

6-23 2014

To: Austin Generation Resource Planning Task Force

From: Susan Lippman

An Analysis of the Low- and Moderate-Income Weatherization goals, as a Percentage of a Megawatt Goal, Compared to Percentage of a Budget—a Mostly Mathematical Discussion

I have been studying and analyzing Austin Energy data a great deal since the June 12 meeting of Austin Interfaith's Green Team (energy subcommittee). I hope to contribute some perspective from what I've been learning, with most emphasis on the mathematics and trying to see the numbers in their proportional contexts, and I hope this will be helpful to everyone interested in the discussion. Nothing here has been reviewed by members of any group I'm in.

I'm focusing on the proposal for 10% of the demand reduction goal of 429 megawatts to be designated for low-income and moderate-income weatherization over 10 years. At the time we met I didn't have the background to gauge whether this is an "incredibly high" target, or not, and I still want to mostly avoid value judgments, and focus on the math. (I will just say for myself that I place a very high value on both the climate protection and the equity goals of the task force.) Carol B., I appreciate what you are saying about a setting a goal that will be a challenge.

I have a copy of Lanetta Cooper's Memorandum to the Gen Plan Task Force, which recommends 10% of the demand savings as above, or "alternatively, 20% of AE's Energy Efficiency budget should be spent on low and moderate income customer households with at least 10% prioritized for a low income weatherization program." I will return to this alternative later.

To summarize the results that will be reached at the end of these three pages, the percent of the annual EE budget that could be needed (under the assumptions employed) to meet the megawatt target could range from 40% to 80% of the current EE budget. These 3 results hinge on whether the MW savings of the Low- and moderate-income program is 1.0 MW, 0.75 MW, or 0.5 MW:

Low estimate: \$6,020,000 / \$15,000,000 = 40% of EE budget
Medium estimate: \$7,980,000 / \$15,000,000 = 53% of EE budget
High estimate: \$12,040,000 / \$15,000,000 = 80% of EE budget

Expansive changes in the assumptions used here could change everything of course, and are to be hoped for. My intent is to explain the math under current conditions; especially note the assumption that all funding comes from the EE budget. And for comparison, note that the percent-of-budget alternative calculation results in: 20% = \$3 million with 10% (\$1.5) million prioritized for a low-income program, so the two approaches create markedly different results.

One point I will show here is that a goal expressed in megawatts makes for rather more variable comparisons than a percentage-of-budget goal. It may be that the Task Force is limited, or maybe only generally limited, to setting goals in terms of megawatts. In any case it may be useful at least for discussion purposes to also look at percent-of-budget numbers within the megawatt goals for Energy Efficiency. In support of the figures below I have used the FY2013 Demand Side Management

Performance Measures Summaryⁱ, a 6/20 email from Debbie Kimberly (VP, Customer Energy Solutions)
ⁱⁱwhich answers some questions I put to her, and copy of an earlier email, 5/30, from Debbie Kimberly to Carol Biedrzycki.

As an exaggerated example of how distorting the megawatt goal can be, consider the 2013 megawatt savings of 0.1 watt (this was anomalous): If the 10% of Demand Savings is applied to AE's 2014 goal of 62 megawatts, the 2014 goal for weatherization would be about 6 megawatts (1/10 of 62), which would be 60 times higher than the 2013 achievement of 0.1 watts. The free weatherization budget in 2013 was \$993,373 (incentives and rebates). 60 times that amount would be \$59, 602,380, or 9.7 times larger than the entire residential energy efficiency budget, or 5 times larger than the entire weatherization budget (residential plus commercial incentives and rebates).

This illustrates that the size of the megawatts-saved number is rather like the tail that wags the dog in terms of how it influences the amount of budget it needs to hit a megawatt target. Megawatts saved usually runs between about 0.5 and 1.0 megawatts, but still, 1.0 megawatt is 100% more than 0.5 megawatts. Here are some numbers for the megawatts and weatherization budgets of recent years, found on Austin Energy's reports section of their website. I'm using the "rebates and incentives" budget numbers, which excludes the O+M (operations and maintenance), because that's what I could find most consistently.

