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GULF POWER
A SOUTHERN COMPANY

April 2, 2014

Ms. Carlotta Stauffer, Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee FL 32399-0850

Dear Ms. Stauffer:

RE: Docket No. 130202-EI

Attached for electronic filing in the above referenced docket is:

1. Petition of Gulf Power Company.

2. Prepared direct testimony and exhibit of John N. Floyd.

Sincerely,

Robert L. McGee, Jr.
Regulatory and Pricing Manager

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Attachments

cc: Florida Public Service Commission
  Lee Eng Tan, Sr Attorney, Office of the General Counsel (5 copies)
 Beggs and Lane
  Jeffrey A. Stone, Esq.

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Commission review of numeric conservation goals (Gulf Power Company).	Docket No.: 130202-EI Filed: April 2, 2014

PETITION FOR APPROVAL OF NUMERIC CONSERVATION GOALS BY GULF POWER COMPANY

Gulf Power Company ("Gulf Power," "Gulf," or "the Company"), by and through its undersigned attorneys, files this petition with proposed numeric conservation goals and requests that the Florida Public Service Commission ("Commission") accept, approve and adopt Gulf Power's proposed numeric conservation goals as the numeric goals established by the Commission for Gulf Power Company pursuant to section 366.82, Florida Statutes, and Rules 25-17.001 and 25-17.0021, Florida Administrative Code. In support of this petition, the Company states:

1. Gulf Power is a public utility subject to the jurisdiction of the Commission pursuant to Chapter 366 of the Florida Statutes. Gulf Power's General Offices are located at One Energy Place, Pensacola, Florida 32520.

2. Copies of all notices and pleadings with respect to this petition should be furnished to:

Robert L. McGee, Jr.
Regulatory & Pricing Manager
Gulf Power Company
One Energy Place
Pensacola, Florida
32520-0780
(850) 444-6530
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501 Commendencia Street
Pensacola, Florida 32502
(850) 432-2451
(850) 469-3331(facsimile)

3. The agency affected by this petition is:

Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

4. Gulf Power is subject to section 366.82, Florida Statutes, part of the Florida Energy Efficiency and Conservation Act ("FEECA"), which requires the Commission to adopt appropriate goals to increase the efficiency of energy consumption, increase the development of demand side renewable energy systems, reduce and control the growth rates of electric consumption and weather sensitive peak demand, and encourage the development of demand side renewable energy resources.

5. Docket No. 130202-EI is one of seven that has been opened by the Commission to establish numeric conservation goals for each of the seven Florida FEECA utilities pursuant to section 366.82, Florida Statutes, and Rule 25-17.0021, Florida Administrative Code. As a result of Gulf's evaluations, the Company proposes the following numeric conservation goals which Gulf has determined to be reasonably achievable in the residential, commercial and industrial classes within Gulf Power's service area over a ten-year period.

6. Gulf Power Company's proposed conservation goals for years 2015 through 2024 are set forth below:

Residential

Year	Summer Peak MW Reduction (at Generator)	Winter Peak MW Reduction (at Generator)	Annual GWh Reduction (at Generator)
2015	2.3	1.3	2.3
2016	3.2	1.8	3.2
2017	4.1	2.3	4.2
2018	5.0	2.9	5.1
2019	5.9	3.4	6.0
2020	6.7	3.8	6.8
2021	7.5	4.3	7.6
2022	8.1	4.6	8.3
2023	8.8	5.0	8.9
2024	9.3	5.3	9.5

Commercial/Industrial

Year	Summer Peak MW Reduction (at Generator)	Winter Peak MW Reduction (at Generator)	Annual GWh Reduction (at Generator)
2015	.3	.1	.8
2016	.4	.1	1.2
2017	.5	.1	1.5
2018	.6	.2	1.8
2019	.7	.2	2.2
2020	.8	.2	2.5
2021	.9	.2	2.7
2022	.9	.3	3.0
2023	1.0	.3	3.2
2024	1.1	.3	3.4

7. The testimony of John N. Floyd, filed contemporaneously with this petition, along with the exhibit and schedules attached thereto, sets forth the Company's ten year projections of the total cost-effective winter and summer peak MW demand reduction and the annual GWh savings which are reasonably achievable through implementation of demand side measures in

Gulf Power's service area for the residential, commercial and industrial classes.

8. As demonstrated by the testimony of witness Floyd, the Company's proposed numeric conservation goals for the period 2015 through 2024 are reasonable and are consistent with the requirements of section 366.82, Florida Statutes, and Rule 25-17.0021, Florida Administrative Code.

9. Gulf knows of no material facts in dispute regarding the relief requested herein. There is no agency decision, so Gulf cannot state when or how it received notice of the agency decision.

10. Gulf is entitled to relief pursuant to Sections 366.81 and 366.82, Florida Statutes, and Rule 25-17.0021.

WHEREFORE, Gulf Power Company requests that the Florida Public Service Commission enter an order approving and establishing the Company's proposed numeric conservation goals for the period 2015 through 2024 pursuant to section 366.82, Florida Statutes, and Rule 25-17.0021, Florida Administrative Code, and grant such other relief as is just and reasonable under the facts and law as determined by the Commission.

Respectfully submitted this 2nd day of April, 2014.

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BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

COMMISSION REVIEW OF NUMERIC CONSERVATION GOALS

Docket No. 130202-EI

PREPARED DIRECT TESTIMONY AND EXHIBIT OF JOHN N. FLOYD

FILED APRIL 2, 2014

GULF POWER

A SOUTHERN COMPANY

GULF POWER COMPANY

Before the Florida Public Service Commission
Prepared Direct Testimony and Exhibit of
John N. Floyd
Docket No. 130202-EI
Date of Filing: April 2, 2014

Q. Please state your name, business address, employer and position.

A. My name is John N. Floyd and my business address is One Energy Place, Pensacola, Florida 32520. I am employed by Gulf Power Company (Gulf or the Company) as the Energy Sales and Efficiency Manager.

Q. Mr. Floyd, please describe your educational background and business experience.

A. I received a Bachelor Degree in Electrical Engineering from Auburn University in 1985. After serving four years in the U.S. Air Force, I began my career in the electric utility industry at Gulf Power in 1990 and have held various positions with the Company in Power Generation, Metering, Power Delivery and Marketing. In my present position, I am responsible for the development and implementation of Gulf's customer program offerings including the programs included in the Company's Demand-side Management (DSM) Plan.

Q. Have you previously testified before this Commission?

A. Yes.

Q. Mr. Floyd, what is the purpose of your testimony?

A. The purpose of my testimony is to propose seasonal peak demand and annual energy conservation goals for Gulf Power for the period 2015 – 2024 as required by the Florida Energy Efficiency and Conservation Act (FEECA).

Q. Please describe how your testimony is organized.

A. My testimony is organized as follows:

Section 1: Proposed Goals and Accomplishments
Section 2: Process to Develop Goals
Section 3: Statutory Adherence
Section 4: Sensitivities
Section 5: Renewable Pilots
Section 6: Conclusions

Q. Have you prepared an exhibit in support of your testimony?

A. Yes, I have. This exhibit was prepared under my direction and control, and the information contained therein is true and correct to the best of my knowledge.

Counsel: We ask that Mr. Floyd's exhibit consisting of 18 schedules be marked for identification as:

Exhibit No. ____ (JNF-1)

Section 1: Proposed Goals and Accomplishments

Q. What residential and commercial/industrial goals are appropriate and reasonably achievable for Gulf Power Company for seasonal peak demand and energy conservation for the period 2015 through 2024?

A. The Company's proposed seasonal peak demand and annual energy conservation goals for the period 2015 through 2024 are contained in Schedule 1 of my exhibit (JNF-1). In total, Gulf is proposing a summer peak demand goal of 68 MW, winter peak demand goal of 37 MW, and cumulative annual energy conservation goal of 84 GWh. These goals are based upon costs derived from Gulf's generation, transmission, and distribution planning processes and represent the total cost-effective winter and summer peak MW demand reductions and the annual GWh savings at the generator which are reasonably achievable through implementation of demand-side programs in Gulf Power's service area for the residential and commercial/industrial customer classes. The basis for the goals is the MW and GWh associated with projected adoption of measures that passed both the Rate Impact Measure (RIM) and the Participant's Test (PT).

Q. How do Gulf's recommended goals compare to current goals?

A. The cumulative annual energy conservation goals being proposed for the period 2015 through 2024 are significantly lower than the goals currently approved in Commission Order No. PSC-09-0855-FOF-EG. A comparison of the goals can be found in Schedule 2 of my exhibit.

Q. Please explain why there is such a significant decrease in the recommended goal level compared to Gulf's current goal.

A. There are several factors that contribute to these proposed goals being significantly lower than current goals. First, these proposed goals are based on Gulf's 2013 generation planning process in which the next planned generating unit addition is in 2023 compared to a 2014 projected unit addition that was used for the 2009 goal setting. These proposed goals are also based on the achievable potential of measures that pass the RIM cost-effectiveness criterion which ensures no cross-subsidy occurs between participating and non-participating customers. The currently approved goals are based on the Total Resource Cost (TRC) cost-effectiveness criterion which does not provide any protections against cross-subsidies or upward rate pressure. Finally, almost half of the current goals are not based on any cost-effectiveness criteria, but instead are based on the technical potential for certain residential measures that were initially excluded from Gulf's Technical Potential Study due to the potential for high free-ridership.

Q. How is it that nearly one-half of Gulf's current goals derive from measures that were not based on any cost-effectiveness criteria?

