

I. Demand and Energy Savings Goals for Austin Energy

Recommendation: The Low-Income Consumer Task Force reaffirms the goal that Austin Energy continue to meet its 800 MW peak reduction goal by 2020, and recommends that Austin Energy pursue achieving at least another 200 MWs of peak reduction in the next four fiscal years (2021-24), subject to availability of technology, programs and budgets. Thus, the Task Force believes assuming adequate support from council this goal is readily achievable.

In addition, Austin Energy should continue to study achieving an even greater level of peak reduction, such as 1200 MWs by the end of 2024. Expanded loan programs and the availability of PACE may allow the utility to achieve this ambitious goal or at least get nearer to these ambitious goals.

Background. On December 11th, 2014, the City Council established a new demand reduction goal for Austin Energy, reaffirming the goal of reaching 800 MWs of peak demand between 2007 and the end of 2020, and requiring at least an additional 100 MWs of peak demand reduction by the end of 2024. As part of this new overall 900 MW goal, Council required that at least an additional 100 MWs be acquired from demand response.

Although the Council set the new 900 MWs of demand reduction by the end of 2024, Council was careful to direct Austin Energy to view this goal as a minimum, and therefore established two additional “targets.” First, City Council told Austin Energy to seek to achieve a greater amount of demand reduction, by stating that subject to further study, technological development, progress toward goals and rate and budget considerations, Austin Energy should consider the potential to reduce an additional 100 MWs of demand reduction through additional energy efficiency and demand response programs by the end of 2024.

Secondly, City Council directed Austin Energy to study whether an even more ambitious goal of 1,200 MWs by the end of 2024 was economically and technically achievable.

The Low Income Task Force believes that assuming improved technologies, programs and a budget commitment roughly consistent with current budgets in the \$30 million range, achieving 1,000 MWs by the end of 2024 is readily achievable. Further study and analysis of course is needed. In addition, with the development of new programs like PACE, improved loan opportunities, and potentially other financial mechanisms like On-Bill Repayment, Austin Energy should study the potential to achieve 1200 MWs of demand reduction between 2007 and 2025.