2009 - Free weatherization budget, \$752,122	Megawatts saved, 0.51	(Cost per megawatt, \$1,472,000)
2010 - Free weatherization budget, \$512,909	Megawatts saved, 0.43	(Cost per megawatt, \$1,195,137)
2011 -	Megawatts saved, 0.99	[not sure of 2011 budget]
" FY 2010 – 2011: Free weatherization budget = \$6291; operating=\$46,248; total, 52,539" [not sure of 2011 budget]		
2012 - Free weatherization budget, \$598,003	Megawatts saved, 0.99	(Cost per megawatt, \$1,195,137)
2013 - Free weatherization budget, \$993,373	Megawatts saved, 0.1	(Cost per megawatt, "\$9,933,730" = not really applicable)

So to get a handle on the budget impact of the 10% megawatt goal, we need some typical numbers, hopefully looking forward a little way into the future. Debbie Kimberly's 6-20 email says that the weatherization program was delayed in implementation in 2014 because the program started up late (reasons were offered in her 5/30 email), and they are intending to spend the rest of the 2-year budget in 2014, and I see a MW target of 1.0 for free weatherization in 2014 in the C.E.S. 2013-14 progress report. Debbie suggests that annually they budget about \$1.4 million for free weatherization, that the Energy Efficiency rebate budget is about \$15 million, that the annual MW savings generally range from .5 to 1.0, and that over 32 years the average savings has been 0.70 MW. I'll use Debbie's assumptions in the calculations which follow. (There is also a cap weatherization program.) This would probably be a good place to note that the MW savings represents a "reduction in peak demand," so it is a capacity measure, not to be confused with MWH or KWH (Megawatt- or Kilowatt-hours), a measure of energy used over time. That also means that there is no straight mathematical formula for translating any number of KWH's or MWH's into Megawatts.

Carol's proposal is for 10% of 429 MW of demand savings to be designated for Low- and Moderate-income weatherization programs. AE's current 2007 to 2020 goal is 800 MW of demand savings, with

371 already met and 429 to go. The proposal is for 5% or 21.45 MW to be met with the low-income weatherization program by 2024, and 5% or 21.45 MW to be met with a weatherization program for the moderate-income group, which will partially pay on a sliding scale. (Also, a 5-MW goal for distributed solar for low-income, which I'm not discussing now.) That is 42.9 MW, spread over (I think) 10 years from 2015 through 2024. (If it is 11 years, 2014 to 2015, all the figures will need a little adjustment.) The annual MW goal for free and moderate-income weatherization would be about 4.3 MW, or about 2.15 each for low- and moderate-income groups.

How big an increase is this of the weatherization budget? It is highly a function of the MW number for weatherization. Ranging from 0.5 to 1.0, the 4.3MW target is 4.3 to 8.6 times higher. If you take the average, 0.75 (which is close to the 0.70 historical average), the increase is 5.7 times higher. These ranges would be reduced somewhat according to the participation in costs by the moderate-income group, but I do not know if that would be very much. Taking \$1.4 million as a typical cost of the weatherization program:

$\$1,400,000 \times 4.3$ (low estimate, based on high-range of MW savings) = \$6,020,000 for low-moderate weatherization

$\$1,400,000 \times 5.7$ (medium estimate, based on average-range of MW savings) = \$7,980,000 for low-moderate weatherization

$\$1,400,000 \times 8.6$ (High estimate, based on low-range of MW savings) = \$12,040,000 for low-moderate weatherization

The annual Energy Efficiency rebate budget is roughly \$15,000,000; about half residential and half commercial customers. The current \$1.4 million is about 10.7% of it. It's total MW goal is 62 for 2014 (past numbers often in upper 50's). The 3 estimates above would result in the following percentages of the Energy Efficiency budget:

Low estimate: $\$6,020,000 / \$15,000,000 = 40\%$ of EE budget
Medium estimate: $\$7,980,000 / \$15,000,000 = 53\%$ of EE budget
High estimate: $\$12,040,000 / \$15,000,000 = 80\%$ of EE budget

Of course, any outside sources of funding, or great increase in efficiency either to the MW goals or to the efficiency of benefit to the customers, would be exactly what we want. Many good suggestions about oversight, etc., have been made.

Here's the comparison to the budget-percentage alternative mentioned earlier: "alternatively, 20% of AE's Energy Efficiency budget should be spent on low and moderate income customer households with at least 10% prioritized for a low income weatherization program."

$\$15,000,000 \text{ budget} \times 20\% = \$3,000,000$ with 10% (\$1,150,000) for low-income weatherization.