A. In Order No. PSC-09-0855-FOF-EG, the Commission assigned Gulf approximately 200 GWh of energy goals beyond what was evaluated as cost-effective under the TRC test. This additional energy goal was based on the technical potential of certain measures that had been previously screened out due to the potential for high free-ridership. Gulf subsequently petitioned for reconsideration of this decision on the ground that this additional energy goal did not represent what was reasonably achievable, but instead was only technically feasible without regard to whether it was cost-effective to achieve. The Commission ultimately denied Gulf’s motion for reconsideration and affirmed the rulings embodied in the 2009 goals order. See Order No. PSC-10-0198-FOF-EG.

Q. Aside from seeking reconsideration of the 2009 goals order, did Gulf engage in any other efforts to mitigate the rate impacts of the 2009 goals to its customers?

A. Yes. In Docket No. 100154-EG Gulf sought approval of a DSM Plan which was designed to achieve the goals established in the 2009 goals order. Included within Gulf’s DSM Plan filing was a “Rate Impact Mitigation” proposal wherein Gulf identified a small group of programs and measures that could be deferred. Deferral of these programs and measures would have reduced the long term rate impact of the Plan by some 50% while still achieving 350 GWh over ten years –almost seven times larger than Gulf’s previous goal.

Q. Did the Commission approve Gulf’s Rate Impact Mitigation proposal?

A. No. While the Commission acknowledged that Gulf's approach in developing its Rate Impact Mitigation proposal was appropriate, the Commission ultimately declined to adopt the proposal on the grounds that the proposal would not enable Gulf to meet its newly established goals. See Order No. PSC-11-0114-PAA-EG.

Q. Did the Commission have occasion to address rate impacts associated with other FEECA utilities' DSM Plans?

A. It did. Shortly after approving Gulf's DSM Plan, the Commission entered proposed agency action orders modifying and approving demand side management plans for Florida Power & Light Company and Progress Energy Florida, Inc. See Order Nos. PSC-11-0346-PAA-EG and PSC-11-0347-PAA-EG. In both cases the Commission determined that the plans submitted by the utilities would effect undue rate impacts on customers. Consequently, the Commission modified the proposed DSM plans to only include programs the Commission had previously approved for the two utilities as a result of the 2004 goal setting proceeding, finding that those programs were cost-effective and would accomplish the intent of FEECA. Those programs were determined to be cost-effective using the PT and the RIM test.

Q. Please describe Gulf's progress toward achieving the goals set forth in Order No. PSC-09-0855-FOF-EG for the period 2010-2019.

A. Schedule 3 of my exhibit provides a summary of the Company's progress toward goal achievement. Notwithstanding the concerns expressed above, Gulf has endeavored to achieve the goals set in 2009. On a cumulative basis, Gulf is ahead of the goals set in Order No. PSC-09-0855-FOF-EG and has achieved the annual goals since 2012.

Q. What impact has achievement of these goals had on the cost to Gulf's customers?

A. The cost of energy efficiency programs associated with these higher goals has more than doubled since 2010. These additional costs are borne by all of Gulf's customers each year through increased Energy Conservation Cost Recovery (ECCR) charges. Although there has been substantial energy savings associated with these additional costs, these program expenses are creating cross-subsidies between non-participating and participating customers because almost all of the programs required to achieve these goals fail the RIM test. This results in upward rate pressure for all customers over time.

Q. Please elaborate on what you mean by cross-subsidies and their effect on rate pressure.

A. Energy efficiency programs offered through the Company's approved DSM Plan are a unique aspect of the Company's business in that the costs to offer these programs, including incentives paid to customers, are borne by all of the Company's customers, not just the customers who are voluntarily participating in the program. The Company depends on the energy and demand savings benefits, in the form of avoided cost savings, from customers' voluntary participation in the efficiency programs to offset the cost impacts of these programs. When these energy and demand saving benefits are greater than the cost impacts borne by all customers, then a non-participating customer is not subsidizing any costs and is, in fact, benefited by lower utility cost which causes downward rate pressure over time. If the demand and energy savings of participating customers do not completely offset the cost impacts, including incentives paid to customers, the deficiency is re-distributed to all customers in the form of a cross-subsidy resulting in upward rate pressure over time. This is the essence of the RIM cost-effectiveness test and why it should be considered in setting energy efficiency and conservation goals.

Q. What actions can the Commission take in this proceeding to ensure that Gulf's goals for the period 2015-2024 do not impose such high cost on Gulf's customers in the future?

A. The Commission can and should set goals based on the amount of cost-effective achievable potential utilizing the RIM test. This will ensure the benefits of energy and demand reductions are greater than the cost impacts borne by both participating and non-participating customers such that both groups of customers are better off as a result.

Q. Please describe how Gulf has historically endeavored to meet the intent of the FEECA statute.

A. Gulf has a long history of leadership and innovation in the area of energy efficiency. Beginning in 1975, before the FEECA statute existed, Gulf introduced customers to the value of energy efficient construction with the GoodCents Home program. This program, now called EarthCents home, has long been the standard for energy efficient construction in Northwest Florida. An example of Gulf's innovation is the Company's Energy*Select* program. Originally offered in 1995, Gulf introduced customers to the concept of home energy management combined with variable pricing, including critical peak pricing (CPP) with its Energy*Select* program. When first introduced, Energy*Select* was not only a new program for Gulf, but also was the first CPP program offered in the nation.

In addition to equipment-based programs, Gulf has placed great emphasis over the years on customer education through our audit programs and outreach activities. As Energy Experts, Gulf's employees provide valuable advice and recommendations to customers regarding energy use and equipment decisions. Gulf's educational efforts extend into classrooms and community settings, including low-income communities, where energy efficiency information helps shape customers of the future and aids customers who may not have access to sound and reliable energy advice.

Section 2: Process to Develop Goals

Q. Please describe the process used to develop Gulf's recommended seasonal peak demand and annual energy conservation goals.

A. Gulf developed proposed goals based on the progressive process of 1) updating the full technical potential for energy efficiency savings; 2) determining the subset of that technical potential that is cost-effective under both the RIM and TRC cost-effectiveness tests as compared to the cost of Gulf's next planned generating unit addition from the Company's 2013 Ten Year Site Plan; and 3) determining the reasonably achievable market potential of both the RIM-based and the TRC-based evaluations considering the circumstances of our service area, existing programmatic activity, and historical experience.

Q. Please describe what is meant by technical potential for energy and demand savings and how it is used in the goal setting process.

A. Technical potential represents the amount of energy and demand savings that is technically feasible without regard to cost, customer acceptance, cost-effectiveness or other real-world constraints. Technical potential begins with a comprehensive list of energy efficiency measures that are technically feasible to implement. The energy and demand savings of each measure is multiplied by the applicable customer base to calculate what is technically possible without any regard to whether it is in the best interest of the customer or if a customer would even voluntarily adopt the measure. In this sense, technical potential is somewhat of a theoretical construct that just provides a starting point for the balance of the process. It certainly does not represent cost-effective potential that could be reasonably achieved.

Q. How did Gulf determine the appropriate technical potential for this docket?

A. The Company and the other FEECA utilities worked together, with input from the Southern Alliance for Clean Energy (SACE), to consistently update the technical potential results from a study conducted by Itron that was used in the 2009 goals proceeding. This study included a comprehensive list of energy efficiency measures that are commercially available for implementation. The process used for updating Gulf's technical potential consisted of three steps: 1) adjust, as necessary, existing measures from the 2009 study, 2) add new measures and 3) adjust for customer growth and DSM achievements. This process is summarized in a diagram found in Schedule 4 of my exhibit.

Q. Please describe each step in more detail.

A. The first step involved identifying measures made obsolete by new building codes and standards. These "baseline" measures represent the starting point from which to calculate the incremental energy and demand savings associated with higher efficiency measures. Each baseline measure was reviewed to determine if it was still relevant based on updates to codes and standards. If it was determined to be obsolete, it was removed and a new baseline was set based on current codes or standards. At the end of this step, 5 measures were removed due to their obsolescence.

The next step involved identifying new commercially-viable measures that were not included in the previous study. The energy and demand savings impacts of these measures, along with the costs of the measures, were determined using a combination of experience from the utilities and third party information. This information was added to the existing technical potential resulting in 7 residential, 15 commercial and 5 industrial measures being added to the technical potential. After the first two steps, the comprehensive measure list included 285 total unique measures. Of this total, 62 were residential energy efficiency measures, 91 commercial efficiency measures and 122 industrial efficiency measures. Demand Response and demand-side renewables comprised 10 measures included in the technical potential measure list. A comprehensive list of measures including those that were removed and added can be found in Schedule 5 of my exhibit.

After adjustments were made for obsolete and new measures, the technical potential was adjusted for growth in Gulf's customer base as well as DSM achievements since the last technical potential assessment was completed.

Q. What were the results of Gulf's updated technical potential?

A. After the updates were made, the energy efficiency demand and energy values represented by Gulf's technical potential are 720 MW of summer demand, 448 MW of winter demand and 3,253 GWh of energy. The demand response values include 285 MW of summer demand and 247 MW of winter demand. Finally, the solar photovoltaic technical potential resulted in 1,481 MW of summer demand, 240 MW of winter demand and 4,017 GWh of energy. All of these results are summarized in Schedule 6 of my exhibit.

Q. How do these technical potential results compare to Gulf's results in the last goals proceeding?

A. The updated technical potential results reflect slightly lower overall potential based primarily on adjustments due to codes and standard changes. A summary comparing the technical potential from the last proceeding to Gulf's updated technical potential can be found in Schedule 7 of my exhibit.

Q. What was the next step in developing Gulf's proposed DSM goals?
A. The next step in the process was to determine the amount of technical potential that is cost-effective. This amount is called economic potential.

