Tucson Electric Power Company Demand-Side Management Program Portfolio Plan 2008-2012

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Attachments:

1. Introduction

Tucson Electric Power Company ("TEP") is requesting approval of the portfolio of DSM programs presented in this Demand-Side Management ("DSM") Program Portfolio Plan for 2008 through 2012 ("DSM Portfolio"). This DSM Portfolio provides an overview of DSM programs that TEP proposes to implement to provide savings and net benefits for TEP customers.

2. DSM Portfolio Performance Costs, Savings and Net Benefits

TEP proposes to implement its DSM Portfolio, designed to reduce the use of energy by encouraging its customers to implement certain energy-efficiency products, services or practices, and help TEP manage peak loads through the implementation of a Direct Load Control ("DLC") Program. The proposed programs are designed to influence residential and non-residential customers to adopt energy efficiency measures through a combination of rebates, technical assistance and training, and consumer education.

Exhibit 1 below summarizes the proposed budget and expected energy and demand savings as a result of program activities from 2008-2012[1]. Exhibit 2 below summarizes program net benefits from 2008-2012 from the perspectives of the Total Resource Cost ("TRC") and the Societal Cost ("SC") tests. These tests are described in more detail below.

Exhibit 1
DSM Portfolio Budgets and Estimated Savings 2008-2012

Program Budget 2008-2012	Coincident Peak Demand Savings (MW)	Non-coincident Peak Demand Savings (MW)	Annual MWH Savings	Annual Therm Savings
$63,310,337	183.4	247.0	211,600	303,970

The total budget represents TEP's best estimate of spending, however, it is inevitable that some programs will achieve greater participation than others. DSM costs will be recovered through an adjuster mechanism approved by the Arizona Corporation Commission ("Commission") and actual spending will be trued-up after each full year. Therefore, TEP suggests that the proposed annual budgets should not represent a maximum annual spending limit and that flexibility is approved for TEP to adjust spending for programs achieving greater participation than expected. Budgets may need to be adjusted annually to maximize the effectiveness of the overall DSM Portfolio.

[1] Both the coincident and non-coincident demand savings include a 107.8 MW reduction attributable to the proposed Direct Load Control Program. Base load reductions attributable to DSM activities are estimated to be 139.1 MW non-coincident and 75.6 MW coincident peak.

Exhibit 2
DSM Portfolio Net Benefits 2008-2012

Total Resource Cost Test Portfolio Benefits	$150,351,771
Total Resource Cost Portfolio Costs	$81,404,485
Total Resource Cost Portfolio Net Benefits	$68,947,286
Societal Cost Test Portfolio Benefits	$184,213,285
Societal Cost Test Portfolio Costs	$81,404,485
Societal Cost Test Portfolio Net Benefits	$102,808,799
Total Resource Cost Test – Portfolio Level	1.85
Total Societal Cost Test – Portfolio Level	2.26

Total Net Benefits are equal to Total Societal Benefits minus Total Societal Costs. Total Societal Benefits are equal to the avoided costs of demand and energy savings over the life of the efficiency measures, and Total Societal Costs include all program costs, including the costs of program administration, measurement, evaluation and research[2].

The DSM adjustor mechanism will recover costs of development and implementation of a DSM customer information tracking system, capitalized over 5 years subsequent to implementation of the tracking system. TEP's current, high-level estimate for this tracking system is $1.5 million.

3. Description of Proposed Programs

The DSM Portfolio includes a range of programs designed to provide all TEP customer segments with opportunities to reduce demand, save energy and reduce energy costs. The programs are designed to provide options for improving the energy efficiency of residential existing homes, residential new construction projects, residential low-income homes, non-residential existing facilities, and non-residential new construction and renovation projects.

While this document provides cost and benefit information for a five-year program portfolio plan, it is important to note that this does not mean programs will be eliminated at the end of the first five years. Through regular monitoring and evaluation of each program, TEP will determine if programs are cost effective. Individual programs may be modified or eliminated at a date earlier than 5 years or they may continue for additional years until each individual program is no longer cost-effective.

