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Before the Public Service Commission
Of the State of Missouri

Direct Testimony

of

Sherrill L. McCormack

October 2009

EMPIRE
SERVICES YOU COUNT ON

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OF
SHERRILL L. MCCORMACK
ON BEHALF OF
THE EMPIRE DISTRICT ELECTRIC COMPANY
BEFORE THE
MISSOURI PUBLIC SERVICE COMMISSION

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DIRECT TESTIMONY
OF
SHERRILL L. MCCORMACK
THE EMPIRE DISTRICT ELECTRIC COMPANY
BEFORE THE
MISSOURI PUBLIC SERVICE COMMISSION
CASE NO.

INTRODUCTION

Q. PLEASE STATE YOUR NAME AND ADDRESS.

A. My name is Sherrill L. McCormack, and my business address is 602 S. Joplin Avenue, Joplin, Missouri 64801.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am currently employed by The Empire District Electric Company ("Company" or "Empire") as the Energy Efficiency Coordinator.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL EXPERIENCE.

A. I hold a Bachelor of Science degree in Business Administration with a major in finance from Mississippi State University. I also earned a Masters Degree in Business Administration from Pittsburg State University. Prior to joining Empire, I held various positions in banking and investments from 1978 to 1989 in Mississippi and Texas, followed by two years as an adjunct business instructor at Labette County Community College in Kansas and nine years as a business instructor with Crowder College in Missouri. In August 2001, I was employed by Empire as a Planning Analyst. I worked with long-range financial forecasting and generation planning until November 2005. With the renewed interest in energy efficiency programs, my primary responsibilities have shifted to coordinating the implementation of

demand side management and energy efficiency programs that have been authorized by the various regulatory commissions that regulate Empire's electric operations. In 2008 I became the Energy Efficiency Coordinator. I also participate in Empire's integrated resource planning.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION?

A. Yes. I have testified in previous Empire rate cases on Demand Side Management programs and on Empire's Experimental Low Income Program.

Q. WHAT IS THE PURPOSE OF THIS TESTIMONY?

A. I will describe Empire's Demand Side Management ("DSM") portfolio consisting of both energy efficiency programs and a demand response program, and the associated rate base and expense adjustments. I will also discuss the Company's Experimental Low Income Program ("ELIP") and the removal of the Residential Conservation Service Rider ("RCS").

DSM

Q. PLEASE DESCRIBE EMPIRE'S MOST RECENT HISTORY OF DSM PROGRAMS.

A. As part of Empire's Experimental Regulatory Plan (Case No. EO-2005-0263), a collaborative, the Customer Programs Collaborative ("CPC"), consisting of representatives from Empire, Staff, the Office of Public Counsel, Department of Natural Resources Energy Center, and industrial intervener Praxair, was formed. This group selected a consultant through an RFP to develop a portfolio of DSM programs and to assist in their implementation. The portfolio consisted of a set of programs for residential, commercial, and industrial customers. Budgets for each program were included as were program descriptions, high-level evaluation plans, and benefit cost tests results.

Q. WERE ALL CUSTOMER CLASSES INCLUDED IN THE PORTFOLIO?

A. No. The large power ("LP") customers were excluded as part of the Experimental Regulatory Plan agreements. The Stipulation and Agreement, in Case No. EO-2005-0263 with an effective date of August 12, 2005, stated that LP customers would not pay for the cost of programs and would not participate in programs whose Ratepayer Impact Measure ("RIM") Test results were less than 1.05. None of Empire's programs in the 2006 portfolio passed the RIM test for the LP customers.

Q. PLEASE DESCRIBE THE PROGRAMS IN EMPIRE'S 2006 DSM PORTFOLIO.

A. Empire's 2006 portfolio consisted of six residential programs and two programs for commercial and industrial ("C&I") customers. A third C&I program was a peak load program that was funded at a zero level because Empire had excess generation at the time of portfolio development and approval.

Q. PLEASE DETAIL EMPIRE'S RESIDENTIAL PROGRAMS.

A. Empire has two programs designated for low-income customers. The first is a weatherization program to supplement the federal low-income weatherization program. The second program, Low-Income New Homes, provides rebates to non-for-profit organizations and local government housing authorities for increased levels of insulation, 14 SEER or higher HVAC, upgrades to ENERGY STAR® refrigerators, and installation of ENERGY STAR lighting fixtures in homes for low-income customers. Additional residential programs include a compact fluorescent lamp ("CFL") program, a high-efficiency central air conditioner program, and two ENERGY STAR programs—one for new homes and one for existing homes.

Q. PLEASE DESCRIBE THE CFL PROGRAM AND THE CENTRAL AIR CONDITIONER PROGRAM.

A. In prior years, the CFL program has been a coupon-based rebate program administered by Midwest Energy Efficiency Alliance ("MEEA"), through the "Change a Light, Change the World" campaign. However, in 2009 MEEA discontinued this approach. Empire and the CPC are considering a door-to-door distribution program, which would include a CFL and information on other Empire energy efficiency programs to be left on doors in an area of the service territory not covered in the earlier program. Additional approaches and technologies will be considered for future years.

The High Efficiency Central Air Conditioner ("CAC") program is in it is third program year and is also undergoing process and impact evaluations. As authorized by the Commission, this program pays participating Missouri electric customers a cash incentive for replacing existing central air conditioner systems or heat pumps with a new system having a minimum SEER of 15. The customer incentive payments vary with the SEER of the new unit. More specifically, units installed with a 15 SEER are entitled to an incentive of $400; units with a SEER of 16 are entitled to $450; and units with a SEER of 17 or higher are entitled to $500. The incentives are also available for new installations.

Empire has also provided additional training to participating outside HVAC contractors in the areas of load calculation (Manual J) and duct design (Manual D). To date, Empire has provided three Manual J training classes to seventy-one contractors. One session was held in partnership with City Utilities of Springfield. Two Manual D training sessions have been held for thirty contractors. Additional training sessions on each area will be held this fall. Manual J will be delivered first on October 16 in Republic, Missouri. Empire's current approved list of installers includes ninety-one contractors.

Q. PLEASE DESCRIBE EMPIRE'S TWO ENERGY STAR PROGRAMS.

A. In April 2009 the ENERGY STAR Homes program became effective. This program requires Residential Energy Services Network ("RESNET") certified energy raters, of which there were very few in Southwest Missouri. Therefore, Empire partnered with the Crowder College Missouri Alternative and Renewable Energy Technology ("MARET") Center to provide the required training and assist in certifying auditors. To date this partnership has resulted in the training of three auditors who are currently working on field certification. The Home Energy Rating Services ("HERS") auditors are required to audit the homes during construction looking for building techniques that will minimize air infiltration and again after construction is complete to confirm the home is constructed in such a way that it is 15-20% more energy efficient than an average new home. Empire will reimburse the HERS auditor up to $400 per home. Once the home receives the ENERGY STAR designation, Empire rebates the builder $800 to assist in offsetting the additional costs of the enhanced construction techniques.

The Home Performance with ENERGY STAR ("HPwES") program became effective August 28, 2009. This program requires a whole-house audit for existing homes by a Building Performance Institute ("BPI") certified auditor. The partnership with the MARET Center at Crowder College has been expanded to include training and certification for these auditors. Once the audit is performed, the homeowner receives an audit report detailing the measures to improve the energy efficiency of the home. Empire is partnering with Missouri Gas Energy ("MGE") on this program, and the utilities will rebate building shell, air infiltration, and duct leakage measures. Homeowners are permitted to take advantage of other energy efficiency programs offered by Empire, such as the CAC program. The rebate provided by Empire for HPwES is $400 to assist in offsetting the cost of the audit and installed measures.

Q. PLEASE DESCRIBE THE TWO PROGRAMS EMPIRE HAS IN PLACE FOR COMMERCIAL AND INDUSTRIAL CUSTOMERS AND HOW THEY OPERATE.

A. The older of the two programs is the Commercial and Industrial Facility Rebate ("C&I Rebate") program, which became effective in May 2007. This program consists of three parts. First, the companies may choose to have a facility energy audit performed by a third party energy auditor. If at least one of the recommended measures is implemented, the customer may apply for an audit rebate of up to $300 for facilities less than 25,000 square feet or up to $500 for facilities greater than 25,000 square feet.

The second component of the program consists of a prescriptive rebate program for small commercial customers. These are customers on the CB or SH rate schedules, and the applications covered under the program are specific retrofits or new installations of lighting, motors, or HVAC units.

