




TO: Mayor and Council Members

CC: Marc A. Ott, City Manger

FROM: Larry Weis, General Manager 

DATE: December 6, 2011

SUBJECT: Report on Strategy to Reach 800 MW of Peak Demand Savings by 2020,
per Resolution No. 20111006-060

On October 6, 2011, City Council approved a resolution directing staff to provide a report on the current strategy to reach the adopted goal of 800 MW of peak demand savings by 2020.

The resolution directed Austin Energy to report on the following energy efficiency project initiatives:

- Status of the energy efficiency technical potential study, and any related analysis on revising the stated energy efficiency goals,
- Progress made on exploring an auction-based system for large commercial energy efficiency projects,
- Status of reviewing the limit for funding energy efficiency projects,
- Current and future budget levels needed to achieve the goals adopted by prior City Council action, specifically considering the proposed rate redesign currently underway and how its passage may affect progress, and
- Any other initiatives being considered by the utility.

The report that follows fulfills the direction stated in the resolution. Please let me know if you have any questions.



Strategy to Reach 800 Megawatts of Peak Demand Savings by 2020

**Austin Energy's Response to Austin City
Council Resolution No. 20111006-060**

December 6, 2011

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Energy Efficiency & Green Building Programs Overview

Austin Energy's Energy Efficiency Services and Green Building groups provide Residential and Commercial energy management and green building products and services to Austin Energy customers. Program and product offerings include technical assistance, energy audits, recommendations on the most cost-effective measures, and financial incentives for installation of qualifying equipment. Green Building also provides plan-review and technical assistance services to building industry professionals seeking to have their projects evaluated for energy and resource efficiency or sustainability.

Austin Energy's "Power Saver" and Green Building programs drive market transformation to maximize energy resources by lowering electric consumption and bills while increasing customer comfort and satisfaction. Greater efficiency lowers costs to Austin Energy and all of its customers, while also reducing power plant emissions and promoting economic development in the Austin area. Resulting capital purchases by Austin Energy and customers provide economic benefits through increased employment in the local energy efficiency industry. Gains in disposable income from these investments and from customer savings creates additional funds available for spending in the local economy.

The diverse mixture of Residential Efficiency, Commercial Energy Management, and Green Building programs offered by Austin Energy has achieved substantial reductions in peak electric demand, and all-time record reductions in both energy usage, and power plant emissions. Austin Energy is currently assessing performance for FY 2010-11. From October 2009 through September 2010, Austin Energy achieved the following impacts through its energy efficiency and green building programs:

Demand and Energy Reduction:

- 41.2 Megawatts of Additional Required Power-Plant Peak Capacity
(approximately 1.5% of the Austin Energy peak of 2,628 for FY 2010)
- 89,000 Megawatt-hours of Energy Savings
(approximately .75% of Austin Energy sales of 12,000 GWh in FY 2010)

Annual Power-Plant Emissions' Reductions (metric tonnes):

- | | |
|---------------------------|--------|
| ▪ Carbon Dioxide: | 53,400 |
| ▪ Nitrogen Oxides: | 37.2 |
| ▪ Sulfur Dioxide: | 33.7 |
| ▪ Carbon Monoxide: | 25.9 |
| ▪ Suspended Particulates: | 4.57 |
| ▪ NMOC (VOC): | 1.28 |

Detailed information on Energy Efficiency and Green Buildings programs is published annually in the Demand Side Management (“DSM”) Performance Measures Report. Performance measures reported include:

- Annual customer participation
- Annual peak demand reduction (MW)
- Annual energy savings (MWH)
- Avoided costs (\$/kW saved)
- Benefit-cost analysis
- Emissions reductions

Overarching Principles:

- Energy efficiency will be the first priority in meeting new load growth, per Council Resolution No. 990913-05 and others dating back to 1994.
- Increase the energy efficiency goal from 800 MW to 1,000 MW, if viable and cost-effective, per Council-approved Austin Energy Resource and Climate Protection Plan to 2020.
- Study the capability of increasing the maximum investment in energy efficiency that Austin Energy is willing to make and increase or eliminate the cap on Austin Energy investment in individual customer improvements that both reduce peak and total demand for energy, per Council-approved Austin Energy Resource and Climate Protection Plan to 2020.