Q. Please describe what is meant by economic potential.
A. Economic potential is the amount of technical potential determined to be cost-effective by applying Commission approved cost-effectiveness tests to the measures in the technical potential. These are the RIM, TRC, and PT cost-effectiveness tests. This Commission has requested two sets of economic potential, one based on a set of measures that pass the RIM and the PT test and another based on a set of measures that pass the TRC and the PT test. These two evaluations are not mutually exclusive. In practice, most of the measures included in the RIM & PT evaluation also pass the TRC test.

Q. Please describe the three cost-effectiveness tests in more detail.
A. The PT, or Participant's Test, as the name implies, measures cost-effectiveness from the perspective of the participating customer. This test considers bill savings and incentives as benefits and out-of-pocket

expenses as costs. It is important that any measure included in any final DSM Plan be cost-effective to the participant.

The RIM, or Rate Impact Measure, test evaluates the cost-effectiveness of a measure from a non-participant's perspective. In this way, it measures whether cross-subsidy occurs between non-participating and participating customers that ultimately results in upward rate pressure. The RIM test considers avoided capacity and fuel costs as a benefit compared to costs of program implementation including customer incentives and utility revenue decreases. When benefits exceed costs in the RIM test, implementation of the efficiency measure or program will not result in cross-subsidy and will cause downward pressure on utility rates. This is why the test is sometimes referred to as the "no-losers test." Use of the RIM test in goal setting is essential to ensure that cross-subsidy and upward rate pressure do not occur.

The TRC, or Total Resource Cost, test looks at cost-effectiveness of an efficiency measure from the joint perspective of the utility and customer base as a whole. In this way, TRC only measures whether total costs are increased or decreased. The TRC test considers the same benefits as the RIM test while only including program implementation (not including customer incentives) and total equipment expenses as costs. Importantly, the TRC test does not provide any measure of rate pressure or cross-subsidy. For this reason, the TRC test should never be used without simultaneous consideration of the RIM test results to ensure non-participating customers are not subsidizing customers who are voluntarily participating in an efficiency program.

Q. Please describe the process Gulf used to determine the economic potential.

A. Gulf evaluated the cost-effectiveness of all measures in the updated technical potential utilizing the Company’s most recent generation, transmission, and distribution planning assumptions. These “base case” assumptions include projections of fuel costs and avoided generation costs on which the Company’s 2013 Ten Year Site Plan was produced. Each measure’s demand and energy savings characteristics and costs were used along with the avoided cost benefits to calculate the cost-effectiveness of the measure according to the RIM, TRC, and PT formulas. If the result of the cost-effectiveness test was positive, or greater than 1.0, then that measure was deemed to be cost-effective at this phase of the process and the measure’s technical potential for energy and demand savings was included in the economic potential. Certain measures were determined to be cost-effective under one or more of the cost-effectiveness tests, but not all. A summary of the Economic Potential for the RIM & PT criteria and TRC & PT criteria is provided in Schedule 8 of my Exhibit. A complete list of measures for the Economic Potential in both evaluations is included in Schedule 9 of my exhibit.

Q. What avoided generating unit did Gulf use in the base case analysis?
A. Consistent with Gulf's April 2013 Ten Year Site Plan filing, a 750 MW combined cycle unit with an in-service date of 2023 was used for the cost-effectiveness evaluations.

Q. Please describe the other assumptions used in the base case analysis.
A. The base case analysis for evaluating the cost-effectiveness of measures in this study includes projections of fuel costs, load and energy sales, and generation costs over the planning period. The fuel cost projections used for planning purposes are developed using a collaborative process between Southern Company's Planning Coordination Team and the modeling vendor, CRA International. The load and energy forecast is developed based on a number of inputs including projections of economic growth, customer growth, and appliance codes. Generation costs are based on current projections of capital, operating, and environmental compliance expenses associated with the next planned generation unit needed to satisfy the load requirements. These cost inputs are used to develop the avoided cost values used in evaluation of the measures included in the Technical Potential Study.

Q. What was the final step in developing Gulf's proposed DSM goals?
A. The final step in the process was to determine the amount of the economic potential that is reasonably achievable in the marketplace over the ten year planning horizon. This amount is called achievable potential and serves as the proposed goals.

Q. How did Gulf determine the achievable potential for each set of measures included in the economic potential?

A. For each measure that was deemed cost-effective in either the RIM & PT or TRC & PT portfolios, customer adoption projections were developed based on the level of economic benefit provided to the customer. In order to maximize the projected adoption of these cost-effective measures, incentives were applied to increase the economic benefit to the customer. For the RIM & PT portfolio, the incentive was set at the amount to create a two-year payback for the customer or the maximum amount that would keep the measure RIM passing. For the TRC & PT portfolio, the incentive was set at an amount to create a two-year payback to the customer. Gulf considered previous adoption projections from the 2009 Achievable Potential Study and historical program experience to aid in projecting customer adoption at these incentive levels.

Q. What is free-ridership and how did Gulf take into account the effects of free-ridership in its analysis?

A. In this context, free-ridership is the adoption of an energy efficiency measure that would have occurred absent any utility program. As required by Commission rule, the goals set for energy and demand reductions must account for the effects of free-ridership. In the base case, measures that had a customer payback of less than two years without any utility incentive were considered to already present the customer with a reasonable economic proposition and therefore did not require additional incentives through a utility program. The selection of a two year payback criterion is consistent with assumptions used in the Energy Information Administration's Load and Demand Side Management (LDSM) submodule of the Electricity Market Module of the National Energy Modeling System. The LDSM model documentation characterizes the use of a two year payback level as being "based on general utility practice."

If included as part of a utility's goal, the expense associated with promotion of these measures would be an unnecessary cost burden on all utility customers since these measures would likely be adopted even without a utility program.

Q. What is the achievable potential during the period 2015-2024 for both the RIM & PT and TRC & PT evaluations?

A. The achievable potential is 84 GWh for the RIM & PT evaluation. For the TRC & PT evaluation, the achievable potential is 268 GWh. A summary of the achievable potential results for both evaluations can be found in Schedule 10 of my exhibit. A full list of measures included in the achievable potential for each evaluation is included in Schedule 11 of my Exhibit. The achievable potential for demand and energy reductions is based on projecting customer adoption of measures in the updated technical potential study found to be cost-effective by each of the RIM & PT and TRC & PT evaluations; that is, customer adoption of measures determined to have economic potential.

Q. How were renewable technologies identified and evaluated?

A. Renewable technologies were handled in two ways for the technical and achievable potential studies. First, solar thermal water heating and photovoltaic (PV) pool pumps were included in the energy efficiency study since they both directly replace specific end-use loads and can be modeled like other efficiency measures. Neither of these measures is cost-effective under the TRC or RIM test and, therefore, no achievable potential for these measures is included in Gulf's proposed goals.

The technical potential for rooftop PV initially assessed by Itron in 2009 was adjusted to reflect known new installations and customer growth since that time. Cost-effectiveness tests were applied to rooftop PV based on the actual system installed costs participating customers have experienced during the course of the renewable pilot programs. Rooftop PV does not pass either of the Commission standards for cost-effectiveness and, therefore, no achievable potential for this measure is included in Gulf's proposed goals.

Q. How was demand response considered in the development of Gulf's proposed goals?

A. Like the process for PV, the technical potential for demand response was based on an update of Itron's projection in 2009. For the balance of the process, however, Gulf utilized actual program experience with the company's Energy*Select* program to ultimately project the achievable potential. This program, unlike traditional demand response programs, also provides energy savings which are reflected in the Company's proposed goals.

Q. Which evaluation of achievable potential should be used to set Gulf's energy and demand reduction goals for the period 2015-2024?

A. The evaluation of achievable potential based on measures that are cost-effective under both the RIM and PT tests should be used to set Gulf's energy and demand reduction goals. This combination of tests ensures first that a participating customer will benefit from adoption of the efficiency measure and that benefits of efficiency savings outweigh the costs in a way that causes downward pressure on electric rates. This evaluation can be thought of as a subset of the TRC evaluation that not only ensures total costs are reduced, but also ensures that participating customers are not subsidized by non-participants. These two principles are critical in an energy efficiency policy that also recognizes the importance of electricity rates for the economic development of the utility area.

Q. Why is consideration of economic development appropriate in energy efficiency goal setting?

A. Economic development is an important aspect of the utility business as increased sales provide contributions towards the fixed costs of the utility system. This, in turn, benefits all customers. This Commission has been a strong proponent of utility-sponsored economic development initiatives for these very reasons and has approved such initiatives in a variety of regulatory settings. In fact, the Commission recently approved three new economic development rate riders in connection with the settlement of Gulf's latest base rate case. See Order No.PSC-13-0670-S-EI. The importance of considering economic development in establishing energy efficiency goals is highlighted by the Commission's own rules.

Rule 25-17.001(7) clearly states that implementation of FEECA should not restrict growth necessary to support economic development and, instead, should enhance economic growth through lowering energy costs from what they would otherwise be absent cost-effective energy efficiency goals.

The primary means of achieving this objective through the goal setting process is by use of the RIM test in setting energy and demand reduction goals. The RIM test ensures that all customers benefit through lower electricity rates over time. This is the only cost-effectiveness test that can achieve this objective.

Q. What is the annual bill impact for an average residential customer using 1,200 kWh per month?

A. The projected annual bill impacts for each of the achievable potential evaluations are provided in Schedule 12 of my exhibit. These bill impacts reflect projected ECCR expenses associated with implementation of each evaluated achievable potential of energy and demand savings. In 2015, the company's proposed RIM portfolio is projected to impact a residential customer's annual bill by $8.71, a significant decrease from the bill impact of the currently approved goals. This increases to $12.60 in 2024 assuming monthly usage of 1,200 kWh. Comparatively, the TRC portfolio is projected to impact a residential customer's annual bill by $23.34 in 2015, increasing to $66.82 by 2024, again assuming monthly usage of 1,200 kWh. These projected expenses are modeled in a similar way as the achievable potential estimates themselves and are not based on a set of proposed DSM programs designed to meet the demand and energy values determined by the achievable potential. More specifically, the cost estimates reflected in the bill impacts are based on multiplying the projected adoption by the maximum incentive determined for each cost-effective measure and are not intended to represent the actual costs associated with programs that will ultimately be developed to achieve the goals.