ENDNOTES:

Austin Energy DSM Performance Measures Summary- FY2013													
Program	Participants	MWh	MW	Incentives	Total	Savings	Benefit/Cost Ratio			TRC ⁴ = Utility	Life	Utility	TRC
Residential				Rebates	O&M ¹ +Rebate	\$0.086/kwh	TRC ²	Utility	Participat	Net Benefit	Years	Life Cycle	\$/kW
										NPV		e/kWh	
EES- Appliance Efficiency Program	3,366	6,547	2.5	\$ 1,521,960	\$ 1,876,003	\$ 564,775	1.7	1.9	4.0	\$ 3,078,446	15	2.8	\$ 765
EES- Home Performance ES - Rebate	1,819	3,593	3.3	\$ 3,239,035	\$ 3,711,797	\$ 309,907	2.1	2.5	2.1	\$ 4,130,623	15	10.0	\$ 1,134
EES- Home Performance ES - Loan	385	760	0.7	\$ 6,024	\$ 106,086	\$ 65,593	2.6	1.9	15.6	\$ 1,030,063	15	1.3	\$ 153
EES- Free Weatherization	155	169	0.1	\$ 993,373	\$ 1,014,635	\$ 14,615	0.3	0.3	1.2	\$ (752,050)	10	77.6	\$ 6,891
EES- Clothes Washer Rebate	249	72	0.0	\$ 15,750	\$ 17,548	\$ 6,186	1.3	2.8	2.4	\$ 8,532	10	3.2	\$ 1,409
EES- Refrigerator Recycling	2,666	1,568	0.4	\$ 377,417	\$ 433,771	\$ 135,254	1.1	2.1	2.5	\$ 78,770	10	3.6	\$ 1,111
GB- Residential Ratings	616	211	0.4		\$ 323,722	\$ 18,195	1.6	1.1	3.2	\$ 392,935	23	11.4	\$ 894
GB- Residential Energy Code	2,783	10,878	4.5		\$ 168,108	\$ 938,380	17.0	19.5	109.9	\$ 17,385,064	23	0.1	\$ 37
Subtotal Residential	12,039	23,798	11.9	\$ 6,153,559	\$ 7,651,670	\$ 2,052,906							
Commercial													
EES- Commercial Rebate	453	34,158	7.8	\$ 2,190,852	\$ 3,314,928	\$ 2,946,608	3.0	3.9	7.0	\$ 15,336,333	10	1.3	\$ 426
EES- Small Business	267	4,674	1.1	\$ 759,285	\$ 921,176	\$ 403,221	2.3	3.2	3.5	\$ 1,812,583	10	2.6	\$ 822
EES- Municipal	106	10,684	1.1	\$ 122,764	\$ 287,113	\$ 921,670	7.4	11.3	18.8	\$ 4,658,993	10	0.3	\$ 252
EES- Multifamily	7,917	8,533	4.6	\$ 2,524,498	\$ 3,187,440	\$ 736,135	1.3	2.1	1.9	\$ 1,310,828	6	7.4	\$ 694
GB- Multifamily Ratings	1,548	12,219	5.8		\$ 305,495	\$ 1,054,099	24.6	38.5	62.0	\$ 18,159,845	18	0.2	\$ 53
GB- Multifamily Energy Code	8,580	3,751	1.2		\$ 168,108	\$ 323,617	1.7	2.1	27.1	\$ 1,819,375	18	0.4	\$ 143
GB- Commercial Ratings	2,035	10,428	3.0		\$ 497,848	\$ 899,556	23.0	109.8	28.0	\$ 13,332,496	20	0.4	\$ 165
GB- Commercial Energy Code	2,836	8,735	3.1		\$ 168,108	\$ 753,502	53.8	141.8	78.0	\$ 12,862,482	20	0.2	\$ 54
Subtotal Commercial	23,742	93,183	27.7	\$ 5,597,399	\$ 8,850,216	\$ 8,038,408							
Demand Response (DR)													
DR- Power Partner	4,278	51	5.8	\$ 1,085,733	\$ 1,485,556	\$ 4,420	4.0	1.0	4.0	\$ 4,528,521	7	501	\$ 258
DR- Cycle Saver	1,541	9	1.0	\$ 22,717	\$ 167,345	\$ 798	7.5	1.3	7.5	\$ 1,209,952	10	234	\$ 167
DR- Power Partner (Comm & Muni)	89	0.2	0.02	\$ 249,525	\$ 251,841	\$ 14	0.0	0.3	0.1	\$ (741,651)	7	>900	\$ 15,698
DR- Load Coop	139	133	8.4	\$ 247,880	\$ 1,454,980	\$ 11,514	0.1	1.1	1.9	\$ (235,041)	2	586	\$ 174
DR- Engineering Support & TES	3	0	2.6	\$ -	\$ 372,382	\$ -	3.0	2.1	13.4	\$ 3,340,354	15	>900	\$ 144
Subtotal DR	6,050	194	17.7	\$ 1,605,854	\$ 3,732,103	\$ 16,746							
Total DSM Programs	41,831	117,175	57.3	\$13,356,813	\$20,233,989	\$10,108,060	1.8	2.3	4.3	\$ 38,884,025	7.1	3.0	6.9 \$ 353
Solar Photovoltaic													
Residential	692	5,390	3.2										
Commercial	29	3,084	1.8										
Total Solar	721	8,474	5.0	\$8,210,500	\$8,764,710								

