15	National Grid	13912	13912	3706	59064	8217	0.59064
55		415 River St.	Mattapan	35	National Grid	34668	34668	11140	37037	12840	0.37037
56	Infill	15 Kinsington St.	Roxbury	3	National Grid	6084	4563	2205	76408	3486	0.76408
57		169 Martin Luther King Blvd	Roxbury	7	National Grid	9708	7368	2340	42888	3160	0.42888
58		165 Martin Luther King Blvd	Rozbury	3	National Grid	6084	4563	2364	43400	1980	0.434
59	West Newton	35-37 West Newton	Boston	29	National Grid	21600	21600	14800	29607	6395	0.29607
60	Dartmouth Hotel	144 Dudley St.	Roxbury	45	National Grid	81500	81500	58190	25166	20510	0.25166
61		39 Warren St.	Roxbury	20	National Grid	21000	21000	4940	25166	5285	0.25166
62	Vila Nova	383 Dudley St.	Roxbury	3	National Grid	6000	4800	4050	93409	4484	0.93409
63		377 Dudley St.	Roxbury	3	National Grid	6000	4800	3950	29531	1418	0.29531

#	Project Name	City	# Units	Gas Utility	Total ft2	Conditioned ft2	Common area ft2	Bsmt/Conditioned ft2	Annual therms	Therms/ft2
1	Vila Nova	Roxbury	3	National Grid	6000	4800	4050	4525.00	217	0.045
2		Roxbury	7	National Grid	16800	12600	7280	3295.00	415	0.033
3	Grand Families	Dorchester	27	National Grid	36352	36352	9620	106.00	38	0.001
4	Four Forest	Dorchester	6	National Grid	9800	7350	4768	3429.00	252	0.034
5	Boston Hope	Dorchester	2	National Grid	4608	3072	1536	55070.00	1692	0.551
6		Dorchester	12	National Grid	21600	16200	12968	39826.00	6452	0.398
7		Dorchester	18	National Grid	29280	21960	16704	38123.00	8372	0.381
8		Dorchester	2	National Grid	4608	3072	1536	42235.00	1297	0.422
9		Dorchester	1	National Grid	3150	2100	1050	60277.00	1266	0.603
10		Dorchester	1	National Grid	3150	2100	1050	47100.00	989	0.471
11		Dorchester	1	National Grid	3150	2100	1050	46808.00	983	0.468
12		Dorchester	1	National Grid	3150	2100	1050	42661.00	896	0.427
13	1017 Beacon	Brookline	16	National Grid	6500	6500	2500	80174.83	5211	0.802
14	1392 Dorchester Avenue	Dorchester	12	National Grid	9840	7847	8083	22555.00	1770	0.226
15	1460 House	Dorchester	43	National Grid	32292	32292	7691	29388.60	9490	0.294
16	15-25 Hemenway Apartments	Boston	4	National Grid	4914	4914	1006	55275.55	2716	0.553
17	15-25 Hemenway Apartments	Boston	4	National Grid	4381	2621	897	92393.05	2422	0.924
18	15-25 Hemenway Apartments	Boston	4	National Grid	4284	2524	877	93819.52	2368	0.938
19	15-25 Hemenway Apartments	Boston	4	National Grid	4284	2524	877	93819.52	2368	0.938
20	15-25 Hemenway Apartments	Boston	4	National Grid	4323	2563	885	93232.97	2390	0.932
21	15-25 Hemenway Apartments	Boston	4	National Grid	4284	2524	877	93819.52	2368	0.938
22	154 / 156 Boylston	Brookline	6	National Grid	8600	6360	2400	65167.70	4145	0.652
23	186 Marlborough St.	Boston	16	National Grid	7793	7042	2876	61330.53	4319	0.613
24	19-21 Faulkner	Dorchester	6	National Grid	7340	5847	1493	7438.86	435	0.074
25	33 Bradlee Street	Boston	13	National Grid	3800	2850	1980	127113.09	3623	1.271
26	394 Washington Street	Boston	12	National Grid	4200	4200	2400	92597.09	3889	0.926
27	64-70 Burbank Apartments	Boston	18	National Grid	18568	18568	6166	51281.54	9522	0.513
28	64-70 Burbank Apartments	Boston	18	National Grid	18568	18568	6166	51281.54	9522	0.513
29	64-70 Burbank St. Apt	Boston	18	National Grid	18568	18568	6166	53299.18	9897	0.533
30	64-70 Burbank St. Apt	Boston	18	National Grid	18568	18568	6166	53299.18	9897	0.533
31	7 Toledo Terrace	Dorchester	3	National Grid	3600	2700	900	3719.40	100	0.037
32	71 Westland Apartments	Boston	20	National Grid	21000	21000	7354	2912.31	612	0.029
33	9 Half Moon Street	Boston	12	National Grid	4400	4400	2480	89039.68	3918	0.890
34	Ashford Street Lodging	Allston	12	National Grid	8232	5488	3444	109533.85	6011	1.095
35	Blue Mountain	Dorchester	6	National Grid	12688	9516	4688	151996.61	14464	1.520
36		Dorchester	6	National Grid	5220	5220	420	133232.20	6955	1.332
37		Dorchester	9	National Grid	8400	8400	400	133232.17	11192	1.332
38		Dorchester	7	National Grid	10880	8160	3880	169554.79	13836	1.696
39		Dorchester	7	National Grid	8160	8160	0	127166.21	10377	1.272
40	Broadway I	Chelsea	24	National Grid	23000	18635	9905	1656.15	309	0.017
41	Brookledge Cummins	Boston	50	National Grid	57000	57000	5000	66052.94	37650	0.661
42	Brookledge Cummins	Boston	40	National Grid	45000	45000	4000	33981.74	15292	0.340
43	Burke Mountain	Dorchester	12	National Grid	11349	11349	1349	93450.25	10606	0.935
44		Dorchester	12	National Grid	11568	11568	1568	93450.20	10810	0.935
45		Dorchester	12	National Grid	10140	10140	640	97166.35	9853	0.972
46		Dorchester	6	National Grid	5718	5718	718	97166.37	5556	0.972
47		Dorchester	6	National Grid	8700	6960	3030	116393.17	8101	1.164
48		Dorchester	12	National Grid	10233	10233	733	97166.35	9943	0.972
49		Dorchester	9	National Grid	8400	8400	600	93114.33	7822	0.931
50		Dorchester	6	National Grid	9516	9516	1016	146265.69	13919	1.463
51		Dorchester	9	National Grid	8640	8640	640	104514.01	9030	1.045
52		Dorchester	9	National Grid	7899	7899	899	104514.21	8256	1.045
53		Dorchester	6	National Grid	8821	8821	821	113619.31	10022	1.136
54		Dorchester	4	National Grid	4947	4947	947	113619.24	5621	1.136
55		Dorchester	6	National Grid	9360	9360	1360	97166.36	9095	0.972
56		Dorchester	6	National Grid	5739	5739	739	97166.30	5576	0.972
57		Dorchester	12	National Grid	11019	11019	1019	99764.42	10993	0.998
58		Dorchester	12	National Grid	11019	11019	1019	103806.52	11383	1.033
59		Dorchester	10	National Grid	11019	11019	1019	75633.36	8334	0.756
60		Dorchester	12	National Grid	10381	10381	1381	90015.49	9345	0.900
61		Dorchester	6	National Grid	7125	7125	625	105808.24	7539	1.058
62		Dorchester	12	National Grid	11139	11139	1139	90015.50	10027	0.900
63		Dorchester	9	National Grid	8682	8682	682	105808.11	9186	1.058

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#	Project Name	Address	City	#Units	Gas Utility	Total ft2	Conditioned ft2	Common area ft2	tu/Conditioned f	Annual therms	Therms/ft2
1	Ceylon Field Apts	14-14A	Dorchester	8	National Grid	9117	7092	3039	91156	6465	0.912
2	Ceylon Field Apts	286-88	Dorchester	9	National Grid	10205	7279	3402	121783	8865	1.218
3	Ceylon Field Apts	52-54	Dorchester	6	National Grid	7263	5071	2421	105310	5340	1.053
4	Ceylon Field Apts	48-50	Dorchester	6	National Grid	7278	5086	2426	97675	4968	0.977
5	Ceylon Field Apts	44-46	Dorchester	12	National Grid	14202	10415	4734	77792	8102	0.778
6	Ceylon Field Apts	40-42	Dorchester	6	National Grid	6254	4170	2327	81920	3416	0.819
7	Ceylon Field Apts	255 Ma	Dorchester	3	National Grid	3389	2449	1130	48513	1188	0.485
8	Ceylon Field Apts	259 Ma	Dorchester	3	National Grid	3389	2449	1130	48513	1188	0.485
9	Ceylon Field Apts	93 Inte	Dorchester	3	National Grid	3600	2686	1200	151088	4058	1.511
10	Ceylon Field Apts	70 Har	Dorchester	6	National Grid	6777	4806	2259	130270	6261	1.303
11	Ceylon Field Apts	30 Tha	Dorchester	6	National Grid	8136	5636	2712	133362	7516	1.334
12	Champ Homes	82 Sch	Hyannis	26	National Grid	12801	12801	4925	15132	1937	0.151
13	Champ Homes	83B Sc	Hyannis	4	National Grid	1036	1036	100	53831	558	0.538
14	Champ Homes	75 Sch	Hyannis	8	National Grid	3972	2648	1324	65171	1726	0.652
15	Champ Homes	83 Sch	Hyannis	6	National Grid	2749	2195	554	81722	1794	0.817
16	Coleman House 1	677 Wi	Boston	100	National Grid	78000	78000	28085	55040	42931	0.550
17	Coleman House II	677b V	Boston	46	National Grid	41123	41123	16823	42335	17409	0.423
18	Columbia Road Apts	477 Co	Dorchester	8	National Grid	9670	7736	3355	78074	6040	0.781
19	Columbia Road Apts	414 Co	Dorchester	15	National Grid	9272	9272	2912	92303	8558	0.923
20	Columbia Road Apts	418 Co	Dorchester	16	National Grid	10862	7950	4502	126112	10026	1.261
21	Columbia Road Apts	475 Co	Dorchester	8	National Grid	9670	7736	3355	78074	6040	0.781
22	Cottage Brook Apts	628 Dt	Dorchester	4	National Grid	3980	2980	-97	125225	3732	1.252
23	Cottage Brook Apts	626 Dt	Dorchester	4	National Grid	6092	5092	2015	112175	5712	1.122
24	Cottage Brook Apts	624 Dt	Dorchester	3	National Grid	3572	2572	-505	130216	3349	1.302
25	Cottage Brook Apts	622 Dt	Dorchester	3	National Grid	5077	4077	1000	116759	4760	1.168
26	Cottage Brook Apts	616 Dt	Dorchester	4	National Grid	5976	4976	1529	137679	6851	1.377
27	Cottage Brook Apts	614 Dt	Dorchester	4	National Grid	5976	4976	1529	137679	6851	1.377
28	Cottage Brook Apts	589 Dt	Dorchester	4	National Grid	5508	5508	1431	103846	5720	1.038
29	Cottage Brook Apts	591 Dt	Dorchester	4	National Grid	5508	5508	1431	103846	5720	1.038
30	Cottage Brook Apts	593 Dt	Dorchester	4	National Grid	5508	5508	1431	103846	5720	1.038
31	Cottage Brook Apts	595 Dt	Dorchester	4	National Grid	5508	5508	1431	103846	5720	1.038
32	Cottage Brook Apts	132 Br	Dorchester	3	National Grid	2475	2475	689	88708	2196	0.887
33	Cottage Brook Apts	130 Br	Dorchester	3	National Grid	2475	2475	689	88708	2196	0.887
34	Cottage Brook Apts	128 Br	Dorchester	3	National Grid	2475	2475	689	88708	2196	0.887
35	Cottage Brook Apts	126 Br	Dorchester	3	National Grid	2475	2475	689	88708	2196	0.887
36	Cottage Brook Apts	124 Br	Dorchester	3	National Grid	2580	2580	794	88708	2289	0.887
37	Cottage Brook Apts	88 Bro	Dorchester	1	National Grid	2952	2452	1873	106797	2619	1.068
38	Cottage Brook Apts	18 W C	Dorchester	2	National Grid	3670	3670	1111	119620	4390	1.196
39	Cottage Brook Apts	11 W C	Dorchester	2	National Grid	3059	3059	500	113977	3487	1.140
40	Cottage Brook Apts	9 E Col	Dorchester	3	National Grid	3978	3078	900	111445	3430	1.114
41	Cottage Brook Apts	11 E C	Dorchester	3	National Grid	4500	3500	1422	110869	3880	1.109
42	Cottage Brook Apts	61 Nor	Dorchester	3	National Grid	3978	3078	900	103604	3189	1.036
43	Cottage Brook Apts	119 In	Dorchester	3	National Grid	4078	3078	1000	107355	3304	1.074
44	Cottage Brook Apts	95 Inte	Dorchester	3	National Grid	3000	2500	1701	101497	2537	1.015
45	Cottage Brook Apts	95 Wo	Dorchester	3	National Grid	4572	3672	1812	110226	4047	1.102
46	Cottage Brook Apts	49 Sto	Dorchester	8	National Grid	10160	9660	4315	89591	8654	0.896
47	Cottage Brook Apts	45 Sto	Dorchester	8	National Grid	8225	7725	1871	90695	7006	0.907
48	Cottage Brook Apts	93 Bro	Dorchester	3	National Grid	5840	4840	1801	108379	5246	1.084
49	Cottage Brook Apts	95 Bro	Dorchester	3	National Grid	4840	3840	1603	113212	4347	1.132
50	Cottage Brook Apts	24 Mac	Dorchester	2	National Grid	3670	3670	1111	93647	3437	0.936
51	Cottage Brook Apts	20 Mac	Dorchester	2	National Grid	3159	3159	600	11949	377	0.119
52	Cottage Brook Apts	16 Mac	Dorchester	2	National Grid	3059	3059	500	108444	3317	1.084
53	Cottage Brook Apts	12 Mac	Dorchester	2	National Grid	3421	3421	862	94865	3245	0.949
54	Cottage Brook Apts	10 Mac	Dorchester	2	National Grid	3839	3839	1280	94865	3642	0.949
55	Cottage Brook Apts	8 Magr	Dorchester	2	National Grid	3159	3159	600	94865	2997	0.949
56	Cottage Brook Apts	19 Ley	Dorchester	3	National Grid	3978	3078	900	122825	3781	1.228
57	Cottage Brook Apts	21 Ley	Dorchester	3	National Grid	3978	3978	900	95037	3781	0.950
58	Cottage Brook Apts	23 Ley	Dorchester	3	National Grid	3978	3078	900	122825	3781	1.228
59	Cottage Brook Apts	25 Ley	Dorchester	3	National Grid	3978	3078	900	122825	3781	1.228
60	Cottage Brook Apts	27 Ley	Dorchester	3	National Grid	3978	3078	900	122825	3781	1.228
61	Cottage Brook Apts	29 Ley	Dorchester	3	National Grid	4773	3873	1695	117121	4536	1.171
62	Cottage Brook Apts	31 Ley	Dorchester	3	National Grid	3978	3078	900	122825	3781	1.228
63	Cottage Brook Apts	33 Ley	Dorchester	3	National Grid	3978	3078	900	122825	3781	1.228

National Grid Gas December 2014

#	Project Name	Address	City	# Units	Gas Utility	Total ft2	Conditioned ft2	Common area ft2	ft2/Conditioned f	Annual therms	Therms/ft2
1	Cottage Brook Apts	35 Leyland S	Dorchester	3	National Grid	3978	3078	900	122825	3781	1.228
2	Cottage Brook Apts	37 Leyland S	Dorchester	4	National Grid	6519	5519	1000	112256	6195	1.123
3	Council Tower	2875 Washin	Boston	145	National Grid	110566	110566	27641	46226	51110	0.462
4	Cromwell Court	Bldg 1 (1 & 2	Hyannis	24	National Grid	26307	26307	1695	39328	10346	0.393
5	Cromwell Court	Bldg 2 (3 & 4	Hyannis	24	National Grid	25827	25827	1703	40876	10557	0.409
6	Cromwell Court	Bldg 3 (5 & 6	Hyannis	24	National Grid	23996	23996	-436	38178	9161	0.382
7	Cromwell Court	Bldg 4 (7 & 8	Hyannis	24	National Grid	26307	26307	1695	44285	11650	0.443
8	Cromwell Court	Bldg 5 (9	Hyannis	28	National Grid	29883	29883	2319	31268	9344	0.313
9	Dudley Terrace Apt	2-12 Dudley	Dorchester	14	National Grid	14861	11146	14860	61656	6872	0.617
10	Dudley Terrace Apt	1129 Dorche	Dorchester	15	National Grid	8806	8806	8805	84515	7442	0.845
11	Dudley Terrace Apt	20-24 Roach	Dorchester	9	National Grid	7560	5040	7559	56417	2843	0.564
12	Dudley Terrace Apt	14-16 Roach	Dorchester	6	National Grid	4748	3165	4747	56423	1786	0.564
13	Dudley Village Sout	630 Dudley S	Dorchester	8	National Grid	10651	10532	2120	33337	3511	0.333
14	Dudley Village Sout	571 Dudley S	Dorchester	8	National Grid	13793	12875	4580	21375	2752	0.214
15	Elms	51 Friend St.	Amesbury	27	National Grid	7268	7268	3812	99334	7220	0.993
16	Farnsworth House	90 South St	Boston	76	National Grid	75648	75648	18912	31227	23622	0.312
17	Fenway Lodging Ho	57 Hemenwa	Boston	13	National Grid	5000	4230	2684	74250	3141	0.742
18	Fenway Views Cond	108 Peterbor	Boston	55	National Grid	60085	60085	16804	4619	2775	0.046
19	Genesis House	28 Wallingfor	Boston	209	National Grid	187656	117794	69862	105144	123853	1.051
20	Geneva Apts	221/223/225	Dorchester	14	National Grid	18149	12099	18148	74978	9072	0.750
21	Geneva Apts	231/233 Gen	Dorchester	9	National Grid	5150	3850	4578	242621	9341	2.426
22	Geneva Apts	227/229 Gen	Dorchester	9	National Grid	5911	4611	5910	135519	6249	1.355
23	Geneva Apts	211/213 Gen	Dorchester	9	National Grid	4318	3118	3838	232700	7256	2.327
24	Geneva Apts	251/253/255	Dorchester	6	National Grid	3492	3492	2910	169503	5919	1.695
25	Golda Meir 1	160 Stanton	Boston	124	National Grid	112250	112250	44415	67663	75952	0.677
26	Golda Meir II	160b Stanton	Boston	75	National Grid	61500	61500	20825	28766	17691	0.288
27	Granite Lena	2 Abbott Stre	Boston	2	National Grid	2237	2237	673	80314	1797	0.803
28	Granite Lena	712 Blue-Hill	Boston	1	National Grid	1226	1226	118	80612	988	0.806
29	Granite Lena	714 Blue-Hill	Boston	3	National Grid	5928	4446	1821	107482	4779	1.075
30	Granite Lena	786 Blue-Hill	Boston	9	National Grid	8649	6487	0	107081	6946	1.071
31	Granite Lena	788 Blue-Hill	Boston	9	National Grid	13861	10396	4903	107083	11132	1.071
32	Granite Lena	3 Charlotte S	Boston	6	National Grid	11947	8960	5264	67781	6073	0.678
33	Granite Lena	9 Charlotte S	Boston	3	National Grid	6606	4954	3048	67786	3358	0.678
34	Granite Lena	4 Esmond St	Boston	6	National Grid	10694	8020	4224	71541	5738	0.715
35	Granite Lena	6 Esmond St	Boston	5	National Grid	10283	7712	3972	71539	5517	0.715
36	Granite Lena	91 Esmond S	Boston	17	National Grid	19332	15466	6867	74387	11505	0.744
37	Granite Lena	183 Harvard	Boston	14	National Grid	14361	11489	4708	72954	8382	0.730
38	Granite Lena	185 Harvard	Boston	14	National Grid	14182	11319	5212	73127	8277	0.731
39	Granite Lena	12 McLellan S	Boston	15	National Grid	14049	11239	4281	64719	7274	0.647
40	Granite Lena	16 McLellan S	Boston	15	National Grid	14277	11422	3963	64715	7392	0.647
41	Granite Lena	31 Wales Str	Boston	12	National Grid	14579	11663	6681	65307	7617	0.653
42	Granite Lena	33 Wales Str	Boston	12	National Grid	14468	11575	6559	65303	7559	0.653
43	Hemenway Apts	15 Hemenwa	Boston	4	National Grid	4914	3015	1006	90091	2716	0.901
44	Hemenway Apts	17 Hemenwa	Boston	4	National Grid	4381	2621	897	92393	2422	0.924
45	Hemenway Apts	19 Hemenwa	Boston	4	National Grid	4284	2524	877	93820	2368	0.938
46	Hemenway Apts	21 Hemenwa	Boston	4	National Grid	4284	2524	877	93820	2368	0.938
47	Hemenway Apts	23 Hemenwa	Boston	4	National Grid	4323	2563	885	93233	2390	0.932
48	Hemenway Apts	25 Hemenwa	Boston	4	National Grid	4284	2524	877	93820	2368	0.938
49	Long Glen I	114 Glenville	Allston	16	National Grid	15400	15400	5010	5236	806	0.052
50	Long Glen I	118 Glenville	Allston	20	National Grid	17425	17425	5690	169834	29594	1.698
51	Long Glen II	48 Glenville /	Allston	18	National Grid	13392	13392	5200	41273	5527	0.413
52	Long Glen II	58 Glenville /	Allston	15	National Grid	17360	17360	5600	41273	7165	0.413
53	Longfellow House	885 South St	Roslindale	45	National Grid	44990	44990	20240	55704	25061	0.557
54	Madison Park III	23-39 Raynol	Boston	9	National Grid	12150	8100	4050	81932	6637	0.819
55	Madison Park III	11-21 Raynol	Boston	6	National Grid	8100	5400	2700	81932	4424	0.819
56	Madison Park III	83 Ruggles S	Boston	6	National Grid	9000	6000	3000	80288	4817	0.803
57	Madison Park III	67-81 Ruggle	Boston	8	National Grid	12150	8100	4050	76331	6183	0.763
58	Janus Highland LP	181 Highland	Boston	21	National Grid	17288	17288	0	61932	10707	0.619
59	Janus Highland LP	120-124 Marl	Boston	3	National Grid	3965	3965	0	40608	1610	0.406
60	Joy Street Residenc	56 Joy St	Boston	21	National Grid	20900	20900	9920	45356	9479	0.454
61	Leventhal House	40 Wallingfor	Boston	254	National Grid	158387	158387	41718	60322	95542	0.603
62	Lincoln School Apar	86 Central St	Hingham	60	National Grid	68355	68355	34755	46156	31550	0.462
63	Long Glen I	10 Long Aver	Boston	23	National Grid	17425	17425	5690	50582	8814	0.506