<u>Section 3: Statutory Adherence</u>

Q. Has Gulf Power provided an adequate assessment of the full technical potential of all available demand-side conservation and efficiency measures, including demand-side renewable energy systems?

A. Yes. Through a mutually agreed-upon process for updating the Itron Technical Potential Study, an adequate assessment of the full technical potential of all available demand-side conservation and energy efficiency measures, including demand-side renewables has been completed. This assessment included the evaluation of 285 individual end-use energy efficiency, demand response and solar photovoltaic measures.

Q. Section 366.82(3), Florida Statutes, requires the Commission to evaluate the full technical potential of supply-side conservation and efficiency measures. Does Gulf Power's Technical Potential Study evaluate supply-side conservation and efficiency measures and, if not, why?

A. Gulf Power has not conducted an assessment of supply-side conservation and efficiency opportunities in the same manner as the demand-side opportunities have been evaluated. Gulf does recognize that these opportunities may exist and, in fact, considers energy efficiency in selecting supply-side projects in all generation, transmission, and distribution functions consistent with the requirements of Rule 25-17.001(5). However, the Commission has not developed guidelines for such an evaluation that would provide a methodical approach to identifying, quantifying, and proposing goals for supply-side conservation and efficiency measures. For this reason, Gulf Power does not believe that consideration of supply-side conservation and efficiency measures is appropriate in this proceeding.

Q. Has Gulf Power provided an adequate assessment of the achievable potential of all available demand-side conservation and efficiency measures, including demand-side renewable energy systems?

A. Yes. Beginning with the updated technical potential results, Gulf performed cost-effectiveness screening in accordance with Commission rules and determined energy efficiency measures that are cost-effective for goal setting purposes. Gulf projected the reasonably achievable potential for energy and demand savings of these cost-effective measures.

All demand-side renewable energy systems were evaluated using the same cost-effectiveness standards as other energy efficiency measures. No renewable measures are cost-effective under these standards and, therefore, none are reflected in the achievable potential results. In past FEECA proceedings, the Commission determined that it was appropriate to set goals equal to zero in cases where no DSM measures were found to be cost-effective. See Order Nos. PSC-00-0588-FOF-EG; PSC-00-0587-FOF-EG; PSC-04-0768-PAA-EG; PSC-04-0767-PAA-EG. Given that no renewable measures passed the Commission's approved cost-effectiveness criteria, setting renewable goals at a level above zero in this proceeding would not be appropriate. A summary of the achievable potential results can be found in Schedule 10 of my exhibit.

Q. What cost-effectiveness test or tests should the Commission use to set DSM goals for Gulf Power?

A. The Commission should use the combination RIM and PT cost-effectiveness tests to set goals for Gulf Power. This combination of tests provides an appropriate balance between participating and non-participating customer benefits and ensures downward pressure on overall electric rates while still supporting significant conservation activities over the period 2015 through 2024.

Using the combination of RIM and PT cost-effectiveness tests to establish goals for Gulf Power is consistent with the requirements of section 366.82(3), Florida Statutes, to consider impacts to participating customers as well as non-participating customers, together comprising the general body of customers.

Q. Do Gulf Power's proposed DSM goals adequately reflect the costs and benefits to customers participating in the measure?

A. Yes. The measures included in development of the goals reflect the costs and benefits to the participating customers. This is done by performing the participant cost test and ensuring that all measures contemplated for inclusion in the goals pass this test.

Q. Do Gulf Power's proposed DSM goals adequately reflect the costs and benefits to the general body of ratepayers as a whole, including utility incentives and participant contributions?

A. Yes. By passing the RIM test, Gulf's proposed goals reflect costs and benefits that minimize overall rate impacts for the general body of customers, whether or not they participate in one of the resulting conservation programs. In addition, by only including measures that also pass PT, these proposed goals adequately consider participant contributions as a component of overall customer impact.

Q. Do Gulf Power's proposed DSM goals adequately reflect the costs imposed by state and federal regulations on the emission of greenhouse gases?

A. Yes. Gulf is not incurring costs associated with existing state or federal regulations on the emissions of greenhouse gases and, therefore, Gulf has appropriately not included assumptions of costs of greenhouse gas emissions in the development of proposed goals. Gulf's DSM evaluations are consistent with assumptions used in determining the next generating unit identified in the Company's 2013 Ten Year Site Plan.

Q. What is Gulf Power's position relative to the Commission establishing incentives to promote both customer-owned and utility-owned energy efficiency and demand–side renewable energy systems?

A. Prior to 2009, the Commission's preference for relying on the combination of RIM and PT in the evaluation and approval of utility conservation programs provided the necessary structure to ensure that the interests of all stakeholders were balanced. In practice, these tests provided incentives to customers through the payment of rebates, to the general body of customers by preventing cross-subsidization between DSM program participants and non-participants, and to the utility by ensuring that incorporation of DSM in the resource planning process results in net benefits that put downward pressure on rates. Therefore, reliance on the RIM test in goal-setting obviates the need for utility incentives.

Section 4: Sensitivities

Q. Has Gulf completed any sensitivities to the evaluations performed in this proceeding?

A. Yes. Gulf has performed additional cost-effectiveness screening on the energy efficiency measures included in the technical potential for alternative fuel cost projections and free-ridership periods. The purpose of these additional evaluations was to determine how sensitive the economic potential is to these factors. The first sensitivity was performed for two additional fuel cost scenarios, “low fuel” and “high fuel.” Since fuel cost projections are an input in the cost-effectiveness evaluations, different fuel cost assumptions can increase or decrease the avoided cost benefits of each measure’s savings, and, consequently, the cost-effectiveness results. Each of these fuel cost projections represent a planning scenario utilized by Gulf Power in the resource planning process. These high and low fuel cost projections have the most impact on the RIM evaluations with a range of -22% to +14% changes in the economic potential for energy savings. The TRC evaluation is much less sensitive with a range of -2% to +4% change in economic potential compared to the base case analysis. A summary of these results can be found in Schedule 13 of my exhibit.

The second sensitivity was for shorter and longer free-ridership periods. For this evaluation, Gulf calculated the economic potential utilizing a one-year (shorter) and three-year (longer) payback period to determine how sensitive the economic potential is to these free-ridership periods. This evaluation was completed by removing measures from the economic potential for which customer payback was less than one or three years without any utility-provided incentive. The shorter and longer free-rider period evaluations have the most impact on the TRC evaluation with a range of -25% to +33% change in the economic potential. The RIM evaluation is less sensitive with a range of -22% to +16% change in the economic potential compared to the base case. A summary of these results can be found in Schedule 14 of my exhibit.

Section 5: Renewable Pilots

Q. Please describe Gulf's current solar pilot programs.

A. Gulf's DSM Plan currently includes four solar pilot programs. These programs include rooftop PV systems for residential and commercial customers, PV systems for schools, solar thermal water heating (STWH) systems for residential customers, and STWH systems for low-income customers.

The Company's PV pilot program provides residential and commercial customers an incentive for installation of a solar energy system on their home or business. Customers installing qualifying systems receive $2/watt with a maximum per-customer incentive of $10,000.

Gulf's Solar for Schools pilot program provides capital funding to supplement deployment of PV systems up to 10 kW in qualifying public education facilities served by Gulf Power. This program offers the added benefit of providing resources to enable the data collected from the installed systems to be used in the schools' energy curriculum.

Gulf's STWH pilot program provides an incentive to residential customers to install a STWH system. Customers installing qualifying systems receive up to a $1,000 incentive.

The STWH for Low-Income pilot program facilitates the installation of STWH systems in qualifying low-income housing. Through the program the STWH systems are provided at no additional expense to the customers. This program offers up to 15 system installations per year.

Q. How have these pilot programs performed since their approval in early 2011?

A. Annual participation for these programs can be found in Schedule 15 of my exhibit. Participation in the PV pilot program has been fully subscribed each year. Participation in the STWH rebate and low-income STWH pilot programs has fallen well short of projected participation in each of the program years. Finally, the Solar for Schools pilot program has performed as projected in 2012 and 2013.

Q. Please describe the Company's PV pilot program performance in more detail.

A. Reservations for incentives under this pilot program are made available annually prior to the beginning of the program year. Each year the program has been fully subscribed shortly after the new program year funding becomes available. If any reservations are cancelled, those funds are once again made available for additional customer reservations. Through 2013, 132 PV systems have been installed in Gulf's service area under this program. Through March 2014, reservations for an additional 51 PV systems have been received. The installed cost of PV systems installed under this program has decreased consistent with the national trend of declining solar PV costs. Based on the information collected in the solar pilot programs, a more stable and viable solar contractor base has developed in Gulf Power's service area. As the pilot programs began, there were several contractors installing systems on a one-time basis. However, in recent years, a base of contractors installing multiple installations has been established. These contractors are actively competing for market share and providing customers more competitive options for system equipment and design, installed costs, and other services to meet customers' needs and expectations.

Q. Please describe the Company's STWH rebate and Low-Income STWH program performance in more detail.

A. Like the PV program, reservations for rebates under the STWH program are made available annually prior to the beginning of the program year. In no year has the number of reservations for installations of STWH systems approached the projections. Gulf developed the projections for likely installations under this program based on results of a 2008 STWH pilot program with the same rebate level. Unlike the improvements in panel efficiencies for PV systems, STWH technology has seen virtually no change or improvement in the last six years. Gulf has not recognized any increase in the STWH contractor base over the course of the pilot program. Additionally, the costs for STWH systems installed under this program actually increased between 2011 and 2013 program years. Customers are seemingly unwilling to make such a significant investment in a system for water heating when other alternatives, such as heat pump water heating, are much more cost-effective.