Overall Strategy to Reach 800 MW by 2020

Austin Energy’s strategy to reach 800 MW of peak demand savings by 2020 involves an accelerated target mix of energy efficiency products and services including demand response program initiatives to residential and commercial electric customers. These initiatives will be complemented by a new and innovative rate structure that will promote greater conservation and energy efficiency while improving long-term revenue stability. Adoption of the new rate structure is one key to incentivizing and accomplishing the 800 MW goal.

Tools for obtaining energy savings represent a full continuum of approaches from education and suasion, to cash incentives for customers and/or contractors, to requirements in the energy code. Austin Energy acts to harvest energy efficiency opportunities largely in response to pervasive market failures (that is, customers not making cost-effective investments in energy efficiency due to excessive expectations of program return, lack of information about technology performance, lack of understanding about the value of savings, disconnects between consumption behavior and billing information, and others) that result in otherwise rational customers and market participants not making fully private investments in energy efficiency opportunities. To ensure responsible use of customer funds, Austin Energy views energy efficiency like a resource, to be developed in preference to other resources when more cost-effective and advantageous to the customers and community. As product markets mature to become more self-sustaining (for example, in the purchase and use of compact fluorescent light bulbs among many customer groups), Austin Energy program managers shift funds and

resources to cost-effective options with less market penetration (for example, in the use of LED lighting). In each case, Austin Energy shifts program emphasis between energy efficiency measures and customer classifications to maximize both near- and long-term benefits of programs.

At the overall program level, Austin Energy's portfolio of energy efficiency services are tested for their ability to deliver reliable energy savings benefits at or below the cost of the next-best electric service resource—a combined-cycle natural gas-fired generation plant. As set out below, over the past several years Austin Energy's programs have beat this benchmark by between 35% and 65%. In fact, the average residential electric bill in Austin is about 15% lower than the average Texas residential bill, including in the "competitive" or "deregulated" markets, due to decades of operation of Austin Energy's energy efficient programs. Austin Energy rigorously tests and annually reports the cost-effectiveness of products and services offered against standard industry cost-effectiveness tests as well, to ensure cost-effectiveness for customers, the utility, and society at large.

Table 1: Energy Efficiency & Green Building Megawatt Savings Forecast as of Dec. 2, 2010