National Grid Electric Sept 2010 Projects

	Project Name	Address	City	#Units	Electric Utility	Total ft2	Conditioned ft2	Common area ft2	kWh/bldg ft2	kWh/common ft2
1	50-52 Andrew St.	50-52 Andrew St.	Lynn	48	National Grid	22000	16500	15528	6.58	N/A
2	Middlesex St. LP	56 Middlesex St.	Lowell	24	National Grid	23495	23495	5947	N/A	18.71
3	Turtle Woods	399 Essex St.	Beverly	67	National Grid	45560	44288	10730	11.03	N/A
4	Turtle Creek	401 Essex St.	Beverly	110	National Grid	90295	90295	34946	6.54	N/A
5	Saugus Commons	10-12 Newhall Ave	Saugus	2	National Grid	2332	2332	64	N/A	32.39
6		35 Newhall Ave	Saugus	28	National Grid	19599	19599	2319	N/A	11.83
7		20 Newhall Ave	Saugus	24	National Grid	16482	16482	2319	N/A	10.85
8		36 Newhall Ave	Saugus	24	National Grid	18333	18333	2319	N/A	10.66
9		41 Newhall Ave	Saugus	24	National Grid	18333	18333	2319	N/A	9.47
10		47 Newhall Ave	Saugus	24	National Grid	16482	16482	2319	N/A	8.33
11		59 Newhall Ave	Saugus	24	National Grid	18333	18333	2319	N/A	10.83
12		77 Newhall Ave	Saugus	26	National Grid	19413	19413	2319	N/A	10.25
13		82 Newhall Ave	Saugus	26	National Grid	17145	17145	2319	N/A	7.83
14		9-11 Newhall Ave	Saugus	2	National Grid	2332	2332	64	N/A	92.08
15	Academy	102 South Main Street	Fall River	85	National Grid	97641	83769	43468	N/A	2.92
16	Ships Cove Apartments	130 Canal St.	Fall River	201	National Grid	160234	160234	60235	10.50	N/A
17	Stratton Hill Park	161 W Mountain, A	Worcester	76	National Grid	66245	66245	5304	N/A	19.46
18	Jamaica Plain Scattered Sites Cooperat	3 Buckley St	Jamaica Plain	3	National Grid	3518	2639	879	N/A	1.01
19	Andover Commons	30 Railroad St - Boiler Bldg	Andover	8	National Grid	17962	17962	11162	N/A	0.37
20		30 Railroad Street	Andover	159	National Grid	97650	97650	7200	N/A	33.58
21	Brockton Commons	55 City Hall Plaza	Brockton	139	National Grid	111184	111184	11502	N/A	15.07
22	Hanover Legion Elderly Apartments	70 Legion Dr A01 - A08	Hanover	8	National Grid	5286	5286	717	5.12	N/A
23	Hanover Legion Elderly Apartments	70 Legion Dr A09 - A20	Hanover	12	National Grid	9472	9472	2992	5.26	N/A
24	Hanover Legion Elderly Apartments	70 Legion Dr B21 - B28	Hanover	8	National Grid	5286	5286	717	5.64	N/A
25	Hanover Legion Elderly Apartments	70 Legion Dr B29 - B40	Hanover	12	National Grid	9472	9472	2992	3.11	N/A
26	Hanover Legion Elderly Apartments	70 Legion Dr C41 - C48	Hanover	8	National Grid	5286	5286	717	5.31	N/A
27	Hanover Legion Elderly Apartments	70 Legion Dr C49 - C60	Hanover	12	National Grid	9472	9472	2992	3.55	N/A
28	New Hope, Inc. - SE	947 Park St.	Attleboro	6	National Grid	3847	2720	3307	8.70	N/A
29		95 High St.	Milford	6	National Grid	3276	3276	2364	9.86	N/A
30	New North Canal	255-259 Moody St	Lowell	14	National Grid	9130	9130	0	9.20	N/A
31		229-233 Moody St.	Lowell	15	National Grid	11682	11682	0	9.20	N/A
32		221-227 Moody	Lowell	4	National Grid	2816	2816	0	9.20	N/A
33		239-249 Fr Morrissette	Lowell	6	National Grid	4224	4224	0	9.20	N/A
34		544-550 Fr Morrissette	Lowell	19	National Grid	13794	13794	0	8.51	N/A
35		475-481 Moody St.	Lowell	4	National Grid	2816	2816	0	8.51	N/A
36		463-473 Moody St.	Lowell	6	National Grid	4224	4224	0	8.51	N/A
37		130-146 Aiken	Lowell	14	National Grid	10516	10516	0	8.51	N/A
38		86-92 Arcand	Lowell	4	National Grid	2816	2816	0	8.60	N/A
39		182-190 Moody	Lowell	23	National Grid	16731	16731	0	8.60	N/A
40		166-170 Fr Morrissette	Lowell	14	National Grid	10516	10516	0	8.60	N/A
41		150-160 Fr Morrissette	Lowell	6	National Grid	4224	4224	0	8.60	N/A
42		104-118 Arcand	Lowell	15	National Grid	10978	10978	0	8.60	N/A
43		185-207 Moody St.	Lowell	18	National Grid	13420	13420	0	8.99	N/A
44		181-183 Moody St.	Lowell	12	National Grid	6996	6996	0	8.99	N/A
45		199-201 Moody St.	Lowell	12	National Grid	6996	6996	0	8.99	N/A
46		175-177 Moody St.	Lowell	8	National Grid	5632	5632	0	8.99	N/A
47		572-574 Fr Morrissette	Lowell	8	National Grid	11264	11264	0	5.51	N/A
48		590-592 Fr Morrissette	Lowell	8	National Grid	11264	11264	0	5.51	N/A
49		600-602 Fr Morrissette	Lowell	8	National Grid	11264	11264	0	5.51	N/A
50		17-19 James St.	Lowell	8	National Grid	5632	5632	0	5.51	N/A
51	Stratton Hill Park	161 W Mountain A	Worcester	76	NGRID	66245	66245	5304	N/A	19.50
52		161 W Mountain B	Worcester	80	NGRID	67732	67732	5184	N/A	16.96
53	New Hope (Electric Heat)	95 High St	Milford	6	NGRID	3276	3276	1452	9.86	N/A
54		947 Park St	Milford	6	NGRID	4367	4367	1127	7.66	N/A
55	Great Meadow Village (Electric Heat)	23 Beach A	Salisbury	16	NGRID	9167	9167	1833	17.08	N/A
56		23 Beach B	Salisbury	16	NGRID	9167	9167	1833	17.08	N/A
57		23 Beach C	Salisbury	16	NGRID	9167	9167	1833	17.08	N/A
58		23 Beach D	Salisbury	16	NGRID	9167	9167	1833	17.08	N/A
59		23 Beach E	Salisbury	16	NGRID	9167	9167	1833	17.08	N/A

NGrid Electric Usage October 2010

1	Salem Point Limited Partnership	20-22 Peabody Street	Salem	12	Ngrid	12300	10500	3875	N/A		5.48
2		46 Peabody Street	Salem	6	Ngrid	8017	6686	2663	N/A		1.27
3		17-19 Ward Street	Salem	6	Ngrid	5824	4802	2044	N/A		4.03
4		23-25 Ward Street	Salem	6	Ngrid	5824	4802	2044	N/A		2.16
5		41-43 Ward Street	Salem	6	Ngrid	9896	8164	3463	N/A		2.51
6		45-49 Ward Street	Salem	6	Ngrid	8100	6573	2694	N/A		1.79
7		52 Ward Street	Salem	7	Ngrid	11692	10625	2134	N/A		1.24
8		57-59 Harbor Street	Salem	16	Ngrid	23156	21061	6288	N/A		3.29
9		64 Harbor Street	Salem	3	Ngrid	4800	3975	1650	N/A		1.58
10		64-1/2 Harbor Street	Salem	3	Ngrid	4800	3975	1650	N/A		2.20
11		38 Peabody Street	Salem	6	Ngrid	8997	7592	2811	N/A		1.91
12	Hilltop Terrace (Electric Heat)	Facility 1&2	Plainville	8	Ngrid	5000			12.67		N/A
13		Facility 3&4	Plainville	8	Ngrid	5000			12.67		N/A
14		Facility 5&6	Plainville	8	Ngrid	5000			12.67		N/A
15		Facility 7&8	Plainville	8	Ngrid	5000			12.67		N/A
16		Facility 9&10	Plainville	8	Ngrid	5000			12.67		N/A
17		Community Bldg	Plainville	1	Ngrid	5000			12.67		N/A
18	Woodland Meadows I (electric heat)	120 W Main St. A	Norton	10	Ngrid	3900	3000	900	31.29		N/A
19		120 Main St. B	Norton	10	Ngrid	3900	3000	900	31.29		N/A
20		120 Main St. C	Norton	10	Ngrid	3900	3000	900	31.29		N/A
21		120 Main St. D	Norton	10	Ngrid	3900	3000	900	31.29		N/A
22		120 Main St. E	Norton	10	Ngrid	3900	3000	900	31.29		N/A
23		120 Main St. F	Norton	10	Ngrid	3900	3000	900	31.29		N/A
24		120 Main St. G	Norton	10	Ngrid	3900	3000	900	31.29		N/A
25		120 Main St. H	Norton	10	Ngrid	3900	3000	900	31.29		N/A
26		120 Main St. I	Norton	0	Ngrid	3223	3000	3000	25.86		N/A
27		120 Main St. J	Norton	10	Ngrid	3900	3000	900	31.29		N/A
28		120 Main St. K	Norton	10	Ngrid	3900	3000	900	31.29		N/A
29		120 Main St. L	Norton	10	Ngrid	3900	3000	900	31.29		N/A
30		120 Main St. M	Norton	10	Ngrid	3900	3000	900	31.29		N/A
31		120 Main St. N	Norton	2	Ngrid	3900	3000	900	31.29		N/A
32	Jacobs Way	Building 1	Norton	2	Ngrid	2218	2218	218	N/A		2.69
33		Building 2	Norton	2	Ngrid	3630	3630	630	N/A		1.52
34		Building 3	Norton	2	Ngrid	2218	2218	218	N/A		2.69
35		Building 4	Norton	2	Ngrid	2218	2218	218	N/A		2.69
36		Building 5	Norton	2	Ngrid	2218	2218	218	N/A		2.69
37		Building 6	Norton	2	Ngrid	2218	2218	218	N/A		2.69
38		Building 7	Norton	2	Ngrid	2218	2218	218	N/A		2.69
39	Cameron House	109 Housatonic Street	Dedham	44	Ngrid	46885	46885	28071	8.48	N/A	
40	Ships' Cove	130 Canal Street	Dedham	201	Ngrid	160234	160234	31544	11.21	N/A	
41	Corcoran House	40 Walnut Street	Dedham	42	Ngrid	29000	29000	9000	10.59	N/A	
42	Worcester Housing Connection	701 Main St	Worcester		Ngrid	33088	33088	0	8.21	N/A	
43	Greenwood St. Apartments	327 GREENWOOD ST -	Worcester	12	Ngrid	5020			9.20	N/A	
44		329 GREENWOOD ST -	Worcester	8	Ngrid	4332			9.20	N/A	
45		335 GREENWOOD ST -	Worcester	8	Ngrid	2112			9.20	N/A	
46		333 GREENWOOD ST -	Worcester	6	Ngrid	2812			9.20	N/A	
47		331 GREENWOOD ST -	Worcester	8	Ngrid	2600			9.20	N/A	
48		339 GREENWOOD ST -	Worcester	6	Ngrid	2240			9.20	N/A	
49		337 GREENWOOD ST -	Worcester	7	Ngrid	4500			9.20	N/A	
50		341 GREENWOOD ST -	Worcester	6	Ngrid	3724			9.20	N/A	
51	George F. Booth Apartments	16 Haven Lane 1	Worcester	5	Ngrid	2628			5.27	N/A	
52		16 Haven Lane 2	Worcester	4	Ngrid	3762			5.27	N/A	
53		16 Haven Lane 3	Worcester	4	Ngrid	2048			5.27	N/A	
54		16 Haven Lane 4	Worcester	5	Ngrid	3762			5.27	N/A	
55		16 Haven Lane 5	Worcester	4	Ngrid	3762			5.27	N/A	
56		Lincoln St. 6	Worcester	5	Ngrid	2628			5.27	N/A	
57		Lincoln St. 7	Worcester	5	Ngrid	2628			5.27	N/A	
58		16 Haven Lane 8	Worcester	4	Ngrid	1944			5.27	N/A	
59		16 Haven Lane 9	Worcester	4	Ngrid	1944			5.27	N/A	

NGrid Electric Usage November2010

#	Project Name	Address	City	Units	Electric Utility	Total ft2	Conditioned ft2	Commercial ft2	kWh/unit ft2	kWh/common ft2
1	George F. Booth Apartments	16 Haven Lane 10	Worcester	4	Ngrid	3762			5.27	N/A
2		16 Haven Lane 11 (community bldg)	Worcester	0	Ngrid	2160			5.27	N/A
3	Lakeside Apartments	2 Lakeside	Worcester	6	Ngrid	6330	5358	972	N/A	11.83
4		4 Lakeside	Worcester	6	Ngrid	6330	5358	972	N/A	11.83
5		6 Lakeside	Worcester	6	Ngrid	6330	5358	972	N/A	11.83
6		8 Lakeside	Worcester	6	Ngrid	6330	5358	972	N/A	11.83
7		10 Lakeside	Worcester	6	Ngrid	6330	5358	972	N/A	11.83
8		12 Lakeside	Worcester	6	Ngrid	6330	5358	972	N/A	11.83
9		14 Lakeside	Worcester	6	Ngrid	6330	5358	972	N/A	11.83
10		16 Lakeside	Worcester	6	Ngrid	6330	5358	972	N/A	11.83
11		18 Lakeside	Worcester	6	Ngrid	6330	5358	972	N/A	11.83
12		20 Lakeside	Worcester	6	Ngrid	6330	5358	972	N/A	11.83
13		22 Lakeside	Worcester	6	Ngrid	6330	5358	972	N/A	11.83
14		24 Lakeside	Worcester	6	Ngrid	6330	5358	972	N/A	11.83
15		26 Lakeside	Worcester	6	Ngrid	6330	5358	972	N/A	11.83
16		28 Lakeside	Worcester	6	Ngrid	6330	5358	972	N/A	11.83
17		30 Lakeside	Worcester	6	Ngrid	6330	5358	972	N/A	11.83
18		32 Lakeside	Worcester	6	Ngrid	6330	5358	972	N/A	11.83
19		34 Lakeside	Worcester	6	Ngrid	6330	5358	972	N/A	11.83
20		36 Lakeside	Worcester	6	Ngrid	6330	5358	972	N/A	11.83
21		38 Lakeside	Worcester	6	Ngrid	6330	5358	972	N/A	11.83
22		40 Lakeside	Worcester	6	Ngrid	6330	5358	972	N/A	11.83
23		42 Lakeside	Worcester	6	Ngrid	6330	5358	972	N/A	11.83
24		44 Lakeside	Worcester	6	Ngrid	6330	5358	972	N/A	11.83
25		46 Lakeside	Worcester	6	Ngrid	6330	5358	972	N/A	11.83
26		15 Lovell	Worcester	6	Ngrid	6330	5358	972	N/A	11.83
27		1 Veterans	Worcester	6	Ngrid	6330	5358	972	N/A	11.83
28		2 Veterans	Worcester	6	Ngrid	6330	5358	972	N/A	11.83
29		4 Veterans	Worcester	6	Ngrid	6330	5358	972	N/A	11.83
30		17 Garland	Worcester	4	Ngrid	6318	5346	972	N/A	11.83
31		18 Garland	Worcester	6	Ngrid	6330	5358	972	N/A	11.83
32		19 Garland	Worcester	6	Ngrid	6330	5358	972	N/A	11.83
33		20 Garland	Worcester	6	Ngrid	6330	5358	972	N/A	11.83
34		52 South Circuit	Worcester	7	Ngrid	7385	6413	972	N/A	11.83
35		54 South Circuit	Worcester	7	Ngrid	7385	6413	972	N/A	11.83
36		3 Veterans	Worcester	6	Ngrid	6330	5358	972	N/A	11.83
37	Providence Apartments	201 Providence St.	Worcester	50	Ngrid	50604			9.20	N/A
38	Lafayette Apartments	2 Lafayette St.	Worcester	71	Ngrid	48510			3.47	N/A
39	Curtis Apartments	BOYLSTON ST - A	Worcester	30	Ngrid	22725	22725	21375	136.47	N/A
40		BOYLSTON ST - B	Worcester	24	Ngrid	15726	15726	21375	136.47	N/A
41		GREAT BROOK VALLEY AVE - C	Worcester	30	Ngrid	23010	23010	21375	136.47	N/A
42		GREAT BROOK VALLEY AVE - D	Worcester	48	Ngrid	42600	42600	21375	136.47	N/A
43		GREAT BROOK VALLEY - M	Worcester	36	Ngrid	15150	15150	21375	136.47	N/A
44		GREAT BROOK VALLEY AVE - F	Worcester	48	Ngrid	45402	45402	21375	136.47	N/A
45		GREAT BROOK VALLEY AVE - G	Worcester	36	Ngrid	43260	43260	21375	136.47	N/A
46		GREAT BROOK VALLEY AVE - H	Worcester	30	Ngrid	17724	17724	21375	136.47	N/A
47		GREAT BROOK VALLEY AVE - J	Worcester	24	Ngrid	23100	23100	21375	136.47	N/A
48		GREAT BROOK VALLEY AVE - K	Worcester	48	Ngrid	45558	45558	21375	136.47	N/A
49		TACOMA ST - L	Worcester	0	Ngrid	15150	15150	21375	136.47	N/A
50	Maple Terrace	2A, 2B, 4A, 4B Maple Terrace - 1	Attleboro	4	Ngrid	2700	2700		14.66	N/A
51		8A - 10 D Tacher Street - 10	Attleboro	8	Ngrid	5000	5000		14.66	N/A
52		Maple Terrace - 11	Attleboro	0	Ngrid	5000	5000		14.66	N/A
53		1a, 1b, -3a,3b Thacher Street - 2	Attleboro	4	Ngrid	2700	2700		14.66	N/A
54		5A-7D Thacher Street - 3	Attleboro	8	Ngrid	5000	5000		14.66	N/A
55		9A-11D Thacher Street - 4	Attleboro	8	Ngrid	5000	5000		14.66	N/A
56		15-17 A-D Thacher Street - 5	Attleboro	8	Ngrid	5000	5000		14.66	N/A
57		19A - 21D Thacher Street - 6	Attleboro	8	Ngrid	5000	5000		14.66	N/A
58		23A - 25D Thacher Street - 7	Attleboro	8	Ngrid	5000	5000		14.66	N/A
59		16A-18D Thacher Street - 8	Attleboro	8	Ngrid	5000	5000		14.66	N/A

NGrid Electric Usage December 2010

#	Project Name	Address	City	Units	Electric Utility	Total ft2	Conditioned ft2	Common area ft2	kWh/bldg ft2	kWh/common ft2
1	Maple Terrace	12a-14d Thad	Attleboro	8	Ngrid	5000	5000		14.66	N/A
2	Oakhurst	65-67-79 Sou	Attleboro	3	Ngrid	1488	1488		18.79	N/A
3		South Ave - 1	Attleboro	0	Ngrid	1260	1260		18.79	N/A
4		5, 6, 7, 8 Sou	Attleboro	16	Ngrid	8400	8400		18.79	N/A
5		1, 2, 3, 4 Sou	Attleboro	16	Ngrid	8400	8400		18.79	N/A
6		12 ABCD- 14	Attleboro	8	Ngrid	4200	4200		18.79	N/A
7		5-7 Nickerson	Attleboro	8	Ngrid	4200	4200		18.79	N/A
8		49-63 South	Attleboro	8	Ngrid	3360	3360		18.79	N/A
9		27 - 41 South	Attleboro	8	Ngrid	4200	4200		18.79	N/A
10		15, 17, 23, 2	Attleboro	4	Ngrid	4200	4200		18.79	N/A
11		1, 3, 7, 9, 11	Attleboro	6	Ngrid	4200	4200		18.79	N/A
12		568, 572, 57	Attleboro	16	Ngrid	8400	8400		18.79	N/A
13		582, 584, 58	Attleboro	4	Ngrid	1680	1680		18.79	N/A
14		1 -3 Nickerso	Attleboro	8	Ngrid	4200	4200		18.79	N/A
15		9, 10 South A	Attleboro	8	Ngrid	4200	4200		18.79	N/A
16	Brookside	41 North Ave	Attleboro	75	Ngrid	53080	53080		19.61	N/A
17	Rivercourt	Rivercourt - 1	Attleboro	59	Ngrid	44875	44875		14.64	N/A
18	Chestnut Court	E2	Andover	12	Ngrid	9108.00	9108.00		8.77	N/A
19		E1	Andover	12	Ngrid	9108.00	9108.00		8.77	N/A
20		E3	Andover	6	Ngrid	4588.00	4588.00		8.77	N/A
21		E4	Andover	6	Ngrid	3100.00	3100.00		8.77	N/A
22		E5	Andover	6	Ngrid	4588.00	4588.00		8.77	N/A
23	Grandview Terrace	E7	Andover	21	Ngrid	10000.00	10000.00		7.41	N/A
24		E6	Andover	18	Ngrid	10000.00	10000.00		7.41	N/A
25	Frye Circle	256 North Ma	Andover	8	Ngrid	4608.00	4608.00		15.08	N/A
26		256 North Ma	Andover	10	Ngrid	6912.00	6912.00		15.08	N/A
27		256 North Ma	Andover	10	Ngrid	6912.00	6912.00		15.08	N/A
28		256 North Ma	Andover	10	Ngrid	6912.00	6912.00		15.08	N/A
29		256 North Ma	Andover	8	Ngrid	4608.00	4608.00		15.08	N/A
30		256 North Ma	Andover	8	Ngrid	4608.00	4608.00		15.08	N/A
31		256 North Ma	Andover	8	Ngrid	4608.00	4608.00		15.08	N/A
32		256 North Ma	Andover	8	Ngrid	4608.00	4608.00		15.08	N/A
33		256 North Ma	Andover	8	Ngrid	4608.00	4608.00		15.08	N/A
34		256 North Ma	Andover	8	Ngrid	4608.00	4608.00		15.08	N/A
35		Community B	Andover	0	Ngrid	7000.00	7000.00		15.08	N/A
36		25 Main Stree	Andover	10	Ngrid	6912.00	6912.00		15.08	N/A
37	Stowe Court	100 Morton S	Andover	40	Ngrid	35625.00	35625.00		3.22	N/A
38		100 Morton S	Andover	0	Ngrid	12000.00	12000.00		3.22	N/A
39	Kennedy Drive	Kennedy Dr -	Brockton	8	Ngrid	4324	4324		6.94	N/A
40		Kennedy Dr -	Brockton	8	Ngrid	4324	4324		6.94	N/A
41		Kennedy Dr -	Brockton	8	Ngrid	4324	4324		6.94	N/A
42		Kennedy Dr -	Brockton	8	Ngrid	4324	4324		6.94	N/A
43		Kennedy Dr -	Brockton	8	Ngrid	4324	4324		6.94	N/A
44		Kennedy Dr -	Brockton	8	Ngrid	4324	4324		6.94	N/A
45		Kennedy Dr -	Brockton	8	Ngrid	4324	4324		6.94	N/A
46		16 - Commun	Brockton	0	Ngrid	1640	1640		6.94	N/A
47		Kennedy Dr -	Brockton	8	Ngrid	4324	4324		6.94	N/A
48		Kennedy Dr -	Brockton	8	Ngrid	4324	4324		6.93943859	N/A
49		Kennedy Dr -	Brockton	8	Ngrid	4324	4324		6.93943859	N/A
50		Kennedy Dr -	Brockton	8	Ngrid	4324	4324		6.93943859	N/A
51		Kennedy Dr -	Brockton	8	Ngrid	4324	4324		6.93943859	N/A
52		Kennedy Dr -	Brockton	8	Ngrid	4324	4324		6.93943859	N/A
53		Kennedy Dr -	Brockton	8	Ngrid	4324	4324		6.93943859	N/A
54		Kennedy Dr -	Brockton	8	Ngrid	2304	2304		6.93943859	N/A
55	Belair Towers	105 Belair St	Brockton	269	Ngrid	189000	189000		11.9198519	N/A
56	Crosby Gardens	25 North Ave	Brockton	74	Ngrid	54072	54072		12.7045791	N/A
57	Ann L Ward House	629 North Ma	Brockton	23	Ngrid	11904	11904		6.28897849	N/A
58	Rainbow Terrace	Hawley Stree	Brockton	8	Ngrid	4324	4324		6.92169905	N/A
59		Hawley Stree	Brockton	8	Ngrid	4324	4324		6.92169905	N/A