Even in the STWH for low-income program where, working through low-income organizations, the systems are installed for free, it has been difficult to find customers willing to accept the risk and long-term operational costs associated with the STWH systems. In 2011, 15 systems were installed working with two low-income housing agencies. In 2012, 14 systems were installed with two agencies, and in 2013 only 1 system was installed. Additional planned installations for 2013 were cancelled by the low-income agency due to lack of interest. Currently, 14 installations are planned for 2014. Low-income housing providers have been reluctant and in some cases unwilling to install the solar thermal water heating systems on low-income housing recognizing their customer base will not have the ability to pay for up keep and maintenance costs of the installed systems.

Q. Please describe the Company's Solar for Schools program performance in more detail.

A. The schools program is designed to provide a PV system up to 10KW for one public education institution each year. The program was initially designed to supplement the E-Shelter program being managed by the Florida Solar Energy Center (FSEC). Due to the launch of the E-Shelter program in 2011, no schools were identified for Gulf's program in 2011. In 2012 and 2013, one PV system was installed each year under the program. For 2014, Gulf is currently working on a PV installation with a school that had initially been selected under the E-Shelter program, but was dropped due to installation difficulty. Identification of schools for the program has been more difficult than expected. Schools are often reluctant to install the systems on roofs due to wind loading and maintenance concerns. Consequently, all systems installed to date have been ground mount systems which are more expensive and more difficult to site due to land availability, proximity to load centers, and shading considerations.

Q. Has Gulf collected any additional information about customers who have participated in these pilot programs?

A. Yes. Gulf has conducted customer surveys during the course of the pilot programs. For the PV and STWH programs, most of the responding customers were satisfied with the program enrollment and rebate process as well as contractor performance. Additionally, 76% of the customers participating in the solar pilot programs have annual incomes above the Northwest Florida median of $47,800 and 63% have home values greater than the Northwest Florida median of $170,000.

Q. What expenses has Gulf incurred as a result of these programs?

A. Expenses for these programs can be found in Schedule 16 of my exhibit. Expenses have tracked with participation. Due to lower participation than anticipated in the STWH programs, Gulf's expenditures have been below the total spending cap established by the Commission in each year.

Q. For customers who have participated in the pilot programs, how have installed equipment costs for both PV and STWH systems trended since these programs began?

A. Equipment cost information collected during the pilot is provided in Schedule 17 of my exhibit. The cost of systems installed under the PV pilot program has decreased from an average of $5.54 per watt in 2011 to $3.42 per watt for systems being installed in 2014. This decrease reflects the national trend of declining solar PV costs.

Installation costs for STWH systems actually increased from the beginning of the pilot program through 2013. Costs for systems projected to be installed in 2014 indicate a slight decrease to near 2011 levels. Gulf cannot determine whether this increase is a result of intentional markups because of the incentive or inflationary cost pressures.

Q. Based on the results of the pilot, have the cost-effectiveness results of these programs improved?

A. For roof-top PV, the cost-effectiveness from the participant's perspective has improved. This is in part due to panel cost decreases, the rebate provided under the pilot program, and the increasing competitiveness of area solar installers. Under both the RIM and TRC tests, however, PV remains non-cost effective. For the RIM test, the peak demand avoided cost savings does not outweigh the revenue impact thus failing this standard even with no incentive. For the TRC test, these same avoided cost savings do not outweigh the total cost of these systems.

For STWH, the cost-effectiveness results have not improved materially over the course of the pilot program. The cost-effectiveness results of these technologies are shown in Schedule 18 of my exhibit.

Q. What would systems have to cost for them to be cost-effective?

A. The cost of installed PV would have to be below $2 per watt to be cost-effective under the TRC test at Gulf's current avoided cost. Since the RIM test does not consider equipment cost, there is no cost point at which PV would be cost-effective at Gulf's current avoided cost.

For STWH, the installed cost of an average system would have to be below $1,925 to be cost-effective under TRC. With actual costs over $5,000, costs would have to decline precipitously for these systems to become cost-effective.

Q. Should the Company's existing solar pilot programs be extended and, if so, should any modifications be made to them?

A. Based on the results of the pilot, Gulf recommends not continuing the pilot programs past 2014. Neither the PV nor the STWH technologies are cost-effective under the RIM or TRC test and therefore cause a cross-subsidy to occur and ultimately cost Gulf's general body of customers more than the benefits realized by these systems. This is not to say that PV systems cannot be cost-effective to the participating customer. In fact, the decreases in system costs have improved the cost-effectiveness of PV systems to the point that additional ratepayer subsidized funding is not appropriate.

Q. Aside from extending the existing solar pilot programs, are there other actions Gulf Power could take to promote renewable energy in Florida?

A. Yes. Gulf can increase efforts around education on alternative energy sources, including solar, through the existing Energy Education component of Gulf's DSM Plan. As these technologies evolve, customer education is an increasingly important aspect of the service the company provides to all customers. Helping customers understand the opportunities and limitations associated with alternatives like PV can lead to a better customer experience as well as continued discovery of ways these technologies can be incorporated into the utility grid. Increasing the focus on these alternatives in our school-based and community education efforts can help accomplish this goal.

Gulf can also work with area low-income agencies to seek educational opportunities for this customer base. As PV costs continue to decline, customers in lower income brackets may have opportunities to leverage the benefits of renewable energy alternatives. Increased customer education among this customer base can help ensure successful development of these projects.

Section 5: Conclusions

Q. What is your recommendation to the Commission regarding appropriate goals for the company?

A. My recommendation is that the Commission set goals for energy efficiency and demand-side renewables based on all measures that are cost-effective under the combination of the RIM and PT tests including the effects of free-ridership based on a two-year payback criterion. This policy will ensure all Demand-Side Management activity is evaluated consistent with supply-side resources for the purposes of meeting customer energy and demand needs in a least cost manner that effects lower electricity rates than would otherwise result. This policy is also consistent with the

Commission’s recognition of the importance of implementing FEECA in a manner that supports economic growth and economic development.

Q. Does this conclude your testimony?
A. Yes.

AFFIDAVIT

STATE OF FLORIDA)
)
COUNTY OF ESCAMBIA)

Docket No. 130202-EI

Before me the undersigned authority, personally appeared John N. Floyd, who being first duly sworn, deposes, and says that he is the Energy Sales and Efficiency Manager of Gulf Power Company, a Florida corporation, that the foregoing is true and correct to the best of his knowledge, information, and belief. He is personally known to me.

John N. Floyd
Energy Sales and Efficiency Manager

Sworn to and subscribed before me this 31st day of March, 2014.

Notary Public, State of Florida at Large

Commission No. EE 150873

My Commission Expires Dec. 17, 2015

NOTARY PUBLIC STATE OF FLORIDA
MELISSA A. DARNES
MY COMMISSION # EE 150873
EXPIRES: December 17, 2015
Bonded Thru Budget Notary Services

Proposed Numeric Conservation Goals -- Savings at the Generator

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Total
Residential											
Annual Energy (GWh)	2.3	3.2	4.2	5.1	6.0	6.8	7.6	8.3	8.9	9.5	62.1
Summer System Peak (MW)	2.3	3.2	4.1	5.0	5.9	6.7	7.5	8.1	8.8	9.3	60.9
Winter System Peak (MW)	1.3	1.8	2.3	2.9	3.4	3.8	4.3	4.6	5.0	5.3	34.8
Commercial/Industrial											
Annual Energy (GWh)	0.8	1.2	1.5	1.8	2.2	2.5	2.7	3.0	3.2	3.4	22.2
Summer System Peak (MW)	0.3	0.4	0.5	0.6	0.7	0.8	0.9	0.9	1.0	1.1	7.1
Winter System Peak (MW)	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	1.9
Total											
Annual Energy (GWh)	**3.2**	**4.4**	**5.7**	**7.0**	**8.2**	**9.3**	**10.3**	**11.3**	**12.1**	**12.9**	**84.3**
Summer System Peak (MW)	**2.6**	**3.5**	**4.6**	**5.6**	**6.6**	**7.5**	**8.3**	**9.1**	**9.8**	**10.4**	**68.0**
Winter System Peak (MW)	**1.4**	**1.9**	**2.5**	**3.0**	**3.6**	**4.0**	**4.5**	**4.9**	**5.3**	**5.6**	**36.7**

Note: Totals may not add due to rounding.