Program Savings (MW)	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2007-20	2011-20
	Actual				Forecast											
Comm Rebates	15.6	12.8	11.8	10.0	11.9	11.5	12.0	12.0	12.5	12.5	12.5	12.5	12.5	12.5	172.6	122.5
Comm Thermostats	1.7	1.4	0.6	0.6	0.1	0.6	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	13.1	8.7
Comm Peak Load Mgmt	3.6	1.3	3.1	2.0	4.1	2.0	3.0	2.5	1.5	-	-	-	-	-	23.0	13.1
Municipal Conservation	-	0.1	0.3	0.4	0.8	1.1	1.2	1.2	1.2	1.2	0.5	0.5	0.5	0.5	9.4	8.7
Small Business	1.3	1.8	1.2	1.9	1.5	2.5	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	33.2	26.9
Thermal Storage Lg Primary	1.5	1.6	2.0	-	<i>Combined with Thermal Storage Gen Svc, below</i>											5.1
Thermal Storage Gen Svc	0.5	0.5	0.7	0.0	1.1	2.5	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	26.7	25.0
Vending Miser	0.1	0.1	0.0	0.0	-	-	-	-	-	-	-	-	-	-	0.2	-
Res Appliance New	-	-	-	-	0.8	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	6.1	6.1
Res Appliance Existing	2.3	4.2	3.4	4.9	4.6	1.4	2.2	1.3	1.3	1.3	1.3	1.3	1.3	1.3	32.3	17.6
Home Performance	5.0	5.0	7.4	5.3	4.2	5.5	6.0	6.0	6.0	6.0	6.0	6.5	6.5	6.5	82.0	59.2
Free Weatherization	0.6	0.5	0.5	0.4	1.0	1.0	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	9.3	7.3
HP w/ES Loans	0.4	0.4	0.3	0.2	1.2	0.5	1.1	0.9	0.9	0.9	0.9	0.9	0.9	0.9	10.4	9.0
Multi Family	5.1	4.6	3.1	4.5	4.0	3.0	3.7	4.3	4.4	4.4	4.4	4.4	4.4	4.4	58.8	41.5
Res Water Heater	1.5	0.8	1.1	1.3	0.6	2.9	3.1	3.2	3.2	3.2	3.2	3.2	3.2	3.2	33.6	28.9
Res Thermostats	10.2	9.8	3.6	2.3	0.9	3.3	2.0	1.5	1.0	0.5	0.5	0.5	0.5	0.5	37.1	11.2
GB Commercial	1.5	4.8	4.8	1.6	2.6	2.4	1.4	1.8	1.9	1.9	1.9	2.1	2.2	2.2	33.1	20.4
GB Comm Code	3.2	5.2	3.1	1.4	2.4	3.0	4.0	6.0	7.0	8.3	9.4	9.6	9.8	10.1	82.5	69.6
GB Residential	0.8	0.9	0.6	0.6	0.4	0.4	0.5	0.6	0.6	0.6	0.7	0.7	0.7	0.8	8.8	6.0
GB Res Code	6.9	4.9	2.9	3.2	4.7	5.3	6.9	7.0	7.2	8.5	8.7	8.9	9.1	9.2	93.3	75.5
GB Multi Family	0.8	1.3	1.0	0.5	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	6.3	2.8
GB Multi Family Code	2.7	2.2	1.0	0.1	1.0	1.2	1.4	1.6	1.6	2.0	2.0	2.0	2.0	2.0	22.9	16.8
Total	65.4	64.1	52.4	41.2	48.0	50.8	56.5	57.8	58.3	59.4	60.2	61.4	61.9	62.4	800.0	576.8

(May not total due to rounding. Comm = Commercial, Res = Residential, HP w/ES = Home Performance with Energy Star, GB = Green Building)

Sub-Totals by Type	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2007-20	2011-20
Commercial	24.3	19.7	19.6	14.9	19.5	20.2	22.7	22.2	21.7	20.2	19.6	19.6	19.6	19.6	283.3	204.9
Residential	25.2	25.3	19.5	18.9	17.3	18.1	19.4	18.4	18.1	17.6	17.6	18.1	18.1	18.1	269.6	180.8
Green Builder	15.9	19.2	13.4	7.5	11.2	12.5	14.4	17.2	18.5	21.7	23.0	23.8	24.2	24.7	247.1	191.2
Direct Load Control	19.0	15.5	11.0	6.2	6.9	11.3	11.8	10.8	9.4	7.4	7.4	7.4	7.4	7.4	138.5	86.9
Cycling	15.5	12.5	7.3	4.9	5.2	5.9	6.0	5.0	3.5	1.5	1.5	1.5	1.5	1.5	73.2	33.0
Energy Eff Services	49.5	45.0	39.0	33.8	36.8	38.3	42.1	40.6	39.8	37.8	37.2	37.7	37.7	37.7	552.9	385.7

(Does not total: These are overlapping program groupings to illustrate areas of emphasis. E.g., Residential programs include some Load Control and Cycling, as well as other types of measures.)