Graph 1. MW Savings to Date, Tracking to 800 MW Goal by 2020 and 900 MWs by 2024

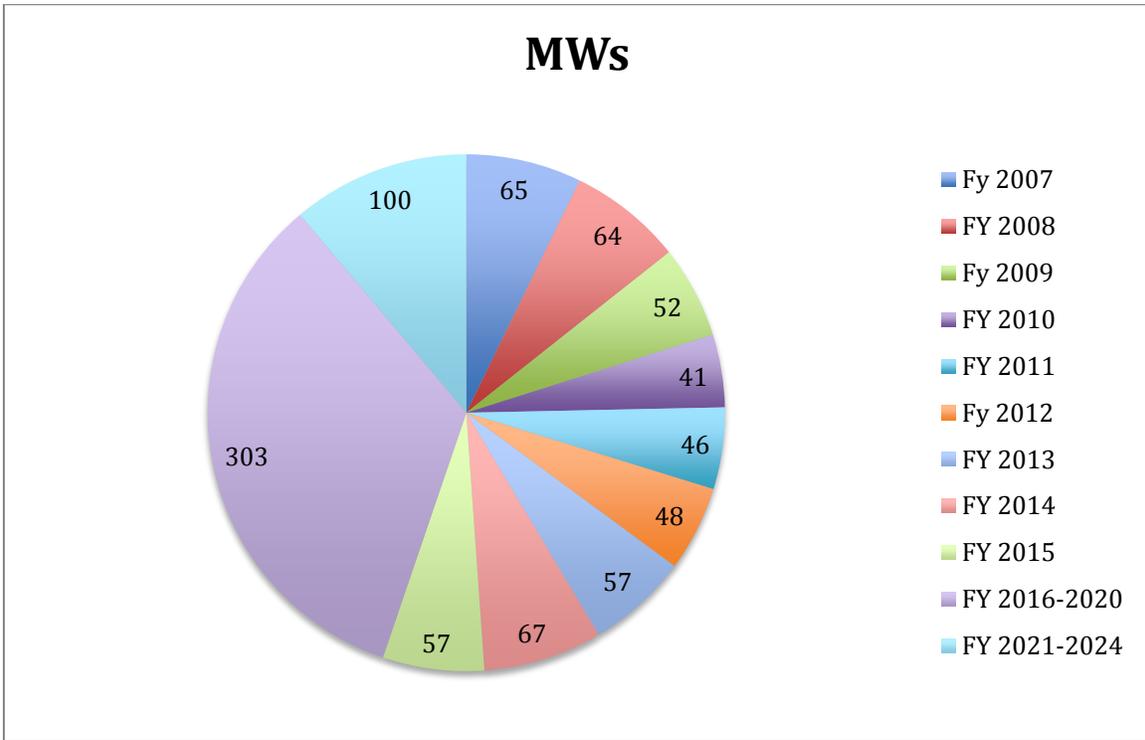


Table 1. Getting to 1000 by end of 2024: What's A Path To Getting There?

Year	Energy Efficiency	Demand Response	Total
2007-2015	401	96	497
2016	50	10	60
2017	50	10	60
2018	50	11	61
2019	50	11	61
2020	50	11	61
Total to 2020	651	149	800
2021	30	20	50
2022	30	20	50
2023	30	20	50
2024	30	20	50
Total by End of 2024	771	219	1000

Table 2. Getting to 1200 by end of 2024: What's A Path To Getting There?

Year	Energy Efficiency	Demand Response	Total
2007-2015	401	96	497
2016	50	10	60
2017	50	10	60
2018	50	11	61
2019	50	11	61
2020	50	11	61
Total to 2020	651	149	800
2021	60	40	100
2022	60	40	100
2023	60	40	100
2024	60	40	100
Total by End of 2024	871	319	1200

Energy Savings Goals

Recommendation: Establish a minimum energy savings annual target of one percent of total energy sales through energy efficiency and demand reduction programs. In future updates to the Austin Energy Generation Plan, assess meeting this level or higher energy savings goals, subject to future budgets, affordability and other factors.

Background. While peak energy use – both in the summer and winter – is extremely valuable both to customers and to the utility and should be a major focus of the utility, the Task Force believes that energy savings – the amount of energy used year-round – is equally important. While Austin Energy unofficially maintains and reports energy savings goals, the Task Force believes it would be appropriate to establish a permanent energy savings goal for Austin Energy’s energy efficiency and demand reduction programs. As an example, the State of Texas requires that Investor-Owned Utilities establish and meet both a demand reduction and energy savings goal. In addition, many states in the US have required their utilities to establish an energy savings goal, usually from between a half a percent of use up to three percent of use.

Establishing an energy savings goal would also assure that Austin Energy does not focus solely on demand response programs, which though important, does not directly help residential consumers on their monthly bills as much as do energy savings. Also, energy savings goals contribute more directly to the reduction of carbon and other pollutant emissions.

While Austin Energy should work with City Council to establish a long-term energy savings goals, the Low-Income Consumer Task Force recommends that Austin Energy in the short-term aim to save at least one percent of its energy sales through energy efficiency and demand reduction programs. Currently, these programs nearly achieve this target and appear to have met this target in 2014. Thus, we believe a one-percent target for energy savings is readily achievable within current budgets. In future Generation Plan updates, Council should examine this one-percent target and consider other appropriate levels ranging from one to two percent of total sales, which many utilities throughout the country are readily achieving.

Table 4. Current Energy Savings by Year

Year	Total KWh Sales	Total Reported Energy Savings	% of Sales
FY 2011	12,723,303,281	117,298,000	0.92%
FY 2012	12,715,146,231	108,606,000	0.85%
FY 2013	12,270,733,600	117,198,000	0.96%
FY 2014	12,588,000,000	127,649,000	1.01%

II. Establishing Minimum Energy Savings and Demand Reduction Goals for Low-Income Weatherization Programs

Recommendations: Establish an initial annual goal of reducing peak demand through low-income weatherization by 1 MW of peak demand, and 1000 MWhs of energy savings by weatherizing approximately 1,000 homes. Establish a longer-term goal of weatherizing up to 2,000 homes per year, with the goal of reducing demand by 2 MWs and saving up to 2,000 MWhs per year. Average cost per Kw reduced should not exceed \$3700 per Kw reduced initially, and should be reduced to \$2300 per Kw as the program expands.

Austin Energy already sets expected peak demand reduction and energy savings goals for its energy efficiency programs. Austin Energy should establish specific goals for the low-income weatherization program. While the goal will of course be influenced by budgets, by establishing a yearly expectation on number of homes, KWs reduced and KWhs saved, the program could be more easily judged for the success it enjoys.