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GULF POWER COMPANY
Comparison of Current Goals and Proposed Goals
at the Generator

Residential — Annual Energy Reduction (GWh)

Year	Current	Proposed	Difference	% change
2015	50.2	2.3	(47.9)	-95%
2016	53.6	3.2	(50.4)	-94%
2017	55.4	4.2	(51.2)	-92%
2018	56.2	5.1	(51.1)	-91%
2019	56.7	6.0	(50.7)	-89%

Residential — Summer Peak Reduction (MW)

Year	Current	Proposed	Difference	% change
2015	12.8	2.3	(10.5)	-82%
2016	14.0	3.2	(10.8)	-77%
2017	14.7	4.1	(10.6)	-72%
2018	14.9	5.0	(9.9)	-66%
2019	15.1	5.9	(9.2)	-61%

Residential — Winter Peak Reduction (MW)

Year	Current	Proposed	Difference	% change
2015	10.9	1.3	(9.6)	-88%
2016	12.1	1.8	(10.3)	-85%
2017	12.7	2.3	(10.4)	-82%
2018	13.3	2.9	(10.4)	-78%
2019	13.7	3.4	(10.3)	-75%

Commercial/Industrial — Annual Energy Reduction (GWh)

Year	Current	Proposed	Difference	% change
2015	11.7	0.8	(10.9)	-93%
2016	12.3	1.2	(11.1)	-91%
2017	12.7	1.5	(11.2)	-88%
2018	12.5	1.8	(10.7)	-85%
2019	11.9	2.2	(9.7)	-82%

Commercial/Industrial — Summer Peak Reduction (MW)

Year	Current	Proposed	Difference	% change
2015	2.9	0.3	(2.6)	-91%
2016	3.0	0.4	(2.6)	-88%
2017	3.2	0.5	(2.7)	-85%
2018	3.1	0.6	(2.5)	-81%
2019	3.1	0.7	(2.4)	-78%

Commercial/Industrial — Winter Peak Reduction (MW)

Year	Current	Proposed	Difference	% change
2015	1.0	0.1	(0.9)	-93%
2016	1.2	0.1	(1.1)	-92%
2017	1.1	0.1	(1.0)	-88%
2018	1.1	0.2	(0.9)	-86%
2019	1.1	0.2	(0.9)	-83%

Total — Annual Energy Reduction (GWh)

Year	Current	Proposed	Difference	% change
2015	61.9	3.2	(58.7)	-95%
2016	65.9	4.4	(61.5)	-93%
2017	68.1	5.7	(62.4)	-92%
2018	68.7	7.0	(61.7)	-90%
2019	68.6	8.2	(60.4)	-88%

Total — Summer Peak Reduction (MW)

Year	Current	Proposed	Difference	% change
2015	15.7	2.6	(13.1)	-84%
2016	17.0	3.5	(13.5)	-79%
2017	17.9	4.6	(13.3)	-75%
2018	18.0	5.6	(12.4)	-69%
2019	18.2	6.6	(11.6)	-64%

Total — Winter Peak Reduction (MW)

Year	Current	Proposed	Difference	% change
2015	11.9	1.4	(10.5)	-88%
2016	13.3	1.9	(11.4)	-86%
2017	13.8	2.5	(11.3)	-82%
2018	14.4	3.0	(11.4)	-79%
2019	14.8	3.6	(11.2)	-76%

Note: Totals may not add due to rounding.

Comparison of Achieved kW and kWh Reductions with Public Service Commission Established Goals at the Generator

Annual Comparison

Residential

	GWh Energy Reduction			Summer Peak MW Reduction			Winter Peak MW Reduction		
	Total Achieved	Com. Appr. Goal	% Variance	Total Achieved	Com. Appr. Goal	% Variance	Total Achieved	Com. Appr. Goal	% Variance
2010	0.00	35.0	-100%	0.00	7.5	-100%	0.00	5.9	-100%
2011	28.30	37.6	-25%	7.24	8.3	-13%	7.04	6.5	8%
2012	63.66	40.6	57%	19.29	9.4	105%	19.49	7.4	163%
2013	69.69	43.8	59%	22.70	10.5	116%	23.49	8.5	176%

Commercial/Industrial

	GWh Energy Reduction			Summer Peak MW Reduction			Winter Peak MW Reduction		
	Total Achieved	Com. Appr. Goal	% Variance	Total Achieved	Com. Appr. Goal	% Variance	Total Achieved	Com. Appr. Goal	% Variance
2010	0.00	3.2	-100%	0.00	1.2	-100%	0.00	0.5	-100%
2011	11.67	5.6	108%	5.13	1.6	221%	2.89	0.6	382%
2012	12.59	7.7	64%	14.54	2.1	592%	7.63	0.8	854%
2013	25.63	9.5	170%	7.46	2.4	211%	3.96	0.9	340%

Total (including Solar)

	GWh Energy Reduction			Summer Peak MW Reduction			Winter Peak MW Reduction		
	Total Achieved	Com. Appr. Goal	% Variance	Total Achieved	Com. Appr. Goal	% Variance	Total Achieved	Com. Appr. Goal	% Variance
2010	0.00	38.2	-100%	0.00	8.7	-100%	0.00	6.4	-100%
2011	40.37	43.2	-7%	12.55	9.9	27%	10.03	7.1	41%
2012	76.65	48.3	59%	34.02	11.5	196%	27.23	8.2	232%
2013	95.68	53.3	80%	30.35	12.9	135%	27.55	9.4	193%

Note: Totals may not add due to rounding.

Comparison of Achieved kW and kWh Reductions
with Public Service Commission Established Goals
at the Generator

Cumulative Comparison

Residential

	GWh Energy Reduction			Summer Peak MW Reduction			Winter Peak MW Reduction		
	Total Achieved	Com. Appr. Goal	% Variance	Total Achieved	Com. Appr. Goal	% Variance	Total Achieved	Com. Appr. Goal	% Variance
2010	0.00	35.0	-100%	0.00	7.5	-100%	0.00	5.9	-100%
2011	28.30	72.6	-61%	7.24	15.8	-54%	7.04	12.4	-43%
2012	91.96	113.2	-19%	26.53	25.2	5%	26.53	19.8	34%
2013	161.65	157.0	3%	49.23	35.7	38%	50.02	28.3	77%

Commercial/Industrial

	GWh Energy Reduction			Summer Peak MW Reduction			Winter Peak MW Reduction		
	Total Achieved	Com. Appr. Goal	% Variance	Total Achieved	Com. Appr. Goal	% Variance	Total Achieved	Com. Appr. Goal	% Variance
2010	0.00	3.2	-100%	0.00	1.2	-100%	0.00	0.5	-100%
2011	11.67	8.8	33%	5.13	2.8	83%	2.89	1.1	163%
2012	24.26	16.5	47%	19.67	4.9	301%	10.52	1.9	454%
2013	49.89	26.0	92%	27.13	7.3	272%	14.48	2.8	417%

Total (including Solar)

	GWh Energy Reduction			Summer Peak MW Reduction			Winter Peak MW Reduction		
	Total Achieved	Com. Appr. Goal	% Variance	Total Achieved	Com. Appr. Goal	% Variance	Total Achieved	Com. Appr. Goal	% Variance
2010	0.00	38.2	-100%	0.00	8.7	-100%	0.00	6.4	-100%
2011	40.37	81.4	-50%	12.55	18.6	-33%	10.03	13.5	-26%
2012	117.02	129.7	-10%	46.57	30.1	55%	37.26	21.7	72%
2013	212.70	183.0	16%	76.92	43.0	79%	64.81	31.1	108%

Note: Totals may not add due to rounding.

Technical Potential Update Process

Itron 2009 Final Technical Potential

Adjust Existing Measures

- **Remove Obsolete Measures**
  - Remove measures due to new codes & standards
  - Reset baselines
  - *Adjust Individual Measures*
- **Adjust Impacts of Existing Measures**
  - Calculate individual measure impacts relative to new baselines
  - *Adjust Individual Measures*

New Measures

- **Add New Measures**
  - Add new measures and their individual impacts
  - *Add Individual Measures*

Growth

- **Add Growth Factor**
  - Increase TP by percent customer growth from 2007-2012
  - *Adjust at total Technical Potential*

Achieved

- **Subtract DSM Achieved**
  - Subtract 2007-2012 DSM achieved
  - *Adjust at total Technical Potential*

Final

- **2014 Updated Itron Technical Potential**

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Technical Potential Measure List

<u>Energy Efficiency Measures</u>

Residential Energy Efficiency

1 14 SEER Split-System Heat Pump
2 15 SEER Split-System Air Conditioner
3 15 SEER Split-System Heat Pump
4 17 SEER Split-System Air Conditioner
5 17 SEER Split-System Heat Pump
6 19 SEER Split-System Air Conditioner
7 AC Heat Recovery Units
8 AC Maintenance (Indoor Coil Cleaning)
9 AC Maintenance (Outdoor Coil Cleaning)
10 Ceiling R-0 to R-19 Insulation
11 Ceiling R-19 to R-38 Insulation
12 CFL (18-Watt integral ballast), 0.5 hr/day
13 CFL (18-Watt integral ballast), 2.5 hr/day
14 CFL (18-Watt integral ballast), 6.0 hr/day
15 Default Window with Sunscreen
16 Double Pane Clear Windows to Double Pane Low-E Windows
17 Duct Repair
18 Electronically Commutated Motors (ECM) on an Air Handler Unit
19 Energy Star CW CEE Tier 2 (MEF=2.0)
20 Energy Star CW CEE Tier 3 (MEF=2.2)
21 Energy Star Desktop PC
22 Energy Star DVD Player
23 Energy Star DW (EF=0.68)
24 Energy Star Laptop PC
25 Energy Star Set-Top Box
26 Energy Star TV
27 Energy Star VCR
28 Faucet Aerators
29 HE Freezer
30 HE Refrigerator - Energy Star version of above
31 HE Room Air Conditioner - EER 11
32 HE Room Air Conditioner - EER 12
33 Heat Pump Water Heater (EF=2.9)
34 Heat Trap
35 High Efficiency One Speed Pool Pump (1.5 hp)
36 Low Flow Showerhead
37 Pipe Wrap
38 Proper Refrigerant Charging and Air Flow
39 PV-Powered Pool Pumps
40 Radiant Barrier
41 Reflective Roof
42 RET 2L4'T8, 1EB
43 ROB 2L4'T8, 1EB
44 Sealed Attic w/Sprayed Foam Insulated Roof Deck
45 Sealed Attics
46 Solar Water Heat
47 Two Speed Pool Pump (1.5 hp)

Technical Potential Measure List

48 Variable-Speed Pool Pump (<1 hp)
49 Wall 2x4 R-0 to Blow-In R-13 Insulation
50 Water Heater Blanket
51 Water Heater Temperature Check and Adjustment
52 Water Heater Timeclock
53 Weather Strip/Caulk w/Blower Door
54 Window Film
55 Window Tinting
56 LED (12-Watt), 0.5 hr/day
57 LED (12-Watt), 2.5 hr/day
58 LED (12-Watt), 6.0 hr/day
59 LED (13-Watt) Outdoor
60 Fridge Appliance Recycling
61 Freeze Appliance Recycling
62 Smart Plug