Table 2: Financial Incentives and Total Expenses for Energy Efficiency Products (2006-2010)

	Financial Incentives (\$/kW)					Total Allocated Expenses (\$/kW)				
	2006	2007	2008	2009	2010	2006	2007	2008	2009	2010
Residential Efficiency										
Appliance Efficiency Program	447	403	460	535	570	543	536	526	575	600
Home Performance ES - Rebate	411	410	460	535	586	482	515	526	671	755
Home Performance ES - Loan	475	598	609	665	438	580	730	675	1,026	1,065
Free Weatherization	1,165	824	1,579	1,472	1,221	1362	1,057	1,645	1,940	1,845
Multi-Family Program	349	234	336	532	485	399	290	402	603	529
Clothes Washer Rebate	400	400	1,242	1,139	1,100	443	453	1,308	1,471	1,339
Duct Leaks Sealing/Diag. (S.Fam)	598	922				658	1,008			
Refrigerator Recycling	750	537	426	719	772	809	602	492	836	854
Power Partner	267	324	256	681	713	286	347	322	731	906
Cycle Saver	234	299	274	500	239	256	325	340	577	379
Compact Fluorescent Lighting	220	207	102	194		259	247	169	207	
Subtotal (Weighted Average)	367	349	362	556	571	417	404	428	645	693
Comm. Energy Management										
Commercial Rebate (no ILA-03)	188	244	236	240	285	258	287	302	273	331
Small Business	234	174	365	207	498	265	210	431	281	548
Municipal	473	NA	1,675	1,756	31	1823	NA	1,741	2,418	528
Power Partner (Comm & Muni)	273	561	215	482	343	275	636	281	635	583
Load Coop			4	2	5			70	20	32
Engineering Support	3	15	0	0	0	15	25	66	16	4,964
Commercial Smart Vendor	980	-	1,311	288	75	1886	319	1,377	1,346	1,193
Subtotal (Weighted Average)	221	218	219	196	271	403	264	285	241	340
Green Building										
Subtotal	193	0	0	0	0.0	48	58	65	68	179
Total DSM Programs		216	210	280	359	319	268	276	347	472

Source: DSM Performance Measures Report, 2010

Each year, annual program participation and savings levels are evaluated to create short term and longer term forecasts of both energy and peak demand savings. Budgets for Energy Efficiency Services and Green Buildings groups, and the Conservation Rebates Incentive Fund (CRIF)—the primary budget components related to energy efficiency programs—have over the past years resulted in an average of about 45 MW of cost-effective savings per year. At the same time, costs per MW saved have increased as Austin Energy pursues progressively harder-to-reach savings opportunities, so savings per year have generally declined. To reach the current 2020 goal of 800 MW, Austin Energy estimates that funding for energy efficiency rebates and incentives, hardware purchases and other non-personnel and contracting costs need to be increased by about 5-8% each year through 2020. This preliminary estimate will be refined with results of the energy efficiency potential study discussed below. In addition, staffing and contracting resources need to also be increased. These requirements may be reduced through improvements in energy efficiency technologies, marketing and education, adoption of more aggressive building energy codes, and higher demand for energy efficiency products and services. The Zero-Energy Capable Homes (ZECH) energy code changes planned for 2015, for example, could have the effect of accelerating market penetration of energy efficiency measures in an economic climate that

involves strong new housing activity, but would concomitantly reduce savings available to traditional incentive-based programs.

Table 3: Budgets for Energy Efficiency Services, Green Building, and Incentives (CRIF) Fund, 2008-12

	<u>FY2008</u>	<u>FY2009</u>	<u>FY2010</u>	<u>FY2011</u>	<u>FY2012</u>
Energy Efficiency Services O&M	\$ 8,204,177	\$ 8,988,852	\$ 8,104,278	\$ 8,772,424	\$ 11,315,526
Green Building O&M	\$ 1,642,472	\$ 1,796,083	\$ 1,799,281	\$ 2,084,175	\$ 2,196,039
Conservation Rebates & Incentives Fund (CRIF)	\$ 16,400,000	\$ 17,692,992	\$ 16,421,474	\$ 18,553,346	\$ 15,441,458
TOTAL	\$ 26,246,649	\$ 28,477,927	\$ 26,325,033	\$ 29,409,945	\$ 28,953,023
 Change Year over Year		\$ 2,231,278	\$ (2,152,894)	\$ 3,084,912	\$ (456,922)

Austin Energy has found that traditional rebates and incentives aimed at existing building stocks are vital to success. These products require larger budgets and staffing support per MW saved than code-based measures. Changes to Austin Energy's rate structure will enhance incentives for participation in these traditional programs. To further ensure a robust menu of product and service offerings throughout the balance of the decade, Austin Energy is both preparing for new Code changes and redesigning two signature efficiency products, the "Home Performance with Energy Star" and the "Multi Family Efficiency Rebate" products. Austin Energy's strategy in pursuing and earning the \$10 million federal grant under the Department of Energy's "BetterBuildings" program was to obtain external funds to support these product development efforts.