This section includes a brief description of each proposed DSM program. Detailed program descriptions are provided in the Attachments hereto including information about (1) program concepts; (2) target markets; (3) baseline conditions; (4) customer eligibility; (5) program rationales; (6) program objectives; (7) products and services provided; (8) delivery strategy and administration; (9) marketing and communications; (10) implementation schedules; (11) monitoring and evaluation plans; (12) program costs; (13) estimated energy savings; and (14) program cost effectiveness. Exhibit 3 below lists the programs included in this DSM Portfolio:

[2] The total resource costs and societal costs include $1,500,000 in customer tracking database costs expected to be incurred in 2008.

Exhibit 3
Listing of Programs Included in the DSM Portfolio

Education and Outreach Program
Direct Load Control Program
Residential Efficiency Programs
Low-Income Weatherization
New Home Program
Residential HVAC Retrofit
Shade Tree Program
CFL Buydown
Non-Residential Efficiency Programs
Non-Residential Existing Facilities
Small Business Program
Efficient Commercial Building Design

3.1 Education and Outreach Program

The Education and Outreach Program includes initiatives specifically formulated for TEP's residential and non-residential customers.

Residential Education and Outreach

TEP currently provides on-line energy audit services to residential customers. The Energy Advisor ("EA") is a highly interactive, graphical home energy analysis application that is easy to use and understand. The EA can generate more that 140 energy savings recommendations or measures and is personalized for weather and electric utility rates based on the customer's zip code. A user can complete the audit with or without an electric bill history download. TEP's on-line energy tools are designed to help customers understand and manage their energy use and include a Detailed Home Energy Analysis and Energy Savings Calculators. TEP's residential Education and Outreach Program also includes an energy efficiency media campaign to educate customers on how to conserve energy, as well as energy education initiatives formulated for academic institutions. The campaign includes bill inserts, radio advertising, and home page icons on TEP's website. This DSM Portfolio proposes to continue the Program in its current configuration. TEP expects that this Program will serve as a conduit to the proposed CFL Buydown, Guarantee Home, Shade Tree and Residential HVAC Retrofit Programs. The Education and Outreach Program also includes education for residential customers on Time-of-Use ("TOU") rates.

Non-Residential Education and Outreach

This DSM Portfolio proposes to continue the EA Program in its current configuration as on-line audit services with the goal of educating TEP small commercial consumers on how to conserve energy and lower their utility bills. The Education and Outreach Program also includes education for non-residential customers on TOU rates and energy education initiatives formulated for academic institutions. TEP expects that this Program will serve as a conduit to the proposed Existing Facilities, Small Commercial and Efficient Commercial Building Design incentive Programs.

The changes to the Education and Outreach Program include an increase in funding levels to allow for greater promotion of energy efficiency to residential and small commercial customers through media, brochures, direct mailings and bill inserts. TEP is also proposing an increase in funding for Academic

education to allow for a greater number of in-class presentations and additional funding to educate consumers on how to conserve energy on TOU Rates

For a detailed description of the Education and Outreach Program, see Attachment 1.

3.2 Direct Load Control Program

This proposed program is to provide TEP with the capacity for direct load control of residential and small commercial central air conditioning equipment using communicating thermostat technology. The DLC Program may be delivered in-house or if necessary, through a third-party implementation contractor. A DLC implementation option being considered is through integration with an in-house Automatic Meter Reading / Advanced Meter Infrastructure ("AMR/AMI") program. TEP hopes to install DLC on 10,000 air conditioning units during the first year of implementation and ramp up participation to an estimated 100,000 units within 10 years. TEP's ultimate goal is to have up to 246 MW of load shedding capacity from the residential and small-mid size commercial component of the DLC system. For a detailed description of the DLC Program, see Attachment 2.

3.3 Residential Efficiency Programs

Proposed residential efficiency programs to be included in the DSM Portfolio are described below.