From: Kimberly, Debbie [Debbie.Kimberly@austinenergy.com]
Sent: Friday, June 20, 2014 5:33 PM
To: 'Susan Lippman'
Cc: Guerrero, Joe; Chamberlain, Thomas; Kuehn, Denise; Jambor, Elizabeth
Subject: RE: Regarding Gen Plan task force, clarification of low income efforts?

Follow Up Flag: Follow up
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Ms. Lippman:

Thank you for your very thoughtful questions and detailed email. I will endeavor to address your concerns at a high level, given the short time frame you're working under. I've copied others on this, and would invite them to add detail as appropriate.

1. Stimulus monies were exhausted in April 2012
2. Relative to the magnitude of the goal, you are correct in your observation that a 21.5 MW low income goal out of the remaining 429 MW, by 2024 is extraordinarily challenging. Consider that for the 32 year period dating from 1982 AE has achieved 22.5 MW in low income weatherization savings. (Table 3 2013-2014 Progress Report).
3. The 2013 savings of .1 were an anomaly due to various factors that contributed to the late start of the program. Generally, annual savings range for .5-1.0 MW. Annually, we budget about \$1.4 MM for our free weatherization program and \$1 MM for our cap weatherization program (\$2.4 MM) with targeted savings ranging from 1 - 1.5 MW per year.
4. We have also launched a multi-family rebate program that aims to reach customers at or below 400% of the federal poverty guidelines. The incentive budget for this program ranges from \$2-2.5 MM/year and yields 4-% MW in annual savings, reaches more dwellings and has positive economics as measured by the total resource cost test.
5. Renewable programs, including solar are premium offerings and as such, generally are not a good match for the population referenced – unless the cost is subsidized by other customers.
6. The annual rebate budget for residential and commercial customers is roughly \$15 MM, divided almost evenly between commercial and residential.
7. The MWH to MW conversion is a function of many factors, depending on the type of measure, the manner in which and when energy is consumed. So, recycling a refrigerator results in relatively low demand savings, but a whole house, home performance with energy star incentive will generate much higher demand savings (a function of air conditioning and other measures that contribute to reductions in peak demand).

Ms. Lippman, I hope this helps and I thank you for your engagement in this process.

Debbie Kimberly | VP, Customer Energy Solutions | Austin Energy

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From: Susan Lippman [<mailto:gogreen@austin.rr.com>]

Sent: Friday, June 20, 2014 2:38 PM

To: Kimberly, Debbie

Cc: Guerrero, Joe

Subject: Regarding Gen Plan task force, clarification of low income efforts?

Dear Ms. Kimberly, (or if not available, perhaps Joe Guerrero?)

I am a participant in (at least) two groups that are following the Gen Plan Task Force, and I have perceived concern over the targets that are being suggested for the free weatherization program of the Energy Efficiency part of your portfolio. I'm hoping to understand the math better because there are voices, far more experienced than I am in following city affairs, differing rather strongly about the consequences of certain asks. I'm thinking the gulf between them may not be as large as seems if the math or better data is understood.

I do have a copy of the "Clarification on Low Income Efforts" that you sent to Carol Biedrzycki, and a copy of the FY2013 DSM Performance measures summary, among other sources I have looked at. I noted that not much of 2013 was available for actual execution of weatherizations.