WMECO Electric September 2010

#	ProjectName	Address	City	# Units	Total ft2	Conditioned ft2	common area ft2	kWh/bldg ft2	kWh/common ft2
1	East Gate	34 Bay Meadow	Springfield	10	15,130	10402	5,674	N/A	2.0
2		65 Bay Meadow	Springfield	20	21,043	14467	1315	N/A	1.5
3		5 Bay Meadow	Springfield	16	22,796	15672	1424	N/A	1.3
4		42 Bay Meadow	Springfield	14	17,536	12,056	6,576	N/A	1.8
5		6-18 Bay Meadow	Springfield	12	18086	12434	6782	N/A	1.7
6		20 Bay Meadow	Springfield	14	17536	12056	6576	N/A	1.8
7		60 Bay Meadow	Springfield	12	22144	15224	8304	N/A	1.4
8		1306 Bay Meadow	Springfield	14	21593	14845	8097	N/A	1.4
9		56 Bay Meadow	Springfield	8	9645	6631	3617	N/A	3.2
10		1266 Bay St.	Springfield	10	14029	9645	5261	N/A	2.2
11		82 Bay Meadow	Springfield	9	12826	8818	4810	N/A	2.4
12		1292 Bay St.	Springfield	9	16006	11004	6002	N/A	1.9
13	Better Homes Tapley	221 Bay St.	Springfield	30	49056	35202	16571	N/A	0.6
14	Center City Housing	71 Adams St.	Springfield	8	8700	7000	1700	N/A	3.5
15		22-24 Winthrop	Springfield	16	19907	15869	4038	N/A	1.5

WMECO Oct2010 [illegible]

	Project Name	Address	City	# Units	Electric Utility	Total ft2	Conditioned ft2	Common area ft2	KWh/Building Sqft	KWh/Common Area
1	Chesterfield Hotel	397 Main Road	Chesterfield	7	WMECO	10800	6999	5654	2.62	N/A
2	Better Homes Rentals	83 St James	Springfield	6	WMECO	11904	8928	2976	3529	N/A
3	Wahconah Heights	335 Wahconah St -	Pittsfield	4	WMECO	1804	1647		3.02	N/A
4		Wahconah St 335-1	Pittsfield	8	WMECO	4100	3943		3.02	N/A
5		Wahconah St 335-1	Pittsfield	8	WMECO	4100	3943		3.02	N/A
6		Wahconah St 335-2	Pittsfield	4	WMECO	1804	1647		3.02	N/A
7		Wahconah St 335-3	Pittsfield	4	WMECO	1804	1647		3.02	N/A
8		Wahconah St 335-4	Pittsfield	8	WMECO	4100	3943		3.02	N/A
9		Wahconah St 335-5	Pittsfield	4	WMECO	1804	1647		3.02	N/A
10		Wahconah St 335-6	Pittsfield	4	WMECO	1804	1647		3.02	N/A
11		Wahconah St 335-7	Pittsfield	4	WMECO	1804	1647		3.02	N/A
12		Wahconah St 335-8	Pittsfield	8	WMECO	4100	3943		3.02	N/A
13		Wahconah St 335-9	Pittsfield	12	WMECO	6396	6239		3.02	N/A
14		Community Room	Pittsfield	0	WMECO	1734	1577		3.02	N/A
15	Francis Plaza	Francis Ave - 1	Pittsfield	8	WMECO	5014	5014		8.60	N/A

WMECO Electric Usage November 2010

	Project Name	Address	City	# Units	Electric Utility	Total ft2	Conditioned ft2	Common area ft2	kWh/Building Sq	Wh/Common Area
1	Francis Plaza	Francis Ave - 2	Pittsfield	8	WMECO	4100	4100		8.60	N/A
2		Francis Ave - 3	Pittsfield	8	WMECO	4100	4100		8.60	N/A
3		Francis Ave - 4	Pittsfield	8	WMECO	5014	5014		8.60	N/A
4		Francis Ave - 5	Pittsfield	8	WMECO	5014	5014		8.60	N/A
5		Francis Ave - 6	Pittsfield	0	WMECO	1394	1394		8.60	N/A
6	Rose Manor	Elberon Ave -1	Pittsfield	12	WMECO	7872	7872		14.39	N/A
7		Elberon Ave -10	Pittsfield	9	WMECO	7200	7200		14.39	N/A
8		Elberon Ave -11	Pittsfield	4	WMECO	1800	1800		14.39	N/A
9		Elberon Ave -12	Pittsfield	8	WMECO	5320	5320		14.39	N/A
10		Elberon Ave -13	Pittsfield	8	WMECO	4368	4368		14.39	N/A
11		Elberon Ave -14	Pittsfield	8	WMECO	4208	4208		14.39	N/A
12		Elberon Ave -15	Pittsfield	8	WMECO	5238	5238		14.39	N/A
13		Elberon Ave -16	Pittsfield	8	WMECO	3780	3780		14.39	N/A
14		Elberon Ave -17	Pittsfield	8	WMECO	7872	7872		14.39	N/A
15		Elberon Ave -2	Pittsfield	12	WMECO	7872	7872		14.39	N/A

WMECO Electric Usage December 2010

#	Project Name	Address	City	# Units	Electric Utility	Total ft2	Conditioned ft2	Common area ft2	Wh/Building Sq	Wh/Common Area
1	Rose Manor	Elberon Ave -	Pittsfield	12	WMECO	7872	7872		14.39	N/A
2		Elberon Ave -	Pittsfield	12	WMECO	7872	7872		14.39	N/A
3		Elberon Ave -	Pittsfield	12	WMECO	7872	7872		14.39	N/A
4		Elberon Ave -	Pittsfield	12	WMECO	7872	7872		14.39	N/A
5		Elberon Ave -	Pittsfield	12	WMECO	7872	7872		14.39	N/A
6		Elberon Ave -	Pittsfield	8	WMECO	7872	7872		14.39	N/A
7		Elberon Ave -	Pittsfield	8	WMECO	7872	7872		14.39	N/A
8	Providence Court	Providence C	Pittsfield	91	WMECO	88500	88500		7.28	N/A
9		Providence C	Pittsfield	12	WMECO	9000	9000		7.28	N/A
10	Chestnut Court	Chestnut Cou	Amherst	6	WMECO	3680	3680		7.27	N/A
11		Chestnut Cou	Amherst	8	WMECO	3905	3905		7.27	N/A
12		Chestnut Cou	Amherst	8	WMECO	3905	3905		7.27	N/A
13		Chestnut Cou	Amherst	4	WMECO	1730	1730		7.27	N/A
14		Chestnut Cou	Amherst	4	WMECO	1730	1730		7.27	N/A
15	Ann Whalen	33 Kelloge Av	Amherst	80	WMECO	69175	69175		6.69	N/A
16	Jean Elder (Congregate)	9 Chestnut St	Amherst	23	WMECO	14742	14742		6.50	N/A

Bay State Gas Usage November 2010

#	Project Name	Address	City	# Units	Total ft2	Conditioned ft2	Common area ft2	tu/Conditioned f	Annual therms	Therms/ft2
1	Eastgate	100 Baymeadow Rd.	Springfield	1	3598	3598	3597	76843	2765	0.768
2		1306 Bay Street	Springfield	14	21593	14845	8097	63415	9414	0.634
3		1292 Bay Street	Springfield	9	16006	11004	6002	63413	6978	0.634
4		5 Bay Meadow	Springfield	16	22796	15672	8548	76812	12038	0.768
5		1266 Bay St	Springfield	10	14029	9645	5261	67683	6528	0.677
6		6-18 Bay Meadow Rd	Springfield	12	18086	12434	6782	67685	8416	0.677
7		20 Bay Meadow Rd	Springfield	14	17536	12056	6576	71666	8640	0.717
8		34 Bay Meadow Rd	Springfield	10	15130	10402	5674	71669	7455	0.717
9		42 Bay Meadow Rd	Springfield	14	17536	12056	6576	71666	8640	0.717
10		56 Bay Meadow	Springfield	8	9645	6631	3617	65133	4319	0.651
11		60 Bay Meadow	Springfield	12	22144	15224	8304	65134	9916	0.651
12		82 Bay Meadow Rd	Springfield	9	12826	8818	4810	65139	5744	0.651
13		65 Bay Meadow	Springfield	20	21043	14467	7891	80588	11659	0.806
14	Pine St. Apartments	157 Pine St.	Springfield	15	10000	5000	5000	233173	6268	2.332
15	Union St. Apartments	145 Union St.	Springfield	11	13510	10750	2760	108453	5292	1.085
16	Robertson on the River	120 Ingell St.	Taunton	64	138651	136651	23150	8532	23031	0.085
17	Hanover Legion Elderly Apartments	70 Legion Dr A01 - A08	Hanover	8	5286	5286	717	220557	3691	2.206
18		70 Legion Dr A09 - A20	Hanover	12	9472	9472	2992	123086	4098	1.231
19		70 Legion Dr B21 - B28	Hanover	8	5286	5286	717	220557	3238	2.206
20		70 Legion Dr B29 - B40	Hanover	12	9472	9472	2992	123086	4116	1.231
21	Hanover Legion	70 Legion Dr C41 - C48	Hanover	8	5286	5286	717	220557	3188	2.206
22		70 Legion Dr C49 - C60	Hanover	12	9472	9472	2992	123086	4412	1.231
23		70 Legion Dr. Bldg C	Hanover	1	2238	2238	2238	520941	2309	5.209
24	Better Homes Tapley	221 Bay St.	Springfield	30	49056	35202	16571	33119	26867	0.331
25	Center City Housing	71 Adams St.	Springfield	8	8500	6800	1700	171451	5286	1.715
26		22/24 Winthrop	Springfield	16	19907	15869	4038	73468	9106	0.735

Bay State Gas Usage December 2010

#	Project Name	Address	City	# Units	Total ft2	Conditioned ft2	Common area ft2	tu/Conditioned f	Annual therms	Therms/ft2
1	Liberty Hill Townhouses	5 Nursery St.-comm	Springfield	0	3680	3680	N/A	28288	1041	0.283
2	Rainville	32 Byers	Springfield	46	14259	14259	N/A	86317	12308	0.863
3	Better Homes Rental	83 St. James St.	Springfield	6	11904	11904	N/A	23101	2750	0.231
4	Stowe Court	100 Morton St -1	Andover	40	35625	35625	N/A	24147	8602	0.241
5	Chestnut Court	E2	Andover	12	9108	9108	N/A	68218	6213	0.682
6		E1	Andover	12	9108	9108	N/A	68218	6213	0.682
7		E3	Andover	6	4588	4588	N/A	68218	3130	0.682
8		E4	Andover	6	3100	3100	N/A	68218	2115	0.682
9		E5	Andover	6	4588	4588	N/A	68218	3130	0.682
10	Grandview Terrace	E7	Andover	21	10000	10000	N/A	116340	11634	1.163
11		E6	Andover	18	10000	10000	N/A	116340	11634	1.163
12	Stowe Court	100 Morton St -2	Andover	0	12000	12000	N/A	24147	2898	0.241
13	Crosby Gardens	25 North Ave - 1	Brockton	74	54072	54072	N/A	44962	24312	0.450
14	Ann L Ward House	629 North Main St -	Brockton	23	11904	11904	N/A	44447	5291	0.444

Glossary of Terms

Total sqft	Includes all conditioned and unconditioned common areas, tenant units and basement
Conditioned sqft	Includes all conditioned common areas, tenant units and basements only if basement is finished AND heated
Common area sqft	Includes all conditioned and unconditioned common areas and basement and excludes only tenant unit square footage
Btu/Conditioned sqft	Total annual Btus divided by conditioned square footage
Annual Therms	Total annual therms
Therms/sqft	Total annual therms divided by conditioned square footage
kwh/common area sqft	Total annual kwh divided by common area if building electric meter covers only common areas. Total annual kwh divided by common area if building electric meter covers only common areas. If a building's common area alectric meters include significant outdoor lighting this number can be artificially high.
kwh/bldg sqft	Total annual kwh divided by total building square footage if electricity is master metered and covers whole building or if all tenant meters are being tracked as well as common areas

Lopes, Diane

From: Daniel Teague [dteague@wegowise.com]
Sent: Thursday, December 23, 2010 1:13 PM
To: Diana Duffy; Lopes, Diane; Jerrold Oppenheim; sasde@nu.com; kgray@nisource.com; wells@bostonabcd.org
Subject: 2010 Benchmarking Report

All,

Attached is the status report for the benchmarking work we did this fall. Let us know if you have any questions or edits.

Dan and Shiva
--
Daniel Teague
Business Development
WegoWise, Inc
www.wegowise.com
15 Court Square, Suite 420
Boston, MA 02108
617-367-WEGO (9346)

Massachusetts Affordable Housing Energy Benchmarking

2010 Final Report

Prepared by WegoWise, Inc. for the Low Income Energy Affordability Network (LEAN)

12/22/2010

wēgowise

This report was prepared by Dan Teague and Shiva Prakash of WegoWise, Inc. It is based on analysis of the first phase of data collection for the LEAN multi-family benchmarking program through December 2010. The data, analysis and recommendations are subject to change as the implementation of this program progresses. This report should therefore be understood to be an analysis of a partial sample.

Please contact WegoWise with any questions or comments:

617-367-WEGO

dteague@wegowise.com or sprakash@wegowise.com

PROJECT DESCRIPTION

The goal of this project is to create a comprehensive inventory of low-income multi-family buildings in the state of Massachusetts with the ultimate objective of establishing energy benchmarks based on aggregated usage data of these buildings over three years. This project supports the development of an energy efficiency standard and in turn an understanding of the extent of achievable energy savings in low-income multi-family buildings.

One full year of usage data was gathered for each building as well as key building characteristics including whole building square footage and common area square footage. An individual metric for each building was calculated using these numbers and added to the database. This document serves as a status report summarizing the data gathered through December 2010 and outlines general recommendations based on the analysis of this data.

SUMMARY OF RELEVANT FINDINGS

Based on a quartile analysis of the data gathered from September 2010 through December 2010, the following energy benchmarks were calculated.

Gas Usage *(therms/conditioned ft²)*	**Energy Efficiency Classification**
<.54	Energy Efficient
.54-.75	Better Than Average
.75-.94	Worse Than Average
>.94	Poor

Whole Building Electricity Usage *(kWh/bldg ft2)*	**Energy Efficiency Classification**
<6.28	Energy Efficient
6.28-8.77	Better Than Average
8.77-14.66	Worse Than Average
>14.66	Poor
Common Area Electricity Usage *(kWh/Common Area ft2)*	**Energy Efficiency Classification**
<1.99	Energy Efficient
1.99-3.83	Better Than Average
3.83-11.83	Worse Than Average
>11.83	Poor

"Energy Efficient" is defined as buildings in the top quartile of performance; "Better Than Average" represents the second quartile, "Worse Than Average" the third, and "Poor" the fourth. These calculated benchmarks can be used to approximately assess a building's performance relative to other buildings in Massachusetts based on where its energy use falls in this classification scheme. Buildings that fall into the "Worse Than Average" and "Poor" categories likely have high payback energy conservation opportunities.

CHALLENGES AND RECOMMENDATIONS

CHALLENGES

- Limited venues for outreach and awareness of the Multi-family Building Inventory lead to a lack of clarity on the part of housing organizations about our goals and the benefits of their participation. Therefore we found we had to make many unsuccessful cold calls to non-profit housing organizations and public housing authorities.

- Housing organizations often lacked the staff time or technical capability to collect the required information for the inventory. In addition, the specific information required to set up online utility accounts isn't readily available and proved to be particularly difficult for housing organizations to deliver.

RECOMMENDATIONS

- We received excellent support from the Department of Housing and Community Development, and found that their ability to directly interface with Housing Authorities greatly reinforced our efforts. We believe that the continued support from DHCD, the Low-income Energy Affordability Network will be crucial to the success of the inventory in the next year.

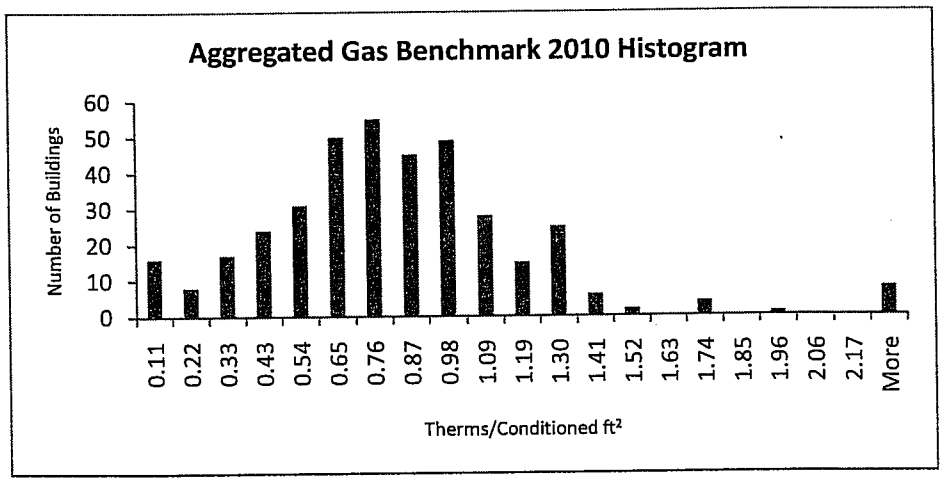
- Continue to develop persuasive marketing materials and strategies to improve program uptake.

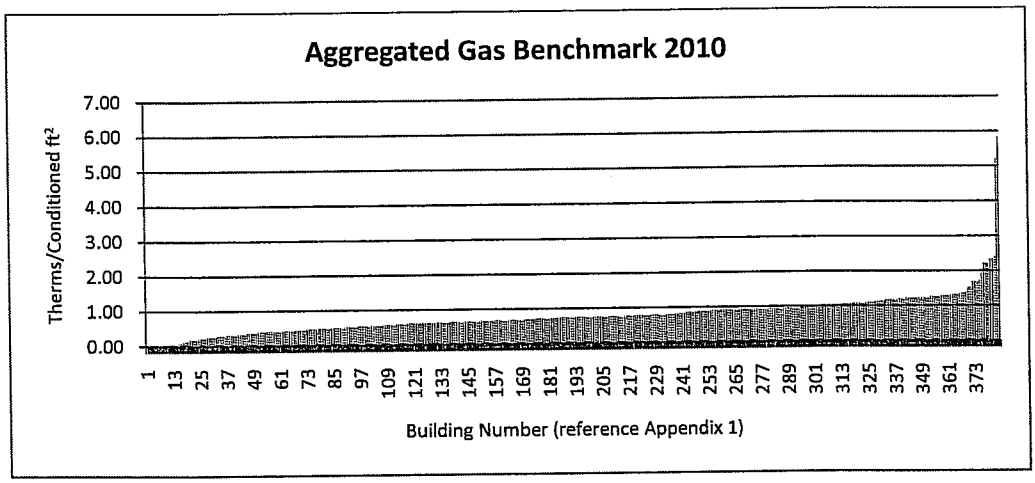
- If feasible, more streamlined access to participants' utility data would greatly improve the efficiency and success of developing the inventory as it would reduce the burden on housing organizations.

ANALYSIS BY UTILITY TYPE

GAS USAGE DATA AND ANALYSIS

Aggregated Gas Benchmark 2010 Statistics	
Mean	0.79
Median	0.75
Mode	0.92
Standard Deviation	0.51
Minimum	0.00
Maximum	5.82
Count	384

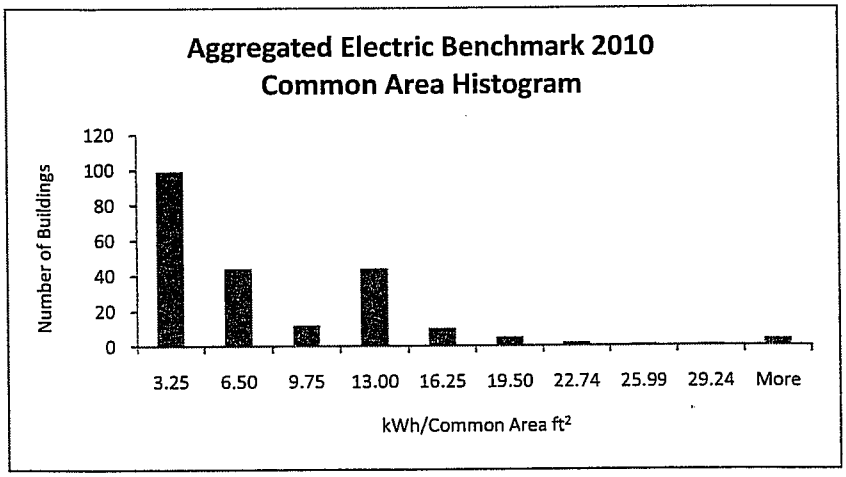


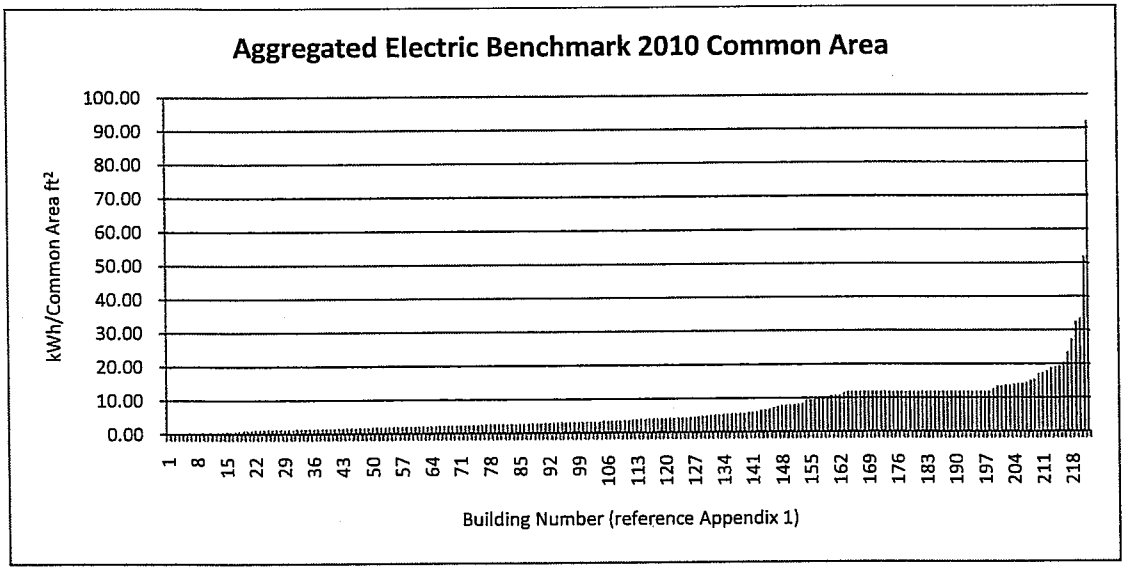


ELECTRICITY USAGE DATA AND ANALYSIS

Common Area Usage

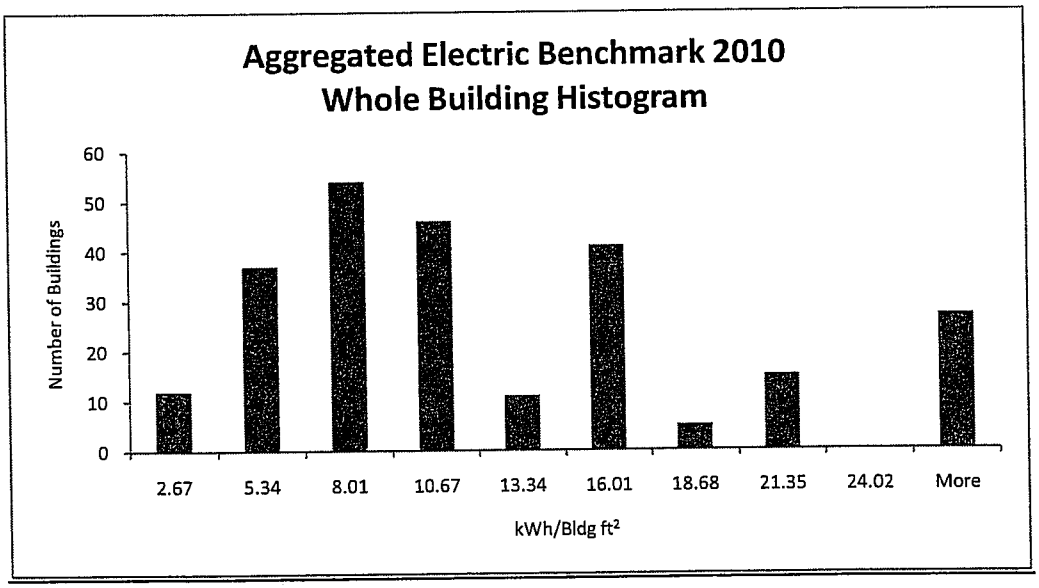
Aggregated Electric Common Area Benchmark 2010 Statistics	
Mean	6.81
Median	3.83
Standard Deviation	8.72
Minimum	0.08
Maximum	92.08
Count	222