Low-Income Weatherization Program

This DSM Portfolio proposes an expansion and modification of the current Low-Income Weatherization ("LIW") Program. The Program will continue to provide qualifying residential low-income customers with funding assistance for the installation of measures that improve the energy-efficiency of their homes. However, the new Program will offer an expanded set of efficiency measures and services. TEP has not formally tracked program activities in the past but will develop a tracking system for the new Program to quantify measures installed, energy savings realized, and report on Program achievements.

Changes to the LIW Program include: (1) increased funding to participating agencies; (2) an expanded list of weatherization measures allowed in each home; (3) an increased spending limit on each home; (4) inclusion of compact fluorescent lighting ("CFL"), low-flow shower and faucet aerators and water heater insulation wraps to be installed in every low-income home that also qualifies for emergency repair or flood repair funding; and (5) an increase in the reporting functions so agencies must report each measure installed in the homes. The new program will allow TEP to calculate and verify energy and demand savings from the LIW program and report those savings in future years. However, this analysis does not include the positive and unquantifiable effects of leveraging federal and state funding for other improvements to the homes which further reduce energy consumption and improve occupant comfort and safety. For a detailed description of the LIW Program, see Attachment 3.

New Home Program

The Guarantee Home Program ("GHP"), also referred to as the Residential New Construction Program, requirements are designed to utilize the most recent building science research and promote a system approach to designing and constructing new homes. The GHP requires in-field performance testing of homes to assure that homes are performing to specification and provides both energy cost and comfort guarantees. To encourage participation, the GHP offers incentives for builders who meet program standards. The Program also offers training and technical assistance for builders and subcontractors about the benefits and features of energy efficient homes. This DSM Portfolio proposes to modify the GHP to include updated standards that account for changes in local energy codes, include updated energy and demand savings and high-efficiency equipment options. For a detailed description of the New Home/Residential New Construction Program, see Attachment 4.

Residential HVAC Retrofit Program
The Residential HVAC Retrofit Program promotes the installation of high-efficiency residential HVAC equipment by providing incentives to homeowners for equipment that meets minimum qualifying efficiency requirements. For a detailed description of the Residential HVAC Retrofit Program, see Attachment 5.

Shade Tree Program
The purpose of the Shade Tree Program is to promote energy conservation and environmental benefits associated with planting low-water usage trees and other vegetation. Desert-adapted trees have been provided to residential neighborhoods, low-income families, public areas, and schools by TEP. The trees at residential sites are located on the south, west and east sides of home in the TEP service area with the objective of providing summer shading, reducing cooling loads and reducing customer cooling energy costs on the TEP system. TEP has not formally tracked Program activities in the past but will develop a tracking system for the new Program. TEP will quantify measures installed, energy savings realized, and report on Program achievements. TEP is also proposing to increase funding to allow a greater number of trees to be planted in neighborhoods. For a detailed description of the Shade Tree Program, see Attachment 6.

Compact Fluorescent Lamp Buydown Program
TEP's original desire was to develop a program to promote high-efficiency EPA/DOE Energy Star® appliances and lighting products. However, advice from TEP's consultant that benefit-cost analysis completed by other utilities in the Southwest has shown that the incremental cost versus benefit from Energy Star® appliances does not provide a positive TRC. Rather than duplicating the cost and effort to conduct a separate analysis for the appliance section of this Program, TEP chose to limit the Program to lighting products that produce a positive TRC. This Program therefore promotes high-efficiency EPA/DOE Energy Star® approved lighting. The Program will negotiate discount pricing from CFL manufactures and retailers (up-stream buy-down), and provide for distribution of CFLs through local retailers. Customers will be referred to participating retailers to purchase qualifying products. Discount pricing will be passed on to consumers through a negotiated agreement with lighting manufactures and retailers. The Program provides sales training for participating retailers and consumer education, including in-store, point-of-sale displays. For a detailed description of the CFL Buydown Program, see Attachment 7.

