

**Promoting Affordable Housing in Austin Through Low Income
Multi-Family Energy Efficiency Measures**



***Documented Affordable Housing Improvements
(23% average savings at current rates)***

Accelerates 800MW Goal

Rapid ROI to Austin Energy

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I. THE MULTI-FAMILY MARKET IN AUSTIN

A) According to the information below, Austin ranks 5th behind New York, Los Angeles, Dallas and Washington D.C. for those that reside in Multi-Family housing. Austin is tied with San Francisco and Houston.

Large Cities: Population, Housing, and Renters				
City Names	Population	Total Occupied Housing Units	Total Apartments	Apartments Percent Of All Housing
New York, NY	8,244,910	3,023,330	1,514,341	50%
Los Angeles, CA	3,819,708	1,304,145	545,250	42%
Chicago, IL	2,707,123	1,016,342	288,115	28%
Houston, TX	2,145,933	774,630	292,875	38%
Philadelphia, PA	1,536,471	576,429	89,510	16%
Phoenix, AZ	1,469,484	519,369	109,413	21%
San Antonio, TX	1,359,730	482,783	114,840	24%
San Diego, CA	1,326,183	468,194	135,928	29%
Dallas, TX	1,223,378	455,371	176,882	39%
San Jose, CA	967,478	305,460	68,190	22%
Jacksonville, FL	827,909	311,369	60,646	19%
Indianapolis, IN	824,232	324,438	66,434	20%
Austin, TX	820,601	331,582	125,401	38%
San Francisco, CA	812,826	342,706	130,869	38%
Columbus, OH	796,014	322,314	88,469	27%
Fort Worth, TX	760,758	263,676	55,177	21%
Charlotte, NC	751,074	292,715	69,808	24%
Detroit, MI	706,640	253,629	37,409	15%
El Paso, TX	665,577	219,568	37,451	17%
Memphis, TN	652,078	245,836	53,958	22%
Boston, MA	624,969	251,745	88,669	35%
Seattle, WA	620,778	282,492	99,602	35%
Denver, CO	619,968	266,624	86,859	33%
Baltimore, MD	619,493	239,251	51,505	22%
Washington, DC	617,996	268,670	111,192	41%

Source: NMHC tabulations of 2011 American Community Survey, 1-Year Estimates. Updated October 2012.

B) Characteristics of Austin and the Multi-family Sector

- The total population in Austin is 790,390 and 389,892 (49%) are renters. Of which, 300,348 (38%) reside in multi-family communities. (see above). The total population will top 1 million in the next 10 years (Robinson 2014).
- The total number of housing units in Austin is 354,241 and 178,226 of these are rental occupied.
- There are 1,157 multi-family properties in Travis County, the majority of which (76%) have been neglected for energy efficiency improvements due to a combination of the existing rebate structure and the square footages of the individual apartment units involved. (see C below).
 - On average, 259 people reside at each community, which approximates to a Multi-Family resident population of 300,000 people.

C) Why has a portion of the Multi-Family market been neglected for energy efficiency measures?

Until recently, the existing Austin Energy Multi-Family program only offered single measure rebates based on the square footage for each individual apartment, size matters! Smaller communities (150 units or less) with smaller floor plans (+/-500 square feet) have all but been ignored and neglected for energy efficiency measures. The reason for this “neglect” is that the energy efficiency contractor cannot perform the work to where it is economically feasible to the property owner without coming out of pocket with significant dollars. For example (*duct seal efficiency measure*)......up-flow electric furnaces offer a rebate of \$ 0.25 cents per conditioned square foot. The rebate amounts to \$93.75 for a 375 square foot efficiency apartment. The rebate covers roughly 50% of the costs to do the work and property owners are not willing to pay an additional \$93.75 for the cost of the work in each apartment. The property owner’s position is that “*The tenant’s pay the bills, what do I care*”. A tremendous "disconnect" or "split incentive" exists to make energy efficiency programs appealing to the property owner.

D) Apartment Complex by unit size in Travis County (Source: Austin Board of Realtors, May 2013)

10 units or less =	275 Communities*
11-25 units =	287 Communities*
26-50 units =	161 Communities*
51-100 units =	103 Communities*
101-150 units =	63 Communities*
151+ units =	268 Communities

*The above properties marked with an asterisk are prime candidates for low income energy efficiency measures.

E) Who rents?

Five types of renters have been identified which can be classified into three groups.

A. Financial

1. Those that have had recent financial setbacks (death, divorce, job loss, illness, bankruptcy, foreclosures), etc....
2. Or, those that simply cannot afford anything else. These are the folks that are one step from having to live with someone else and/or another family. Or, find themselves homeless. These are the people that need affordable housing programs the most!

B. Short-term

3. Those that have recently moved to Austin and have yet decided where to live, house hunting, etc....
4. Corporate housing for short-term work related projects.

C. Convenience

5. Those that enjoy the simplicity of apartment life.

II. BACKGROUND

The multifamily (MF) sector is a hard-to-reach market for many energy efficiency programs due to the split incentive between the property owner, who must pay for upgrades, and the resident, who benefits from them. For over 20 years, Austin Energy has offered a successful multifamily rebate program which has encouraged property owners to make energy efficiency upgrades in over 20,000 apartment units.