There is a concern that Carol B.'s 2024 proposed goals of "10% of demand savings [in megawatts?]" would be equal to 30 to 45 MW of demand reduction. In her draft presentation at City Hall given on 5/29, she proposed 5% of the remaining 429 MW goal [of the 800MW goal for 2020, as I think I understand it], or 21.45 MW for low-income weatherization, and the same amount for moderate-income weatherization, or 42.9 MW. (And 5 MW for solar.) I don't know if this goal would be spread over

There is a concern that Carol B.'s 2024 proposed goals of 10% (5% for low-income and 5% for moderate-income) of the remaining 429 MW goal [of the 800MW goal for 2020, as I think I understand it], or 42.9 MW is extremely high. Assuming that is spread over 2014 to 2024, 11 years, that is 3.9 MW per year. Or if it is spread to the 2020 goal, 7 years, it is 6 MW per year, or if it is taken as 10% of the demand savings target (as has been expressed by Lanetta Cooper), it is also 6 MW per year.

I think the alarm goes like this: 2013's MW savings under free weatherization was 0.1 MW. If increased to 6, it means a 60-fold increase ($0.1 \times 60 = 6$) of the weatherization budget, or $\$1,104,636 \times 60 = \67 million, or 3 times the whole EE budget; an absurd result. Alternately, some information I have says that AE has yet to meet 1 MW of reduction using low-income programs; even then the result is \$6.7 million, so I think the concern is about draining resources that are more effective at demand reduction.

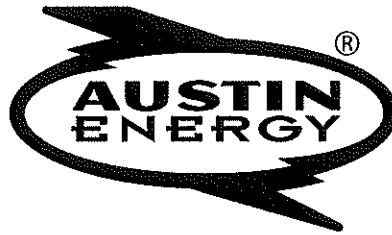
It might be helpful to know if you can project 2014's cost and MW savings projections. 2013 plus 2014 might be meaningful together; since I see that you are trying to spend a 2-year budget by 2014. I also see in "Customer Energy Solutions" 2013-14 progress report, the graph looks like a 1-MW savings by 3/13/14. Could this imply a 4-MW savings in 2014?

Other numbers that would help me: What is the total Energy Efficiency budget? The cost per house? And one question really bedevils me: how to convert from KWH (or MW hours, whatever) to Megawatts saved? One more question—is there any more ARRA (stimulus) money for HVAC's? Or other funding?

Thanks for your help. I really support both the carbon-saving and the low-income-helping sides of this issue, and I hope they are not as much in conflict as it might seem. If I can get more clear on these things by this weekend, I'll work with some of the factions over the weekend, and MAYBE have something useful to contribute to the Task Force deliberations. The Task Force meets again Monday at 2:30 and are seriously trying to concatenate their recommendations now. Their last meeting before their report goes to council will be 6/2. Now I must go off to my late lunch. I welcome your help, if you can provide it; and if not on short notice then it will still be useful after the Task Force sends its initial reco's to Council.

Thank you!

Susan Lippman 512-291-9838 (home) 512-810-0236 (cell)



MEMORANDUM

TO: Carol Biedrzycki, Texas ROSE

FROM: Debbie Kimberly, Vice President, Customer Energy Solutions

DATE: May 30, 2014

SUBJECT: Clarification on Low Income Efforts

Carol I'd like to respond to your May 12 email regarding our low income programs. I hope I can provide some clarification on some of the issues brought up in the email discussions you forwarded. Through a combination of programs – free weatherization, multifamily incentives, bill discounts, emergency assistance and other tools, Austin Energy is dedicated to helping limited income customers.

As you know, Austin Energy (AE) is not bound by SB 1434, which requires that investor owned transmission and distribution utilities (TDUs) allocate 10% of their energy efficiency budgets to low income specific programs. Nonetheless, Austin Energy has gone to great lengths to serve the needs of limited income customers. Some examples of Austin Energy's efforts:

- Austin Energy applied for and secured ARRA funding to augment weatherization assistance efforts. In total, AE and the Texas Department of Housing and Community Affairs received grant funds totaling \$5.9 million. AE was awarded an additional \$3.7 million, for a total of \$9.6 million. Of this amount, \$8.9 million covered measures and associated expenses used to weatherize 1,886 homes over a 23 month period ending in April 2012.
- Austin Energy funds a customer assistance (CAP) program via a tariff mechanism. This program provides a 10% bill discount to low income customers, who are automatically enrolled in the program - a rarity in the electric utility industry (and in 2013 the Texas Legislature repealed the System Benefit Fund for competitive territories).
- Low income customers are exempted from the customer charge, other utility charges and receive discounts on other fees.
- Austin Energy also augments CAP assistance with other services – such as free weatherization, multifamily rebates and other programs.