The third component applies to all C&I customers, except those customers on the LP rate schedule. In this component of the program, the applications must meet two requirements for approval. The measures must pass the Societal Test, a benefit cost test[1] containing environmental externalities, at 1.05 or greater and must have a payback of more than two years. Applications are to be approved in advance, and customers may receive a combined total of up to $20,000 per program year

The second program for commercial and industrial customers is the Building Operator Certification ("BOC") program that was implemented in February 2008. This program is administered in Missouri by the Missouri Energy Center in partnership with MEEA. Empire is in the final stages of the second Level I series and has a third Level I series class scheduled to begin in January 2010. This program provides training to facility managers in ways to

[1]. Additional information on the five benefit cost tests may be found on page 37 of Schedule SLM-1.

improve the energy efficiency of their equipment and processes. Upon successful completion of a series of classes and assignments, the participants receive the certification. Empire provides rebates of $575 to those participants who are Empire customers that complete the certification process.

Q. HAVE ANY PROGRAMS BEEN ADDED TO EMPIRE'S DSM PORTFOLIO SINCE THE APPROVAL OF THE ORIGINAL PORTFOLIO?

A. Yes. The CPC agreed that Empire should add the Apogee HomeEnergy Suite and the Commercial Energy Suite to its web site. These suites are energy calculators and libraries which provide education to the residential and commercial customers. Also included are an interactive home to show key areas for energy efficiency improvements and a Kids Page which includes teacher lesson plans. Empire has been promoting the calculators and Kids Page to area schools.

An additional program for the commercial and industrial customers which was approved by the CPC and by the Commission was the Interruptible Service Rider. This program became effective in February 2009.

Q. PLEASE DESCRIBE THE INTERRUPTIBLE SERVICE RIDER DEMAND RESPONSE PROGRAM.

A. The program is strictly voluntary and enables Empire to call on a participating customer for specified reduction in electric usage when the need arises. The options available to the participating customer under the tariff include contract terms of one year, three years, or five years. The rate that Empire pays the customer for service interruption varies according to the length of the contract. Under the terms of the approved tariff, the number of curtailments are limited to ten (10) per year with a maximum interruption of eight hours per curtailment

event. In addition to the monthly bill credits, participating customers will receive additional compensation equal to $0.30 per kW of interruptible demand for each hour of actual curtailment during a curtailment year. Unlike the other commercial and industrial DSM programs, this program passed the RIM test and is available to customers on the LP rate schedule.

Q. WHAT HAVE EMPIRE'S ANNUAL EXPENDITURES ON DSM BEEN SINCE 2005?

A. Empire's annual expenditures for DSM have been as follow:

Description	2005	2006	2007	2008	YTD June 2009
Total	$10,903	$115,098	$294,757	$315,526	$350,365

Q. WHAT ARE THE DSM EXPENDITURES FOR THE TEST YEAR ENDED JUNE 30, 2009?

A. The total DSM expenditures for the test year were $665,893. The breakout by program is displayed in the following table:

Description	Amount
Change A Light	$27,559
Weatherization	$212,366
Low-Income New Homes	$734
Central Air Conditioning	$93,198
ENERGY STAR Homes	$10,263
Building Operator Certification	$14,703
Commercial & Industrial Rebates	$254,485
Interruptible Program	$1,012
Administrative & General and Educational (Apogee)	$37,470
Program(s) Evaluation	$14,103
Total	$665,893

Q. HAVE ANY OF THE DSM PROGRAMS BEEN EVALUATED?

A. Yes. Two program evaluations have been completed: Change a Light and Low Income Weatherization. An impact evaluation is provided annually by Wisconsin Energy

Conservation Corporation ("WECC") for the Change a Light program. The estimated annual reduction in energy usage is around 51 kilowatt-hours per bulb. Based on the bulbs purchased by Empire's customers each year since 2005, the estimated cumulative annual energy savings in Empire's Missouri service territory are:

Year	Bulbs	Kwh
2005	4,292	219,321
2006	14,153	723,218
2007	25,107	1,282,966
2008	34,967	1,786,812

The Low-Income Weatherization program was evaluated in 2009 by an outside contractor selected by the CPC. Because the program used by Empire follows the Department of Energy's Low-Income Weatherization Assistance Program, Empire only performed an impact evaluation on this program. The results of this evaluation found the average savings per weatherized home is 2,052 kWhs annually. Based upon the number of low income homes weatherized by the program in Empire's Missouri territory, the following estimated annual cumulative energy savings have occurred.

Year	Number of Participants	Estimated Kwh Savings
2005	21	43,092
2006	133	272,916
2007	277	568,404
2008	415	851,580
YTD 2009 (June)	487	999,324

Currently, the High Efficiency Central Air Conditioner Program and the Commercial & Industrial Rebate Program are undergoing both process and impact evaluations. The results of these studies are expected in November 2009.

Q. WHAT IS THE 2010 MISSOURI DSM BUDGET?

A. Based on the existing portfolio, the budget for 2010 is $1,428,729; excluding Apogee and the Interruptible Rider, the budget is $1,372,360. Of course, the ultimate cost of the DSM program will depend upon the number of Empire customers taking advantage of the programs that Empire is offering. For example, new home construction in Empire's service territory is very slow, and the reduction in construction activity directly reduces the number of potential participants in several of our programs.

Q. ARE THERE ANY PROPOSED CHANGES TO THE 2010 DSM PORTFOLIO OF PROGRAMS?

A. No, the overall program portfolio will remain the same in 2010, but we are proposing some modifications to the existing programs for future years.

Q. IS EMPIRE PROPOSING ANY CHANGES TO THE DSM PROGRAM BEYOND 2010 IN THIS RATE CASE?

A. Yes. Empire is proposing three changes. First, because MEEA is no longer administering the Change a Light CFL program, Empire has included estimated expenditures for a new CFL program. The details of this program are still under development at the time of this testimony. Second, Empire is proposing the addition of an air conditioner tune-up rebate as an additional component of the ongoing CAC program. A rebate of $50 for a 12-point inspection and tune-up of the CAC system or heat pump is being proposed. Third, Empire is requesting that Large Power ("LP") customers be allowed to participate in the C&I Rebate Program and the BOC Program. Several of our LP customers have requested to participate in these programs, but Empire's current tariff does not allow the LP customers to participate. The complete DSM portfolio with program descriptions, budgets, and benefit cost test results being proposed by Empire is attached to this testimony as Schedule SLM-1.

Q. DOES EMPIRE HAVE OTHER SUGGESTED DSM CHANGES?

A. Yes. Empire has two proposals. Our first proposal deals with a proposed reduction in the amortization period for deferred DSM costs from 10 years to 5 years. This shorter amortization period of 5-years would make Missouri DSM cost recovery more like our other states. Both Arkansas and Oklahoma allow utilities to recover costs through a rider based on DSM program budgets. These states, unlike Missouri's DSM amortization period of 10-years, allow concurrent recovery of DSM costs. Many of the DSM costs incurred are for the administration and delivery of these programs and are ongoing costs which should be recovered at the time of program delivery.

Our second request deals with a change in the status of the CPC to an advisory group rather than a group which has explicit voting rights. This would place Empire's collaborative group on a level consistent with the collaborative process employed at Kansas City Power & Light. Empire has gained experience in DSM programs over the last four years and has demonstrated a positive working relationship with all parties of the CPC. It is Empire's intention to continue in the same positive relationship, advising parties of ideas and asking for input to improve the process and programs. Empire does not believe it is necessary or efficient to retain the voting aspect of the current collaborative arrangement.

ELIP

Q. PLEASE UPDATE THE COMMISSION ON EMPIRE'S EXPERIMENTAL LOW INCOME PROGRAM.

A. In Case No. ER-2008-0093, the customer and shareholder funding of the ELIP was discontinued. The accumulated customer funding was refunded to customers along with interest. The accumulated stockholder funding has and will be used to pay for the program

through the end of this rate case. These funds are also being used to pay for an evaluation of the program. This evaluation is currently underway and should be completed by January 2010. Empire will make a recommendation, including any necessary adjustments for this program, following a review of the evaluation results.