3.4 Non-Residential Efficiency Programs

Proposed non-residential efficiency programs to be included in the DSM Portfolio are described below:

Non-Residential Existing Facilities Program
The Non-Residential Existing Facilities Program provides prescriptive incentives to owners and operators of non-residential facilities for energy-efficiency improvements in lighting, HVAC, motors, compressed air and refrigeration measures. The Program will provide custom incentives for implementation of energy-efficiency measures not covered by the prescriptive measures. The Program also provides technical assistance and education for facility owners and operators. For a detailed description of the Non-Residential Existing Facilities Program, see Attachment 8.

Efficient Commercial Building Design Program
The Efficient Commercial Building Design Program is a performance based program that includes design assistance for the design team, performance based incentives for the building owner/developer, and energy design information resources. Design assistance involves efforts to integrate energy-efficiency into a customer's design process to influence equipment/systems selection and specification as early in the design process as possible. Design assistance provides incentives to offset the additional design cost of

investigating alternative energy efficient designs. The performance based incentives for the building owner/developer are based on improved efficiency compared to a baseline design and are computed by comparing the features of the baseline design to those of the energy efficient alternatives using an hourly building energy simulation program, such as DOE-2. Building energy analysis and modeling will most likely be provided by a pre-qualified design professional with expertise in building energy simulation modeling. Energy design resources include design guides, technical resources, and modeling tools to facilitate the comparison of alternative designs. For a detailed description of the Efficient Commercial Building Design Program, see Attachment 9.

Small Business Program

DSM incentive programs have typically had limited success reaching small business participants. This market segment generally has limited access to investment capital, little or no knowledge of energy cost savings opportunities, and, in general, requires a simple payback of one year or less before they will participate. In order to successfully reach this market segment and encourage small businesses to participate, the Company proposes to offer a direct installation program for lighting, HVAC, and Refrigeration measures. The Program will be operated as an "up-stream" market program and offer incentives directly to installing contractors. Eligible customers are those who qualify for TEP's pricing plan, Rate 10 – Small General Service, (typically an aggregate monthly demand of 200 kW or less). The proposed Program will focus on reducing known barriers in this market and provide the incentives and delivery mechanisms to encourage participation in the Program. For a detailed description of the Small Business Program, see Attachment 10.

4. Budget

TEP is proposing to spend $63.3 million dollars on energy-efficiency DSM programs during program years 2008-2012[3]. The proposed division of funds between residential and non-residential customers is approximately commensurate with the relative contribution to the DSM funds from these customer classes.

The proposed budget maximizes the amount of program funds that go directly to customers through rebates and incentives, training and technical assistance, and consumer education. This DSM Portfolio also takes into account the realities of DSM program start-up costs and funds needed to adequately plan, develop, deliver, and evaluate quality programs. It typically takes two years or more to ramp up programs and achieve significant customer participation levels and program savings, and the DSM Portfolio accounts for program ramp-up costs over the 2008-2009 time period. Over the ramp up period through 2009, TEP expects that a total of 55% to 60% of the program costs (depending on the program) will benefit customers directly in the form of incentives, training or education. Once the program has reached maturity, TEP expects that a total of up to 65% to 70% of program costs will go directly to customers. The balance of budget expenditures will be applied to program administration. Program administration expenses include all non-incentive expenses, including TEP internal staff expenses, marketing and communications expenses, implementation contractor fees and expenses, measurement, evaluation and research, and other direct expenses attributable to the programs.

Incentive levels and other program elements will be reviewed and modified as needed during the first year from the approval date of this DSM Portfolio, and periodically thereafter. Such modifications will be reported in the mid-year and year-end reports submitted to Commission Staff.

[3] This does not include $1.5 million in customer tracking database development costs expected to be allocated to the TEP portfolio in 2008.