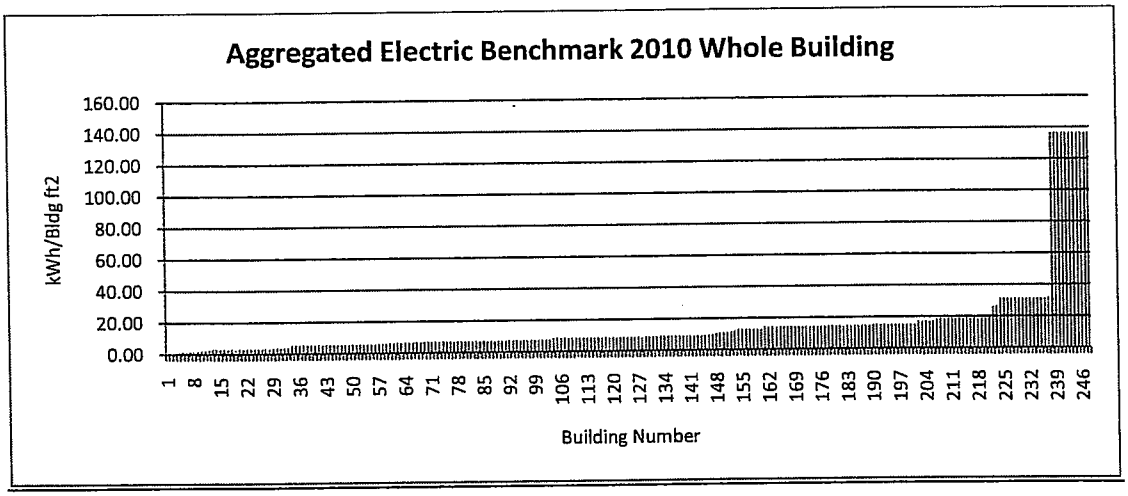




Whole Building Usage

Aggregated Electric Whole Building Benchmark 2010 Statistics	
Mean	16.27
Median	8.77
Standard Deviation	26.87
Minimum	0.03
Maximum	136.47
Count	248

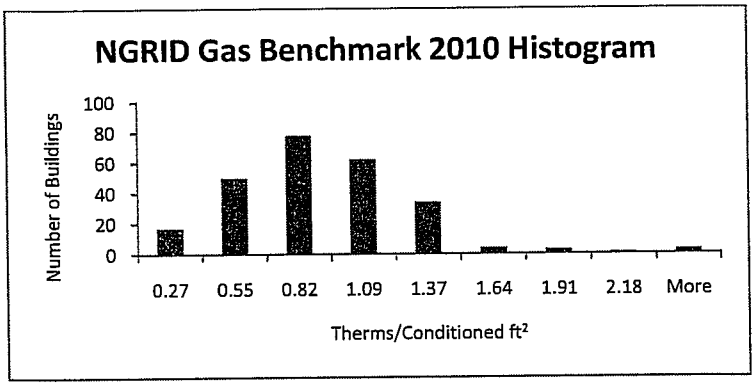


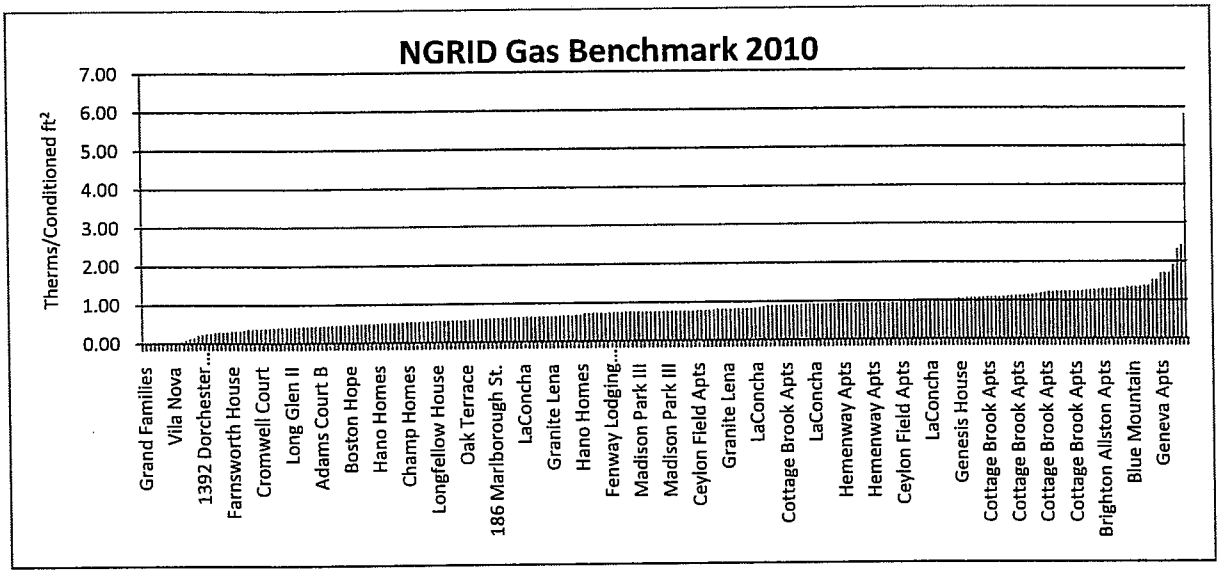


ANALYSIS BY UTILITY COMPANY

NATIONAL GRID GAS

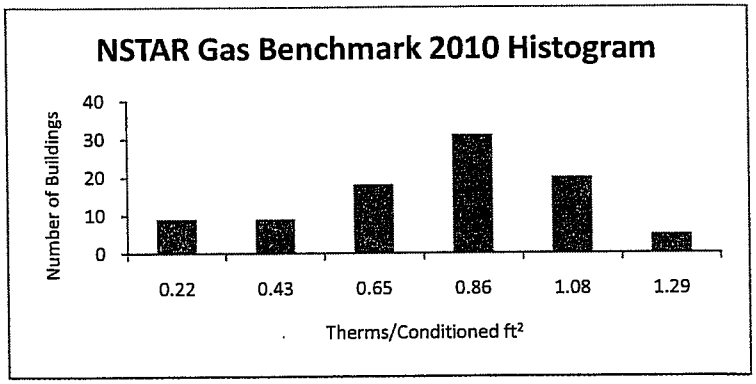
NGRID Gas Benchmark 2010 Statistics	
Mean	0.80
Median	0.76
Mode	0.94
Standard Deviation	0.49
Minimum	0
Maximum	5.82
Count	252

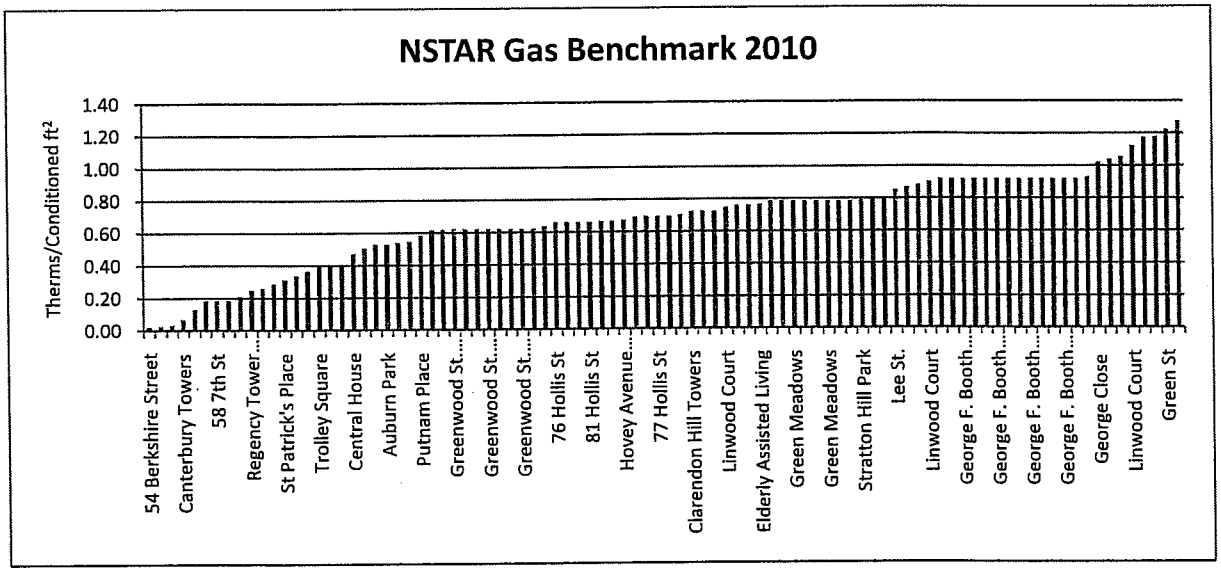




NSTAR GAS

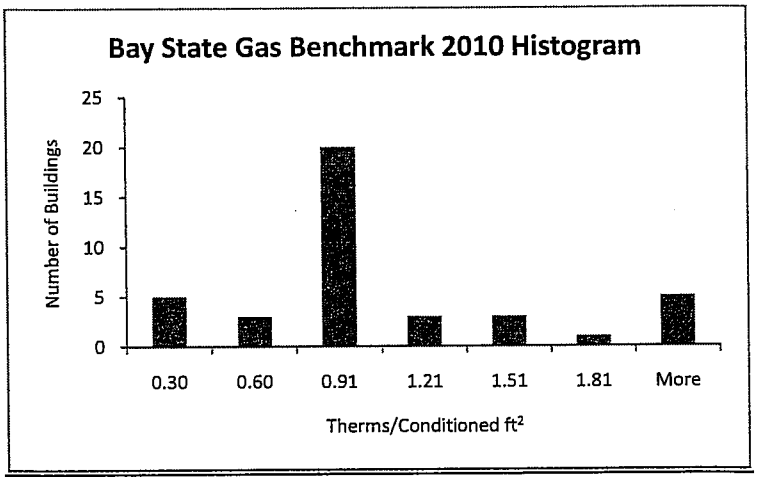
NSTAR Gas Benchmark 2010 Statistics	
Mean	0.67
Median	0.69
Mode	0.92
Standard Deviation	0.28
Minimum	0.02
Maximum	1.28
Count	92

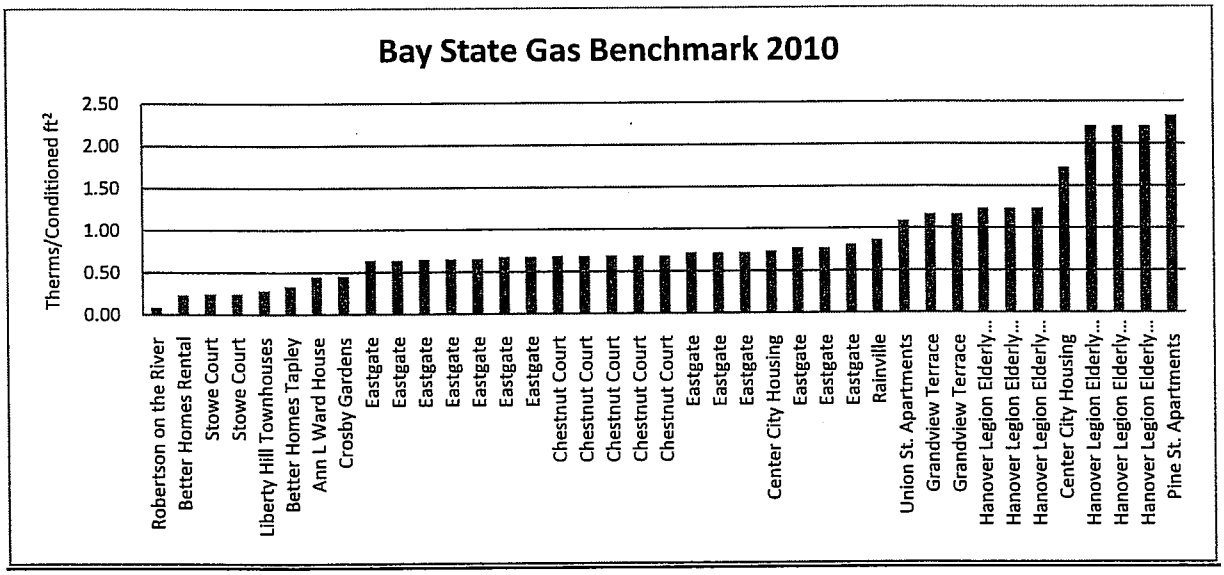




BAY STATE GAS

Bay State Gas Benchmark 2010 Statistics	
Mean	0.98
Median	0.70
Standard Deviation	0.89
Minimum	0.09
Maximum	5.21
Count	40

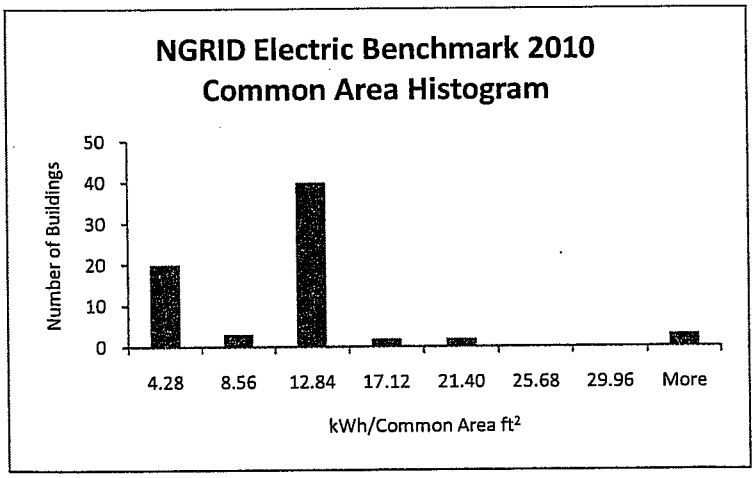


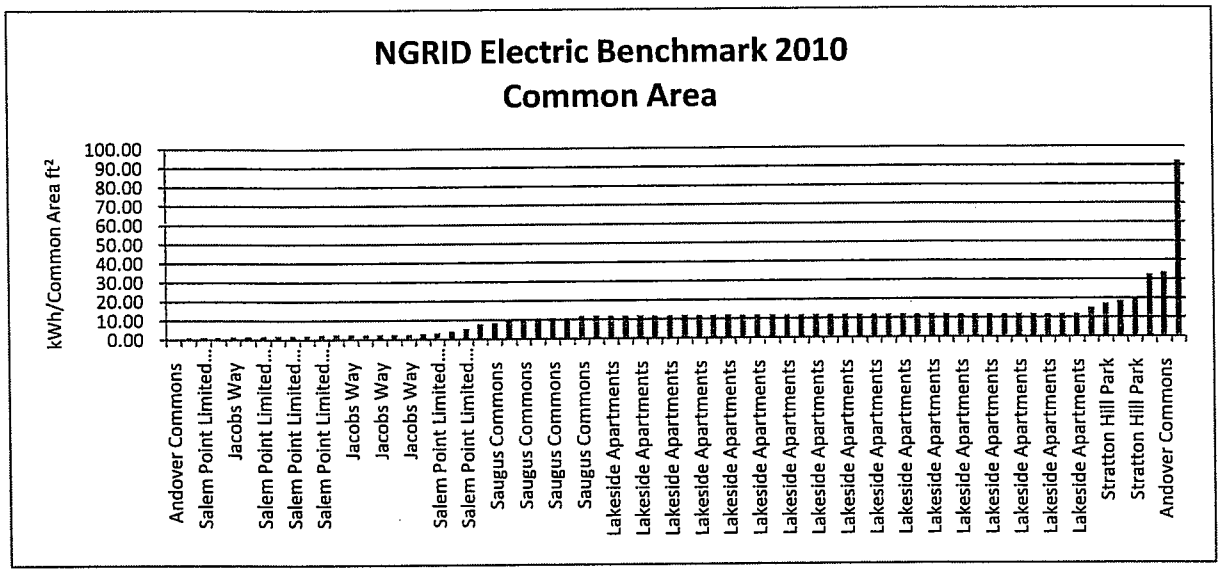


NATIONAL GRID ELECTRIC

Common Area Usage

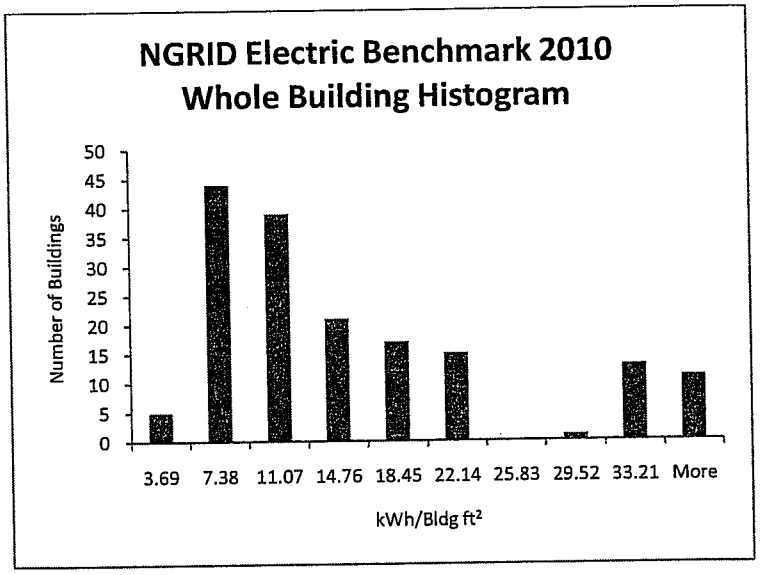
NGRID Electric Common Area Benchmark 2010 Statistics	
Mean	10.86
Median	11.83
Standard Deviation	11.65
Minimum	0.37
Maximum	92.08
Count	70

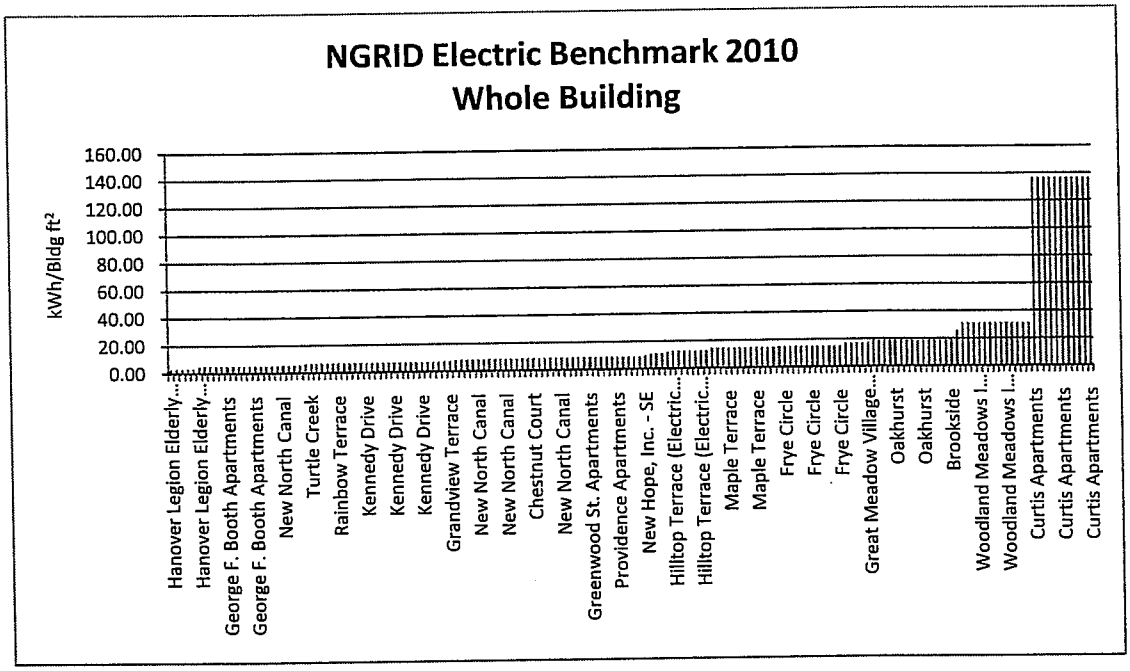




Whole Building Usage

NGRID Electric Whole Building Benchmark 2010 Statistics	
Mean	20.53
Median	9.20
Standard Deviation	31.78
Minimum	3.11
Maximum	136.47
Count	166

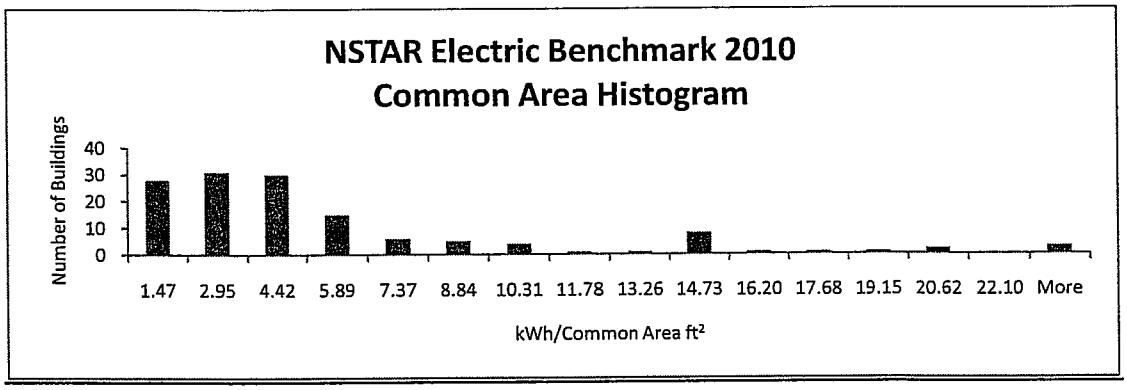


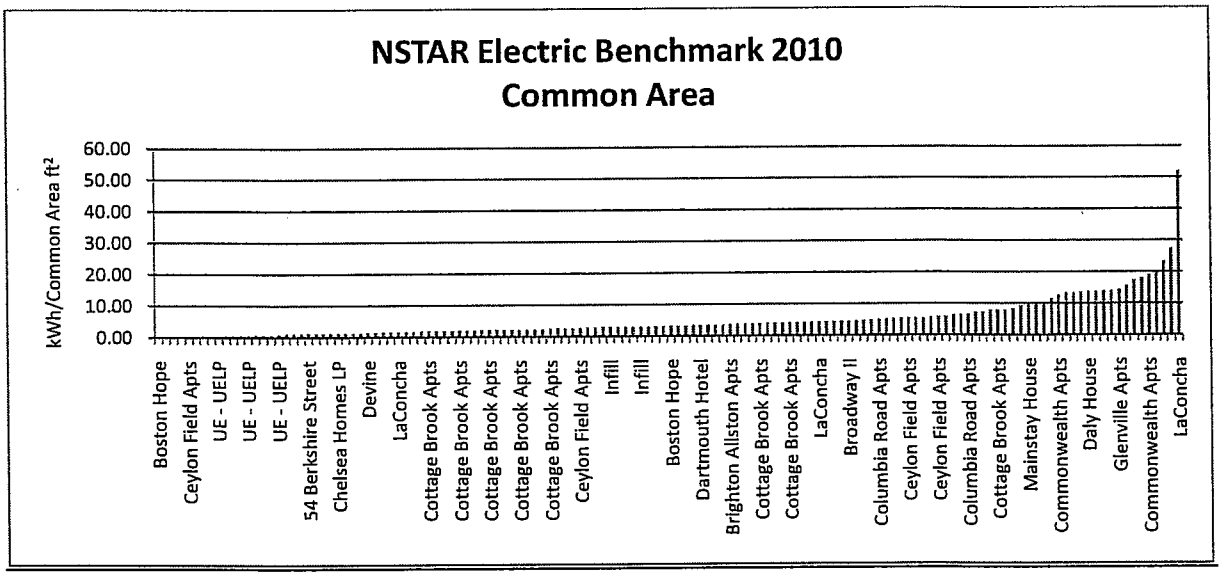


NSTAR ELECTRIC

Common Area Usage

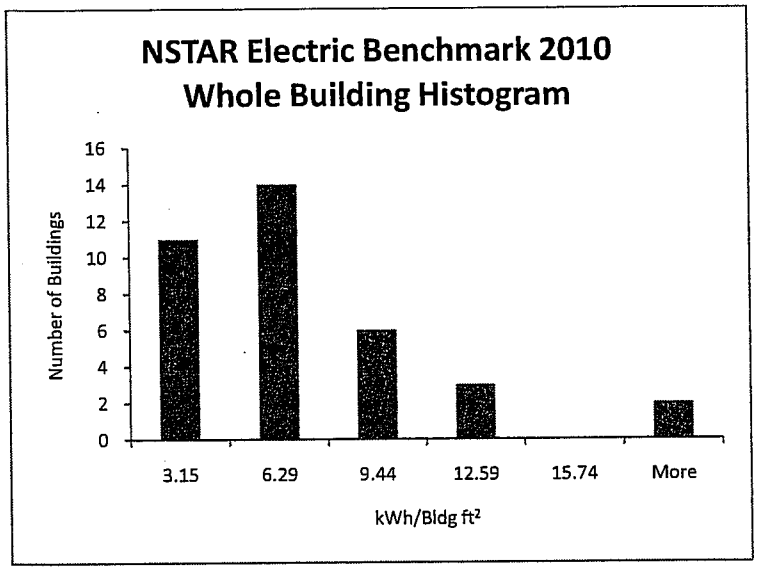
NSTAR Electric Common Area Benchmark 2010 Statistics	
Mean	5.28
Median	3.28
Standard Deviation	6.41
Minimum	0.08
Maximum	51.97
Count	137