Energy Efficiency Incentive Budget

In Fiscal Year 2014, 14% of AE's energy efficiency rebate budget is specifically dedicated to low income weatherization (via the CAP and free weatherization programs). Another 8% of our rebate budget is dedicated to the multifamily rebate program, with many of these properties housing low and limited income citizens. As such, we have allocated 22% of our energy efficiency rebate budget to bring energy efficiency and savings to low income homes.

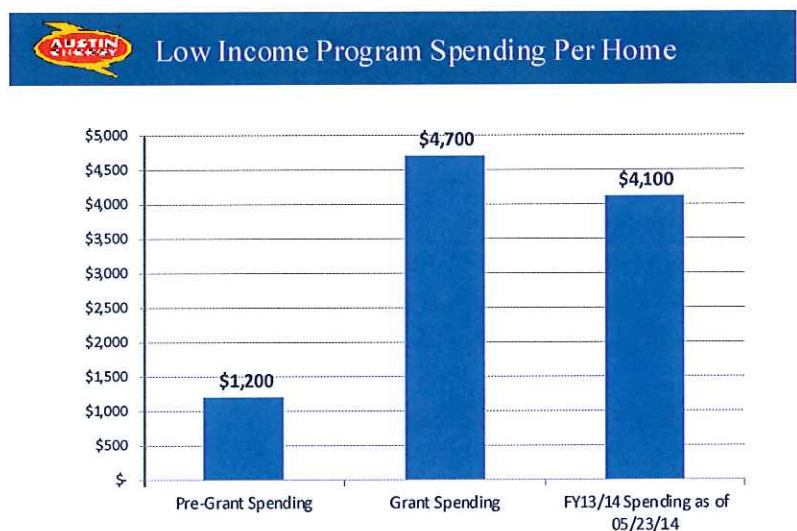
Low Income Weatherization & Tier Approach – FY13 and FY14

Austin Energy's weatherization program applies a tiered approach in weatherizing customer homes. Determination of Tier 1 or Tier 2 status is made after the initial assessment of the home and a work order is created via the National Energy Audit Tool (NEAT). The data gathered at the assessment and input into the NEAT audit is the basis of the measures allowed by NEAT. If repair or replacement of the HVAC system is indicated in the NEAT the unit then becomes a TIER 2 home, if no HVAC work is indicated, the home is a Tier 1 unit.

AE acknowledges that FY13 did not result in the program services as we planned, but circumstances beyond our control impacted delivery of weatherization services. The low expenditure rate for the FY13 weatherization funds resulted from the delayed conclusion of procurement efforts to obtain weatherization contractors for the weatherization program. The procurement effort was conducted by another department and required over 11 months to develop. Contracts were made available in May 2013 for Tier 1 contractors and June 2013 for Tier 2 Contractors. This reduced a full year's efforts to less than 120 days to expend all funds.

Another challenge within the weatherization program is the length of time for the process - from informing eligible customers to final inspection - the process can take between 68 and 126 days. Much of this time is spent in education and in-home visits to provide not only a weatherized home, but the information to gain the most benefit from the efficiency measures. We are also undertaking to streamline processes in order to reduce this processing timing. Despite the challenges experienced in FY13, we are diligently working to spend the totality of the 2-year budget by the end of FY14 and anticipate weatherizing roughly 250 CAP homes for the two year period ending in FY14. Including the free weatherization and LWRAP programs, we estimate we will be able to weatherize a total of 458 homes over the two year period ending September 30, 2014. The education program with CAP is underway as well as other weatherization activities. While not part of the weatherization budget, several multifamily projects are successfully underway which will also serve our low income customers.

As of May 23, 2014, we have 292 homes (CAP, free weatherization and LWRAP) that have passed final inspection. Our average spend per home of \$4100 (measures and associated labor) is comparable to the amount spent during the ARRA grant as depicted in the chart right.



This is significant spending – both in aggregate and on a per home basis. Measures include insulation, duct repair, and HVAC repair/replacement and replacement of inefficient refrigerators.

The table right provides information on the homes that have completed the weatherization process, some of which received appliances for the period FY13 to-date.