Leveraging federal and state funds has been a key component of Austin Energy's efforts to maintain and enhance energy efficiency programs. In addition to the \$10 million BetterBuildings grant, Austin Energy secured additional federal funds to support low income weatherization (\$8.3 million), municipal government energy efficiency projects (\$7.5 million), Solar for Schools demonstration and education projects (\$650,000), electric vehicle infrastructure, planning and demonstration (approximately \$1 million), and Carver Museum Solar (\$363,000). Austin Energy has also taken advantage of opportunities to leverage \$10 million in state funds made available through the LoanStar program for low-interest loans for performance contracting projects.

Austin Energy also pursues a strategy of diversity in product and service offerings in order to maximize opportunities for program success in volatile economic and technical environments. This strategy enables program managers to shift resources to the most cost-effective and successful opportunities over the course of a single year and between multiple years, and between and among customer classifications.

The energy efficiency potential study currently underway will provide much-needed analytical support for fine-tuning program strategies over the coming years. At this time, a few trends and needs are discernible. First, consistent funding and policy are critical to developing and deploying products and services that often take more than one or two years to reach peak effectiveness. Second, Austin Energy's programs must be increasingly automated and streamlined through application of information technologies. Austin Energy's Distributed Energy Services group budgeted \$2.3 million for this purpose in FY2011-12. Third, Austin Energy plans to leverage the power and opportunity of smart grid technologies—information technology and automation on or near the customer's premises. Fourth, Austin Energy plans to increasingly rely upon products based on demand response, direct load control, and thermal storage in order to achieve its overall goal. These products will enable Austin Energy and/or its customers to respond to market price signals to reduce peak demand, support grid reliability, or take advantage of favorable market conditions for purchase or sale of power. Finally, Austin Energy's energy efficiency products and services will become more complex and integrated, addressing the whole building and its energy use, both as a consequence of a shift toward performance-based standards in the ZECH code design, as explained above, and as a means for harvesting the maximum savings potential from each program/customer interaction.

Status of Energy Efficiency Potential Study

Austin Energy has entered into contracts with three nationally recognized demand side management (DSM) consulting firms: KEMA, Inc., GDS Associates, Inc., and ICF International. The service contracts with these consultants will provide expertise in DSM technical analyses and evaluations of specific energy efficiency project initiatives to assist the utility in achieving the goals initiated in the Austin Energy Resource and Climate Protection Plan to 2020.

One of these DSM service contracts entails conducting an energy efficiency potential study to determine the technical, economic, and achievable program potential in Austin. Understanding the achievable market potential for energy efficiency will provide the foundation for Austin Energy to tackle the critical tasks in developing an integrated roadmap for implementation of a comprehensive, cost-effective energy efficiency program. The results of this study will be used by Austin Energy to identify where the greatest potential energy and demand savings remain and which technologies offer the most cost-effective opportunities for energy efficiency and demand savings. Based on the findings of the potential study, Austin Energy can determine if the current goal of 800 MW of demand savings by 2020 can be increased to 1,000 MW.