For the purposes of presenting the proposed budgets for this DSM Portfolio, the program budgets have been broken into the following categories:

- **Rebates and Incentives –** Funds that go toward customer rebates and incentives, and installation of measures (e.g., low-income weatherization measures).
- **Training & Technical Assistance –** Funds that are used for energy-efficiency training and technical assistance.
- **Consumer Education –** Funds that are used to support general consumer education about the benefits of energy-efficient improvements and load management options.
- **Program Implementation –** Program delivery costs associated with implementing the program, including implementation of contractor labor and overhead costs as well as other direct program delivery costs.
- **Program Marketing –** Includes all expenses related to marketing the program and increasing DSM consumer awareness and participation.
- **Planning & Administration –** Costs related to planning, developing and administering the programs, including management of program budgets, oversight of implementation contractors, program coordination and general overhead expenses.
- **Measurement, Evaluation, and Research –** Program expenses related to conducting measurement and evaluation of savings attributable to the program and program operational efficiency, as well as related research activities.
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Exhibit 4 below shows a summary roll-up of the anticipated budgets for each program by cost category for program years 2008-2012. Exhibit 5 presents the total annual budget for each program over the planning period from 2008-2012. Detailed annual budgets for each program year are included in the Attachments. These budgets represent TEP's best estimate of spending, however, it is inevitable that some programs will achieve greater participation than others. DSM costs will be recovered through an adjuster mechanism approved by the Commission and actual spending will be trued-up after each full year. Therefore, TEP suggests that the proposed annual budgets should not represent a maximum annual spending limit and that flexibility is approved for TEP to adjust spending for programs achieving greater participation than expected. Program budgets may need to be adjusted annually to maximize the effectiveness of the overall DSM Portfolio.

Exhibit 4

2008-2012 DSM Portfolio Budgets by Cost Category

Program	Total Administrative and O&M Cost Allocation	Total Marketing Allocation	Total Direct Implementation	Total EM&V Cost Allocation	Total Cost
Education and Outreach	$242,910	$98,670	$2,456,320	$57,100	$2,855,000
Direct Load Control	$1,033,616	$771,033	$16,669,007	$200,000	$18,673,657
Residential Efficiency Programs					
Low-Income Weatherization	$128,878	$0	$1,821,414	$32,447	$1,982,739
New Home Construction	$2,300,339	$2,130,590	$12,778,673	$552,795	$17,762,397
Residential HVAC Retrofit	$345,094	$318,548	$1,911,289	$79,637	$2,654,568
Shade Tree Program	$80,000	$0	$700,000	$20,000	$800,000
CFL Buydown Program	$297,312	$445,967	$2,824,460	$148,656	$3,716,395
Residential Subtotal	$3,151,622	$2,895,106	$20,035,837	$833,535	$26,916,100
Non-Residential Efficiency Programs					
Non-Residential Existing Facilities Program	$668,951	$445,967	$2,415,657	$185,820	$3,716,395
Small Business Program	$1,171,687	$634,169	$4,820,311	$275,710	$6,901,877
Efficient Commercial Building Design	$764,516	$339,785	$3,015,589	$127,419	$4,247,309
Non-Residential Subtotal	$2,605,154	$1,419,921	$10,251,557	$588,949	$14,865,580
Total	$7,033,303	$5,184,730	$49,412,721	$1,679,584	$63,310,337

Exhibit 5

2008-2012 DSM Portfolio Budgets by Year

Program	2008	2009	2010	2011	2012	Total Cost
Education and Outreach	$651,000	$551,000	$551,000	$551,000	$551,000	$2,855,000
Direct Load Control	$3,970,500	$3,337,190	$3,560,905	$3,787,625	$4,017,437	$18,673,657
Residential Efficiency Programs						
Low-Income Weatherization	$381,000	$388,620	$396,392	$404,320	$412,407	$1,982,739
New Home Construction	$3,200,000	$3,644,072	$3,663,824	$3,649,415	$3,605,086	$17,762,397
Residential HVAC Retrofit	$500,000	$515,000	$530,450	$546,364	$562,754	$2,654,568
Shade Tree Program	$160,000	$160,000	$160,000	$160,000	$160,000	$800,000
CFL Buydown Program	$700,000	$721,000	$742,630	$764,909	$787,856	$3,716,395
Residential Subtotal	$4,941,000	$5,428,692	$5,493,297	$5,525,007	$5,528,103	$26,916,100
Non-Residential Efficiency Programs						
Non-Residential Existing Facilities Program	$700,000	$721,000	$742,630	$764,909	$787,856	$3,716,395
Small Business Program	$1,300,000	$1,339,000	$1,379,170	$1,420,545	$1,463,161	$6,901,877
Existing Facilities Program	$800,000	$824,000	$848,720	$874,182	$900,407	$4,247,309
Non-Residential Subtotal	$2,800,000	$2,884,000	$2,970,520	$3,059,636	$3,151,425	$14,865,580
Total	$12,362,500	$12,200,882	$12,575,722	$12,923,268	$13,247,965	$63,310,337