First, it must be recognized that the program has not been without problems. In general, the Low-Income Consumer Task Force agrees that the amount of energy demand reduced and energy savings achieved have been lower than predicted, and the amount of money spent per home or participant has not led to the energy savings or demand reduction expected. This is not to say the investment in helping lower income Austinites weatherize their homes is not a worthy and important goal, but the results have not been as both participants, Austin Energy and advocates for these programs had hoped.

Table 5 provides basic data about the number of participants, homes, budgets and cost per home and per unit of energy reduced. It is important to note that for three fiscal years, spending on low-income weatherization was boosted by funding from the ARRA. The Task Force recognizes that Austin Energy has made tremendous efforts in the current FY 2015 fiscal year to improve the program and increase the number of households reached. Still, even this year, the program has not enjoyed the success it deserves given the hard work and effort put into it by AE staff, contractors and other agencies working to improve the livelihood of lower-income Austin Energy customers.

Table 5. Austin Energy’s Weatherization Program, Performance Metric

Year	# of Participants	KWs Reduced	KWhs Saved	Total Spent	\$/per Home	\$/per Kw Reduced	\$/per Life-Cycle KWh Reduced
2009	538	511	588,030	\$1,002,521	\$1,863	\$1,961.88	\$0.17
2010	456	433	498,410	\$1,369,742	\$3,004	\$3,163.38	\$0.27
2011	1,044	992	1,141,090	\$5,276,286	\$5,054	\$5,318.84	\$0.46
2012	958	910	1,047,090	\$4,019,797	\$4,196	\$4,417.36	\$0.38

2013	155	186	192,360	\$308,867	\$1,993	\$1,660.58	\$0.16
2014	312	374	387,190	\$2,104,193	\$6,744	\$5,626.18	\$0.54
2015 (through August 10)	531	527	586,592	\$2,125,488	\$4,003	\$4,033.18	\$0.36

Source: Austin Energy, Response to Questions, August 14, 2015.

Footnote: Note, FYs 2009, 2010, 2011 and 2012 include approximately \$9.8 million in federal government funds from ARRA. The budgets, per KW and per KWh savings include these numbers. FY 2013 through FY 2015 includes both CAP money spent on weatherization and EES money spent on weatherization.

As Table 5 reveals, as expected for a program that provides 100% of the cost of certain measures, the programs are relatively high in cost compared to other energy efficiency programs. Thus, once weatherization programs were expanded between FY 2011 and FY 2014 to include air conditioning replacement and refrigerator replacement equipment, the expense of the programs often exceeded \$5,000 per Kw reduced and sometimes as much as \$6000 per home, and a relatively high cost per KWh reduced over the life of the equipment. While these programs have materially benefited lower income residents of Austin Energy, and City Council should consider other benefits of the programs besides the direct cost of the subsidies such as jobs created, the environmental benefits, the improved quality of life and other measures, establishing a basic \$ per KW goal, MW reduction goal and MWh reduction goal are worthy of consideration.

The most MWs and MWhs reductions achieved were in FY 2011 and FY 2012, when the programs achieved roughly 1 MW and 1,000 MWhs of demand and energy savings reduction. In those years, roughly 1,000 homes were weatherized. Achieving these amounts at a minimum – and in a cost-effective way – are worthy short-term goals. By reducing the costs and increasing the effectiveness of the programs, longer term, Austin Energy should and the City Council should consider a goal to weatherize up to 2,000 homes per year, and reach goals of reducing 2 MWs of peak demand and 2,000 MWhs of peak reduction per year. These larger goals would be phased in over several years, as the costs and experience with the program was expanded.

Table 6 lays out a potential scenario, assuming that Austin Energy created a three-tier Weatherization program at different levels of funding depending on the need of the lower income residents. Table 7 lists a break-out of a potential scenario for a three-tier system, with average costs per KWs reduced. Table 8 recommends initial and further cost-effectiveness measures.