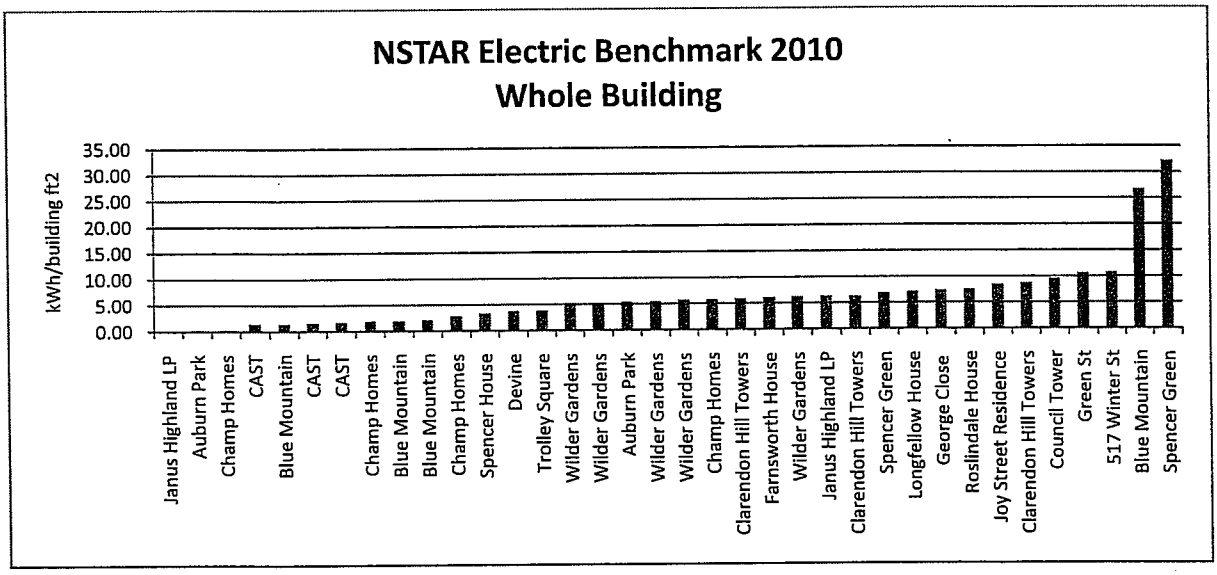




Whole Building Usage

NSTAR Electric Whole Building Benchmark 2010 Statistics	
Mean	6.29
Standard Error	1.07
Median	5.67
Standard Deviation	6.42
Minimum	0.03
Maximum	32.14
Count	36.00

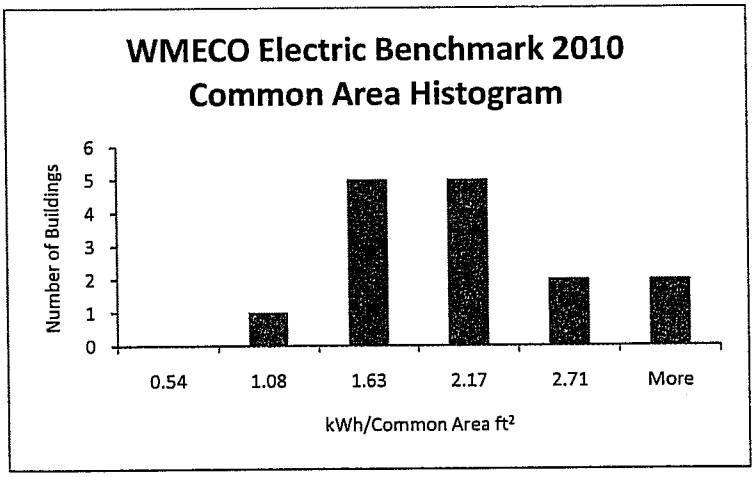


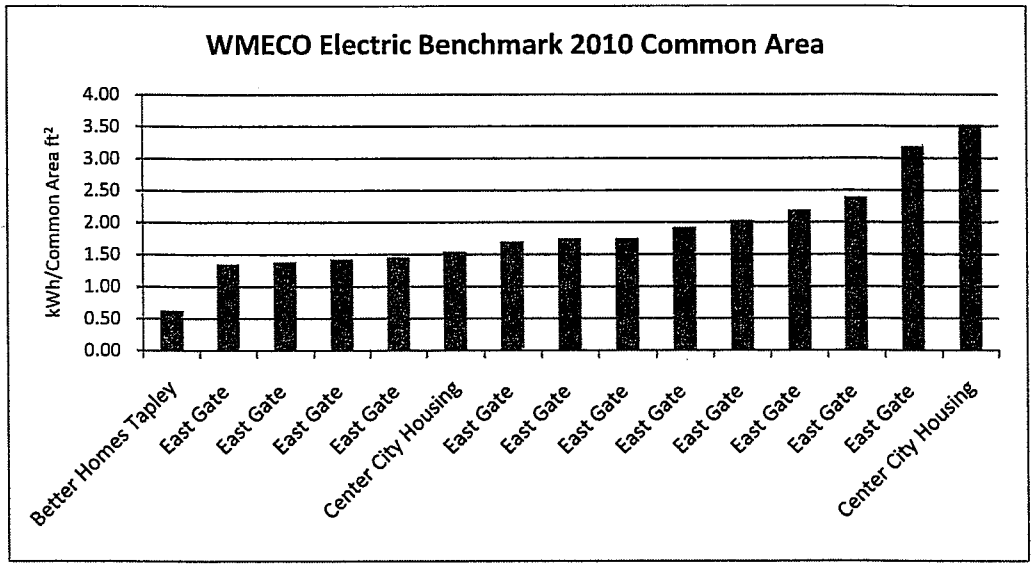


WMECO

Common Area Usage

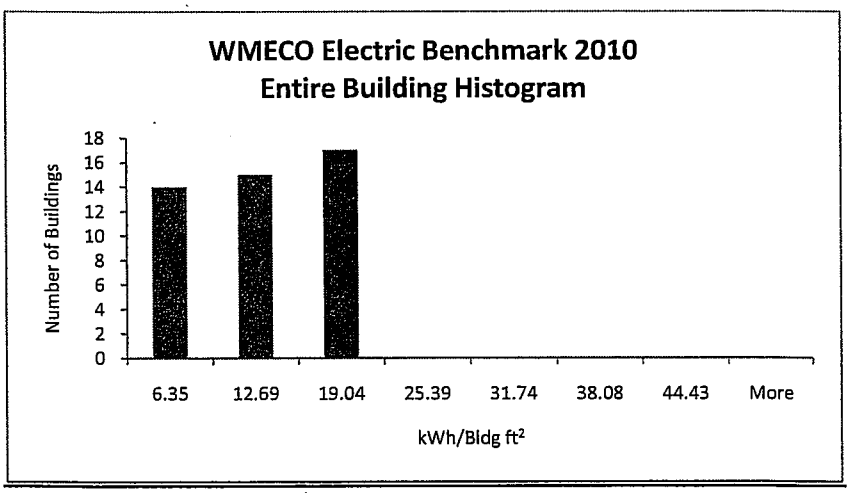
WMECO Electric Benchmark 2010 Statistics	
Mean	1.88
Standard Error	0.19
Median	1.75
Standard Deviation	0.73
Minimum	0.63
Maximum	3.53
Count	15

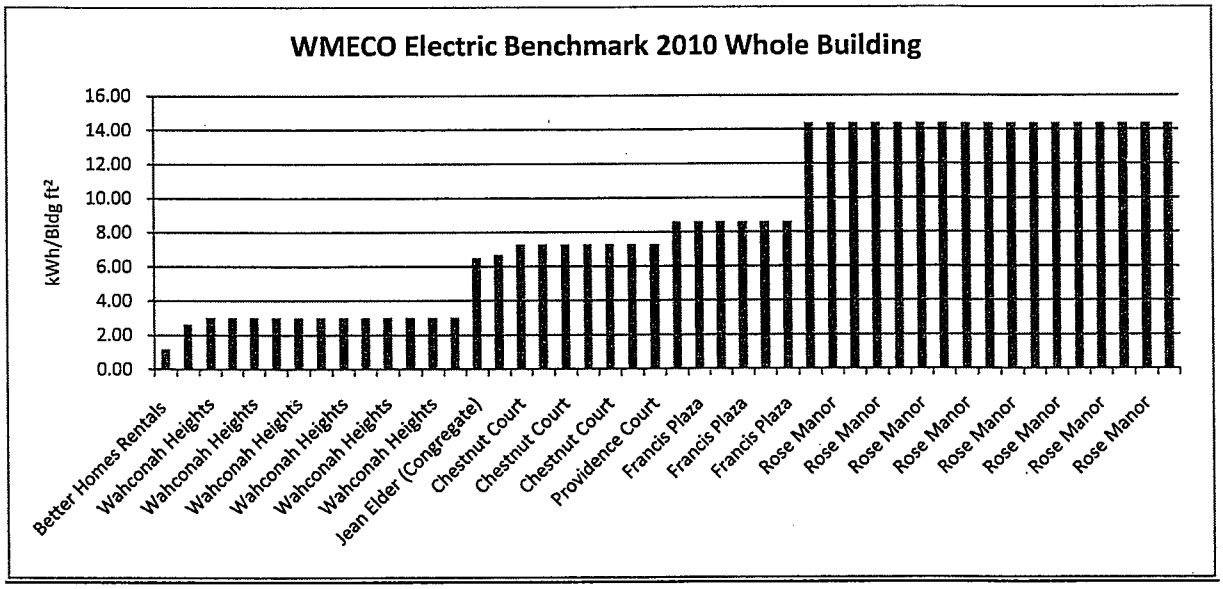




Whole Building Usage

WMECO Electric Whole Building Benchmark 2010 Statistics	
Mean	8.70
Standard Error	0.71
Median	7.94
Standard Deviation	4.84
Minimum	1.19
Maximum	14.39
Count	46




WMECO Electric Benchmark 2010 Whole Building
kWh/Bldg ft²
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
Better Homes Rentals
Wahconah Heights
Wahconah Heights
Wahconah Heights
Wahconah Heights
Wahconah Heights
Wahconah Heights
Jean Elder (Congregate)
Chestnut Court
Chestnut Court
Chestnut Court
Providence Court
Francis Plaza
Francis Plaza
Francis Plaza
Rose Manor
Rose Manor
Rose Manor
Rose Manor
Rose Manor
Rose Manor
Rose Manor
Rose Manor

2010
Commercial and Industrial
Performance Metrics

C&I #1
Small Business Electric and Gas Integration

Metric Number	Metric Language	National Grid Electric Targets	National Grid Electric Final 2010 Production	National Grid Gas Targets	National Grid Gas Final 2010 Production
C&I #1 Small Business Electric and Gas Integration	In 2010 completed DI projects will achieve a total of X THERM gas savings for each PA. For Electric PAs, X = THERM gas savings among projects within its electric territory, regardless of the gas PA territory they occur in. For Gas PAs, X = THERM gas savings in its gas territory. Gas measures were not included in the 2009 DI Program so baseline data is 0.	Threshold: 94,887 Design: 105,429 Exemplary: 115,972	**Exemplary: 141,417 therms**	Threshold: 107,875 Design: 119,861 Exemplary: 131,847	**Exemplary: 136,518 therms**

2010 DIRECT INSTALL PROGRAM RESULTS

NGRID-ELECTRIC INDEMAND through 12-28	Invoiced-Paid	Corrections	Total	NGRID-ELECTRIC Pre-July Numbers	Provided by RISE-CLC	Provided by NSTAR-ELECTRIC	Total
Bay State Gas	34,506	-644	33,862	2,679			36,541
Berkshire Gas	5,840		5,840	2,278			8,118
NGRID GAS	**58,881**		**58,881**		**14,833**	**62,804**	**136,518**
New England Gas	10,451		10,451				10,451
NSTAR Gas and Electric	24,440		24,440	2,601			27,041
Unitil/FG&E	1,085		1,085				1,085
Grand Total	135,203		134,559	7,558	14,833	62,804	219,754

2010 METRIC

	Threshold	Design	Exemplary	Therms Savings	Results
Bay State Gas	40,538	45,042	49,546		
Berkshire Gas	8,035	8,928	9,821		
Fitchburg G&E - Gas	2,632	2,925	3,217		
New England Gas	5,055	5,617	6,179		
NGRID Gas	**107,875**	**119,861**	**131,847**	**136,518**	**Exemplary**
NSTAR Gas	35,078	38,976	42,873		

NGRID Electric	**94,887**	**105,429**	**115,972**	**142,117**	**Exemplary**
NSTAR Electric	85,225	94,694	104,164		
WMECo	16,997	18,886	20,774		

Electric Company	Natural Gas Company	Job ID	City	Therm Savings
NSTAR	NATIONAL GRID	RI1002113802	BARNSTABLE	670
NSTAR	NATIONAL GRID	RI1003345002	YARMOUTH	335
NSTAR	NATIONAL GRID	RI1004892203	YARMOUTH	335
NSTAR	NATIONAL GRID	RI1004892203	YARMOUTH	77
NSTAR	NATIONAL GRID	RI1004892203	YARMOUTH	34
NSTAR	NATIONAL GRID	RI1004892203	W YARMOUTH	43
NSTAR	NATIONAL GRID	RI1005852702	W YARMOUTH	335
NSTAR	NATIONAL GRID	RI1005887902	W YARMOUTH	68
NSTAR	NATIONAL GRID	RI1005887902	MONUM BCH	77
NSTAR	NATIONAL GRID	RI1005917303	CENTERVIL	154
NSTAR	NATIONAL GRID	RI1005936102	BOURNE	77
NSTAR	NATIONAL GRID	RI1005936102	BREWSTER	17
NSTAR	NATIONAL GRID	RI1005936802	BOURNE	77
NSTAR	NATIONAL GRID	RI1005936802	FALMOUTH	68
NSTAR	NATIONAL GRID	RI1005954802	FALMOUTH	335
NSTAR	NATIONAL GRID	RI1005964302	BOURNE	77
NSTAR	NATIONAL GRID	RI1005964302	FALMOUTH	51
NSTAR	NATIONAL GRID	RI1005969002	FALMOUTH	34
NSTAR	NATIONAL GRID	RI1005995802	FALMOUTH	77
NSTAR	NATIONAL GRID	RI1006002902	FALMOUTH	335
NSTAR	NATIONAL GRID	RI1006032002	MASHPEE	1340
NSTAR	NATIONAL GRID	RI1006046901	HYANNIS	670
NSTAR	NATIONAL GRID	RI1006051501	ORLEANS	335
NSTAR	NATIONAL GRID	RI1006051601	S YARMOUTH	670
NSTAR	NATIONAL GRID	RI1002908201	YARMOUTH	3421
NSTAR	NATIONAL GRID	RI1002972504	FALMOUTH	1589
NSTAR	NATIONAL GRID	RI1003053102	FALMOUTH	2814
NSTAR	NATIONAL GRID	RI1003105902	YARMOUTH	335
NSTAR	NATIONAL GRID	RI1003105902	W DENNIS	34
NSTAR	NATIONAL GRID	RI1004679101	BOURNE	282
NSTAR	NATIONAL GRID	RI1004679202	BOURNE	67
NSTAR	NATIONAL GRID	PR1000131	MILTON	138
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NSTAR	NATIONAL GRID	RI1005933202	BOSTON	153
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NSTAR	NATIONAL GRID	RI1005936202	BOSTON	52
NSTAR	NATIONAL GRID	RI1005936202	BOSTON	17
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NSTAR	NATIONAL GRID	RI1005933802	BOSTON	154
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NSTAR	NATIONAL GRID	RI1005934402	BOSTON	77
NSTAR	NATIONAL GRID	RI1005934402	BOSTON	17
NSTAR	NATIONAL GRID	RI1005936002	BOSTON	86
NSTAR	NATIONAL GRID	RI1005936002	BOSTON	85
NSTAR	NATIONAL GRID	RI1005923702	BOSTON	77
NSTAR	NATIONAL GRID	RI1005923702	BOSTON	52

Electric Company	Natural Gas Company	Job ID	City	Therm Savings
NSTAR	NATIONAL GRID	RI1005923702	BOSTON	17
NSTAR	NATIONAL GRID	RI1005939402	BOSTON	77
NSTAR	NATIONAL GRID	RI1005939402	BOSTON	86
NSTAR	NATIONAL GRID	RI1005939402	BOSTON	34
NSTAR	NATIONAL GRID	RI1005923602	BOSTON	57
NSTAR	NATIONAL GRID	RI1005923602	BOSTON	335
NSTAR	NATIONAL GRID	RI1005923602	BOSTON	51
NSTAR	NATIONAL GRID	PR1000203	SOMERVILLE	336
NSTAR	NATIONAL GRID	RI1005924602	BOSTON	17
NSTAR	NATIONAL GRID	RI1005924602	BOSTON	154
NSTAR	NATIONAL GRID	RI1005924602	BOSTON	17
NSTAR	NATIONAL GRID	TT101442	WESTON	616
NSTAR	NATIONAL GRID	TT101442	WESTON	4888
NSTAR	NATIONAL GRID	RI1005934302	BOSTON	51
NSTAR	NATIONAL GRID	RI1005934302	BOSTON	57
NSTAR	NATIONAL GRID	RI1005934302	BOSTON	29
NSTAR	NATIONAL GRID	RI1005213005	BOSTON	7753
NSTAR	NATIONAL GRID	RI1005995202	BOSTON	77
NSTAR	NATIONAL GRID	PR1000215	SOMERVILLE	336
NSTAR	NATIONAL GRID	RI1004244802	DORCHESTER	154
NSTAR	NATIONAL GRID	RI1005935302	BOSTON	154
NSTAR	NATIONAL GRID	RI1005935302	BOSTON	29
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NSTAR	NATIONAL GRID	RI1005993402	BOSTON	23
NSTAR	NATIONAL GRID	RI1005993402	BOSTON	77
NSTAR	NATIONAL GRID	RI1005995502	BOSTON	51
NSTAR	NATIONAL GRID	RI1005995502	BOSTON	72
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NSTAR	NATIONAL GRID	RI1006000802	BOSTON	77
NSTAR	NATIONAL GRID	NE100484	WAREHAM	670
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NSTAR	NATIONAL GRID	RI1006016602	BOSTON	335
NSTAR	NATIONAL GRID	RI04145804	DORCHESTER	335
NSTAR	NATIONAL GRID	RI1006022602	BOSTON	77
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NSTAR	NATIONAL GRID	RI1005978302	BOSTON	215
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NSTAR	NATIONAL GRID	RI1006016302	BOSTON	17
NSTAR	NATIONAL GRID	RI1006016302	BOSTON	335
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NSTAR	NATIONAL GRID	TT101506G	NEWTON	51
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NSTAR	NATIONAL GRID	TT101506G	NEWTON	1360
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NSTAR	NATIONAL GRID	TT101506G	NEWTON	1925
NSTAR	NATIONAL GRID	TT101506G	NEWTON	335
NSTAR	NATIONAL GRID	TT101506G	NEWTON	2080

Electric Company	Natural Gas Company	Job ID	City	Therm Savings
NSTAR	NATIONAL GRID	TT101506G	NEWTON	335
NSTAR	NATIONAL GRID	PR100GAS10	SOMERVILLE	336
NSTAR	NATIONAL GRID	PR100GAS10	SOMERVILLE	118
NSTAR	NATIONAL GRID	PR100GAS11	SOMERVILLE	336
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NSTAR	NATIONAL GRID	PR100GAS12	SOMERVILLE	118
NSTAR	NATIONAL GRID	PR100GAS12	SOMERVILLE	336
NSTAR	NATIONAL GRID	PR100GAS1	SOMERVILLE	336
NSTAR	NATIONAL GRID	PR100GAS9	CANTON	1038
NSTAR	NATIONAL GRID	PR100GAS9	CANTON	77
NSTAR	NATIONAL GRID	PR100GAS9	CANTON	336
NSTAR	NATIONAL GRID	RI1005376002	BOSTON	77
NSTAR	NATIONAL GRID	RI1006006301	BOSTON	231
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NSTAR	NATIONAL GRID	RI1003983903	DORCHESTER	77
NSTAR	NATIONAL GRID	RI1003983903	DORCHESTER	68
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NSTAR	NATIONAL GRID	RI1006023502	BOSTON	77
NSTAR	NATIONAL GRID	RI1006025302	BOSTON	57
NSTAR	NATIONAL GRID	RI1006025302	BOSTON	154
NSTAR	NATIONAL GRID	RI1006010302	BOSTON	335
NSTAR	NATIONAL GRID	RI1006025203	BOSTON	154
NSTAR	NATIONAL GRID	RI1005924603	BOSTON	77
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NSTAR	NATIONAL GRID	RI1006015302	BOSTON	77
NSTAR	NATIONAL GRID	RI1006025402	BOSTON	86
NSTAR	NATIONAL GRID	RI1006025402	BOSTON	77
NSTAR	NATIONAL GRID	RI1005101602	S BOSTON	77
NSTAR	NATIONAL GRID	RI1004049803	W ROXBURY	154
NSTAR	NATIONAL GRID	RI1005498202	BOSTON	77
NSTAR	NATIONAL GRID	RI1005987702	BOSTON	335
NSTAR	NATIONAL GRID	RI1005987702	BOSTON	77
NSTAR	NATIONAL GRID	RI1005987702	BOSTON	57
NSTAR	NATIONAL GRID	RI56158	BOSTON	10813
NSTAR	NATIONAL GRID	100856	WEST NEWTON	10581
NATIONAL GRID	NATIONAL GRID	567964	WEBSTER	231
NATIONAL GRID	NATIONAL GRID	591769	AYER	385
NATIONAL GRID	NATIONAL GRID	594667	DOUGLAS	336
NATIONAL GRID	NATIONAL GRID	595304	ROCKLAND	336
NATIONAL GRID	NATIONAL GRID	609912	LEMONISTER	414
NATIONAL GRID	NATIONAL GRID	619239	WEBSTER	80.08
NATIONAL GRID	NATIONAL GRID	632502	PEPPERELL	85.8
NATIONAL GRID	NATIONAL GRID	660883	SPENCER	85
NATIONAL GRID	NATIONAL GRID	683444	WEBSTER	672
NATIONAL GRID	NATIONAL GRID	697133	BRADFORD	336
NATIONAL GRID	NATIONAL GRID	697134	WEYMOUTH	672
NATIONAL GRID	NATIONAL GRID	697136	WEYMOUTH	336
NATIONAL GRID	NATIONAL GRID	698233	WESTBOROUGH	336
NATIONAL GRID	NATIONAL GRID	698517	WESTBOROUGH	336
NATIONAL GRID	NATIONAL GRID	698537	QUINCY	1344
NATIONAL GRID	NATIONAL GRID	699431	ROCKLAND	336
NATIONAL GRID	NATIONAL GRID	704623	WEST BRIDGEWATER	336
NATIONAL GRID	NATIONAL GRID	709744	MELROSE	618
NATIONAL GRID	NATIONAL GRID	709746	MELROSE	618
NATIONAL GRID	NATIONAL GRID	709751	MELROSE	927