ADJUSTMENTS

Q. WHAT ARE EMPIRE'S DSM ADJUSTMENTS?

A. Empire's DSM rate base adjustment for the test year through June 30, 2009, is $817,838, as shown in Schedule SLM-2. The Total Estimated DSM Expenditures for 2009 has been calculated by adding the actual DSM expenditures for the first six months of 2009 and estimated expenditures for the last six months of calendar year 2009. This 2009 total DSM expenditure becomes the basis of the Estimated 2009 Vintage DSM Amortization. The DSM Amortization from 2006-2009 are totaled, providing the Total DSM Amortization through December 31, 2009. The Estimated Net DSM Asset Balance at December 31, 2009, of $1,448,335 has been calculated by subtracting the Estimated Accumulated DSM Amortization at December 31, 2009, from the Total DSM Expenditures through the same date. The DSM Expenditure balance at June 30, 2009, is subtracted from the estimated DSM Expenditure balance at December 31, 2009, to reach the adjustment to rate base of $817,838. The DSM expense adjustment has been calculated by annualizing the DSM amortization for each vintage year and subtracting the test year amortization. The DSM expense adjustment is $185,292 as shown in Schedule SLM-3.

RESIDENTIAL CONSERVATION SERVICE RIDER

Q. WHAT IS THE RESIDENTIAL CONSERVATION SERVICE (RCS) RIDER?

A. The original program became effective September 17, 1984, and was created to perform home energy audits for owners or occupants of residential buildings.

Q. IS EMPIRE PROPOSING ANY CHANGES TO THIS TARIFF?

A. Empire is requesting that this tariff, Sheet No. 7 of Section 4, be eliminated.

Q. WHY?

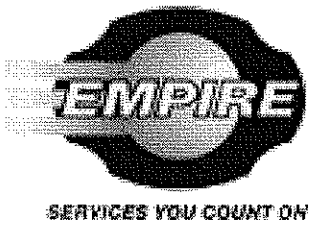
A. Over the course of time, the demand for this program declined to the point that there was no longer any demand for the program. As the personnel in charge of the program retired or changed positions, the positions were changed to match needed skill sets. No funds have been collected from ratepayers to fund this program since July 1, 1989, and Empire has implemented several DSM programs that offset the need for this program.

Q. WILL EMPIRE'S CUSTOMERS HAVE ACCESS TO THE AUDIT SERVICE ENVISIONED IN THE RCS IF THE TARIFF IS ELIMINATED?

A. Yes. There are several certified auditors, HERS or BPI, in the area and others are in the midst of training and the certification process. Empire has partnered with the Crowder College MARET Center to provide auditor training and certification in Southwest Missouri. One class was conducted during the spring semester of 2009, and another class began in September 2009.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.



The Empire District Electric Company

Missouri DSM Program Portfolio For 2011-2015

Submitted
October 2009

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OVERVIEW

PROGRAM DESCRIPTION

This document contains descriptions of a series of demand side management (DSM) programs that reflect the following:

- Best Practices – DSM program designs continue to follow current industry best practices.
- Coverage – The programs provide services to all classes of customers at all income levels.
- Goals – Participation goals are challenging, based upon Empire's service territory and the current economy. However, with the attention being placed on energy efficiency today, we believe it is an opportune time to continue to support DSM.
- Budgets – Budgets include sufficient funds to properly manage, administer and market the programs.
- Cost Effectiveness – Each program has undergone benefit/cost screening consistent with the California Standard Practice Manual. Five different perspectives[1] have been analyzed (Total Resource Cost, Societal, Participant, Ratepayer Impact Measure (RIM) and Utility Cost).

ENHANCEMENTS FROM PREVIOUS PROGRAM FILINGS

This portfolio includes enhancements from the previously approved portfolio of programs. Specifically, we have added:

- Increase in eligibility guidelines for Low Income Weatherization to be synchronized with Federal funding eligibility guidelines
- Central Air Conditioning and Heat Pump tune-ups
- Electronic Programmable Setback Thermostats when purchased with a Central cooling system and installed by the HVAC contractor
- A more robust Building Operator Certification support program
- Inclusion of the Large Power customer in the eligibility criteria for the C/I Custom Rebate program and the BOC program.

BENEFIT COST SOFTWARE

The software used to perform the benefit/cost screening has been adapted from

[1] Appendix A contains a description of each of these tests.

Minnesota Office of Energy Security (formerly Department of Commerce) "BenCost" software and is consistent with the California Standard Practice Manual. The input data required for the model includes the following:

- General Inputs – Applied to all energy conservation measures/programs, these data describe the utility avoided costs, economic evaluation conditions [e.g., discount rates], and customer rates. Each of the specific inputs is identified below with a description and their source.

    - Retail Rate – the average cost of energy saved [$/kWh] by the customer, including demand and energy charges. The customer may be defined as residential or commercial/industrial if different rate structures exist. This rate is used to calculate the value of a particular measure/program from the customer's perspective and can be used to calculate simple payback.

    - Commodity Cost – the utility's avoided cost of energy [$/kWh]. This represents the amount of money that would be saved by avoiding the generation, transmission, and distribution of one less unit of energy.

    - Demand Cost – avoided capacity charge for electric demand [$/kW]. The utility cost savings achieved by avoiding the delivery of one less unit of demand [kW]. This may represent avoided generation and/or purchased power depending on the specific utility generation assets and planned delivery of power.

    - Variable O&M – the estimated utility cost savings achieved in operations and maintenance by the avoidance in demand or energy, expressed as savings per unit of energy saved [$/kWh]. This value may also be included in the Commodity Cost calculations and should not be duplicated.

    - Environmental Damage Factor – the estimated value placed on avoiding environmental externalities such as emissions and other environmentally harmful effects of power generation [$/kWh].

    - Escalation Rate – economic inflation rate used for utility rates, costs, etc. [percent]. This escalation rate is applied to current values to estimate the value of the same costs in future dollars. The rate is applied to each of the costs identified above.

    - Participant Discount Rate – the economic inflation rate applied to participant cash flows [percent]. This represents the customer's cost of money for which alternative investments may be made instead of the investment in energy saving measures. This value is used to determine net present value of costs and benefits in the Participant Test.

- Utility Discount Rate – the utility's cost of capital expressed as a percentage. This is representative of alternate utility investments, similar to Participant Discount Rate. This value is used to determine net present value of costs and benefits in the Utility Cost Test and Ratepayer Impact Test.

- Societal Discount Rate – similar to the other discount rates, this value represents the overall societal cost of money [percent] and is used in discounting the societal effects of savings. This value is used determine net present value of costs and benefits in the Societal Test and the Total Resource Cost test.

- General Input Data Year – the year from which the source data is taken. In order to properly discount future costs of money, it is important to know from which year the input data is derived.

- Project Analysis Year – the first year of project analysis, representative of a mature program [year, e.g., 2013], which includes budget for impact and or process evaluations. For the evaluation of planned programs, this normally represents the third year of program operations. Economic factors in the model are escalated appropriately to reflect the differences from data collection to program implementation.

- Project/Measure Specific Inputs – The following is a list of the inputs that are applied to an individual project/measure. These vary depending on program type, measure description, and nature of the energy savings. These data were developed by AEG using data provided by Empire on project target markets and customer energy usage characteristics and other utility programs.

    - Utility Project Costs – the overall annual costs for the utility to implement the program under evaluation [annual $]. This includes the utility cost for incentives, administration, evaluation, etc. for each year that program is planned. Utility incentives must be provided separately as these costs are handled differently from other utility costs in certain benefit cost tests.

    - Direct Participant Cost – the incremental cost of each energy savings measure [$ per measure] before utility incentives. This represents what the customer would have to pay to achieve the benefits of the specified energy efficient measure. This is a one-time cost.

    - Other Participant Cost – if there are other costs such as increased annual maintenance these may be defined here [annual $]. It is assumed that these are recurring costs over the life of the measure.

- Other Energy Savings – if there are other energy savings [non-electric] such as fuel savings, these may be defined here [annual $]. It is assumed that these are recurring savings over the life of the measure.

- Project Life – the estimated lifetime that a project/measure will yield energy savings [years]. Measure life should be consistent with equipment life but in some instances the utility may choose to limit the savings to a predetermined life [e.g., 15 years maximum] for analysis purposes.

- Demand Savings – the amount of demand reduction that the particular measure will yield [kW]. This represents the rated reduction on power.

- Coincident Factor – a factor applied to Demand Savings to determine the value of demand reduction that will be achieved during the hour of the utility peak [in percent].

- kWh/participant Savings – the energy savings component of a particular measure [annual kWh]. This is defined as the savings achieved for each measure.

- Number of Participants – the participation goal for a particular program.

- Incentive per Participant – the value of the utility incentive for each particular measure included in program. This value multiplied by the Number of Participants will yield the total utility incentive.