A "Scope of Work for Energy Efficiency Potential Study" was issued to the three DSM consulting firms. Proposals for this work were submitted in December 2011, and one firm will be selected to complete the potential study. Austin Energy estimates that the potential study will take 4 – 6 months to complete. Other energy efficiency projects currently underway as part of the DSM consulting services contracts, and in many ways related to the potential study, include the following:

- Power Factor Automation Tool
- Demand Response Solutions for Commercial and Industrial Sector
- Cost-effective Measures for Multi-family Properties

- Evaluation of American Reinvestment Recovery Act (ARRA) Low-income Weatherization Program
- Evaluation of Home Performance with Energy Star
- Demand Response for Residential Customers

Status of Reviewing the Limit of Funding Energy Efficiency Projects

Austin Energy regularly reviews incentives offered for energy efficiency to make any necessary adjustments as appropriate to encourage customer participation, greater energy and demand savings, while ensuring fiscal responsibility. Austin Energy conducts an end-of-year performance assessment of its energy efficiency programs to determine the cost-effectiveness of the utility's annual investment in energy efficiency.

Austin Energy BetterBuildings Program

The federal Department of Energy's "BetterBuildings" program funding to Austin Energy is intended to drive comprehensive energy efficiency retrofits for at least 4,400 homes and businesses by the end of 2013, through the development and deployment of new and improved energy efficiency products. The first major effort under the grant was to obtain a real world assessment of program capacity through a high volume market "blitz" called the "Best Offer Ever." The program served 568 additional customers in the fourth quarter of 2010, and gained benchmark data to drive the rest of the program effort.

The current objective is a fundamental transformation of Austin Energy's signature "Home Performance with Energy Star" and Multi-Family retrofit products to incorporate performance standards, greater persistence of savings, and more efficient product delivery. Austin Energy's BetterBuildings initiative will develop and strengthen the energy efficiency workforce, streamline and improve inspection processes, improve assessment and performance quantification and documentation, and develop marketing and communication platforms for greater product uptake. A major effort of the initiative is the development of new financial products to enable customers to start paying for energy efficiency improvements from the electric bill savings generated by the improvements. These products will include a revolving loan fund and measures to encourage third-party lending, such as loan-loss reserves and performance guarantees. Austin Energy envisions these products establishing a foundation for Austin Energy-managed loan and lease programs in the future.

Rate Restructuring is Essential to Energy Efficiency Success

Austin Energy's proposed rate restructuring is a fundamental component of its overall strategy for achieving the 800 MW goal. As we have discussed with the Council in the past, energy efficiency successes can create financial risks and instability in utility revenues. The proposed rate restructuring will enhance financial incentives for energy efficiency while stabilizing utility revenues. Several components of the proposed rates contribute to enhanced incentives for energy efficiency:

- **Tiered Rate Structure:** Austin Energy is proposing rate tiers in residential rates to provide a price signal that supports investments in energy efficiency and peak reduction. With tiered rates, the marginal price of electricity increases with higher volume of use—those very customers with the greatest potential for delivering significant usage reductions. At higher levels of monthly usage, customers will see increasing value from energy efficiency improvements that reduce consumption. Because high volume customers impose greater demand and costs on the system than low volume users, the proposed 5 – tier rate structure provides incentives for high usage customers to invest in energy efficiency. Under Austin Energy’s proposed 5-tier residential rate structure, any customer with monthly usage above 1,250 kWh will have higher marginal incentives for energy efficiency. Customers with monthly usage below 1,250 will continue to see financial incentives to reduce bills.
- **Summer Rate Structure:** Today, Austin Energy’s rates are structured with a six-month summer period and a six-month non-summer rate period. Austin Energy is proposing shifting to a four-month summer rate and an eight-month non-summer rate. While the total bill for a customer—based on typical usage—will not be affected by the shortened summer billing period, customers will see a higher marginal price in the summer months, consistent with the period for which peak reduction is most valuable.
- **Expanded Commercial Demand Charges:** Demand charges are an efficient pricing approach that charges customer for peak monthly usage (“demand”). Today, commercial customers with monthly demand above 20 kW are billed according to demand rates. Austin Energy is proposing to expand demand rates to all commercial customers. While total revenues from commercial customers will not change, all commercial customers will have a clear financial incentive to reduce monthly peak demand.