Electric Company	Natural Gas Company	Job ID	City	Therm Savings
NATIONAL GRID	NATIONAL GRID	709752	MELROSE	618
NATIONAL GRID	NATIONAL GRID	709759	MELROSE	618
NATIONAL GRID	NATIONAL GRID	709849	NORTH ANDOVER	672
NATIONAL GRID	NATIONAL GRID	709854	HAVERHILL	927
NATIONAL GRID	NATIONAL GRID	709856	NORTH ANDOVER	1854
NATIONAL GRID	NATIONAL GRID	709859	BILLERICA	336
NATIONAL GRID	NATIONAL GRID	709862	LOWELL	336
NATIONAL GRID	NATIONAL GRID	709865	NEWBURYPORT	336
NATIONAL GRID	NATIONAL GRID	709904	MELROSE	927
NATIONAL GRID	NATIONAL GRID	709909	MELROSE	618
NATIONAL GRID	NATIONAL GRID	709910	MELROSE	309
NATIONAL GRID	NATIONAL GRID	709913	MELROSE	927
NATIONAL GRID	NATIONAL GRID	710143	FOXBORO	336
NATIONAL GRID	NATIONAL GRID	713553	TEWKSBURY	309
NATIONAL GRID	NATIONAL GRID	715651	MALDEN	618
NATIONAL GRID	NATIONAL GRID	715655	MALDEN	927
NATIONAL GRID	NATIONAL GRID	715659	MALDEN	927
NATIONAL GRID	NATIONAL GRID	715661	HAVERHILL	309
NATIONAL GRID	NATIONAL GRID	715665	BRADFORD	1236
NATIONAL GRID	NATIONAL GRID	715667	HAVERHILL	618
NATIONAL GRID	NATIONAL GRID	715669	HAVERHILL	927
NATIONAL GRID	NATIONAL GRID	715673	GLOUCESTER	618
NATIONAL GRID	NATIONAL GRID	715678	GLOUCESTER	927
NATIONAL GRID	NATIONAL GRID	715680	NEWBURYPORT	1008
NATIONAL GRID	NATIONAL GRID	715683	SALISBURY	336
NATIONAL GRID	NATIONAL GRID	715688	EVERETT	618
NATIONAL GRID	NATIONAL GRID	715690	EVERETT	618
NATIONAL GRID	NATIONAL GRID	715693	EVERETT	618
NATIONAL GRID	NATIONAL GRID	715695	EVERETT	309
NATIONAL GRID	NATIONAL GRID	715697	EVERETT	618
NATIONAL GRID	NATIONAL GRID	715699	EVERETT	2472
NATIONAL GRID	NATIONAL GRID	715700	EVERETT	618
NATIONAL GRID	NATIONAL GRID	715818	MALDEN	4017
NATIONAL GRID	NATIONAL GRID	715879	LYNN	927
NATIONAL GRID	NATIONAL GRID	715899	LYNN	618
NATIONAL GRID	NATIONAL GRID	715901	LYNN	618
NATIONAL GRID	NATIONAL GRID	715903	LYNN	618
NATIONAL GRID	NATIONAL GRID	716563	EVERETT	618
NATIONAL GRID	NATIONAL GRID	717090	EVERETT	618
NATIONAL GRID	NATIONAL GRID	717135	SALEM	618
NATIONAL GRID	NATIONAL GRID	717136	NEWBURYPORT	336
NATIONAL GRID	NATIONAL GRID	717139	NEWBURYPORT	336
NATIONAL GRID	NATIONAL GRID	717143	GLOUCESTER	927
NATIONAL GRID	NATIONAL GRID	717146	NEWBURYPORT	336
NATIONAL GRID	NATIONAL GRID	717147	GLOUCESTER	618
NATIONAL GRID	NATIONAL GRID	717175	HAVERHILL	618
NATIONAL GRID	NATIONAL GRID	717187	GLOUCESTER	618
NATIONAL GRID	NATIONAL GRID	717198	GLOUCESTER	618
NATIONAL GRID	NATIONAL GRID	717201	NEWBURYPORT	618
NATIONAL GRID	NATIONAL GRID	717202	HAVERHILL	672
NATIONAL GRID	NATIONAL GRID	717203	HAVERHILL	336
NATIONAL GRID	NATIONAL GRID	717204	HAVERHILL	336
NATIONAL GRID	NATIONAL GRID	717205	TEWKSBURY	672
NATIONAL GRID	NATIONAL GRID	717206	TEWKSBURY	336
NATIONAL GRID	NATIONAL GRID	717207	NEWBURYPORT	336
NATIONAL GRID	NATIONAL GRID	723958	MALDEN	7725
NATIONAL GRID	NATIONAL GRID	723963	TEWKSBURY	336
NATIONAL GRID	NATIONAL GRID	723966	LYNN	618
NATIONAL GRID	NATIONAL GRID	723967	EVERETT	618
NATIONAL GRID	NATIONAL GRID	723978	PEPPERELL	618
NATIONAL GRID	NATIONAL GRID	723988	LEMONISTER	336
NATIONAL GRID	Bay State Gas	568339	AVON	385

Electric Company	Natural Gas Company	Job ID	City	Therm Savings
NATIONAL GRID	Bay State Gas	571951	NORWELL	77
NATIONAL GRID	Bay State Gas	581278	STOUGHTON	463
NATIONAL GRID	Bay State Gas	593410	NORTHAMPTON	77
NATIONAL GRID	Bay State Gas	619596	E BRIDGEWATER	672
NATIONAL GRID	Bay State Gas	643816	NORTHAMPTON	239.58
NATIONAL GRID	Bay State Gas	646274	HAMPDEN	672
NATIONAL GRID	Bay State Gas	683428	NORTHAMPTON	672
NATIONAL GRID	Bay State Gas	683441	NORTHAMPTON	336
NATIONAL GRID	Bay State Gas	690648	FRANKLIN	672
NATIONAL GRID	Bay State Gas	690652	BELLINGHAM	336
NATIONAL GRID	Bay State Gas	690656	FRANKLIN	336
NATIONAL GRID	Bay State Gas	690664	FRANKLIN	336
NATIONAL GRID	Bay State Gas	694682	REHOBOTH	336
NATIONAL GRID	Bay State Gas	694687	ATTLEBORO	336
NATIONAL GRID	Bay State Gas	694690	ATTLEBORO	336
NATIONAL GRID	Bay State Gas	694700	BELLINGHAM	336
NATIONAL GRID	Bay State Gas	697048	FRANKLIN	336
NATIONAL GRID	Bay State Gas	697119	SEEKONK	336
NATIONAL GRID	Bay State Gas	697632	SOUTH EASTON	336
NATIONAL GRID	Bay State Gas	697635	HOLBROOK	336
NATIONAL GRID	Bay State Gas	697638	NORTH EASTON	336
NATIONAL GRID	Bay State Gas	697803	STOUOGHTON	672
NATIONAL GRID	Bay State Gas	697872	ATTLEBORO	672
NATIONAL GRID	Bay State Gas	698504	NORTHAMPTON	672
NATIONAL GRID	Bay State Gas	699136	ATTLEBORO	2016
NATIONAL GRID	Bay State Gas	699393	MENDON	336
NATIONAL GRID	Bay State Gas	699396	MENDON	336
NATIONAL GRID	Bay State Gas	699407	MENDON	336
NATIONAL GRID	Bay State Gas	699420	MENDON	336
NATIONAL GRID	Bay State Gas	699455	ATTLEBORO	336
NATIONAL GRID	Bay State Gas	699484	NORTON	672
NATIONAL GRID	Bay State Gas	704607	STOUGHTON	336
NATIONAL GRID	Bay State Gas	704610	BRIDGEWATER	336
NATIONAL GRID	Bay State Gas	704612	HANSON	336
NATIONAL GRID	Bay State Gas	704616	HANSON	336
NATIONAL GRID	Bay State Gas	704618	HANSON	672
NATIONAL GRID	Bay State Gas	704625	HALIFAX	336
NATIONAL GRID	Bay State Gas	704661	HOLBROOK	336
NATIONAL GRID	Bay State Gas	704662	BROCKTON	336
NATIONAL GRID	Bay State Gas	707054	SEEKONK	336
NATIONAL GRID	Bay State Gas	709725	WEST BRIDGEWATER	1008
NATIONAL GRID	Bay State Gas	709728	WEST BRIDGEWATER	336
NATIONAL GRID	Bay State Gas	709951	WEST BRIDGEWATER	336
NATIONAL GRID	Bay State Gas	709997	WEST BRIDGEWATER	336
NATIONAL GRID	Bay State Gas	709998	HANOVER	336
NATIONAL GRID	Bay State Gas	710118	FRANKLIN	336
NATIONAL GRID	Bay State Gas	710126	ATTLEBORO	336
NATIONAL GRID	Bay State Gas	710129	ATTLEBORO	336
NATIONAL GRID	Bay State Gas	710136	ATTLEBORO	336
NATIONAL GRID	Bay State Gas	710139	ATTLEBORO	336
NATIONAL GRID	Bay State Gas	713045	ATTLEBORO	336
NATIONAL GRID	Bay State Gas	713049	ATTLEBORO	672
NATIONAL GRID	Bay State Gas	713057	ATTLEBORO	336
NATIONAL GRID	Bay State Gas	713060	ATTLEBORO	672
NATIONAL GRID	Bay State Gas	724809	WEST BRIDGEWATER	672
NATIONAL GRID	Bay State Gas	724812	WEST BRIDGEWATER	336
NATIONAL GRID	Bay State Gas	724815	WEST BRIDGEWATER	336
NATIONAL GRID	Bay State Gas	724819	BRIDGEWATER	672
NATIONAL GRID	Bay State Gas	724820	BRIDGEWATER	336
NATIONAL GRID	Bay State Gas	724821	BRIDGEWATER	672
NATIONAL GRID	Bay State Gas	724826	WEST BRIDGEWATER	336
NATIONAL GRID	Bay State Gas	724878	BROCKTON	336

Electric Company	Natural Gas Company	Job ID	City	Therm Savings
NATIONAL GRID	Bay State Gas	724879	BROCKTON	336
NATIONAL GRID	Bay State Gas	724882	BROCKTON	336
NATIONAL GRID	Bay State Gas	724883	STOUGHTON	336
NATIONAL GRID	Bay State Gas	724884	STOUGHTON	336
NATIONAL GRID	Bay State Gas	724886	BROCKTON	336
NATIONAL GRID	Bay State Gas	724887	BROCKTON	672
NATIONAL GRID	Bay State Gas	724889	STOUGHTON	336
NATIONAL GRID	Bay State Gas	724893	WRENTHAM	336
NATIONAL GRID	Bay State Gas	724896	WRENTHAM	336
NATIONAL GRID	Bay State Gas	724898	WRENTHAM	336
NATIONAL GRID	Bay State Gas	724901	WRENTHAM	336
NATIONAL GRID	Bay State Gas	724902	WRENTHAM	336
NATIONAL GRID	Bay State Gas	724907	BRIDGEWATER	672
NATIONAL GRID	Bay State Gas	724910	BRIDGEWATER	336
NATIONAL GRID	Bay State Gas	724911	BRIDGEWATER	336
NATIONAL GRID	Bay State Gas	724913	BRIDGEWATER	672
NATIONAL GRID	Bay State Gas	724915	BRIDGEWATER	336
NATIONAL GRID	Berkshire Gas	618948	NORTH ADAMS	168.74
NATIONAL GRID	Berkshire Gas	619930	NORTH ADAMS	207
NATIONAL GRID	Berkshire Gas	623052	LENOX	37.26
NATIONAL GRID	Berkshire Gas	646286	GT BARRINGTON	1094.4
NATIONAL GRID	Berkshire Gas	660342	STOCKBRIDGE	1428
NATIONAL GRID	Berkshire Gas	660384	NORTH ADAMS	353.16
NATIONAL GRID	Berkshire Gas	660598	NORTH ADAMS	535.72
NATIONAL GRID	Berkshire Gas	683429	GT BARRINGTON	1008
NATIONAL GRID	Berkshire Gas	709982	ADAMS	336
NATIONAL GRID	Berkshire Gas	710069	NORTHAMPTON	672
NATIONAL GRID	New England Gas	599960	SOMERSET	413
NATIONAL GRID	New England Gas	694540	FALL RIVER	1008
NATIONAL GRID	New England Gas	694696	FALL RIVER	336
NATIONAL GRID	New England Gas	697077	SWANSEA	336
NATIONAL GRID	New England Gas	697088	SWANSEA	1008
NATIONAL GRID	New England Gas	697092	SWANSEA	336
NATIONAL GRID	New England Gas	697099	SWANSEA	672
NATIONAL GRID	New England Gas	699427	WESTPORT	1680
NATIONAL GRID	New England Gas	699435	FALL RIVER	336
NATIONAL GRID	New England Gas	710133	FALL RIVER	4326
NATIONAL GRID	NSTAR Gas and Electric	594487	WORCESTER	336
NATIONAL GRID	NSTAR Gas and Electric	607962	WORCESTER	358.77
NATIONAL GRID	NSTAR Gas and Electric	619340	WORCESTER	1288
NATIONAL GRID	NSTAR Gas and Electric	632335	WORCESTER	205.92
NATIONAL GRID	NSTAR Gas and Electric	634105	AUBURN	336
NATIONAL GRID	NSTAR Gas and Electric	646295	WORCESTER	404.64
NATIONAL GRID	NSTAR Gas and Electric	648063	AUBURN	77
NATIONAL GRID	NSTAR Gas and Electric	649345	WORCESTER	273.9
NATIONAL GRID	NSTAR Gas and Electric	650143	WORCESTER	336
NATIONAL GRID	NSTAR Gas and Electric	663261	WORCESTER	18.63
NATIONAL GRID	NSTAR Gas and Electric	671291	WORCESTER	336
NATIONAL GRID	NSTAR Gas and Electric	671298	WORCESTER	1008
NATIONAL GRID	NSTAR Gas and Electric	683423	WORCESTER	336
NATIONAL GRID	NSTAR Gas and Electric	683426	WORCESTER	336
NATIONAL GRID	NSTAR Gas and Electric	683435	WORCESTER	336
NATIONAL GRID	NSTAR Gas and Electric	683437	WORCESTER	336
NATIONAL GRID	NSTAR Gas and Electric	683439	WORCESTER	336
NATIONAL GRID	NSTAR Gas and Electric	688473	WORCESTER	672
NATIONAL GRID	NSTAR Gas and Electric	689389	WORCESTER	336
NATIONAL GRID	NSTAR Gas and Electric	689414	WORCESTER	336
NATIONAL GRID	NSTAR Gas and Electric	690503	WORCESTER	336
NATIONAL GRID	NSTAR Gas and Electric	692635	MARLBOROUGH	336
NATIONAL GRID	NSTAR Gas and Electric	692641	MARLBOROUGH	336
NATIONAL GRID	NSTAR Gas and Electric	692643	MARLBOROUGH	336
NATIONAL GRID	NSTAR Gas and Electric	692647	MARLBOROUGH	336

Electric Company	Natural Gas Company	Job ID	City	Therm Savings		
NATIONAL GRID	NSTAR Gas and Electric	692656	MARLBOROUGH	336		
NATIONAL GRID	NSTAR Gas and Electric	692660	MARLBOROUGH	336		
NATIONAL GRID	NSTAR Gas and Electric	692673	MARLBOROUGH	336		
NATIONAL GRID	NSTAR Gas and Electric	694374	WESTBOROUGH	336		
NATIONAL GRID	NSTAR Gas and Electric	694516	WESTBOROUGH	336		
NATIONAL GRID	NSTAR Gas and Electric	697241	MILFORD	336		
NATIONAL GRID	NSTAR Gas and Electric	697243	WESTBOROUGH	672		
NATIONAL GRID	NSTAR Gas and Electric	697567	NORTHBOROUGH	336		
NATIONAL GRID	NSTAR Gas and Electric	698511	WEBSTER	336		
NATIONAL GRID	NSTAR Gas and Electric	698525	WESTBOROUGH	336		
NATIONAL GRID	NSTAR Gas and Electric	698531	WESTBOROUGH	672		
NATIONAL GRID	NSTAR Gas and Electric	698780	NORTHBOROUGH	336		
NATIONAL GRID	NSTAR Gas and Electric	698787	NORTHBOROUGH	309		
NATIONAL GRID	NSTAR Gas and Electric	699341	WORCESTER	336		
NATIONAL GRID	NSTAR Gas and Electric	699402	MARLBOROUGH	672		
NATIONAL GRID	NSTAR Gas and Electric	699408	MILFORD	672		
NATIONAL GRID	NSTAR Gas and Electric	699417	MILFORD	672		
NATIONAL GRID	NSTAR Gas and Electric	699424	MILFORD	336		
NATIONAL GRID	NSTAR Gas and Electric	699506	MILFORD	336		
NATIONAL GRID	NSTAR Gas and Electric	704574	MILFORD	336		
NATIONAL GRID	NSTAR Gas and Electric	704578	MILFORD	336		
NATIONAL GRID	NSTAR Gas and Electric	704586	MILFORD	336		
NATIONAL GRID	NSTAR Gas and Electric	704588	MILFORD	336		
NATIONAL GRID	NSTAR Gas and Electric	704600	MARLBOROUGH	336		
NATIONAL GRID	NSTAR Gas and Electric	704656	WHITINSVILLE	336		
NATIONAL GRID	NSTAR Gas and Electric	704663	NORTHBRIDGE	336		
NATIONAL GRID	NSTAR Gas and Electric	704789	WHITINSVILLE	336		
NATIONAL GRID	NSTAR Gas and Electric	709656	MARLBOROUGH	336		
NATIONAL GRID	NSTAR Gas and Electric	709899	WORCESTER	336		
NATIONAL GRID	NSTAR Gas and Electric	709945	WESTBOROUGH	336		
NATIONAL GRID	NSTAR Gas and Electric	709965	SOUTHBORO	336		
NATIONAL GRID	NSTAR Gas and Electric	709969	NORTHBOROUGH	336		
NATIONAL GRID	NSTAR Gas and Electric	709976	SOUTHBORO	336		
NATIONAL GRID	NSTAR Gas and Electric	710018	UXBRIDGE	336		
NATIONAL GRID	NSTAR Gas and Electric	710121	HOPEDALE	336		
NATIONAL GRID	NSTAR Gas and Electric	710123	UXBRIDGE	336		
NATIONAL GRID	NSTAR Gas and Electric	710154	WESTBOROUGH	336		
NATIONAL GRID	NSTAR Gas and Electric	712941	UXBRIDGE	336		
NATIONAL GRID	NSTAR Gas and Electric	715677	WORCESTER	336		
NATIONAL GRID	Unitil/FG&E	645972	GARDNER	413		
NATIONAL GRID	Unitil/FG&E	646483	GARDNER	336		
NATIONAL GRID	Unitil/FG&E	715696	WINCHDON SPGS	336		
NATIONAL GRID	Berkshire	567813	Lenox	154		
NATIONAL GRID	Berkshire	567813	Lenox	208		
NATIONAL GRID	Berkshire	591179	Gr Barrington	336		
NATIONAL GRID	Berkshire	591179	Gr Barrington	311		
NATIONAL GRID	Berkshire	591097	Williamstown	77		
NATIONAL GRID	Berkshire	591097	Williamstown	1038		
NATIONAL GRID	Berkshire	606468	N. Adams	154		
NATIONAL GRID	NSTAR	592540	Worcester	77		
NATIONAL GRID	NSTAR	592540	Worcester	173		
NATIONAL GRID	NSTAR	588070	Worcester	847		
NATIONAL GRID	NSTAR	592270	Worcester	1386		
NATIONAL GRID	NSTAR	592270	Worcester	118		
NATIONAL GRID	Bay State Gas	599574	Stoughton	336		
NATIONAL GRID	Bay State Gas	574830	Franklin	154	Correction	-154
NATIONAL GRID	Bay State Gas	581312	Brockton	154		
NATIONAL GRID	Bay State Gas	599624	Brockton	154		
NATIONAL GRID	Bay State Gas	592934	Seekonk	336		
NATIONAL GRID	Bay State Gas	592934	Seekonk	154	Correction	-154
NATIONAL GRID	Bay State Gas	595350	S. Easton	231		
NATIONAL GRID	Bay State Gas	581290	Brockton	385		

Electric Company	Natural Gas Company	Job ID	City	Therm Savings		
NATIONAL GRID	Bay State Gas	562740	Hampden	336	Correction	-336
NATIONAL GRID	Bay State Gas	562740	Hampden	231		
NATIONAL GRID	Bay State Gas	562740	Hampden	208		

C&I #2
Targeted Customer Segments

Metric Number	Metric Language	National Grid Electric Targets	National Grid Electric Final 2010 Production
C&I #2 Targeted Customer Segments	During 2010, develop projects not initiated prior to 1/1/2010 and obtain commitments to follow through with implementation from X data centers, high performance laboratories/clean rooms, or industrial facilities. To qualify, assessments and commitments must include both electric and gas non-prescriptive measures where applicable (e.g. customers with gas process usage). Measures for industrial facilities must be related to process. Data center and lab spaces can apply even if a subset of a larger building. Data center and lab measures must be related to those "processes" (i.e., related to HVAC or servers/lab equipment). A "commitment" is a completed custom application. For each PA, "X" is defined as a percent increase (Threshold=20%, Design=30%, Exemplary=40%) in commitments from the commitments that originated from applicable projects in 2009. * indicates targets are scaled from other PA targets where baseline data is missing or inappropriate (e.g., NSTAR Gas is scaled as a share of load from Grid Gas because NSTAR did not serve industrial projects in 2009). Note: It is the PA's and EEAC's intent to have 2011 performance metricdollars tied to the 2010 commitments becoming installed with savings in 2011. * NSTAR Gas did not serve industrial gas customers in 2009 because they were not contributing to gas efficiency programs. Therefore, this baseline is not relevant.	Threshold: 36 Design: 39 Exemplary 42	**Exemplary: 56**

Report for C&I #2 Targeted Customer Segments

Appln # or Ref #	City	Basic Project or EEM Description	Signed Commitment Date	Expected Completion Year	Electric PA	Gas PA
623881	Andover	(EI-VSDO) installation of four variable speed drives to control the drive motor output speed	07/28/2010	2010	NATIONAL GRID	CMA
580617	Andover	(D2-INRG) Screw compressors with VFD control. Evaporative -cooled condenser with VFD capacity control. *Other 2010 Appl* ***#597243*** *(D2 CUSTA-INRG) uncommitted,* ***#572452*** *(EI LGHT-Code 41),* ***#577831 - 577834*** *(EI CUSTA LGHT),* ***#577839*** *(EI LIGHT)*	03/18/2010	2010	NATIONAL GRID	CMA
594932	Andover	(D2-CHIL) 2 x 750 ton Centrifugal Chillers with VFDs *Other 2010 Appl.* ***#587393*** *(EI CUSTA LGHT-Exterior),* ***#599649*** *(EI VSD)*	05/12/2010	2010	NATIONAL GRID	CMA
568174	East Longmeadow	(D2-PROC) 4 - 280 ton and 2 - 350 ton Sumitomo machines	01/26/2010	2010	NATIONAL GRID	CMA
568815	Franklin	(EI-REFG) Thermosyphon oil cooling on (4) 500HP RWBII 222 and (1) 600HP VFD RWBII 270 Compressors, head pressure minimum 114psig, 10DegreesF approach over wb	02/03/2010	2010	NATIONAL GRID	CMA
622644	Franklin	(EI-OM) Decrease set points on process pumps (25 Psig)	07/20/2010	2010	NATIONAL GRID	CMA