- General Project Management and Marketing – These costs are allocated across all the other programs and are reflected in each program's cost effectiveness test results.

- Steady State vs. Start-Up – The benefit/cost analysis is a life cycle analysis. Thus, it is important to reflect steady state implementation costs and not one-time start-up costs. This has been achieved by using the third year of each program budget for each of the benefit/cost tests.

- Evaluation – Program evaluation is usually budgeted to occur in Year 3 of the five-year implementation cycle.

- Program Write-ups – Each program write-up contains the following sections:

    - Peak Demand and Energy Consumption – This is an estimate of the kW and kWh savings that can be expected to occur given the assumptions for each particular program.

- Estimate of Program Cost Effectiveness – Each program undergoes benefit/cost screening. Five different perspectives have been analyzed (Total Resource Cost, Societal, Participant, Ratepayer Impact Measure (RIM) and Utility Cost. Appendix A contains a description of each of these tests.

- Participation – The participation targets reflect the appliance saturations in Empire's service territory as well as replacement cycles and estimated penetrations for energy efficiency measures.

- Program Budgets – Each program budget contains categories for program delivery, project management, marketing, incentives and evaluation.

LOW INCOME EFFICIENCY PROGRAM

PROGRAM DESCRIPTION

Qualifying lower income customers can receive help in managing their energy use and bills through Empire's Low Income Weatherization and High Efficiency Program. The program will work directly with local CAP agencies that already provide weatherization services to low income customers through the DOE and other state agencies. Empire provides supplemental funds to the CAP agencies to cover the cost of weatherization measures. This program will be administered by the CAP agencies and follows the protocol under current federal and state guidelines.

Participants can be an Empire residential customer in a one to four-unit structure. Income and occupancy eligibility will follow the Federal Low Income Weatherization guidelines. CAP agencies are allowed to spend an average of $1,500 (escalated by $50 per year) of Empire funds to leverage their DOE funds. Empire funds will focus on measures that reduce electricity usage such as electric heat, air conditioning, refrigeration, lighting, etc. CAP agencies will have discretion to use the funds as they wish for weatherization and cooling equipment. Within the $1,500, they may spend up to $200 towards the purchase of an ENERGY STAR® rated refrigerator and up to $100 towards the purchase of ENERGY STAR® rated CFLs and lighting fixtures. The maximum per home will be $2,100, escalated by $50 per year.

While the CAPs will have the primary responsibility to obtain leads for this program, Empire can supplement their efforts, as necessary, by targeting low income customers in arrearage that would benefit from reduced utility bills or by referring any other potentially eligible customers who call requesting assistance because of their economic circumstances.

This program helps qualifying customers reduce their energy costs at no cost to the customer. CAP agencies offer a cost effective implementation capability, which allows most of the funds allocated to this program to go directly to the purchase and installation of energy efficiency measures.

EFFECT ON PEAK DEMAND AND ENERGY CONSUMPTION

Years	Demand (kW)	Energy (kWh)
1	38	170,375
2 – 5 (per year)	38	170,375

ESTIMATE OF PROGRAM COST EFFECTIVENESS

Benefit-Cost Test Results				
Total Resource Cost Test	Societal	Participant	Ratepayer Impact Measure (RIM)	Utility Cost
0.46	0.49	Infinity	0.20	0.34

PARTICIPATION

Years	Participation
1	125
2 – 5 (per year)	125 (per year)

Currently, the two CAP agencies that serve almost all of Empire's service territory are using Empire funds to service about five (5) homes per month. This rate of activity has been used to estimate an annual participation rate.

PROGRAM BUDGET

Years	Program Delivery	Project Management	Marketing	Customer Incentive	Evaluation	Total
1	$208,438	$20,844	$5,000	$0		$234,281
2	$215,625	$21,563	$5,000	$0		$242,188
3	$222,813	$22,281	$5,000	$0	$25,000	$275,094
4	$230,000	$23,000	$5,000	$0		$258,000
5	$237,188	$23,719	$5,000	$0		$265,906

The budget assumes an average incentive of $1,500 and a CAP administrative charge of 15%. Project management is set at 10% of program delivery. The $1,500 per home average incentive level is escalated by $50 per year. Note that all the measures are installed at no cost to the participant. However, since this is a direct install program which pays money directly to the CAP agency, no funds are listed under customer incentive.

EVALUATION

Budget assumes 10% of Year 3 total project cost. Since this program is a continuation of a previously approved program, the actual evaluation may occur sooner than Year 3. CAP agencies will be required to provide a list of the measures for each home served that Empire's funds were used for. This program is similar to many other low income programs that are being implemented throughout the U.S. The impact evaluation should reflect the actual mix of all electric homes (electric space heat). A process evaluation could be conducted at the beginning of the third year of implementation.

LOW INCOME NEW HOME

PROGRAM DESCRIPTION

The Low Income New Home Program will be a partnership between Empire and non-profit organizations, including Habitat for Humanity and local government community development organizations, to achieve energy efficient affordable new housing for the low income community. Incentives will be available for high efficiency CAC, heat pumps and refrigerators, and improved levels of insulation.

The total available incentive per residential unit is $1,100 with an assumed average of $500. This incentive may be a combination of any of the following:

- The financial incentive for a central cooling system (air conditioner or heat pump) with a SEER of 14 or higher will be set at the full incremental cost of the unit, up to a maximum of $400. The incremental cost is based on a SEER 13 unit cost. The heat pump incentive will be the same as an incentive for an air conditioner with the equivalent SEER.
- Up to $200 may be allocated toward the purchase of an Energy Star rated refrigerator.
- Up to $100 may be allocated toward the purchase of Energy Star rated lighting fixtures.
- Full incremental cost for building shell improvements that meet the following qualifications:
    - Attic insulation of R-38 or better with a baseline of R-30
    - Exterior wall insulation of R-19 or better with a baseline of R-13
    - Floor insulation of R-19 or better with a baseline of R-13

EFFECT ON PEAK DEMAND AND ENERGY CONSUMPTION

Years	Demand (kW)	Energy (kWh)
1 – 5 (per year)	7.20 (per year)	12,680 (per year)

ESTIMATE OF PROGRAM COST EFFECTIVENESS

Benefit-Cost Test Results				
Total Resource Cost Test	Societal	Participant	Ratepayer Impact Measure (RIM)	Utility Cost
1.06	1.12	4.66	0.36	0.77

PARTICIPATION

Years	Participation
1 – 5 (per year)	10 (per year)

PROGRAM BUDGET

Years	Program Delivery	Project Management	Marketing	Customer Incentive	Evaluation	Total
1	$0	$3,000	$2,500	$5,000		$10,500
2	$0	$3,000	$2,500	$5,000		$10,500
3	$0	$3,000	$2,500	$5,000	$1,050	$11,550
4	$0	$3,000	$2,500	$5,000		$10,500
5	$0	$3,000	$2,500	$5,000		$10,500

The customer incentive budget is based upon 100% of the homes receiving refrigerator and lighting incentives and 25% of the homes receiving high efficiency air conditioners, and 25% receiving high efficiency heat pumps. While this program should be an "easy sell", it has lacked traction in other utility service territories. This may be due to the set processes used by organizations such as Habitat for Humanity, economic circumstances and lack of marketing. The budget therefore contains a slightly increased amount of funds for marketing from previous years.

EVALUATION

Budget assumes 10% of Year 3 total project cost for a process evaluation. Since this program is a continuation of a previously approved program, the actual evaluation may occur sooner than Year 3.

HOME PERFORMANCE WITH ENERGY STAR®

PROGRAM DESCRIPTION

Home Performance with ENERGY STAR® is a unique program which enhances the traditional existing home energy audit service. This program uses the ENERGY STAR® brand to help encourage and facilitate whole-house energy improvements to existing housing. This program focuses on the private-sector contractors and service professionals who currently work on existing homes – replacing HVAC systems, adding insulation, installing new windows, etc. The Missouri Home Performance with ENERGY STAR® program requires the third party performing the assessment, either contractors or consultants, to be accredited under Building Performance Institute (BPI) standards

The program strives to provide homeowners with consumer education, value and a whole-house approach. A participating BPI-certified Home Performance contractor/consultant[2] can identify and assist in fixing a variety of home energy efficiency problems, including poor insulation, air leaks through cracks and gaps, and ineffective moisture control by first performing a home assessment. Upon completion of the inspection, the contractor/consultant will provide an itemized cost estimate for each suggested improvement.