Commercial Energy Efficiency

1 Aerosole Duct Sealing
2 Air Handler Optimization
3 Anti-sweat (humidistat) controls
4 Ceiling Insulation
5 Centrifugal Chiller, 0.51 kW/ton, 500 tons
6 CFL Hardwired, Modular 18W
7 CFL Screw-in 18W
8 Chiller Tune Up/Diagnostics
9 Compressor VSD retrofit
10 Continuous Dimming
11 Convection Oven
12 Cool Roof - Chiller
13 Cool Roof - DX
14 Copier Power Management Enabling
15 Demand Control Ventilation (DCV)
16 Demand controlled circulating systems
17 Demand Defrost Electric
18 Demand Hot Gas Defrost
19 Duct/Pipe Insulation
20 DX Coil Cleaning
21 DX Packaged System, EER=11.9, 10 tons
22 DX Tune Up/ Advanced Diagnostics
23 Efficient Compressor Motor
24 Efficient Fryer
25 Electronically Commutated Motors (ECM) on an Air Handler Unit
26 EMS - Chiller
27 EMS Optimization
28 Energy Recovery Ventilation (ERV)
29 Energy Star or Better Copier
30 Energy Star or Better Monitor
31 Evaporator fan controller for MT walk-ins
32 Floating head pressure controls
33 Freezer-Cooler Replacement Gaskets
34 Geothermal Heat Pump, EER=13, 10 tons

Technical Potential Measure List

35 HE PTAC, EER=9.6, 1 ton
36 Heat Pump Water Heater (air source)
37 Heat Recovery Unit
38 Heat Trap
39 High Bay T5
40 High Efficiency Chiller Motors
41 High Efficiency Fan Motor, 15hp, 1800rpm, 92.4%
42 High Pressure Sodium 250W Lamp
43 High R-Value Glass Doors
44 High-efficiency fan motors
45 Hot Water Pipe Insulation
46 Hybrid Dessicant-DX System (Trane CDQ)
47 LED Display Lighting
48 LED Exit Sign
49 Lighting Control Tuneup
50 Monitor Power Management Enabling
51 Multiplex Compressor System
52 Night covers for display cases
53 Occupancy Sensor
54 Occupancy Sensor (hotels)
55 Optimize Controls
56 Outdoor Lighting Controls (Photocell/Timeclock)
57 Oversized Air Cooled Condenser
58 Packaged HP System, EER=11.7, 10 tons
59 PC Manual Power Management Enabling
60 PC Network Power Management Enabling
61 Premium T8, EB, Reflector
62 Premium T8, Electronic Ballast
63 Printer Power Management Enabling
64 PSMH, 250W, Magnetic Ballast
65 Refrigeration Commissioning
66 ROB Premium T8, 1EB
67 ROB Premium T8, EB, Reflector
68 Roof Insulation
69 Separate Makeup Air / Exhaust Hoods AC
70 Solar Water Heater
71 Strip curtains for walk-ins
72 Thermal Energy Storage (TES)
73 Variable Speed Drive Control
74 Vending Misers (cooled machines only)
75 VSD for Chiller Pumps and Towers
76 Window Film (Standard)
77 LED Linear Tube 22W
78 Flood LED 14W
79 LED (12-Watt)
80 LED High Bay 83W
81 Outdoor LED 104W
82 Run Time Optimizer
83 Dehumidification Hybrid Desiccant Heat Pump
84 Ice Machine
85 0.5 Faucet Aerator (DI)

Technical Potential Measure List

86 1.0 gpm Faucet Aerator (DI)
87 1.5 gpm Showerhead (DI)
88 Server Virtualization
89 Griddle
90 Steamer
91 Holding Cabinet

Industrial Energy Efficiency

1 Aerosole Duct Sealing
2 Aerosole Duct Sealing - Chiller
3 Air conveying systems
4 Bakery - Process
5 Bakery - Process (Mixing) - O&M
6 Centrifugal Chiller, 0.51 kW/ton, 500 tons
7 CFL Hardwired, Modular 18W
8 CFL Screw-in 18W
9 Chiller Tune Up/Diagnostics
10 Clean Room - Controls
11 Clean Room - New Designs
12 Comp Air - ASD (100+ hp)
13 Comp Air - ASD (1-5 hp)
14 Comp Air - ASD (6-100 hp)
15 Comp Air - Motor practices-1 (100+ HP)
16 Comp Air - Motor practices-1 (1-5 HP)
17 Comp Air - Motor practices-1 (6-100 HP)
18 Comp Air - Replace 100+ HP motor
19 Comp Air - Replace 1-5 HP motor
20 Comp Air - Replace 6-100 HP motor
21 Compressed Air - Controls
22 Compressed Air - System Optimization
23 Compressed Air - Sizing
24 Compressed Air - O&M
25 Cool Roof - Chiller
26 Cool Roof - DX
27 Direct drive Extruders
28 Drives - EE motor
29 Drives - Optimization process (M&T)
30 Drives - Process Control
31 Drives - Process Controls (batch + site)
32 Drives - Scheduling
33 Drying (UV/IR)
34 Duct/Pipe Insulation
35 Duct/Pipe Insulation - Chiller
36 DX Coil Cleaning
37 DX Packaged System, EER=11.9, 10 tons
38 DX Tune Up / Advanced Diagnostics
39 Efficient Curing ovens
40 Efficient desalter
41 Efficient drives
42 Efficient drives - rolling
43 Efficient electric melting

Technical Potential Measure List

44 Efficient grinding
45 Efficient Machinery
46 Efficient practices printing press
47 Efficient Printing press (fewer cylinders)
48 Efficient processes (welding, etc.)
49 Efficient Refrigeration - Operations
50 EMS - Chiller
51 EMS Optimization - Chiller
52 Extruders/injection Moulding-multipump
53 Fans - ASD (100+ hp)
54 Fans - ASD (1-5 hp)
55 Fans - ASD (6-100 hp)
56 Fans - Controls
57 Fans - Motor practices-1 (100+ HP)
58 Fans - Motor practices-1 (1-5 HP)
59 Fans - Motor practices-1 (6-100 HP)
60 Fans - O&M
61 Fans - Replace 100+ HP motor
62 Fans - Replace 1-5 HP motor
63 Fans - Replace 6-100 HP motor
64 Fans - System Optimization
65 Fans - Improve Components
66 Gap Forming papermachine
67 Geothermal Heat Pump, EER=13, 10 tons
68 Heat Pumps - Drying
69 Heating - Optimization process (M&T)
70 Heating - Process Control
71 Heating - Scheduling
72 High Bay T5
73 High Consistency forming
74 High Efficiency Chiller Motors
75 Hybrid Dessicant - DX System (Trane CDQ)
76 Injection Moulding - Direct drive
77 Injection Moulding - Impulse Cooling
78 Intelligent extruder (DOE)
79 Light cylinders
80 Machinery
81 Membranes for wastewater
82 Near Net Shape Casting
83 New transformers welding
84 O&M - Extruders/Injection Moulding
85 O&M/drives spinning machines
86 Occupancy Sensor
87 Optimization control PM
88 Optimization Refrigeration
89 Optimize Controls
90 Optimize drying process
91 Other Process Controls (batch + site)
92 Power recovery
93 Premium T8, Electronic Ballast
94 Process control

Technical Potential Measure List

95 Process Drives - ASD
96 Process optimization
97 Pumps - ASD (100+ hp)
98 Pumps - ASD (1-5 hp)
99 Pumps - ASD (6-100 hp)
100 Pumps - Controls
101 Pumps - Motor practices-1 (100+ HP)
102 Pumps - Motor practices-1 (1-5 HP)
103 Pumps - Motor practices-1 (6-100 HP)
104 Pumps - O&M
105 Pumps - Replace 100+ HP motor
106 Pumps - Replace 1-5 HP motor
107 Pumps - Replace 6-100 HP motor
108 Pumps - Sizing
109 Pumps - System Optimization
110 Refinery Controls
111 Replace V-belts
112 Roof Insulation
113 Roof Insulation - Chiller
114 Top-heating (glass)
115 VSD for Chiller Pumps and Towers
116 Window Film (Standard)
117 Window Film (Standard) - Chiller
118 Run Time Optimizer
119 Dehumidification Hybrid Desiccant Heat Pump
120 LED Linear Tube 22W
121 Flood LED 14W
122 LED High Bay 83W (400W equivalent)

Demand Response Measures

Residential Demand Response

1 In home display with peak threshold warning system and pre-set control strategies
2 On-Off Switching via low-power wireless communication technology
3 Smart Thermostats
4 Switch - Cycling Program
5 Switch - Shedding Program

Commercial/Industrial Demand Response

1 Automated control strategies
2 Direct load control system

Demand Side Renewable Measures

Residential PhotoVoltaic

1 Rooftop solar PV

Commercial PhotoVoltaic

1 PV Mounted on Commercial Parking Lot Shade Structures
2 Rooftop solar PV

Technical Potential Measure List

Residential Measures Removed from Technical Potential

1 14 SEER Split-System Air Conditioner
2 14 SEER Split-System Heat Pump
3 HVAC Proper Sizing
4 High Efficiency CD (EF=3.01 w/moisture sensor)

Residential Measures Added to Technical Potential

1 LED (12-Watt), 0.5 hr/day
2 LED (12-Watt), 2.5 hr/day
3 LED (12-Watt), 6.0 hr/day
4 LED (13-Watt) Outdoor
5 Fridge Appliance Recycling
6 Freezer Appliance Recycling
7 Smart Plug