Table 6. Potential Yearly Goals and Costs for Weatherization Program (example only)

Year	Homes/Units Weatherized	MW goal	MWhs Goal	Assumed Budget (see	Assumed Cost Per
------	-------------------------	---------	-----------	---------------------	------------------

				Table 3)	Home/Kw
2016	1,000	1	1,000	\$3,700,000	\$3700
2017	1,000	1	1,000	\$3,300,000	\$3300
2018	1,500	1.5	1,500	\$4,200,000	\$2,800
2019	1,500	1.5	1,500	\$4,200,000	\$2,800
2020	2,000	2.0	2,000	\$4,600,000	\$2,300
2021	2,000	2.0	2,000	\$4,600,000	\$2,300
2022	2,000	2.0	2,000	\$4,600,000	\$2,300
2023	2,000	2.0	2,000	\$4,600,000	\$2,300
2024	2,000	2.0	2,000	\$4,600,000	\$2,300
Total	15,000	15	15,000	\$38,400,000	\$2,560

Table 7. Assumptions on Cost Per Kw Goals for Weatherization (example only)

Year	Tier 1 Homes (80%)	Cost Per Home	Tier II Homes (15%)	Cost Per Home	Tier III Home (5%)	Cost Per Home	Total Budget
2016	800	\$3,500	150	\$4,000	50	\$6,000	\$3,700,000
2017	800	\$3,000	150	\$4,000	50	\$6,000	\$3,300,000
2018	1200	\$2,500	225	\$3,500	75	\$5,500	\$4,200,000
2019	1200	\$2,500	225	\$3,500	75	\$5,500	\$4,200,000
2020	1600	\$2,000	300	\$3,000	100	\$5,000	\$4,600,000
2021	1600	\$2,000	300	\$3,000	100	\$5,000	\$4,600,000
2022	1600	\$2,000	300	\$3,000	100	\$5,000	\$4,600,000
2023	1600	\$2,000	300	\$3,000	100	\$5,000	\$4,600,000
2024	1600	\$2,000	300	\$3,000	100	\$5,000	\$4,600,000
10-Year Total	12000		2250		750		\$38,400,000

Thus, the goal of the program is to reduce the \$s per Kw to \$3700 next year, but overtime reduce that cost to roughly \$2,300 per Kw or less. In reality, the goal would be to reduce the costs in three separate programs as described below.

III. A Proposed Weatherization Program

Austin Energy should create an expanded weatherization program that helps qualified low-income residents through one of three tiers. The basic tier would be modeled on the current weatherization program. We would note that Austin Energy should assess the cost-effectiveness of duct repair and replacement to see if it has been cost-effective. Most households would receive this program.

A second tier would be similar to the current program that provides window AC units to certain households, based upon clear eligibility standards.

A third tier would allow for central AC repair and replacement. Thus, homes with existing AC units would be assessed through a 21-point check. Those that could be repaired cost-effectively would. Those that were more than 10-years old and that could not be repaired would be replaced. Austin Energy would work with Texas Gas to take advantage of furnace replacement, and some flexibility could be allowed for full replacement based on this funding.

Table. Proposed Tiered Weatherization Programs

Category	Weatherization Basic Program (Tier I)	Weatherization Plus	Weatherization Whole-House	Moderate Program
What is Covered	Air Infiltration, Attic Insulation, LEDs or CFLs, Fire and CO Monitor, Solar Screens, Duct Work Repair and up to \$500 Replacement, Low Flow Water Devices	Everything to the left, Plus HVAC-Window	Everything to left, plus AC repair or replacement (HVAC-Central)	A Rebate Plus Low-Interest Loan Program for those not eligible for low-income weatherization Could be On-bill Repayment or Loan through Velocity/Others
Average Per-Home, Per-Kilowatt 2016 Cost	\$3,500	\$4,000	\$6,000	
Longer-term cost goal	\$2,000	\$3,000	\$5,000	
Number of Homes Covered	80%	15%	5%	

(example Only)				
Eligibility	CAP customer, 200 percent of poverty	Same, plus young-in or elderly, no potential for repair or replacement of AC	See to left, plus Existing AC unit that is more than 10-years-old, can not be repaired through 21-point check, availability of Texas Gas could be factor	
MW short-term goal	0.8	0.1	0.1	
MWh yearly goal	800	150	50	
Who Pays for It	EES Weatherization—everyone	CAP Weatherization	CAP Weatherization	EES – separate rebate program

Recommendations: Create a three-tier weatherization program. The majority of homes would be eligible only for basic weatherization services, but certain individuals and families would be eligible for window AC units or even central AC units depending upon eligibility criteria. The basic weatherization program would be paid for with the EES program, but the more expansive measures would be paid for with CAP funds.