Appln # or Ref #	City	Basic Project or EEM Description	Signed Commitment Date	Expected Completion Year	Electric PA	Gas PA
619830	Lawrence	(D2-INRG) Two-cell blast freezer, 12,000 lb/hr, +40¿F vestibules R717 central two-stage refrigeration plant,□ remanufactured reciprocating compressors, rebuilt evaporative condenser, hot gas defrost	06/30/2010	2010	NATIONAL GRID	CMA
577718	Princenton	(EI-PROC) Install 24 new HKD SV10 tower guns of varying heights, 10-foot Focus, 20-foot SV10, and 30-foot SV10.	03/10/2010	2010	NATIONAL GRID	muni
636524	Athol	(EI-VSDO) 3 well-water pumps, 2 @ 125 hp, 1 @ 150 hp, with VSDs installed in a PID loop to control flow.	08/26/2010	2010	NATIONAL GRID	NA
569190	Orange	(EI-AGRI) Warm milk is pre-cooled by cold well water in a heat exchanger before entering the refrigeration system.	02/08/2010	2010	NATIONAL GRID	NA
573000	Orange	(EI-AGRI) Vacuum sensing input to vfd to contol motor speed and generate required vacuum for washing, milking and standby.	02/22/2010	2010	NATIONAL GRID	NA
566445	Sheffield	(EI-AGRI) Milk is pre-cooled by well water in a plate and frame heat exchanger before entering the refrigeration system.	01/11/2010	2010	NATIONAL GRID	NA
566448	Sheffield	(D2-AGRI) Vacuum is regulated by vfd on vacuum pump motor with input from various vacuum sensors.	01/11/2010	2010	NATIONAL GRID	NA
581968	Sturbridge	(D2-PROC) Upgrade to hybrid electric IMM Arburg model 570 E	03/31/2010	2010	NATIONAL GRID	NA
568017	Charlton	(EI VSDO) Upgrade tro VFD	01/25/2010	2010	NATIONAL GRID	NA
594939	Plainville	(D2-HVAC) BPE XE-MIR 2000 Air to Air Polymer fixed plate heat & humidity transfer heat exchanger 120 volt single phase. 495 input watts @1868 cfm	05/12/2010	2010	NATIONAL GRID	NEG
588420	Billerica	(EI-LGHT) with 13 x 139 watt LED BETA area lights	04/12/2010	2010	NATIONAL GRID	NATIONAL GRID
587931	Billerica	(EI-HVAC) Install intelligent floor panels to elimate ssc condition. VFDs and economizer with ductwork in electric room. (ECM3 Ltg #580972)	04/06/2010	2010	NATIONAL GRID	NATIONAL GRID
575040	Chelmsford	(EI-HVAC) Eliminate short cycling of cold air (modify racks) and install intelligent floor panels	03/02/2010	2010	NATIONAL GRID	NATIONAL GRID
619224	Clinton	(EI-VSDO) Install VFDs on 6 molding machines and 1 air compressor.	06/23/2010	2010	NATIONAL GRID	NATIONAL GRID
581171	Dracut	(D2-PROC) VFDs on 2x7.5 hp,20 hp, and two 125 hp motors	03/24/2010	2010	NATIONAL GRID	NATIONAL GRID
621311	Dudley	(EI-VSDO) add VFDs to each Other 2010 Appl **#649135** (D2 CUSTA-AGRI), **#568614** (EI CUSTA-HVAC), **#568256** (EI CUSTA-VFD)	07/12/2010	2010	NATIONAL GRID	NATIONAL GRID
568256	Dudley	(EI-VSDH)	01/27/2010	2010	NATIONAL GRID	NATIONAL GRID

Appln # or Ref #	City	Basic Project or EEM Description	Signed Commitment Date	Expected Completion Year	Electric PA	Gas PA
580589	Gloucester	(D2-INRG) Oversized Condenser	03/18/2010	2010	NATIONAL GRID	NATIONAL GRID
588063	Gloucester	(EI-LGHT) Upgrade to volumetric lighting with dimming and occ contolled lighting	04/07/2010	2010	NATIONAL GRID	NATIONAL GRID
588064	Gloucester	(D2-HVAC) In Row Cooling	04/07/2010	2010	NATIONAL GRID	NATIONAL GRID
593474	Gloucester	(D2-HVAC) Plate & Frame	05/06/2010	2010	NATIONAL GRID	NATIONAL GRID
624018	Gloucester	(EI-LGHT) Qty 55 : 130 Watt LED's w/ Occ sensors in minus 20 F freezer warehouse	07/29/2010	2010	NATIONAL GRID	NATIONAL GRID
577753	Haverhill	(D2-PROC) Piping changes and new controls and sequences.	03/10/2010	2010	NATIONAL GRID	NATIONAL GRID
581085	Leominster	(EI-VSDO) Retrofit ICSC controller. Integrate with machine controls to alter hydraulic pump speed to meet hydraulic requirements.	03/23/2010	2010	NATIONAL GRID	NATIONAL GRID
606033	Leominster	(EI-VSDO) Install VSD on 60 hp hydraulic pump motor.	06/02/2010	2010	NATIONAL GRID	NATIONAL GRID
606038	Leominster	(EI-VSDO) Install VSD to control hydraulic pump.	06/02/2010	2010	NATIONAL GRID	NATIONAL GRID
602429	Lowell	(EI-PROC) Dry Claw Vacuum Pumps	05/25/2010	2010	NATIONAL GRID	NATIONAL GRID
592691	Lynn	(EI-REFG) variable speed chilled glycol pumping 30psig suction pressure for all compressors new 25-hp compressor for OJ room	04/28/2010	2010	NATIONAL GRID	NATIONAL GRID
608067	Melrose	(EI-AGRI) Install hydrautic variable frequesncy servo controllers	06/07/2010	2010	NATIONAL GRID	NATIONAL GRID
580959	West Brookfield	(EI-ECMR) 5 EC motors on 2 evaporators in apple cooler.	03/22/2010	2010	NATIONAL GRID	NATIONAL GRID
608059	Medford	(EI-AGRI) VFD controllers added to the 4 motors	06/07/2010	2010	NATIONAL GRID	NSTAR?
600216	Marlborough	(EI-HVAC) Five UH stand alone units same data center	05/23/2010	2010	NATIONAL GRID	NSTAR
605949	Marlborough	(EI-HVAC) Install new US humidifiers	06/02/2010	2010	NATIONAL GRID	NSTAR
619440	Quincy	(D2-PROC) Fybroc Pumps with impellers sized for desired flow, throttling assumed to not be required. 1200 RPM premium efficient ODP motors	06/25/2010	2010	NATIONAL GRID	NSTAR
620250	Quincy	(EI-REFG) Install Astro Rink Low E Ceiling Mfg by Energie Innovations Inc	07/06/2010	2010	NATIONAL GRID	NSTAR
572658	Westborough	(EI-HVAC) ECMs 1A Filter Mod, 2A & B Pressure Drop Mods, 3A Damper Controls, 4 AHU & MAU Optimization and 6 CHW & HW Pump Diff Pressure Control	02/22/2010	2010	NATIONAL GRID	NSTAR
590709	Westborough	(EI-REFG) Install two (2) Fastrax FR Series High-Performance Rolling Doors	04/13/2010	2010	NATIONAL GRID	NSTAR
568893	Worcester	(D2-OTHR) Install new 650 ton high efficiency York chiller with VFD and float condenser water temperature	02/04/2010	2010	NATIONAL GRID	NSTAR
593295	Worcester	(EI-PROC) optimize process to only use 2 robots	05/04/2010	2010	NATIONAL GRID	NSTAR

Appln # or Ref #	City	Basic Project or EEM Description	Signed Commitment Date	Expected Completion Year	Electric PA	Gas PA
573471	Grafton	(EI-UHUM) Upgrade to UH	02/23/2010	2010	NATIONAL GRID	NSTAR
618666	Gardner	(EI-PROC) Rex TCS Premium Insulated Barrel Heaters	06/16/2010	2010	NATIONAL GRID	Unitil
621057	Gardner	(EI-VSDO) Install VSDs with DP control on 6 existing vacuum fan motors.	07/08/2010	2010	NATIONAL GRID	Unitil
646244	East Longmeadow	(D2-PROC) 1-220 ton, 1-280 ton, 1-450 ton Sumitomo electric servo IMMs	09/08/2010	2010	NATIONAL GRID	CMA
648100	East Longmeadow	(EI-HVAC) Sychro belting	09/17/2010	2010	NATIONAL GRID	CMA
649135	Dudley	(D2-PROC) 2- 300 ton electric servo IMMs	09/21/2010	2010	NATIONAL GRID	NATIONAL GRID
660085	Sutton	(EI-PROC) 240 Quartz heaters with 80 zones in thermoforming oven.	10/08/2010	2010	NATIONAL GRID	NSTAR
646890	Gardner	(D2-PROC)New 450 ton all-electric injection molding machine #9.	09/13/2010	2010	NATIONAL GRID	Unitil
692700	Chelmsford	(D2-CUST AGRI) Rotary claw vac pump w/T	11/08/2010	2011	NATIONAL GRID	NATIONAL GRID
698352	Marlborough	(D2-CUST HVAC) Install new 400 ton plate-and-frame heatx and re-pipe existing heatx	11/17/2010	2010	NATIONAL GRID	NSTAR
698298	Medford	(D2-HVAC) 30 ton air cooled chiller for series of lab spaces; (D2-VFD) Roof exhaust fans (Laboratory) - No TA Studies (prescr)	11/16/2010	2010	NATIONAL GRID	NSTAR

Metric Number	Metric Language	National Grid Gas Targets	National Grid Gas Final 2010 Production
C&I #2 Targeted Customer Segments	During 2010, develop projects not initiated prior to 1/1/2010 and obtain commitments to follow through with implementation from X data centers, high performance laboratories/clean rooms, or industrial facilities. To qualify, assessments and commitments must include both electric and gas non-prescriptive measures where applicable (e.g. customers with gas process usage). Measures for industrial facilities must be related to process. Data center and lab spaces can apply even if a subset of a larger building. Data center and lab measures must be related to those "processes" (i.e., related to HVAC or servers/lab equipment). A "commitment" is a completed custom application. For each PA, "X" is defined as a percent increase (Threshold=20%, Design=30%, Exemplary=40%) in commitments from the commitments that originated from applicable projects in 2009. * indicates targets are scaled from other PA targets where baseline data is missing or inappropriate (e.g., NSTAR Gas is scaled as a share of load from Grid Gas because NSTAR did not serve industrial projects in 2009). Note: It is the PA's and EEAC's intent to have 2011 performance metric dollars tied to the 2010 commitments becoming installed with savings in 2011. * NSTAR Gas did not serve industrial gas customers in 2009 because they were not contributing to gas efficiency programs. Therefore, this baseline is not relevant.	Threshold: 19 Design: 21 Exemplary: 22	**Threshold: 20**

Report for C&I #2 Targeted Customer Segments

Application #	City	Basic Project or EEM Description	Signed Commitment Date	Expected Completion Date	Electric PA	Gas PA
694734	BILLERICA	VENTILATION HEAT RECOVERY	04/30/2010	04/30/2010	NATIONAL GRID	NATIONAL GRID
694744	CHARLESTOW	BOILER COMBUSTION CONTROLS	04/30/2010	04/30/2010	NSTAR	NATIONAL GRID
694892	BEDFORD	HEATING-PERFORMANCE OPTIMIZA	07/12/2010	07/28/2010	NSTAR	NATIONAL GRID
694703	SOUTHBRIDG	BOILER COMBUSTION CONTROLS	07/28/2010	07/28/2010	NATIONAL GRID	NATIONAL GRID
694538	HAVERHILL	PROCESS-PERFORMANCE OPTIMIZA	04/30/2010	04/30/2010	NATIONAL GRID	NATIONAL GRID
694695	CARVER	STEAM TRAP REPAIRS	04/30/2010	04/30/2010	NATIONAL GRID	NATIONAL GRID
643822	BILLERICA	HOOD CONTROLS	08/31/2010	08/31/2010	NATIONAL GRID	NATIONAL GRID
632107	AYER	BOILER COMBUSTION CONTROLS	06/30/2010	06/30/2010	NATIONAL GRID	NATIONAL GRID
643837	MIDDLETON	STEAM TRAP SURVEY	04/09/2010	08/31/2010	MUNI	NATIONAL GRID
692716	DORCHESTER	STEAM TRAP SURVEY	05/05/2010	06/29/2010	NSTAR	NATIONAL GRID
748190	CLINTON	PIPE INSULATION	04/22/2010	09/01/2010	NATIONAL GRID	NATIONAL GRID
692696	WALTHAM	VENTILATION HEAT RECOVERY	04/07/2010	05/28/2010	NSTAR	NATIONAL GRID
698767	CHATHAM	PROCESS-OTHER	09/28/2010	01/27/2011	CLC	NATIONAL GRID
650091	CARVER	PROCESS HEAT RECOVERY	10/01/2010	01/21/2011	NSTAR	NATIONAL GRID
709411	ROCKLAND	PROCESS HEAT RECOVERY	12/01/2010	07/30/2011	NATIONAL GRID	NATIONAL GRID
788363	BOSTON	LAB VENTILATION CONTROLS	12/01/2010	03/04/2011	NSTAR	NATIONAL GRID
783681	AYER	BOILER COMBUSTION CONTROLS	10/24/2010	03/04/2011	NATIONAL GRID	NATIONAL GRID
864779	MIDDLETON	HEAT RECOVERY FROM THERMAL O	12/06/2010	08/01/2011	MUNI	NATIONAL GRID
734170	BOSTON	EMS INSTALL _ Lab Ventilation	12/14/2010	02/01/2011	NSTAR	NATIONAL GRID
803875	WALTHAM	STEAM TRAP SURVEY	03/31/2010	03/31/2010	NSTAR	NATIONAL GRID
20						

C&I #3
Combined Heat & Power (CHP)

***National Grid did not attain Threshold Level for Gas C&I Metric #3

Metric Number	Metric Language	National Grid Electric Targets	National Grid Electric Final 2010 Production
C&I #3 Combined Heat & Power (CHP)	Each PA will complete X Combined Heat & Power commitments in 2010. A commitment is either a signed application or a signed Memorandum of Understanding between the PA and customer. This metric applies to all gas and electric PAs except Berkshire Gas, FG&E Electric and FG&E Gas, however, it is not a requirement that gas PAs contribute any funds to TA studies or CHP rebates. Note: It is the PA's and EEAC's intent to have 2011 performance metric dollars tied to the 2010 commitments becoming installed with savings in 2011, as appropriate based on expected completion dates of the commitments. Targets are not additive. Electric and Gas PA targets reflect the same CHP units. Each CHP project is counted twice -- once by the electric PA and once by the gas PA. Note that baseline data also reflects this double counting. Baseline data: In the past most electric PAs did not promote CHP, and NSTAR Gas did not provide services to industrial customers. Also, past gas CHP efforts relied on a cost-effectiveness screening method that no longer applies and had other less stringent requirements to qualify projects. Therefore, baseline data may not adequately reflect what can be achieved with the new CHP program design. * Electric PA 2009 baseline data reflects projects done by the applicable gas PA in the applicable electric PA's service territory (e.g., NSTAR Electric baseline reflects prc	Threshold: 8 Design: 10 Exemplary: 12	**Exemplary: 15**

Final Report for MA C&I Metric #3 - NGRID 2010 CHP Projects

Application #	City	Basic Project Description	Signed Commitment Date	No of App'l Letter for CHP Goal	Elec PA	Gas PA
664567	Beverly	75 kW	11/29/2010	1	NATIONAL GRID	NATIONAL GRID
568009	Marlborough	555 kW Gas fired engine driven CHP with Absorber	03/19/2110	1	NATIONAL GRID	NSTAR
592327	Oxford	250 kW Gas Fired engine CHP	05/07/2010	1	NATIONAL GRID	NATIONAL GRID
617129	Marlborough	(2) 75 kW Gas fired engines	07/22/2010	1	NATIONAL GRID	NSTAR
622837	Worcester	60 kW Gasfired Engine CHP	10/08/2010	1	NATIONAL GRID	NSTAR
631019	Brockton	60 kW Gas fired Engine CHP	11/19/2010	1	NATIONAL GRID	CMA
592314	Worcester	(4) 75 kW units Gas fired engine CHP	09/06/2010	4	NATIONAL GRID	NSTAR
569850	Worcester	75 kW Gas fired engine CHP	08/31/2010	1	NATIONAL GRID	NSTAR
569848	Worcester	75 kW Gas fired engine CHP	08/31/2010	1	NATIONAL GRID	NSTAR
569849	Worcester	75 kW Gas fired engine CHP	08/31/2010	1	NATIONAL GRID	NSTAR
646803	Worcester	60 kW Gas fired Engine CHP	11/11/2010	1	NATIONAL GRID	NSTAR
710024	Northampton	275 kWe(HPT) Back Pressure Turbine	12/19/2010	1	NATIONAL GRID	CMA
				15		

C&I #4
Retrofit Depth of Savings

Metric Number	Metric Language	National Grid Gas Targets	National Grid Gas Final 2010 Production
C&I #4 Retrofit Depth of Savings	Begin implementation of efforts at capturing whole-building*, deep savings of both electric and gas. Perform assessments and obtain X customer commitments to follow-through with savings of at least Y% building energy savings (gas or electric). To be eligible, buildings must have fossil fuel (e.g. natural gas, oil) and electric measures and a minimum of 5% of savings from fossil fuel and electric. (*Defined as the whole space under management and control of the customer, which can include tenant space in a larger building.) In order to reach exemplary, you must achieve design. A "commitment" is a signed application or Memorandum of Understanding. Note: It is the PA's and EEAC's intent to have 2011 performance metric dollars tied to the 2010 commitments becoming installed with savings in 2011. Baseline data is provided in the 2009 columns. Targets based on proportional scaling of gas and electric PAs.	Threshold:X=15,Y=20% Design: X=18,Y=20% Exemplary: X=15,Y=25%	**Threshold: X=15, Y=20%**

Project No.	City	Project Description	12-month kWh usage	2010 EE kWh	12-month therm usage	2010 EE therms	%of Account Usage kWh	%of Account Usage therms / fuel	Gas Threshold X=15, Y=20%	Gas Design X=18, Y=20%	Gas Exemplary X=15, Y=25%
51689/13750	Brookline	EMS Install	5,000,000	300,000	167,929	63,647	6%	38%	1	1	1
50618/10930	Weston	EMS Install	1,404,854	281,405	191,948	39,277	20%	20%	1	1	
50868/31810	Newton	EMS controls with MeLink Kitchen Hood Controls	1,002,400	145,083	53,000	10,581	14%	20.0%	1	1	
49916/25900	Belmont	EMS Install	267,850	21,428	5,646	3,252	8%	58%	1	1	1
51328/14361	Boston	Lab Ventilation Controls - Simches	20,266,723	2,630,883	777,720	240,000	13%	31%	1	1	1
49726/36460	Lexington	EMS Install	161,484	42,916	38,685	5,369	27%	14%	1	1	1
44918/22420	Burlington	EMS Install	1,914,570	568,716	31,367	11,567	30%	37%	1	1	1
43622/15010	Revere	EMS, insulation	2,968,837	750,125	62,946	25,989	25%	41%	1	1	1
43652/11740	Revere	EMS	1,059,000	262,589	61,201	15,986	25%	26%	1	1	1
43694/13870	Revere	Hydronic Boiler	2,007,000	143,130	12,734	4,500	7%	35%	1	1	1
43638/19270	Revere	EMS, insulation, TRV, steam trap	178,720	57,032	35,713	19,384	32%	54%	1	1	1
43670/16322	Revere	EMS	1,612,000	75,098	53,163	11,800	5%	22%	1	1	
44368/25572	Medford	DCV/ RCX	903,200	249,822	24,000	4,819.7	28%	20%	1	1	1
42638/23320	Beverly	EMS	350,000	100,000	54,932	12,630	29%	23%	1	1	1
45646/12762	Billerica	HVAC controls	395,850	50,000	118,167	30,110	13%	25%	1	1	1
									15	15	11

Metric Number	Metric Language	National Grid Electric Targets	National Grid Electric Final 2010 Production
C&I #4 Retrofit Depth of Savings	Begin implementation of efforts at capturing whole-building*, deep savings of both electric and gas. Perform assessments and obtain X customer commitments to follow-through with savings of at least Y% building energy savings (gas or electric). To be eligible, buildings must have fossil fuel (e.g. natural gas, oil) and electric measures and a minimum of 5% of savings from fossil fuel and electric. (*Defined as the whole space under management and control of the customer, which can include tenant space in a larger building.) In order to reach exemplary, you must achieve design. A "commitment" is a signed application or Memorandum of Understanding. Note: It is the PA's and EEAC's intent to have 2011 performance metric dollars tied to the 2010 commitments becoming installed with savings in 2011. Baseline data is provided in the 2009 columns. Targets based on proportional scaling of gas and electric PAs.	Threshold:X=13,Y=20% Design: X=15,Y=20% Exemplary: X=13,Y=25%	**Exemplary: X=14, Y=25%**

Project No.	City	Project Description	12-month kWh usage	2010 EE kWh	12-month therm usage	2010 EE therms	%of Account Usage kWh	%of Account Usage therms / fuel	Electric PA	Natural Gas PA	Electric Threshold X=13, Y=20%	Electric Design X=15, Y=20%	Electric Exemplary X=13, Y=25%
717112	Billerica	HVAC controls	395,850	50,000	118,167	30,110	13%	25%	NGRID	NGRID	1	1	1
548860	Everett	Upgrade HVAC	604,084	438,523	0	-3,678	73%	55%	NATIONAL GRID	NATIONAL GRID	1	1	1
594151, 594153, 594463, 594464, 594470	Harvard	Retrocommisioning of gas domestic water heater, from WBA study.	1,147,800	303,932	5,900	1,009	26%	17%	NATIONAL GRID	NATIONAL GRID	1	1	1
694720	Revere	EMS, insulation	2,968,837	750,125	62,946	25,989	25%	41%	NATIONAL GRID	NATIONAL GRID	1	1	1
694720	Revere	EMS	1,059,000	262,589	61,201	15,986	25%	26%	NATIONAL GRID	NATIONAL GRID	1	1	1
694720	Revere	Hydronic Boiler	2,007,000	143,130	12,734	4,500	7%	35%	NATIONAL GRID	NATIONAL GRID	1	1	1
694720	Revere	EMS, insulation, TRV, steam trap	178,720	57,032	35,713	19,384	32%	54%	NATIONAL GRID	NATIONAL GRID	1	1	1
694720	Revere	EMS	1,612,000	75,098	53,163	11,800	5%	22%	NATIONAL GRID	NATIONAL GRID	1	1	
595241, 595248	Medford	DCV/ RCX	903,200	249,822	24,000	4,819.7	28%	20%	NATIONAL GRID	NATIONAL GRID	1	1	1
631410	Beverly	EMS	350,000	100,000	54,932	12,630	29%	23%	NATIONAL GRID	NATIONAL GRID	1	1	1
591795, 692630	Charleton	DCV	2,461,070	294,460			12%	28%	NATIONAL GRID	NA - Propane	1	1	1
659656	Fiskdale	1-250 ton high eff air cooled chiller, vfds for fans and pumps, premium motors, high eff dehum and hi eff lighting	2,761,503	1,066,641			39%	17%	NATIONAL GRID	NA - Oil	1	1	1
549340, 568949, 549314	Westborough	Upgrade HVAC, EMS, and custom dry cooler	1,466,552	356,211			24%	>5%	NATIONAL GRID	NSTAR	1	1	
580566	Worcester	Upgrade lighting, HVAC controls to include pump vfds, occ based space reset	2,259,375	466,846	36,837	3,400	21%	9%	NATIONAL GRID	NSTAR	1	1	
543218, 545619, 560242, 649522, 595270, 543438, 581108, 549711, 622934, 531007, 623906	East Longmeadow	Lighitng, Motors, HVAC, Custom	44,671,200	3,162,536			7%	>25%	NATIONAL GRID	Columbia Gas	1	1	1
549621	Brockton	12 new wash baths with electric heat use approximately 6.4 kWh/cycle. Total heat rejection to CT and chiller is 21,760 BTU/cycle.	950520	293,304			31%	>5%	NATIONAL GRID	Columbia Gas	1	1	1