Austin Energy anticipates that these changes to the rate structure will stimulate additional energy efficiency throughout the community. If Austin Energy exceeds the target for planned savings, there is a risk that fixed-cost components of revenues associated with volumetric (usage-based) charges will be under-collected. For many utilities, this risk results in reduced utility incentive for energy efficiency program success. Today, about 57% of Austin Energy’s total costs are fixed, but only 22% of these costs are collected in fixed charges. Austin Energy proposes to reduce the allocation of fixed costs to volumetric charges in order to better align utility and customer incentives to save energy. For a utility like Austin Energy that is aggressive about capturing energy efficiency resource benefits, properly allocating fixed costs to fixed charges is an important element of financial stability.

As part of the proposal to unbundle rates, Austin Energy will separate out the costs of Energy Efficiency Services, the Green Buildings Group and the Conservation Rebates Incentive Fund (“CRIF”) from the utility’s overall cost of service. These costs will be included as a component of a stand-alone group of charges to be known as the Community Benefit Charges. Showing these costs separately as a line item on the customer bill satisfies a key recommendation of the Electric Utility Commission to improve the transparency of these costs.

The charge is proposed as a fixed recovery fee and will be collected on a \$ per kWh basis. Funds collected will support the direct operations and maintenance budgets for the Energy Efficiency Services and Green Building groups, as well as the CRIF budget as approved in the 2009

budget—in total, about \$28 million. An annual reconciliation process will determine any required fee changes, which will be requested through the City's annual budget process and on an as-needed basis.

Complementing the rate design initiatives, Austin Energy will emphasize education among customers and service providers, as well as wider deployment of energy management, consumption monitoring, and other "smart grid" capabilities. Austin Energy's role in the Pecan Street project initiatives is aimed squarely at gaining a useful understanding of this potential.

Auction Systems for Large Commercial Energy Efficiency Projects

As described above, Austin Energy has launched a study of energy efficiency potential in the Austin area. One innovative method for enhancing cost-effective energy efficiency is an auction based system that offers more opportunity to deliver greater energy savings for large electric use customers. Auction based systems are designed for commercial and industrial projects that do not fit cleanly within the standard prescriptive menu of rebates and incentive programs. Efficiency auctions are designed to fill this gap, allowing customers to participate in a competitive bid process where they can propose to save a specific amount of energy in exchange for a specific utility incentive. Customers can propose efficiency projects for existing or new facilities.

The auction based program encourages customers to take a performance-based systems approach to energy efficiency through improvements such as more accurate process controls, better integration of process equipment, better use of plant utilities, and greater use of energy recovery opportunities. Increasing the maximum investment per kW or kWh of savings for customer related improvements can also include increasing or eliminating the cap for Austin Energy investment so long as such investment is financially sound and not unduly risky. Efficiency auctions are designed to encourage vendors and customers to go beyond prescriptive upgrades and seek savings from a broader range of technologies.

Two electric utilities that have auction based efficiency programs are Mid American Energy in Iowa and San Diego Gas & Electric. Mid American issues requests for proposals twice a year. Eligible projects must produce electric energy savings of at least 200MWh; savings must be achieved through an increase in energy efficiency (behavior change initiatives and reduced plug loads are not eligible). Energy efficiency improvements must have a useful life of 10 years. A total of 57 Mid American customers were eligible to participate in the 2004-05 efficiency bid program.

San Diego Gas & Electric established their auction/bid program in 2004 and targets electric projects that will result in electricity savings of at least 500,000 kWh and natural gas savings of 25,000 therms annually. All commercial customers are required to benchmark their facility in order to participate in the program. Participants can aggregate projects/facilities. New construction projects, cogeneration, and fuel-switching projects are not eligible. Other auction-based energy efficiency big programs reviewed include:

- Missouri State Energy Office
- WPPI Energy – Wisconsin

- Xcel Energy – Minnesota

Once the research into how other utilities are conducting auction systems is complete, the next steps are to develop a framework from which Austin Energy auction based system could be established; to seek internal and external stakeholder input; and to develop a process for implementation including testing out the auction system.