In 1986, AE began research towards a pilot energy efficiency rebate program for existing multifamily properties of three stories or less. Five years later in 1991, Austin Energy launched one of the first multifamily programs in the country, offering rebates for prescriptive upgrades made to apartment units. Currently the MF program still offers single measure rebates (air duct sealing, solar screens, attic insulation, etc.....). However, due to the success of the Energy Returns Program in 2013, AE has formed a hybrid of this program using a point total value in determining rebate amounts. AE realized that it is much more efficient by using a "one touch" approach to energy efficiency upgrades. The reasoning is that while a contractor is in the apartment, this is an ideal opportunity to perform additional multiple energy efficiency measures at the same time. Some of the measures included in the multi-point program include the existing single measures rebates along with some added measures (pipe wrap insulation, thermal boundary sealing, water saving devices, etc...see below). Most importantly, by incorporating added measures in the multi-point system, it is now economically feasible for the contractor to perform these measures on smaller communities.

The History of the Energy Returns Program
(*The Catalyst to the present Multi-Point Rebate System*)

Leveraging funding from a federal Recovery Act grant, Austin Energy designed and implemented a new performance-based multifamily program called “*Energy Returns*.” Under this offering, 1,587 apartment units were upgraded in 21 communities in less than a year, with an expected average annual kWh reduction of 23%. The program encouraged comprehensive retrofits by using RESNET-certified raters to provide energy modeling, requiring mandatory water saving devices, and promoting resident education using innovative new outreach campaigns.

An overview of program activities, funds dedicated and modeled savings estimates from the REM/Rate™ files. The water savings estimates are from AWU, who provided the devices.

Total number of units upgraded	1,587
Number of communities	21
Total rebates for upgrades	\$1,191,500
Average rebate/unit	\$751
Average annual estimated kWh reduction	23%
Modeled annual kWh reduction	4,851,759*
Modeled peak kW reduction	1,467
Units tested-in	499
Units tested-out	193
Estimated annual gallons of water saved	10,453,965

* Note - Average of \$275.00 annual reduction in tenants utility bill or \$23.00 a month.

Some of the energy efficiency measures included in the Energy Returns Program:

- a) Duct Sealing
- b) Solar Screens
- c) Attic Insulation
- d) Water saving devices (aerators and showerheads)
- e) Water heater insulation
- f) Installation of weather-stripping and thresholds (door sweeps)
- g) Caulk plumbing penetrations and other sources of leakage to tighten the thermal boundary of the building envelope.
- h) Incandescent lighting is replaced with CFL's
- i) Additional new duct work if necessary.
- j) New return air grills and filters if necessary.
- k) Installation of combustion air ventilation (safety)
- l) Ensure flue pipes are vented to the outside the apartment building (safety)

When calculating rebate levels, AE staff performed field surveys about costs for materials, labor and overhead in an effort to find an appropriate rebate level. The research was important,

but equally important was acknowledging that the multifamily market is very different than the single family market. Rebates for energy efficiency upgrades that do not explicitly improve the property owner's bottom line must be attractive to sell the program. In this case, the rebate levels were based on kW and kWh savings estimates but also on historical costs for work in AE's single measure rebate program. Based on estimates of cost and kW/kWh savings, the rebate levels were then reviewed with the total resource cost test. Table 1 below shows the final rebate levels offered through the program.

<u>Modeled Annual kWh Reduction</u>	<u>Rebate per unit</u>
15%	\$ 500
20%	\$ 750
25%	\$ 1,000
30%	+ \$ 1,250

Lessons learned from the "*Energy Returns*" offering have been used to inform program design in Austin Energy's ongoing multifamily rebate program in creating the multi-point program.

*Note: Some of the above information was cited from the 2014 ACEEE Summer Study of Energy Efficiency in Buildings.

III. RECOMMENDATION

The City of Austin (Austin Energy) has an existing and very successful low-income weatherization program for residential home owners and renters. It is recommended that the City of Austin develops a program for low-income multi-family properties to promote affordable housing in Austin.

- Working on Multi-Family communities affords higher economies of scale versus working on one house at a time. Remediating 25 multi-family properties annually (6,500 residents) equates to the population of a small town comprised of single family housing.
- Those properties that have been neglected in the past will now be economically viable to perform energy efficiency measures moving forward.
- That **housing remains affordable** by substantially reducing the tenant's utility bill. It is the right thing to do! By targeting multi-family properties..... Austin will address the needs of affordable housing on a scale unachievable in single family residences.
- A quick payback or return of investment (27.89 months) of dollars invested.
- That the public's trust is protected. By incorporating test-in/test-out by an independent third party aside from Austin Energy and the contractor, the energy reduction plan is verified by an independent source.
- It is recommended that The City of Austin should seek additional grant funding and strategic partnerships (TDHCA, HUD, DOE, Austin Water, Pecan Street, etc....) to enhance funding of the low-income affordable housing multi-family program moving forward.

It is proposed that the City of Austin develop a program modeled after Austin Energy's Multi-Point Program targeting low income properties with an initial budget of roughly \$2mm to meet the needs and demand of this "untapped and neglected" segment of the multi-family market. This will help accelerate efforts to reach the 800MW goal by 2020.