The benefits for a customer that participates in the program include:

- Significant savings on energy bills
- Higher home resale value
- A quieter, more comfortable living environment
- Improved air quality for better health
- Greater home durability with lower maintenance
- Increased environmental safety and energy efficiency

Empire will promote the program to residential customers through a variety of mediums, including but not limited to press releases, direct mail, bill messages, bill inserts, and the company web site. Interested customers can contact the company through email, by phone, or by accessing the website. Customers will be given an option of selecting:

[2] A BPI-Certified Home Performance Contractor/Consultant must be certified by BPI, a national resource for building science technology that sets standards for assessing and improving the energy performance of homes. A certified Home Performance contractor/consultant can performance-test a home using the most advanced whole house testing technologies and produce a Comprehensive Home Assessment report. Note that Empire does not warrant the products and/or services of participating contractors.

- A contractor who will perform the assessment and is capable of installing the improvements, or
- A consultant who will only perform the assessment.

The contractor/consultant will perform the assessment and will communicate the results to the customer through a scope of work statement which will include a list of recommended energy efficiency improvements. Qualifying improvements for this program are air sealing, adding insulation, sealing ductwork, and installation of energy efficient windows and doors. If a consultant performs the assessment, the customer may choose the contractor who will complete the improvements. Once the improvements are installed, the contractor/consultant will conduct a second assessment to verify the work. This second assessment will be done at no additional cost to the customer.

Empire will provide an incentive of $400 per participant. This can be applied toward the cost of the assessment and or qualifying improvement. However, the participant is eligible for this incentive only if the participant implements one of the improvements recommended by the assessment. The rebate will be issued upon receipt of a rebate application from the customer.

Limiting eligible improvements to those listed above allows for Empire to leverage the support and participation of local natural gas companies that also offer Home Performance with Energy Star. This limitation does allow customers to receive rebates for high efficiency electric equipment from other Empire programs.

PEAK DEMAND AND ENERGY SAVINGS

Years	Demand (kW)	Energy (kWh)
1- 5 (per year)	104 (per year)	150,000 (per year)

For the purposes of this analysis, we have assumed an average 10% reduction in overall energy kWh use.

ESTIMATE OF PROGRAM COST EFFECTIVENESS

Benefit-Cost Test Results				
Total Resource Cost Test	**Societal**	**Participant**	**Ratepayer Impact Measure (RIM)**	**Utility Cost**
1.41	1.48	3.00	0.50	1.60

PARTICIPATION

Years	Participation
1- 5 (per year)	125

PROGRAM BUDGET

Years	Program Delivery	Project Management	Marketing	Customer Incentive	Evaluation	Total
1	$10,000	$5,000	$7,500	$50,000		$72,500
2	$10,000	$5,500	$7,500	$50,000		$73,000
3	$10,000	$6,000	$7,500	$50,000	$11,600	$85,100
4	$10,000	$6,500	$7,500	$50,000		$74,000
5	$10,000	$7,000	$7,500	$50,000		$74,500

EVALUATION

Budget assumes 10% of Year 3 total project cost. Since this program is a continuation of a previously approved program, the actual evaluation may occur sooner than Year 3. Empire will track whole-house evaluations that are performed by certified contractors in their service territory. Evaluations performed by ENERGY STAR® or other utilities with the same program can be monitored and used to calibrate the benefits from this program. Once enough participants complete the program, Empire will coordinate impact and process evaluation efforts with participating gas utility partners.

ENERGY STAR® RESIDENTIAL LIGHTING PROGRAM

PROGRAM DESCRIPTION

Since 2006, Empire has supported and participated in the Change a Light, Change the World program. This national program was held in conjunction with EPA and DOE and, in Missouri, administered by the Midwest Energy Efficiency Alliance (MEEA) and the Missouri Department of Natural Resources.

Empire has been informed that MEEA will no longer implement the program in the format it has been implemented in the past. Empire is uncertain, at this point, whether it will participate in MEEA's new program. We are also unsure at this time what type of high efficiency lighting will need utility support in 2011. However, Empire is committed to continuing to support the use of energy efficient lighting. Therefore, we have maintained our Change A Light program budget as a placeholder. Empire will discuss program details with its Advisory Group and will file program detail for approval.

PEAK DEMAND AND ENERGY SAVINGS

Peak demand and energy savings will be determined upon finalization of program details.

Years	Demand (kW)	Energy (kWh)
1		
2 – 5 (per year)		

ESTIMATE OF PROGRAM COST EFFECTIVENESS

Cost effectiveness analysis will be completed upon finalization of program details.

Benefit-Cost Test Results				
Total Resource Cost Test	Societal	Participant	Ratepayer Impact Measure (RIM)	Utility Cost

PARTICIPATION

Participation estimates will be completed upon finalization of program details.

Years	Participation (CFLs)	Participation (Customers)
1		
2 – 5 (per year)		

PROGRAM BUDGET

Program budget details will be completed upon finalization of program details.

Years	Program Delivery	Project Management	Marketing	Customer Incentive	Evaluation	Total
1	$5,000	$6,000	$5,000	$28,000		$44,000
2	$5,000	$6,500	$5,000	$29,000		$45,500
3	$5,000	$7,000	$5,000	$30,000	$4,700	$51,700
4	$5,000	$7,500	$5,000	$31,000		$48,500
5	$5,000	$8,000	$5,000	$32,000		$50,000

EVALUATION

An evaluation budget assuming 10% of Year 3 total project cost will be completed upon finalization of program details.

RESIDENTIAL HIGH EFFICIENCY CAC PROGRAM

PROGRAM DESCRIPTION

New Construction and Replacement:

The Residential High Efficiency CAC Program will encourage residential customers to purchase and install energy-efficient central air conditioning and heat pumps by providing financial incentives to offset a portion of the equipment's higher initial cost. The program's long-range goal is to encourage contractors/distributors to use energy efficiency as a marketing tool, thereby stocking and selling more efficient units and moving the entire CAC and heat pump market toward greater energy efficiency.

Incentives will be available for systems that meet the following criteria:

Qualifying criteria	Incentive Amount
SEER 15 to 15.9	$400
SEER 16 to 16.9	$450
SEER 17 or higher	$500

Customers with more than one system can receive multiple incentives, up to three per location. The program is voluntary and available on a first-come, first-served basis. For the first eight (8) months of each program year, 65% of the available funds will be made available to residential customers. After the first eight months, all remaining funds will be equally available to residential customers, landlords of residential properties, and builders.

A new feature of this program is the availability of incentives for electronic programmable setback thermostats. Customers can qualify for an additional $25 when a programmable setback thermostat is installed at the same time as the new cooling system. The thermostat must be purchased from and installed by the same cooling contractor and be on the same invoice as the cooling system.

To qualify for an incentive, the customer must meet all of the eligibility conditions and complete an incentive application. The customer will be required to attach a copy of the sale receipt or paid invoice from a professional heating and cooling contractor indicating the date of purchase, dealer name and address, address of residence where the equipment is installed and account number. The application must be received within 60 days of installation. The contractor will be required to submit a copy of the load calculation summary.

Empire will utilize various mediums, including direct mail and its website, to notify both customers and HVAC dealers of the availability of these incentives.

Tune Up:
Another enhancement to Empire's existing program is the addition of a central cooling system tune-up. A spring inspection and tune-up of a central air conditioning or heat pump system can improve its efficiency and increase its life span. Without regular cleaning and maintenance, an air conditioner can lose up to 5% of its original efficiency for each year of operation.

Empire will offer an incentive to encourage annual inspections and maintenance of cooling systems for residential customers. Any residential customer can receive $50 towards a professional service inspection and tune-up. Customers with more than one system can receive multiple incentives, up to three per location. Customers may qualify for the electronic programmable setback thermostat rebate if installed by a HVAC contractor during a tune-up. The thermostat must be purchased from and installed by the same cooling contractor performing the tune-up and be on the same invoice as the tune-up.

To qualify for an incentive, the customer must meet all of the eligibility conditions and complete an incentive application. The customer will be required to attach a copy of the sale receipt or paid invoice from a professional heating and cooling inspection and tune-up service indicating the date of purchase, dealer name and address, itemized list of service checkpoints, and any repair recommendations. Only air conditioning systems of 5 tons or less that have not had a tune-up within the last three years are eligible.