Energy Conservation and Disclosure (ECAD) Ordinance

Energy Conservation Code 6-7 created by the ECAD Ordinance and in effect since June 2009, was enacted to increase energy efficiency in all building segments: single-family; multifamily; and commercial. The first two years focused on the single-family segment. Sellers of “older” (10+ years old) homes who have not improved the energy efficiency of the home in the last ten years were required to conduct an energy audit and disclose results to the potential buyer. The audit includes recommendations from the energy auditor for making cost effective retrofits (supported by rebates through Austin Energy’s Energy Efficiency Services) to the owner or future owner of the property. The ordinance required all “older” inefficient multi-family properties to conduct an energy audit and all “older” commercial properties to rate the energy usage in the building. Findings were to be submitted to Austin Energy by June 1, 2011. However, implementation of the law required an amendment before the June 1, 2011 deadline in order to clarify and improve compliance obligations. With these changes, the ECAD Ordinance has a better potential to positively impact the market for energy efficiency through simple disclosure.

The research conducted for the Energy Efficiency Upgrade Taskforce suggests that there is a significant potential for Austin to reduce peak demand through retrofitting existing buildings in the Austin area. The following table addresses the efficacy of the law or potential savings using EEU Taskforce Projections.

Table 4: Energy Efficiency Retrofits Attributable to ECAD Ordinance

Dates	Home Sales	*Exempt from Ordinance	**Not Exempt from Ordinance	Houses performing retrofits within 1 year prior to sale or within 1 year after sale	% of Total Home Sales
Jun 1st, 2009 to Sep 30th, 2009	4,383	1,729	2,654	247	5.60%
Oct 1st, 2009 to Sep 30th, 2010	9,584	3,492	6,092	566	5.90%
Oct 1st, 2010 to Sep 30th, 2011	6,634	1,887	4,747	373	5.60%
Total	20,601	7,108	13,493	1186	5.80%

Homes shown as “exempt” in the table above are due to building age and energy efficiency upgrades. It is difficult, if not impossible, to accurately account for title transfers due to other legal exemptions such as divorces, gifts, pre-foreclosures, probate, or foreclosure. Real-estate market indicators project that 5% of the sales are due to foreclosure. The table above only identifies what is quantifiable in our data. Prior projections of 12% upgrades included estimates

of participation of non-exempt home sales. In the same timeframe, Austin Energy received 8,871 energy audits. While some have sold, others have not, and may be taken off the market or not even been offered for sale.

Conclusion

Austin Energy has positioned itself well to complete construction of its second "Negawatt" conservation power plant representing 800 MW of avoided electricity demand by 2020. Success in meeting this goal means hundreds of millions of dollars in avoided power plant and fuel costs, significant environmental benefits in reduced emissions and other impacts, and more energy services and jobs in the local economy. Austin Energy will achieve its 2020 goal using many of the same strategies that have driven the nationally-recognized success already achieved: a wide and evolving portfolio of products and services; rigorous analysis and evaluation, and accountability to achieve clear performance objectives; systems thinking and approaches; an underlying localization strategy that maximizes local benefits and opportunities; and leverage of supplemental funds, both private and public.

Success, however, is not guaranteed. The firm foundation of a comprehensive assessment of technical, economic, and realizable potential for energy efficiency savings is necessary. Austin Energy must master the challenges and opportunities of a rapidly evolving technological and market landscape characterized by a smart grid, smart buildings, and smart personal transportation. Success will require increased and consistent resource support for personnel, incentive funds, technology deployment, contractors, marketing, training, and education. It will be vital that Austin Energy maintain and strengthen the flexible, integrated approach it has used successfully to date--connecting energy efficiency goals to fundamental business and financial goals, leveraging the power of well-designed rates for electric service, accounting for and leveraging the impacts and opportunities presented by codes and ordinances, and partnering with local and regional business communities.

Simply put, Austin Energy is committed and positioned to meet the goal of reducing projected electric energy demand by 800 MW by 2020. Success in this goal is core to Austin Energy's mission of providing clean, affordable, and reliable electric service and excellent customer service.