5. Program Energy Savings and Benefits

TEP has estimated the energy savings, costs, net benefits, and environmental benefits associated with each of the programs included in the proposed DSM Portfolio. The following sections describe the energy savings, cost-effectiveness, and environmental benefits that are expected to accrue from the programs.

5.1 Portfolio Energy Savings, Costs and Net Benefits

In preparing this DSM Portfolio, TEP examined a wide range of energy efficiency and load management measures that are applicable to all major energy end uses and provide a broad set of energy savings opportunities in all of TEP's customer sectors. The analysis included a detailed demand and energy savings and a cost effectiveness analysis of each measure, as well as each program as a whole. In order to complete the analysis, TEP assembled data on baseline and energy efficient performance of each measure technology as well as a range of other technical and financial data including:

- TEP avoided cost data;
- Discount rates;
- Effective Useful Lifetimes ("EUL") for each measure;
- Incremental and installed measure costs for each measure; and
- Projected participation rates for each program over the projected program life presented in this DSM Portfolio.

For the analysis of net program benefits, TEP has used avoided cost savings that will result from the expected energy savings and peak demand reductions generated by each DSM program in the proposed DSM Portfolio for measures implemented from 2008-2012. Levelized avoided cost data for a 20-year planning horizon was developed for use in the cost effectiveness analysis. TEP has evaluated the cost effectiveness of each measure and each program as a whole using the Ratepayer Impact Measure ("RIM") test, the TRC test, and the SC test. The SC test is a variant of the TRC test and differs from the TRC test by including the valuation of environmental benefits, non-energy benefits, and other societal benefits in the analysis. The SC test also uses a societal discount rate whereas the TRC uses a market discount rate. For the analysis of the portfolio of programs, TEP quantified the expected environmental benefits resulting from measures installed through the program, although they were not monetized for the purposes of cost-effectiveness testing. A societal discount rate of 5% was used in the computations of the SC test.

Exhibit 6 provides estimates of the expected lifetime energy savings and peak demand savings for each proposed DSM program and a summary of the net benefits. The lifetime energy savings are the estimated savings that will result over the expected lifetime of all program measures.

In addition to the estimated savings and benefits shown in Exhibit 6, the DSM Portfolio is anticipated to produce other societal benefits. Exhibit 7 shows an estimate of the water savings and air emission reductions that are expected as a result of the implementation of the measures promoted by the programs. Significant additional benefits which are expected to accrue to TEP customers include increased levels of service, non-energy benefits such as increased comfort, and support for low-income households.