To receive the incentive, a tune-up must be performed by a professional service technician and include the following 12-point inspection:

- Check and clean condensing unit coils
- Check wiring and connections
- Check coolant level
- Check system operating pressures and temperatures against manufacturer's specification.
- Check condensate pump and drain line
- Check thermostat
- Inspect air filter and replace if necessary
- Check compressor contacts
- Check belts and drives
- Clean and adjust controls
- Lubricate moving parts and clean indoor fan
- Check voltage

In no case will Empire pay more than 100% of the actual cost of the inspection and tune-up. Any application for a tune-up incentive must be received within 60 days of the service.

In addition to the above, Empire will continue to make training in Manual J calculations and System Charging and Airflow available to HVAC contractors.

Manual J is the industry standard residential load calculation method. The training offers step-by-step examples of properly sizing equipment and also addresses principles of heat transfer. The training teaches HVAC contractors to accurately perform and document cooling load calculations and reduces over-sizing. The System Charging and Airflow course addresses airflow through Manual D training and charging procedures and standards.

PEAK DEMAND AND ENERGY SAVINGS

Years	Demand (kW)	Energy (kWh)
1-5 (per year)	300 (per year)	442,745 (per year)

ESTIMATE OF PROGRAM COST EFFECTIVENESS

Benefit-Cost Test Results				
Total Resource Cost Test	**Societal**	**Participant**	**Ratepayer Impact Measure (RIM)**	**Utility Cost**
1.35	1.42	3.43	0.43	1.09

PARTICIPATION

Years	Participation
1 – 5 (per year)	300 (per year)

PROGRAM BUDGET

Years	Program Delivery	Project Management	Marketing	Customer Incentive	Evaluation	Total
1	$0	$35,000	$20,000	$215,250		$270,250
2	$0	$37,000	$20,000	$215,250		$272,250
3	$0	$39,000	$20,000	$215,250	$30,800	$305,050
4	$0	$41,000	$20,000	$215,250		$276,250
5	$0	$43,000	$20,000	$215,250		$278,250

The average incentive is assumed to be $400. It is further assumed that 80% of participants replacing their cooling systems will also install a qualifying setback thermostat. Program management costs include rebate processing and contractor training courses in Manual J calculations and System Charging and Airflow.

EVALUATION

Budget assumes 10% of Year 3 total project cost. Since this program is a continuation of a previously approved program, the actual evaluation may occur sooner than Year 3. The evaluation could include a sample of on-site inspections. Spot metering and runtime data can also be collected to verify the connected load and full load hour estimates used in engineering analysis. A process evaluation could be conducted at the beginning of the third year of implementation.

ENERGY STAR® HOMES

PROGRAM DESCRIPTION

ENERGY STAR® Homes use proven technologies and advanced building practices that ensure a new home is as energy efficient as possible. ENERGY STAR® labeled homes must pass a stringent evaluation, including computer-based energy analysis, inspections, and certification testing. Only those homes that meet high efficiency standards are certified as ENERGY STAR®. ENERGY STAR® Homes use tried and true technologies that have been employed in hundreds of thousands of homes across the U.S. Homes built to these standards provide greater comfort, are quieter and have healthier indoor air quality.

ENERGY STAR® Labeled Homes are "performance tested." While builders may claim to build "energy efficient" homes, builders of ENERGY STAR® labeled homes can prove it. Homes in this program are required to be tested by a Home Energy Rater to ensure that they perform to the ENERGY STAR® Labeled Homes Program standard.

Energy savings on heating, cooling, and hot water energy use are typically achieved through a combination of building envelope upgrades, high performance windows, controlled air infiltration, upgraded heating and air, conditioning systems, tight duct systems, and upgraded water-heating equipment.

The ENERGY STAR® Homes program will offer technical services and financial incentives to builders while marketing the homes' benefits to buyers. Scaled incentives will be provided to homes that qualify as ENERGY STAR® homes.

Manufactured homes that are ENERGY STAR® compliant will also be eligible for incentives.

PEAK DEMAND AND ENERGY SAVINGS

Years	Demand (kW)	Energy (kWh)
1 – 5 (per year)	93 (per year)	260,700 (per year)

ESTIMATE OF PROGRAM COST EFFECTIVENESS

Benefit-Cost Test Results				
Total Resource Cost Test	Societal	Participant	Ratepayer Impact Measure (RIM)	Utility Cost
1.28	1.36	3.64	0.40	1.29

PARTICIPATION

Year(s)	Participation
1- 5 (per year)	100

PROGRAM BUDGET

Years	Program Delivery	Project Management	Marketing	Customer Incentive	Evaluation	Total
1	$20,000	$14,000	$15,000	$80,000		$129,000
2	$20,000	$16,000	$15,000	$80,000		$131,000
3	$20,000	$18,000	$15,000	$80,000	$13,300	$146,300
4	$20,000	$20,000	$15,000	$80,000		$135,000
5	$20,000	$22,000	$15,000	$80,000		$137,000

The average incentive is assumed to be $800 per home. Marketing includes building awareness among all the stakeholders and Program Delivery includes support for training for builders and home energy raters.

EVALUATION

Budget assumes 10% of Year 3 total project cost. Since this program is a continuation of a previously approved program, the actual evaluation may occur sooner than Year 3. Evaluation could include random on-site inspections and engineering analysis. This program is being implemented by utilities (some very large) throughout the country. Many of them will be conducting impact evaluations and this research can be used to calibrate savings assumptions for Empire's program. A process evaluation will also be conducted.

C&I REBATE PROGRAM

PROGRAM DESCRIPTION

The C&I Rebate program will provide rebates to commercial & industrial (C&I) customers that install, replace or retrofit qualifying electric savings measures including HVAC systems, motors, lighting, pumps, etc.

As part of this program, Empire will offer rebates to customers for a portion of the cost of an energy audit. In order to receive the rebate, the customer must implement at least one of the audit recommendations that qualify for a rebate. The energy audit rebate will be set at 50% of the audit cost up to $300 for customers with facilities less than 25,000 square feet and up to $500 for customers with facilities over 25,000 square feet. Energy audits must be performed by a certified (CEM, licensed PE or equivalent) commercial energy auditor. Customers may choose their own auditor or Empire can recommend one. Customers with multiple buildings will be eligible for multiple audit rebates. Chain accounts will be limited to two audits per program year.

A limited number of prescriptive rebates for lighting (e.g., fluorescent fixtures and controls, HID fixtures and controls), cooling (e.g., unitary A/C and split systems) and motors will be available for small commercial customers (defined as customers with peak billed demands under 40 kW[3]). Prescriptive rebate applications must be submitted within 60 days of the completed installation of the energy efficiency measures.

All C&I customers, including those that qualify for prescriptive rebates, will be eligible for custom rebates. Specifically, custom rebates will be available to customers receiving electric service under rate schedules CB, SH, GP, PFM, TEB, and LP. The custom rebates will be individually determined and analyzed to ensure that they pass the Societal Benefit/Cost Test (defined as a test result of 1.05 or higher) and have a payback greater than two (2) years. Custom rebates do require pre-approval.

A customer is eligible for both custom and prescriptive rebates provided the rebates are for different measures. One customer may submit multiple rebate applications for different measures. Each individual measure will be evaluated on its own merits. Similar measures that are proposed in different facilities or buildings will be evaluated separately. However, no customer, including those with multiple facilities or buildings, may receive more than $20,000 in incentives for any program year.

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[3] Rate codes CB (Commercial Service) and SH (Small Heating Service).

For the custom rebate, customers must submit their application prior to purchase of the equipment. Once the application is approved, customers must complete the installation within six months to ensure that the rebate dollars are reserved for them. If the particular measure has a longer lead time or there are other extenuating circumstances, Empire will work with the customer on the timing of reserving dollars.

Custom rebates are calculated as the lesser of the following:

- A buydown to a two-year payback
- 50% of the incremental cost
- 50% of lifecycle avoided demand and energy costs

The avoided cost criteria provide a cap on incentives for projects that are relatively expensive for the amount of kW and kWh saved. The table below illustrates what the rebate would be for a "typical" project and what it would be for a project that had marginal demand and energy savings.