	Tier 1	Tier 2
Homes weatherized	60	232
Total cost	\$91,862	\$1,105,394
Avg. cost per home	\$1,531	\$4,765
Refrigerators	8	94
Refrigerator Cost	\$3,323	\$64,597
HVAC	N/A	41
HVAC Cost	N/A	\$108,922

Our program also focuses on water saving and safety measures in the form of carbon monoxide and smoke detectors. Bringing on qualified energy efficiency contractors and taking the time to build customer confidence as well as educate the customer on the value of energy efficiency adds to the process. It is a valuable process that ensures a quality outcome. That said, I believe that there are opportunities to improve the cost effectiveness and the administration of this program. For example, I believe the replacement of refrigerators and HVAC is not economic and should be discontinued. AE staff is looking at ways to streamline the process, and avoid/minimize post test-in change orders. With respect to the latter, staff reports that structural problems with a residence are often identified once the process has begun – undertaking these repairs should not be funded with AE weatherization monies, but from other sources. These and other enhancements, augmented by the support of other entities (such as the Housing Repair Coalition) would expand the reach and the efficacy of the weatherization program.

Bill Assistance

With the 2012 rate adjustment, AE began collecting a CAP charge in the amount of 0.172 cents/kwh. The tariff collects roughly \$10 MM annually from all customers, excluding CAP customers. In addition to funding \$1 MM annually in weatherization, the CAP funds the Discount Program and Plus 1 Program, to provide direct monetary support limited income customers and those experiencing financial hardship. In FY13, through CAP efforts, we served 16,955 low income households. In FY14, though May, CAP has provided assistance to roughly 36,000 low income households to assist them with their utility bills – this represents a 44% increase over the targeted 25,000 customers.

This direct spending on low and limited income customers is supported by the indirect spending on programs that benefit all our customers. Weatherization and CAP are just two facets to the support we provide our low and limited income customers. Utilizing free educational tools has allowed us to provide greater access to energy saving information.

Other Support

AE provides residential customers, at no charge, a tier awareness app that allows customers to see daily usage as well as create an alert to warn of the next rate tier. Customers report this tool is very valuable in monitoring energy costs. Given that 76% of homes have internet access (US Census) and 56% of adults report using a smart phone (Pew Research), the web app has great potential to reach and assist customers in all demographics.

We utilize two powerful sources for outreach – Austin Public Libraries (APL) and City of Austin Utility Service Centers. Both are sources of energy efficiency information and cost-savings tips. Through our involvement in Rebate Austin, APL rebate outreach events, we have educated more customers on energy saving practices. The Customer Service Representatives (CSRs) at our walk-in service centers are a highly valued resource by customers visiting the service centers. CSRs not only help with bill payment but also provide valuable information about energy reduction and cost savings actions that both single family and multifamily residents can utilize.

Comparable Programs

You noted CPS's STEP Plan in your communication. As you know, STEP allocates 20% of its budget toward low income weatherization. While CPS has over twice the customer base, they are spending less on low income customers than is Austin Energy. Furthermore, only CPS customers at or below 125% of the federal poverty guidelines are eligible for a tariff discounts and waivers, as opposed to the 200% threshold set by the City of Austin. As shown earlier, AE allocates 14% of rebate budgets plus additional monies and services to low income customers. While comparing CPS to AE is not an adequate comparison due to the dramatic differences in customer bases and rate and rebate structures, AE is exceeding CPS in its efforts to support low income citizens. Attachment A provides an excerpt from a 2013 E Source study, comparing the portion of energy efficiency budgets targeted for low income programs. As you will see, Austin Energy compares very favorably nationally and within the state. Attachment B provides a more detailed comparison of AE and CPS programs.

Pecan Street Research

Finally, I understand that Matthew Crosby, with Pecan Street Research (PSR), presented at a recent Generation Task Force meeting. In considering the results of the Doris Duke study, it is important to consider the relative demographics of the study participants and the relationship between the size of the homes and PSR's energy intensity score.

PSR stated that the comparison of study participants "revealed a clear "Early Adopter" profile for all homes in the study. Further, "While homogeneity was expected among green-built participants (in Mueller), participants from homes outside Mueller have a nearly identical distribution of income, education, race and ages as the participants in Mueller. The population is characterized by high education levels and higher than average income. More than 97% of the participants have at least one college degree, and 65% have a post-graduate degree. According to 2010 Census data, only 44% of the adult population in Austin holds a college degree." "The study population has significantly higher incomes than the average for Austin. The median income in Austin is approximately \$50,000, while 92% of the 2011 survey respondents report making \$50,000 or more, and the median for the 2011 survey respondents was \$100,000 - \$150,000.