Exhibit 6
Electric Savings and Benefits
2008-2012 Programs

Program	Non-Coincident Capacity Savings (MW)	Coincident Capacity Savings (MW)	Energy Savings (MWh)	Program Budget ($000)	Societal Benefits ($000)	Societal Costs ($000)	Net Benefits ($000)
Education and Outreach	0.0	0.0	0	$2,855	$0	$0	$0
Direct Load Control	134.8	134.8	4,362	$18,674	$28,448	$18,674	$9,775
Residential Efficiency Programs							
Low Income Weatherization	0.3	0.1	1,026	$1,983	$1,321	$1,983	-$661
New Home Construction	28.4	21.9	42,859	$17,762	$71,207	$27,092	$44,115
Residential HVAC Retrofit	1.8	1.8	5,254	$2,655	$5,367	$3,192	$2,176
Shade Tree Program	0.0	0.0	1,237	$800	$2,997	$997	$2,001
CFL Buydown Program	60.9	6.1	52,013	$3,716	$15,238	$6,546	$8,692
Residential Subtotal	91.5	29.8	102,390	$26,916	$96,130	$39,808	$56,322
Non-Residential Efficiency Programs							
Non-Residential Existing Facilities Program	10.1	8.8	53,019	$3,716	$25,023	$6,699	$18,325
Small Business Program	7.2	6.5	35,746	$6,902	$20,229	$7,719	$12,510
Efficient Commercial Building Design	3.5	3.5	16,083	$4,247	$14,382	$7,005	$7,377
Non-Residential Subtotal	20.7	18.8	104,848	$14,866	$59,634	$21,422	$38,212
Total	247.0	183.4	211,600	$63,310	$184,213	$79,904	$104,309

In addition to the electric savings and benefits, additional energy savings resulting from programs in the program portfolio include 303,970 therms of natural gas. The Residential New Home Construction Program reduces gas energy consumption by 241,506 therms and the LIW Program reduces gas energy consumption by 62,465 therms from 2009 through 2012.

Exhibit 7
DSM Benefit Cost Test
2008-2012 Programs

Program	Total Resource Cost Test	Societal Cost Test	Rate Payer Impact Measure Test
Education and Outreach	NA	NA	NA
Direct Load Control	1.33	1.51	1.15
Residential Efficiency Programs			
Low-Income Weatherization	0.55	0.67	0.41
New Home Construction	2.04	2.63	1.57
Residential HVAC Retrofit	1.35	1.68	0.62
Shade Tree Program	2.28	3.01	0.98
CFL Buydown Program	2.05	2.33	0.48
Non-Residential Efficiency Programs			
Existing Facilities Program	3.04	3.74	0.90
Small Business Program	2.11	2.62	0.54
Efficient Commercial Building Design	1.62	2.05	1.08

5.2 Environmental Benefits

In preparing this DSM Portfolio, TEP has estimated the environmental benefits expected to result from measures installed as a result of the portfolio of DSM programs. Based on the direction of Commission Staff, TEP is reporting environmental benefits in this DSM Portfolio but has not monetized the benefits for the purposes of cost effectiveness analysis of measures and programs. The environmental reductions are based on the kWh savings of all program measures over their expected useful lifetimes. For all measures that result in customer water savings, the calculation includes both customer and utility water savings.

The factors that are used to calculate the DSM Environmental Benefits are shown in Exhibit 8. In calculating these factors, TEP has identified the generation mix that is most likely to be displaced by the measures included in the DSM Portfolio.

Exhibit 8
Environmental Benefits Factors

Environmental Factor	Value	Units
SOx	2.39	lbs/MWh
NOx	3.97	lbs/MWh
CO2	2,088	lbs/MWh
Water	500	gals/MWh (utility water savings only)

Exhibit 9 shows the estimated water consumption and air emissions savings that will result over the expected lifetime of all measures installed as a result of the proposed DSM Portfolio.

Exhibit 9
DSM Estimated Environmental Benefits
2008-2012 Programs

Program	Water Savings (Million Gallons)	Sox (Lbs)	Nox (Lbs)	CO2 (Million Lbs)
Education and Outreach	0.0	0	0	0.0
Direct Load Control	2.2	10,425	17,316	9.1
Residential Efficiency Programs				
Low-Income Weatherization	0.5	2,453	4,074	2.1
New Home Construction	21.4	102,434	170,151	89.5
Residential HVAC Retrofit	2.6	12,558	20,860	11.0
Shade Tree Program	0.6	2,956	4,910	2.6
CFL Buydown Program	26.0	124,311	206,492	108.6
Residential Subtotal	51.2	244,712	406,487	213.8
Non-Residential Efficiency Programs				
Non-Residential Existing Facilities Program	26.5	126,715	210,485	110.7
Small Business Program	17.9	85,433	141,912	74.6
Efficient Commercial Building Design	8.0	38,439	63,850	33.6
Non-Residential Subtotal	52.4	250,587	416,247	218.9
Total	105.8	505,723	840,051	441.8

For all measures that result in customer water savings, the calculation of water savings shown in Exhibit 9 includes both customer and utility water savings.