Typical Custom Project Used for Benefit/Cost Analysis		
Cost per kWh, retail rate	$	0.0693
Incremental cost	$	3,500
kWh savings		10,600
Demand savings		3.50
Annual cost savings	$	734
Rebate at 50% cost	**$**	**1,750**
Rebate at 2 yr payback	$	2,031
Rebate at 50% avoided costs	$	2,468
Marginal Custom Project (high cost and low energy savings)		
Cost per kWh, retail rate	$	0.0693
Incremental cost	$	3,500
kWh savings		6,132
Demand savings		2.00
Annual cost savings	$	425
Rebate at 50% cost	$	1,750
Rebate at 2 yr payback	$	2,650
Rebate at 50% avoided costs	**$**	**1,421**

PEAK DEMAND AND ENERGY SAVINGS

Years	Demand (kW)	Energy (kWh)
1 – 5 (per year)	458 (per year)	1,404,255 (per year)

ESTIMATE OF PROGRAM COST EFFECTIVENESS

Benefit-Cost Test Results				
Total Resource Cost Test	**Societal**	**Participant**	**Ratepayer Impact Measure (RIM)**	**Utility Cost**
1.74	1.85	4.43	0.47	1.81

PARTICIPATION

Years	Rebate Participation	Audit Participation
1 – 5 (per year)	125 (per year)	40 (per year)

It is assumed that there will be 30 small audits and 10 large audits per year.

PROGRAM BUDGET

Years	Program Delivery	Project Management	Marketing	Customer Incentive	Evaluation	Total
1	$85,000	$34,000	$31,000	$264,000		$414,000
2	$85,000	$35,500	$31,000	$264,000		$415,500
3	$85,000	$37,000	$31,000	$264,000	$41,700	$458,700
4	$85,000	$38,500	$31,000	$264,000		$418,500
5	$85,000	$40,000	$31,000	$264,000		$420,000

The average audit incentive is assumed to be $350. The average customer incentive is assumed to be $2,000.

EVALUATION

Budget assumes 10% of Year 3 total project cost. By design, the custom rebate program is self-evaluating. Impacts can be based upon the detailed engineering analysis that is used to determine the rebate levels. A process evaluation will be conducted.

BUILDING OPERATOR CERTIFICATION PROGRAM

PROGRAM DESCRIPTION

The Building Operator Certification (BOC) Program is a professional development program in the energy and resource efficient operations of buildings. The training program covers building operation and maintenance for building operators, managers and consultants. It offers an in-depth look at the best ways to manage a facility, from the latest technologies to trade tips. Participants can improve job skills, access tools to more efficiently run facilities and achieve measurable energy savings. With over 5,000 BOC graduates nationwide, this rapidly growing training program provides an expansive network of peers and a highly regarded credential. BOC training includes nearly 80 hours of classroom and project work in building systems operation and maintenance. Each course in the series is completed in a one-day training session, except BOC 103–HVAC Systems and Controls, which is a two-day course. To become certified, participants must pass an exam at the end of each day of training and complete assigned projects.

There are two levels of certification: Level I - Building System Maintenance and Level II - Equipment Troubleshooting and Maintenance. Level I classes run for a total of 8 days whereas Level II classes run for 7. Development support for BOC was original provided by the Northwest Energy Efficiency Alliance (NEEA), a non-profit group of electric utilities, state governments, public interest groups, and industry representatives committed to promoting affordable, energy-efficient products and services. Today, the Northwest Energy Efficiency Council (NEEC) is leading efforts to make BOC a nationally recognized standard.

Empire will offer scholarships at approximately 50% of the total registration fee. For the immediate future, we have been informed that the registration fee will be approximately $1,200. Therefore, for this plan, Empire has estimated a scholarship of $600 per student who completes the course and receives certification (provided that Empire's scholarship and that of any gas utility does not exceed the total registration cost of the attendee). Empire will target this training support towards customers with facilities that employ full-time building operators. Attendees must operate and maintain a building served by Empire on an electric retail rate to qualify for the scholarship. All commercial and industrial customers are eligible to participate. The annual budget assumes a total of 20 attendees will qualify for the scholarship. In addition, Empire will provide funding to sponsor sessions and contribute to payment of refreshments and meals.

The Midwest Energy Efficiency Alliance (MEEA) administers BOC in the Midwest region with support from the Illinois Department of Commerce and Economic Opportunity, the Minnesota Office of Energy Security, the Missouri Department of

Natural Resources, and the Ohio Department of Development. Empire will, if necessary, coordinate with other Missouri utilities to leverage their program funds.

PEAK DEMAND AND ENERGY SAVINGS

Years	Demand (kW)	Energy (kWh)
1 – 5 (per year)	50 (per year)	125,000 (per year)

ESTIMATE OF PROGRAM COST EFFECTIVENESS

Benefit-Cost Test Results				
Total Resource Cost Test	Societal	Participant	Ratepayer Impact Measure (RIM)	Utility Cost
1.75	1.85	7.21	0.51	1.97

PARTICIPATION

Years	Participation
1 – 5 (per year)	20 (per year)

PROGRAM BUDGET

Years	Program Delivery	Project Management	Marketing	Customer Incentive	Evaluation	Total
1	$20,000	$7500	$7,500	$0		$35,000
2	$20,000	$8,000	$7,500	$0		$35,500
3	$20,000	$8,500	$7,500	$0	$3,600	$39,600
4	$20,000	$9,000	$7,500	$0		$36,500
5	$20,000	$9,500	$7,500	$0		$37,000

EVALUATION

Budget assumes 10% of Year 3 total project cost. Since this program is a continuation of a previously approved program, the actual evaluation may occur sooner than Year 3. Empire will keep track of each customer that participates in the program and will conduct a process evaluation.

C&I PEAK LOAD REDUCTION PROGRAM

PROGRAM DESCRIPTION

The C&I Peak Load Reduction Program is a partnership between businesses and Empire to assure that electric demand can be met on certain days during the summer and winter when customer demand for electricity might exceed the available supply. It is a voluntary demand response program designed to reduce peak demand at the request of the company. It will be available to all Commercial or Industrial customers being served under the Total Electric Building (TEB), General Power Service (GP) or Large Industrial Service (LP) rates. Customers under those rates who volunteer to participate in this program must have a minimum monthly billing demand of 200 kilowatts (kW) and an anticipated minimum load curtailment capability of 200 kW.

Customers who participate will be required to enter into a contract for a term of one, three, or five years with an automatic renewal for the same term of the contract unless notification is given by either the customer or the Company at least 30 days prior to expiration of the contract. Availability of this rider is also subject to the economic and technical feasibility of the installation of required Company equipment. The total megawatts (MWs) contracted for under this program will not exceed 50 MWs.

The contract year will be June 1 through May 31. Curtailments when called will typically occur during, but not necessarily be limited to, the hours of 12:00 noon through 10:00 pm, Monday through Friday. The maximum number of curtailment events will be 10 per curtailment year and each event will last no less than two (2) but no more than eight (8) consecutive hours. Unless there is a system reliability event that needs to be addressed, there will not be more than one event per day. Customers will be provided with a curtailment notice of at least four (4) hours prior to the start of an event. Curtailments may be called for either operational or economic reasons.

To determine demands, the following definitions will be used:

Customer Peak Demand (CPD) shall be either the customer's historical actual maximum measured kW demand during a peak period or an amount determined based on the specific circumstances involving a Customer's actual or expected operations and agreed upon between the Company and the Customer.

The Maximum Firm Demand (MFD) shall be the maximum level of demand that the Customer can place on the system during a curtailment event and will be at least 200 kW lower than the customer's CPD. Both the CPD and the MFD will be specific in the contract. The difference between the two will be the Interruptible Demand (ID), expressed in kW and shall be the demand upon which credits

under this Rider are available to the customer. All IDs must be at least 200 kW. The Company may also use a test curtailment for verification of the customer's ability to curtail to the MFD or to establish the MFD.

Compensation: For each curtailment year, a customer shall receive a payment or bill credit based upon the IR contract term. The Monthly Program Participation Payment per kW of ID is as follows:

Contract Term	$/kW of ID per month
One year	$0.51
Three years	$1.27
Five years	$2.02

In addition to the payments mentioned above, customers will receive additional compensation equal to $.30 per kW of ID for each hour of actual curtailment during the curtailment year.

The customer will be responsible for monitoring their load to comply with the terms of the contract. A penalty shall be assessed if the customer fails to curtail the full amount of the ID or to keep its demand at or below the MFD for any reason. If this failure occurs, the ID and MFD in the contract shall be adjusted and the customer will refund all credits or payments previously received under the current contract in an amount equal to the change in ID multiplied by 150% of the contract demand rate for the remaining months of the contract period. If a customer fails to reduce load to its MFD during three or more curtailment events during a contract year, the customer shall be ineligible to participate for a period of two years from the date of the third failure.