Project No.	City	Project Description	12-month kWh usage	2010 EE kWh	12-month therm usage	2010 EE therms	%of Account Usage kWh	%of Account Usage therms / fuel	Electric PA	Natural Gas PA	Electric Threshold X=13, Y=20%	Electric Design X=15, Y=20%	Electric Exemplary X=13, Y=25%
565369, 565449, 565450, 565451, 565452, 565594, 565595, 565596, 622460	North Andover	VFDs, Aeration, Insulation, Eff Boilers, EMS, Lighitng	5,529,800	1,581,443			29%	>5%	NATIONAL GRID	Columbia Gas	1	1	1
											17	17	14

C&I #5
Comprehensiveness and Depth of Savings

Metric Number	Metric Language	National Grid Gas Targets	National Grid Gas Final 2010 Production
C&I #5 N/C Comprehensiveness and Depth of Savings	Each PA must achieve in a minimum of X% of new construction or substantial/major renovation projects at least an estimated Y% whole building* savings (gas and electric) compared to code. Projects completed in 2010 or signed commitments in 2010 with projects under construction can count. Core Performance projects will qualify at the threshold level and can count at the Design Level if they do at least one Enhanced Strategy and Exemplary if they do at least two Enhanced Strategies. (*Defined as the whole space under management and control of the customer, which can include tenant space in a larger building.) In order to reach exemplary, you must achieve design. If total number of new construction or substantial/major renovation projects for a specific PA is less than 4, the PA may meet the design or exemplary level with 1 project, or be exempt from this metric and allocate funds to other metrics proportionally. Note: It is the PA's and EEAC's intent to have 2011 performance metric dollars tied to the 2010 commitments becoming installed with savings in 2011. Baseline data is provided in the 2009 column. □	Threshold: X=18%,Y=20% Design: X=20%,Y=20% Exemplary: X=18%,Y=25%	**Design: X=34%,Y=20%**

Project #	City	Project Description	Core Performance	No. of Enhanced Strategies / Y%	Electric PA	Natural Gas PA	Gas PA Threshold X=18%, Y=20%	Gas PA Design X=20%, Y=20%	Gas PA Exemplary X=18%, Y=25%
527631	Weymouth	LIGHTING			NATIONAL GRID	NATIONAL GRID			
536235	Amesbury	AB	YES	1	NATIONAL GRID	NATIONAL GRID	1	1	
566609	Dracut	Cool Choice		19.0%	NATIONAL GRID	NATIONAL GRID			
593476	Salem	CDA		20.3%	NATIONAL GRID	NATIONAL GRID	1	1	
634130	Leominster	LIGHTING			NATIONAL GRID	NATIONAL GRID			
545086	Lowell	LIGHTING			NATIONAL GRID	NATIONAL GRID			
565993	Lynn	LIGHTING		20.7% elec ltg only	NATIONAL GRID	NATIONAL GRID			
591790	Beverly	LIGHTING			NATIONAL GRID	NATIONAL GRID			
618560	Beverly	Cool Choice			NATIONAL GRID	NATIONAL GRID			
604218	Newburyport	CUST-AGRI			NATIONAL GRID	NATIONAL GRID			
604226	Newburyport	LIGHTING			NATIONAL GRID	NATIONAL GRID			
622175	Quincy	CDA		> 25%	NATIONAL GRID	NATIONAL GRID	1	1	1
CS7848	Burlington	AB-Super Sz	YES	2	NSTAR	NATIONAL GRID	1	1	1
879494	Woburn	AB-CP	YES	1	NSTAR	NATIONAL GRID	1	1	
803871	Burlington	AB-CP	YES	2	NSTAR	NATIONAL GRID	1	1	1
CS8271	Boston	AB-CP	YES	1	NSTAR	NATIONAL GRID	1	1	
CS8272	Boston	AB-CP	YES	1	NSTAR	NATIONAL GRID	1	1	
CS	Roxbury	AB-CP	YES	1	NSTAR	NATIONAL GRID	1	1	
CDA	Boston	CDA		>20%	NSTAR	NATIONAL GRID	1	1	
827116	Wayland	CDA		21% Elec/26% Gas 24% Combined	NSTAR	NATIONAL GRID	1	1	
697682	Newton, MA	CDA		45% Elec/44% Gas 31% Combined	NSTAR	NATIONAL GRID	1	1	1
MOU	Waltham	AB-CP	YES	TBD (1 or 2)	NSTAR	NATIONAL GRID	1	1	
MOU	Roxbury	AB-CP	YES	TBD (1 or 2)	NSTAR	NATIONAL GRID	1	1	
594952	Tewksbury	LIGHTING			NATIONAL GRID	NATIONAL GRID			
562223	Quincy	LIGHTING			NATIONAL GRID	NATIONAL GRID			
515555	Quincy	LIGHTING			NATIONAL GRID	NATIONAL GRID			
523804	Lowell	LIGHTING			NATIONAL GRID	NATIONAL GRID			
531032	Lowell	LIGHTING			NATIONAL GRID	NATIONAL GRID			

Project #	City	Project Description	Core Performance	No. of Enhanced Strategies / Y%	Electric PA	Natural Gas PA	Gas PA Threshold X=18%, Y=20%	Gas PA Design X=20%, Y=20%	Gas PA Exemplary X=18%, Y=25%
541772	Beverly	LIGHTING			NATIONAL GRID	NATIONAL GRID			
619775	Chelmsford	Cool Choice			NATIONAL GRID	NATIONAL GRID			
619876	Chelmsford	LIGHTING			NATIONAL GRID	NATIONAL GRID			
581681	Quincy	LIGHTING			NATIONAL GRID	NATIONAL GRID			
581687	Quincy	CUST-REFG			NATIONAL GRID	NATIONAL GRID			
581686	Quincy	CUST-LGHT			NATIONAL GRID	NATIONAL GRID			
	Leominster	CONDENSING BOILER <= 300 MBH			NATIONAL GRID	NATIONAL GRID			
	Leominster	WATER HEATER - INDIRECT			NATIONAL GRID	NATIONAL GRID			
694727	Beverly	ENERGY EFFICIENT WINDOWS			NATIONAL GRID	NATIONAL GRID			
694727	Beverly	FLOOR INSULATION			NATIONAL GRID	NATIONAL GRID			
694727	Beverly	CONDENSIN DOMESTIC HOT WATER BOILER			NATIONAL GRID	NATIONAL GRID			
697006	S. Weymouth	ROOF/ATTIC INSULATION			NATIONAL GRID	NATIONAL GRID			
697006	S. Weymouth	ENERGY EFFICIENT WINDOWS			NATIONAL GRID	NATIONAL GRID			
863743	Barnstable	Condensing Boiler <==300 MBH			CLC	NATIONAL GRID			
545665	Dudley	AB + Insulation-Othr Imprvd Insulation Custom Condensing Boiler Ventilation Heat Recover Cooling-Other High Efficiency Exp	YES	1	NATIONAL GRID	NATIONAL GRID	1	1	
720168	Brookline	Engineering Study Custom Condensing Boiler			NSTAR	NATIONAL GRID			
802246	Boston	Roof/Attic Insulation			NSTAR	NATIONAL GRID			
864775	Norwood	Engineering Study Condensing Boiler (1701+ MBH) Ventilation Heat Recovery		MA-CHPS >25%	Muni	NATIONAL GRID	1	1	1
711067	Boston	Condensing Boiler (500-999 MBH)			NSTAR	NATIONAL GRID			
632193	Somerville	Energy Efficient Furnace 92%			NSTAR	NATIONAL GRID			
631916	Boston	Boiler Combustion Controls			NSTAR	NATIONAL GRID			
867644	Wellesley	Ventilation Heat Recovery Ventilation Heat Recovery Hydronic Boiler 1701+ MBH Condensing Boiler 1701+ MBH		MA-CHPS >25%	Muni	NATIONAL GRID	1	1	1
Count-Tally	**50**		**10**			Count-Tally	**17**	**17**	**6**

Project Base	Whole Bldg Savings min. Y %	Eligible Projects (Numerator)	NGRID GAS X %
Denominator	**50**		
Threshold	20.0%	**17**	**34.0%**
Design	20.0%	**17**	**34.0%**
Exemplary	25.0%	**6**	**12.0%**
CHPS/CDA Design	**min Y=20%**	**7**	(1 TBD re Y%)
for Exemplary	**min Y=25%**	**4**	
AB for Design	**AB + 1ES**	**10**	(2 TBD re #ES)
for Exemplary	**AB + 2ES**	**2**	

Metric Number	Metric Language	National Grid Electric Targets	National Grid Electric Final 2010 Production
C&I #5 N/C Comprehensiveness and Depth of Savings	Each PA must achieve in a minimum of X% of new construction or substantial/major renovation projects at least an estimated Y% whole building* savings (gas and electric) compared to code. Projects completed in 2010 or signed commitments in 2010 with projects under construction can count. Core Performance projects will qualify at the threshold level and can count at the Design Level if they do at least one Enhanced Strategy and Exemplary if they do at least two Enhanced Strategies. (*Defined as the whole space under management and control of the customer, which can include tenant space in a larger building.) In order to reach exemplary, you must achieve design. If total number of new construction or substantial/major renovation projects for a specific PA is less than 4, the PA may meet the design or exemplary level with 1 project, or be exempt from this metric and allocate funds to other metrics proportionally. Note: It is the PA's and EEAC's intent to have 2011 performance metric dollars tied to the 2010 commitments becoming installed with savings in 2011. Baseline data is provided in the 2009 column.	Threshold:X=18%,Y=20% Design: X=20%,Y=20% Exemplary: X=18%,Y=25%	**Exemplary: X=20%,Y=25%**

Project #	City	Project Description	Core Performance	No. of Enhanced Strategies / Y%	Electric PA	Natural Gas PA	Elec PA Threshold X=18%, Y=20%	Elec PA Design X=20%, Y=20%	Elec PA Exemplary X=18%, Y=25%
599869	Nantucket	**AB**	YES	2	NGRID	NA	YES	YES	YES
558568	Great Barrington	LIGHTING			NGRID	Berkshire			
558571		Cool Choice			NGRID				
525818	Northampton	**CDA**		35.5% + 5.3%	NGRID	CMA	YES	YES	YES
536231	Methuen	**AB**	YES	2	NGRID	CMA	YES	YES	YES
546772	Granby	**AB**	YES	2	NGRID	CMA	YES	YES	YES
571960	North Andover	LIGHTING			NGRID	CMA			
615564	South Easton	Cool Choice			NGRID	CMA			
556973	Northampton	CUST-LGHP			NGRID	CMA			
556975		CUST-HVAC							
619313	North Easton	LIGHTING			NGRID	CMA			
621369		HVAC							
621385		VFD							
621438		MotorUp							
621452		Cool Choice							
567920	Swansea	LIGHTING			NGRID	NEG			
577977	Plainville	Cool Choice			NGRID	NEG			
536235	Amesbury	**AB**	YES	1	NGRID	NGRID	YES	YES	
545086	Lowell	LIGHTING			NGRID	NGRID			
545665	Dudley	**AB**	YES	1	NGRID	NGRID	YES	YES	

Project #	City	Project Description	Core Performance	No. of Enhanced Strategies / Y%	Electric PA	Natural Gas PA	Elec PA Threshold X=18%, Y=20%	Elec PA Design X=20%, Y=20%	Elec PA Exemplary X=18%, Y=25%
565993	Lynn	LIGHTING			NGRID	NGRID			
566609	Dracut	Cool Choice			NGRID	NGRID			
568862	Everett	**AB**	YES	2	NGRID	NGRID	YES	YES	YES
593476	Salem	**CDA**		20.3%	NGRID	NGRID	YES	YES	
683445	Rockland	**CDA**		34.0%	NGRID	NGRID	YES	YES	YES
528704	Quincy	CUST-LGHP		25% < code	NGRID	NGRID			
528705		CUST-LGTC							
622175	Quincy	**CDA**		25%	NGRID	NGRID	YES	YES	YES
646305 646306 646307	Marlborough	LIGHTING Cool Choice VFD			NGRID	NSTAR			
567933	Worcester	**CDA**		33.6%	NGRID	NSTAR	YES	YES	YES
550483	Worcester	CUST-LGHP			NGRID	NSTAR			
581105	Worcester	LIGHTING			NGRID	NSTAR			
560386	Northborough	CUST-CHIL			NGRID	NSTAR			
565968		CUST-HVAC							
565971		LIGHTING							
565974		CUST-HVAC							
592646		MotorUp							
709926		VFD							
562494	Worcester	LIGHTING			NGRID	NSTAR			
568398		VFD							
568405		Cool Choice							
568640	Worcester	**CDA**		28%	NGRID	NSTAR	YES	YES	YES
594858		CUST-OTHR							
619392	Southborough	LIGHTING			NGRID	NSTAR			
639286		VFD							
541152	Gardner	**CDA**		52% (20% elec)	NGRID	Unitil	YES	YES	YES
640994	North Adams	LIGHTING			NGRID	Berkshire			
580520	Hanover	LIGHTING			NGRID	CMA			
619778		Cool Choice							
619111	Franklin	LIGHTING			NGRID	CMA			
561477	Bellingham	LIGHTING			NGRID	CMA			
641003	Bridgewater	LIGHTING			NGRID	CMA			
527631	Weymouth	LIGHTING			NGRID	NGRID			
594952	Tewksbury	LIGHTING			NGRID	NGRID			
591790	Beverly	LIGHTING			NGRID	NGRID			
618560		Cool Choice							
562223	Quincy	LIGHTING			NGRID	NGRID			

Project #	City	Project Description	Core Performance	No. of Enhanced Strategies / Y%	Electric PA	Natural Gas PA	Elec PA Threshold X=18%, Y=20%	Elec PA Design X=20%, Y=20%	Elec PA Exemplary X=18%, Y=25%
515555	Quincy	LIGHTING			NGRID	NGRID			
523804	Lowell	LIGHTING			NGRID	NGRID			
531032	Lowell	LIGHTING			NGRID	NGRID			
541772	Beverly	LIGHTING			NGRID	NGRID			
604218	Newburyport	CUST-AGRI			NGRID	NGRID			
604226		LIGHTING							
619775	Chelmsford	Cool Choice			NGRID	NGRID			
619876		LIGHTING							
581681	Quincy	LIGHTING			NGRID	NGRID			
581687		CUST-REFG							
581686		CUST-LGHT							
530851	Worcester	LIGHTING			NGRID	NSTAR			
660865	Southborough	LIGHTING			NGRID	NSTAR			
663280	Foxborough	LIGHTING			NGRID	NSTAR			
620143	Worcester	Cool Choice			NGRID	NSTAR			
709760		LIGHTING							
719761		CUST-LEDS							
Count-Tally	**50**		**6**			Count-Tally	**13**	**13**	**10**

Project Base	Whole Bldg Savings min. Y %	Eligible Projects (Numerator)	NGRID ELEC X %
Denominator	**50**		
Threshold	20.0%	**13**	**26.0%**
Design	20.0%	**13**	**26.0%**
Exemplary	25.0%	**10**	**20.0%**
D2/CDA Design	**min Y=20%**	**7**	
for Exemplary	**min Y=25%**	**6**	
AB for Design	**AB + 1ES**	**2**	
for Exemplary	**AB + 2ES**	**4**	

Other Funding Performance Metrics

Metric Number	Metric Language	National Grid Electric Targets	National Grid Electric Final 2010 Production	National Grid Gas Targets	National Grid Gas Final 2010 Production
OTHER FUNDING					
Other Program Funding	See 04/01/2010 PI filing for metric language.	See 04/01/2010 PI filing for metric language.	**None -did not meet.**	See 04/01/2010 PI filing for metric language.	**None -did not meet.**
Other Financing Capital	See 04/01/2010 PI filing for metric language.	See 04/01/2010 PI filing for metric language.	**Exemplary**	See 04/01/2010 PI filing for metric language.	**None -did not meet.**

Other program funding

***National Grid did not achieve Threshold level for this metric.

Other financing capital

Other Financing Metric

In 2010, National Grid was successful in providing financing opportunities to our customers through historically successful financing options, while also working diligently to identify and develop new financing opportunities. Information addressing how National Grid achieved success consistent with the Other Financing Metric is provided below:

1. **The clear and distinct role the PAs had in attaining the other financing capital, demonstrating the specific role the PAs played in attaining the financing, and in particular how the PAs used the bulk purchasing power of the energy efficiency programs and the negotiating clout of the Program Administrators to attain the financing capital. Payday loans, consumer credit cards, and C&I project financing not involving a clear and distinct PA role as historically implemented (*e.g.*, ESCO arranged financing) would not qualify for this metric.**

   In 2010 the Company employed the very successful Residential Heat Loan programs and company-funded SBS loans. For the residential HEAT Loan Program the Company has worked closely with the other PAs in the development and deployment of the program since its inception and initial roll out in 2006. The HEAT Loan Program has been and continues to be a collaborative effort of all of the electric PAs in Massachusetts working with the fulfillment administrator. The bulk purchasing power of the PAs is evident in the low interest rate of 5 percent that they were able to obtain in 2010 with the financing institutions that provide the HEAT Loans to our customers. For 2010, the Company continued to work closely with the fulfillment administrator, River Energy Associates, through the Residential Conservation Services ("RCS") working group. Based on $9,911,956 of Residential HEAT loans issued in 2010 (which excludes any loans issued by Enerbank) and $2,843,490 in SBS funds, National Grid was able to achieve the exemplary level for this metric.

   In addition, as noted in our 2009 Annual Report and 2011 Mid-Term Modification filings, National Grid also focused on identifying financing options that minimized the overall cost of financing to energy efficiency participants, including: (1) upfront/setup costs; (2) ongoing administrative costs; (3) opportunity costs of capital; and (4) cost of money, and mitigating risk to ratepayers. After several months in 2010 exploring these options, the Program Administrators announced new financing products to promote energy efficiency, in conjunction with the Massachusetts Bankers Association.

   The agreed-upon proposal includes financial products for specific customer segments (owner-occupied residential, residential multi-family, landlords/investment property, small business and municipal) that have been developed based on the successful, and nationally recognized HEAT Loan program. The proposal offers rapid expansion of new financial products and streamlines the process for customers to access funds. Ultimately, the proposal will bring benefits not only to Massachusetts customers, but also, importantly, to the Massachusetts business community through participating MBA lenders.

For the first phase, residential loans would be available from a minimum of $500 for periods of up to 24 months (for all applicable customer segments) to a maximum of $15,000 for periods of up to 84 months. For the first time investment property would be included with loan sizes of $5,000 to $25,000. Also for small business customers, and in an expansion of the program, loans from $5000 to $100,000 would available. The financial products would be offered by member banks, with the PAs providing funds through their respective energy efficiency budgets to "buy-down" the applicable interest rate to zero percent. These loans have no up-front costs, no new administrative costs, and do not tie-up capital (opportunity cost). The loan terms and interest rates would differ depending on the customer segment being served. This approach minimizes the overall cost while being responsive to the unique needs of each segment.

2. **The interest rates and financing costs the PAs were able to attain, compared to the range of interest rates and financing costs available in the market and those required in the metric language above.**

   The interest rates and financing costs of the HEAT Loan Program compare very favorably to options available to customers in other states, as noted below:

Third-Party Energy Efficiency Loan Programs

State/Territory	Cost of Capital	Provider	Loan Loss Reserve Requirement[1]	State/Utility Guarantee Requirement[2]	Over-collateralization Requirement[3]	Lending Pool Ceiling[4]
Massachusetts	5.00% - 6.25%	Multiple Lenders	No	No	No	No
Oregon	5.99%	Shorebank & City of Portland Grant	Yes	No	No	Yes
Connecticut (Pilot)	6.00% - 8.00%	Deutsche Bank	Yes	Yes	Yes	Yes
Michigan	up to 7%	Multiple Lenders	Yes	No	No	No
Pennsylvania	14.99%	AFC First	Yes	No	No	Yes
Connecticut	14.99%	AFC First	Yes	No	No	No

3. **How the other financing capital attained by the PAs, at the interest rates and financing costs attained by the PAs, was effective at increasing customer participation in the energy efficiency programs. Satisfactory documentation may include narrative descriptions of how the qualifying other capital was effective at increasing customer participation, including, but not limited to, descriptions of how the financing supported with the other financing capital (a) was effective in assisting customers to participate in the programs, (b) reduced a specific market barrier to program participation, or (c) was targeted to certain customer groups or market**

[1] Loan Loss Reserve is utilized to pay lenders for fund losses.
[2] State/Utility Guarantee provides a full guarantee against defaults paid by either the State or Utility.
[3] Over-collateralization is utilized to create a second layer of loan loss reserve.
[4] Lending Pool Ceiling is an artificial maximum loan issuance ceiling based on lender limitations and/or loan loss reserve fund constraints.

segments that were considered to have lower participation historically in order to increase their participation in the programs.

The PAs were successful in increasing financing capital through the HEAT Loan Program and the use of SBS funds in 2010 over 2009. In addition, participation in energy efficiency programs increased as well. Although the correlation between increased financing and participation is more qualitative than quantitative, the PAs regard outside capital as an important tool in reducing or removing financial barriers that may prevent or delay customers' investments in energy efficiency measures. Such financing mechanisms can help potentially address barriers associated with the substantial (in some cases) up-front costs of installing energy efficiency measures and the difficulties customers may encounter in securing financing independently. Customers—from residential to large C&I—may refrain from installing cost-effective energy efficiency measures due to concerns regarding initial capital, budgeting constraints or other financial impediments. In confronting these barriers, outside capital can: (1) assist customers in identifying a financing source by engaging lenders already versed in the elements and benefits of the programs; (2) facilitate and expedite the lending process; and (3) potentially better align customers' cash flow and the benefits they derive from the investment in Energy Efficiency.

National Grid Electric 2010 Residential HEAT Loan Summary

NGRID 2010	# of Closed Loans	Closed Loan Amount	Interest Buydown Amount	Avg. Loan Amount	Avg Interest BuyDown
Jan	145	$1,181,437.68	$173,554.89		
Feb	73	$569,019.40	$84,032.80		
March	71	$553,211.63	$88,804.84		
Enerbank	172	$1,226,570.43	$462,952.05		
Total 1st Qtr	**461**	**$3,530,239.14**	**$809,344.58**	**$7,657.79**	**$1,755.63**
April	68	$478,042.13	$71,167.74		
May	69	$576,765.69	$90,541.29		
June	85	$706,408.29	$107,661.21		
Enerbank	93	$631,107.15	$238,490.45		
Total 2nd Qtr	**315**	**$2,392,323.26**	**$507,860.69**	**$7,594.68**	**$1,612.26**
Total after 2 quarters	**776**	**$5,922,562.40**	**$1,317,205.27**	**$7,632.17**	**$1,697.43**
July	68	$545,369.31	$81,045.87		
Aug.	68	$593,307.48	$90,839.97		
Sept.	85	$711,713.74	$105,440.00		
Enerbank	90	$649,616.82	$238,490.45		
Total 3rd Qtr	**311**	**$2,500,007.35**	**$515,816.29**	**$8,038.61**	**$1,658.57**
Oct.	90	$755,000.11	$107,028.73		
Nov.	131	$1,066,152.49	$164,162.49		
Dec.	265	$2,175,529.03	$318,511.32		
Enerbank	171	$1,213,167.60	$462,952.05		
Total 4th Qtr	**657**	**$5,209,849.23**	**$1,052,654.59**	**$7,929.76**	**$1,602.21**
Yearly Total	**1744**	**$13,632,418.98**	**$2,885,676.15**	**$31,220.83**	**$1,654.63**
Yearly Total Without Enerbank	**1218**	**$ 9,911,956.98**	**$ 1,482,791.15**	**$ 8,137.90**	**$ 1,217.40**
Percent of interest buydown to total	**14.96%**				