6. Program Marketing and Delivery

This section of the DSM Portfolio presents TEP's proposed marketing and communications strategy, and implementation/delivery plan.

6.1 Program Marketing and Communications

This DSM Portfolio includes targeted marketing and communication of program offerings and benefits to encourage participation among customers, key market players and trade allies. The objective of the marketing and communications strategy is to make customers and key market actors aware of the program offerings and benefits, and to influence their decision-making at the time of purchasing or installing energy systems or equipment in favor of choosing more energy efficient options.

The specifics of the marketing strategy depend on the program, but generally include a mix of internet, print media, radio, direct contact, direct mailings, bill inserts and presentations depending on the market to be reached. The program descriptions in the Attachments describe the proposed marketing approach for each program.

6.2 Program Delivery and Implementation

TEP proposes that programs be implemented using a mix of both in-house and outsourced recourses. This enables TEP to take advantage of outsourced experts who have implemented similar programs in other areas,

while also using in-house resources where appropriate. For all programs, TEP will retain responsibility for program administration, measurement and evaluation, and reporting activities. TEP intends to issue Requests for Proposals ("RFP") to qualified firms for all significant activities that will be outsourced.

Exhibit 10 provides a timeline that shows key dates and program implementation activities. For a detailed description of the proposed implementation schedule and plans for in-house versus outsourced implementation models for each individual program, see the program descriptions included in the Attachments.

Exhibit 10
Program Development and Implementation Timeline
2008-2012

Tasks	2007				2008				2009			
	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4
Program Planning & Development												
Submit Portfolio Plan												
ACC Review & Approval												
Issue Contractor RFP's												
Program Marketing & Communication Planning												
Ongoing Education Programs Implementation												
Ongoing New Home Program Implementation												
Ongoing Shade Tree Program Implementation												
Ongoing LIW Implementation												
CFL Buydown Program Kick-Off												
Select DLC vendor (equipment)												
Select IC and MER Contractors												
DLC Full-scale Launch and Implementation												
NR Existing Facilities Program Launch and Implementation												
Efficient Commercial Building Launch and Implementation												
Small Commercial Program Launch and Implementation												
Program Impact and Process Evaluation												
Submit Updated Portfolio Plan (Biennial Submittal)												

7. Program Measurement, Evaluation and Research

Measurement, evaluation and research ("MER") is an integral component of the proposed DSM Portfolio. TEP will select a MER contractor at the same time it selects outsourced implementation services. TEP will adopt an integrated evaluation strategy for MER activities. This strategy saves program costs and produces better results by collecting data directly at the time measures are installed. Integrating data

collection into program delivery also requires that any implementation contractors engaged by TEP work with the MER contractor, to provide the data necessary to support evaluation activities. MER activities are expected to include:

- Verification that energy-efficiency measures are installed as expected;
- In-field measure performance measurement and data collection;
- Impact analysis to compute the savings that are being achieved;
- Cost-effectiveness analysis;
- Process evaluation to indicate how well programs are working to achieve objectives; and
- Research activities to identify additional opportunities for cost-effective energy-efficiency measures.

In general, the approach for MER will be to integrate data collection and tracking activities directly into the program implementation process. TEP intends to use an independent third-party evaluation contractor to conduct evaluations. Prior to program implementation, TEP will issue an RFP to retain an evaluation contractor. The evaluation contractor will then work directly with TEP and any implementation contractors to ensure that program design and implementation activities will collect the necessary data for MER.

TEP anticipates that evaluation activities will be ongoing during each year of program delivery, providing feedback on program performance and providing information to guide program course correction. TEP also expects that an impact and process evaluation report will be prepared at the end of each program year from 2008 through 2012.

For more information about the MER plan for each proposed DSM program, see the program descriptions in the Attachments.