PEAK DEMAND AND ENERGY SAVINGS

Years	Demand (kW)	Energy (kWh)
1	16,475	n/a
2	21,975	n/a
3	22,725	n/a
4	24,429	n/a
5	26,262	n/a

This is a demand response program targeting a reduction in kW during a specific time frame. Little or no energy (kWh) is saved on a permanent basis. Therefore, energy savings is not applicable and not estimated.

ESTIMATE OF PROGRAM COST EFFECTIVENESS

Benefit-Cost Test Results				
Total Resource Cost Test	**Societal**	**Participant**	**Ratepayer Impact Measure (RIM)**	**Utility Cost**
1.09	1.09	N/A	1.10	1.21

PARTICIPATION

Years	Participation
1	7
2	10
3	11
4	12
5	14

PROGRAM BUDGET

Years	Program Delivery	Project Management	Marketing	Customer Incentive	Evaluation	Total
1	$10,000	$10,000	$7,500	220,353		$247,853
2	$10,000	$11,000	$7,500	$293,916		$322,416
3	$10,000	$12,000	$7,500	$303,947	$33,345	$366,792
4	$10,000	$13,000	$7,500	$326,738		$357,238
5	$10,000	$14,000	$7,500	$351,254		$382,754

EVALUATION

Measurement and verification of curtailments serve as an impact evaluation for this program. Process evaluations will be performed to determine if improvements can be made in how this program is designed, delivered and administered.

GENERAL PROJECT MANAGEMENT AND MARKETING

PROGRAM DESCRIPTION

In order to deploy a multi sector demand response portfolio, it is necessary to have an experienced manager level resource available to provide oversight and guidance to the individual program managers (regardless of whether they are internal Empire staff or contracted labor). This person would also be responsible for reporting to and meeting with the Collaborative. This is not a full time commitment which is reflected in the budget levels shown under project management.

It will also be necessary to maintain and improve general marketing materials and infrastructure. Over the past several years, Empire has added significant content to its website. Empire will continue to assess potential improvements and implement them as appropriate to keep the information current and keep the site refreshed. Empire will also continue to develop brochures and other collateral materials, train and possibly add resources to its customer service operation and undertake various "no cost" initiatives with print, radio and television media (news releases, news conferences, etc.). The budget for these activities is shown under marketing. It is important to have this general marketing support if the individual program participant goals are to be met.

PROGRAM BUDGET

Years	Program Delivery	Project Management	Marketing	Customer Incentive	Total
1	$0	$75,000	$35,000	$0	$110,000
2	$0	$80,000	$37,500	$0	$117,500
3	$0	$85,000	$40,000	$0	$125,000
4	$0	$90,000	$42,500	$0	$132,500
5	$0	$95,000	$45,000	$0	$140,000

TOTAL PORTFOLIO SUMMARY
(Without C&I Load Reduction)

PEAK DEMAND AND ENERGY SAVINGS

Years	Demand (kW)	Energy (kWh)
1-5	1,049	2,565,755

ESTIMATE OF PROGRAM COST EFFECTIVENESS

Benefit-Cost Test Results for All Programs				
Total Resource Cost Test	Societal	Participant	Ratepayer Impact Measure (RIM)	Utility Cost
1.21	1.28	3.83	0.42	1.12

Benefit-Cost results do not include the Peak Load Reduction Program.

PARTICIPATION

Years	Participation
1-5	805

PROGRAM BUDGET

Years	Program Delivery	Project Management	Marketing	Customer Incentive	Evaluation	Total
1	$343,438	$194,344	$123,500	$614,250		$1,275,531
2	$350,625	$206,563	$126,000	$614,250		$1,297,438
3	$357,813	$218,781	$128,500	$614,250	$127,050	$1,446,394
4	$365,000	$231,000	$131,000	$614,250		$1,341,250
5	$372,188	$243,219	$133,500	$614,250		$1,363,156

Appendix A

Test Name	Benefit Components	Cost Components	Test Description
Total Resource Cost Test	-Avoided Energy (per kWh) -Variable O&M (per kWh) -Avoided Demand (per kW)	-Program costs (total program costs as shown in budgets) -Incremental Measure Cost (out of pocket costs for participant)	The test measures the net costs of a demand-side program as a resource option based on the total costs of the program, including both the participants' and the utility's costs. The benefits are avoided supply costs. The costs are the program costs (including equipment costs) paid both by the utility and the participants plus the increase in supply costs for any period in which load has been increased.
Societal Test	-Avoided Energy (per kWh) -Variable O&M (per kWh) -Avoided Demand (per kW) -Avoided Environmental (per kWh)	-Program costs (total program costs as shown in budgets) -Incremental Measure Cost (out of pocket costs for participant)	The test measures the net costs of a demand-side program as a resource option based on the total costs of the program, including both the participants' and the utility's costs. The benefits are avoided supply costs and beneficial externalities. The costs are the program costs (including equipment costs) paid by both the utility and the participants plus the increase in supply costs for any period in which load has been increased, and the costs of negative externalities.
Utility Cost Test (aka Revenue Requirements)	-Avoided Energy (per kWh) -Variable O&M (per kWh) -Avoided Demand (per kW)	-Program costs (total program costs as shown in budgets)	The test measures the net costs of a demand-side management program as a resource option based on the costs incurred by the utility (including incentive costs) and excluding any net costs incurred by the participant. The benefits are the avoided supply costs of energy and demand. The costs are the program costs incurred by the utility, the incentives paid to the customer, and any increased supply costs.
Ratepayer Impact Test (RIM) (aka Non-Participant)	-Avoided Energy (per kWh) -Variable O&M (per kWh) -Avoided Demand (per kW)	-Lost Revenue (kWh * retail rate) -Program costs (total program costs as shown in budgets)	The test measures what happens to customer bills or rates due to changes in utility revenues and operating costs caused by a DSM program. The benefits are the savings from avoided supply or other system costs. The costs are the program costs incurred by the utility, the incentives paid to the participants, and decreased revenues for any period when load has been decreased.
Participant Test	-Program Incentives -Utility Bill Savings	-Incremental Measure Cost (out of pocket costs for participant)	The test evaluates DSM programs from the perspective of the program's participants. The benefits include reductions in utility bills, incentives paid by the utility and any state, federal or local tax benefits received. The costs include all out-of-pocket expenses incurred as a result of participating in a program.

DSM Rate Base Adjustment **Schedule SLM-2**

Regulatory Asset Jan - Jun 2009				
Weatherization	$	77,873		
Low-Income New Homes		140		
Change A Light		8,659		
Central Air Conditioning		39,067		
ENERGY STAR Homes		10,263		
Home Performance with ENERGY STAR		-		
Building Operator Certification		14,703		
Commercial & Industrial Rebates		157,317		
Interruptible Program		1,012		
Administrative & General		27,228		
Evaluations		14,103		
Total CPC DSM Program Expenditures Jan - Jun 2009	**$**	**350,365**		
Estimated CPC DSM Program Expenditures Jul - Dec 2009				
Weatherization	$	120,770		
Low-Income New Homes		2,500		
Change A Light		44,500		
Central Air Conditioning		49,000		
ENERGY STAR Homes		20,000		
Home Performance with ENERGY STAR		20,000		
Building Operator Certification		24,142		
Commercial & Industrial Rebates		171,011		
Interruptible Program		6,072		
Administrative & General		3,442		
Evaluations		80,007		
Estimated CPC DSM Expenditures Jul - Dec 2009	**$**	**541,445**		
Total Estimated DSM Expenditures 2009			**$ 891,810**	
2006 Vintage Amortizations	$	126,000		
2007 Vintage Amortizations		(58,011)		
2008 Vintage Amortizations		571,927		
2009 Vintage Amortization ESTIMATED		891,810		
Total DSM Expenditures through 12/31/2009	**$**	**1,531,725**		
Less Accumulated Amortization through 12/31/2009		(83,391)		
Net Asset Estimated Balance 12/31/2009				**$ 1,448,335**
General Ledger Balance as of 6/30/2009			$ 630,496	
Adjustment Needed to Rate Base				**$ 817,838**

DSM Expense Adjustment **Schedule SLM-3**

Annualized 2006 Vintage Amortizations	12,600		
Annualized 2007 Vintage Amortizations	(5,801)		
Annualized 2008 Vintage Amortizations	57,193		
Annualized 2009 Vintage Amortizations	178,362		
Total DSM Amort.		$	242,354
Less: Per GL			
Amortization in test year		$	(57,061)
Expense Adjustment		**$**	**185,292**