These survey results suggest that there was a self-selection bias amongst the participants in the Mueller and outside Mueller cohorts. Based upon results of the stakeholder surveys, the research team believes that while the study group is not representative of Austin as a whole, it is representative of residents most likely to undertake energy retrofits of their home to both save money and reduce their impact on the environment."

Based on this demographic analysis, it is clear that the participants in the Doris Duke study, both in new Green Built homes in Mueller and in the older homes outside of Mueller represent a very well educated, sophisticated and financially secure group of citizens who have the resources and time available to make informed decisions about strategies to reduce energy use and the available funds to take advantage of energy efficiency initiatives that implement those strategies. This group is also more able to access information about behavior based strategies such as proper programming of thermostats that further reduce energy use.

Attempting to make direct comparisons between the results of the energy efficiency retrofits undertaken by this group and the results of the Austin Energy free weatherization participants would not be appropriate, given the differences in the demographics of the respective populations, the self-selection that occurred with the Doris Duke study, the type of housing stock occupied and the process and procedures prescribed by the weatherization program.

Carol, I appreciate your advocacy on behalf of our low income customers. Our low and limited income programs and services focus on supporting those customers in need. Not only does AE spend millions annually providing bill discounts and education, and comprehensive, quality weatherization, all at no cost to those customer. The value we bring to customers takes time and dedicated resources who consistently strive to improve quality of life. As we move through FY14, we hope to reach more low and limited income customers with programs and services designed to lessen their utility burden.

2013 E Source Study DSM Achievements		
Electric Utility	State	Percent of DSM Budget For Low Income Programs
Southwestern Public Service Co	TX	26.3%
Austin Energy	TX	25.0%
CPS	TX	20.0%
Entergy Corp. Texas	TX	17.9%
Indiana Michigan Power Company (via Efficiency United)	MI	16.0%
CenterPoint Energy Houston	TX	15.2%
El Paso Electric	TX	14.5%
Oncor	TX	10.3%
National Grid (Narragansett Electric Co)	RI	10.1%
AEP Texas Central Company	TX	10.0%
Black Hills Energy	CO	9.4%
DTE Energy	MI	9.3%
Minnesota Power	MN	8.1%
Pacific Power (PacifiCorp)	WA	7.7%
Public Service Co of New Mexico	NM	4.9%
Xcel Energy (Public Service Co of Colorado)	CO	3.6%
Alliant Energy (Interstate Power and Light Co.)	MN	2.7%
Consumers Energy	MI	2.3%
Xcel Energy (Northern States Power Co - Minnesota)	MN	2.2%
MidAmerican Energy	IA	1.8%
Alliant Energy (Interstate Power and Light Co.)	IA	1.1%

*DSM Achievements and Expenditures, 2012 data.

Attachment B

Program and Criteria	Austin Energy	CPS
Weatherization Services	Attic insulation	Attic insulation
	Minor duct repair and sealing	Wall insulation
	Caulking around plumbing penetrations	Weather-stripping and caulking
	Weather stripping on doors	Replacement of incandescent light bulbs with CFLs
	Solar screens	Duct Sealing
	Carbon monoxide & smoke detector	
	ENERGY STAR® compact fluorescent light bulbs	
	Minor plumbing improvements, such as new faucets, showerheads and aerators.	
	Refrigerator - if needed	
	HVAC - Tier 2 if needed	
Eligibility	200% federal poverty and below	200% federal poverty and below
Customer Assistance Program	CAP Discounts - (see below)	Residential Energy Assistance Program
	Financial Support Plus 1	Critical Care
	Payment Arrangement	Affordability Discounts
	Services for Medically Vulnerable	Critical Care Program
		Disabled Citizens Billing Program
		Senior Citizens Billing Program
		Veterans' Discount
		Emergency Assistance Programs
		Temporary Hardships
Eligibility	200% federal poverty and below	125% federal poverty and below
Fees Waived	Customer Charge - \$10/month	Availability Charge - \$8.85/month

10% discount on electric usage, CBC discount

Water, Wastewater Customer Charge and Tiered Fixed Charge waived

Water Volume charge discount, 50% drainage fee discount

Transportation User fee waiver