Commercial Measures Removed from Technical Potential

1 High Efficiency Water Heater (electric)

Commercial Measures Added to Technical Potential

1 LED Linear Tube 22W
2 Flood LED 14W
3 LED (12-Watt)
4 LED High Bay 83W
5 Outdoor LED 104W
6 Run Time Optimizer
7 Dehumidification Hybrid Desiccant Heat Pump
8 Ice Machine
9 0.5 Faucet Aerator (DI)
10 1.0 gpm Faucet Aerator (DI)
11 1.5 gpm Showerhead (DI)
12 Server Virtualization
13 Griddle
14 Steamer
15 Holding Cabinet

Industrial Measures Added to Technical Potential

1 Run Time Optimizer
2 Dehumidification Hybrid Desiccant Heat Pump
3 LED Linear Tube 22W
4 Flood LED 14W
5 LED High Bay 83W (400W equivalent)

Table 1
Summary of Energy Efficiency Technical Potential Results

	Annual Energy (GWh)	Summer System Peak (MW)	Winter System Peak (MW)
Residential	1,796	455	300
Commercial/Industrial	1,457	265	148
Total	**3,253**	**720**	**448**

Table 2
Summary of Demand Response Technical Potential Results

	Annual Energy (GWh)	Summer System Peak (MW)	Winter System Peak (MW)
Residential	N/A	201	213
Commercial/Industrial	N/A	84	34
Total	**N/A**	**285**	**247**

Table 3
Summary of Solar Photovoltaic Technical Potential Results

	Annual Energy (GWh)	Summer System Peak (MW)	Winter System Peak (MW)
Residential	2,559	929	169
Commercial/Industrial	1,458	552	70
Total	**4,017**	**1,481**	**240**

Note: Totals may not add due to rounding.

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Technical Potential Results Compared to 2009 Goals Proceeding

	2009	2014	Variance
Summer Peak Demand (MW)	2,546	2,486	(60)
Winter Peak Demand (MW)	981	934	(47)
Annual Energy (GWH)	7,283	7,270	(13)

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Summary of Energy Efficiency Economic Potential Results

	Annual Energy (GWh)		**Summer System Peak (MW)**		**Winter System Peak (MW)**	
	RIM	TRC	RIM	TRC	RIM	TRC
Residential	793	1,477	345	351	167	181
Commercial/Industrial	359	1,372	120	248	66	115
Total	**1,153**	**2,849**	**465**	**599**	**233**	**296**

Note: Totals may not add due to rounding.

Economic Potential Measure List

RIM Portfolio
Residential Energy Efficiency

1. 15 SEER Split-System Air Conditioner
2. 15 SEER Split-System Heat Pump
3. 17 SEER Split-System Air Conditioner
4. 17 SEER Split-System Heat Pump
5. 19 SEER Split-System Air Conditioner
6. AC Heat Recovery Units
7. AC Maintenance (Indoor Coil Cleaning)
8. AC Maintenance (Outdoor Coil Cleaning)
9. Ceiling R-0 to R-19 Insulation
10. Ceiling R-19 to R-38 Insulation
11. Default Window With Sunscreen
12. Double Pane Clear Windows to Double Pane Low-E Windows
13. Duct Repair
14. Electronically Commutated Motors (ECM) on an Air Handler Unit
15. HE Room Air Conditioner - EER 11
16. HE Room Air Conditioner - EER 12
17. Proper Refrigerant Charging and Air Flow
18. Radient Barrier
19. Reflective Roof
20. Sealed Attic w/Sprayed Foam Insulated Roof Deck
21. Sealed Attics
22. Wall 2x4 R-0 to Blow-In R-13 Insulation
23. Window Film
24. Window Tinting

TRC Portfolio
Residential Energy Efficiency

1. 15 SEER Split-System Air Conditioner
2. 15 SEER Split-System Heat Pump
3. 17 SEER Split-System Heat Pump
4. AC Maintenance (Indoor Coil Cleaning)
5. AC Maintenance (Outdoor Coil Cleaning)
6. Ceiling R-0 to R-19 Insulation
7. CFL (18-Watt integral ballast), 0.5 hr/day
8. CFL (18-Watt integral ballast), 2.5 hr/day
9. CFL (18-Watt integral ballast), 6.0 hr/day
10. Default Window With Sunscreen
11. Double Pane Clear Windows to Double Pane Low-E Windows
12. Duct Repair
13. Electronically Commutated Motors (ECM) on an Air Handler Unit
14. Energy Star CW CEE Tier 2 (MEF=2.0)
15. Energy Star Desktop PC
16. Energy Star DVD Player
17. Energy Star Laptop PC
18. Energy Star Set-Top Box
19. Energy Star TV
20. Energy Star VCR
21. Faucet Aerators
22. Freezer Appliance Recycling
23. Fridge Appliance Recycling
24. HE Freezer
25. HE Refrigerator - Energy Star version of above
26. HE Room Air Conditioner - EER 11
27. HE Room Air Conditioner - EER 12
28. Heat Pump Water Heater (EF=2.9)
29. Heat Trap
30. High Efficiency One Speed Pool Pump (1.5 hp)
31. LED (12-Watt), 2.5 hr/day
32. LED (12-Watt), 6.0 hr/day
33. LED (13-Watt) Outdoor
34. Low Flow Showerhead
35. Pipe Wrap
36. Proper Refrigerant Charging and Air Flow
37. PV-Powered Pool Pumps
38. Radiant Barrier
39. Reflective Roof
40. RET 2L4'T8, 1EB
41. ROB 2L4'T8, 1EB
42. Smart Plug
43. Two Speed Pool Pump (1.5 hp)
44. Variable-Speed Pool Pump (<1 hp)
45. Water Heater Blanket
46. Water Heater Temperature Check and Adjustment
47. Water Heater Timeclock
48. Weather Strip/Caulk w/Blower Door
49. Window Film
50. Window Tinting

Economic Potential Measure List

RIM Portfolio

Commercial Energy Efficiency

1 Aerosole Duct Sealing
2 Ceiling Insulation
3 Centrifugal Chiller, 0.51 kW/ton, 500 tons
4 Chiller Tune Up/Diagnostics
5 Cool Roof - Chiller
6 Cool Roof - DX
7 Copier Power Management Enabling
8 Dehumidification Hybrid Desiccant Heat Pump
9 Demand Control Ventilation (DCV)
10 Duct/Pipe Insulation
11 DX Coil Cleaning
12 DX Tune Up/ Advanced Diagnostics
13 Electronically Commutated Motors (ECM) on an Air Handler Unit
14 EMS - Chiller
15 Energy Recovery Ventilation (ERV)
16 Energy Star or Better Copier
17 Energy Star or Better Monitor
18 Flood LED 14W
19 Geothermal Heat Pump, EER=13, 10 tons
20 High Efficiency Chiller Motors
21 High Efficiency Fan Motor, 15hp, 1800rpm, 92.4%
22 LED (12-Watt)
23 LED High Bay 83W
24 LED Linear Tube 22W
25 Monitor Power Management Enabling
26 PC Manual Power Management Enabling
27 PC Network Power Management Enabling
28 Printer Power Management Enabling
29 Roof Insulation
30 Separate Makeup Air/Exhaust Hoods AC
31 Steamer
32 Thermal Energy Storage (TES)
33 VSD for Chiller Pumps and Towers
34 Window Film (Standard)

TRC Portfolio

Commercial Energy Efficiency

1 0.5 Faucet Aerator (DI)
2 1.0 gpm Faucet Aerator (DI)
3 1.5 gpm Faucet Aerator (DI)
4 Aerosole Duct Sealing
5 Air Handler Optimization
6 Anti-sweat (humidistat) controls
7 Ceiling Insulation
8 Centrifugal Chiller, 0.51 kW/ton, 500 tons
9 CFL Hardwired, Modular 18W
10 CFL Screw-in 18W
11 Chiller Tune Up/Diagnostics
12 Compressor VSD retrofit
13 Continuous Dimming
14 Cool Roof - Chiller
15 Cool Roof - DX
16 Copier Power Management Enabling
17 Dehumidification Hybrid Desiccant Heat Pump
18 Demand Control Ventilation (DCV)
19 Demand controlled circulating systems
20 Demand Defrost Electric
21 Demand Hot Gas Defrost
22 DX Coil Cleaning
23 DX Tune Up/Advanced Diagnostics
24 Efficient compressor motor
25 Electronically Commutated Motors (ECM) on an Air Handler Unit
26 EMS - Chiller
27 EMS Optimization
28 Energy Recovery Ventilation (ERV)
29 Energy Star or Better Copier
30 Energy Star or Better Monitor
31 Evaporator fan controller for MT walk-ins
32 Floating head pressure controls
33 Flood LED 14W
34 Freezer-Cooler Replacement Gaskets
35 Geothermal Heat Pump, EER=13, 10 tons
36 Griddle
37 HE PTAC, EER=9.6, 1 ton
38 Heat Pump Water Heater (air source)
39 Heat Recovery Unit
40 Heat Trap
41 High Bay T5
42 High Efficiency Chiller Motors
43 High Efficiency Fan Motor, 15hp, 1800rpm, 92.4%
44 High Pressure Sodium 250W Lamp

Economic Potential Measure List

45 High R-Value Glass Doors
46 High-efficiency fan motors
47 Holding Cabinet
48 Hot Water Pipe Insulation
49 Hybrid Dessicant-DX System (Trane CDQ)
50 Ice Machine
51 LED (12-Watt)
52 LED Display Lighting
53 LED High Bay 83W
54 LED Linear Tube 22W
55 Lighting Control Tuneup
56 Monitor Power Management Enabling
57 Multiplex Compressor System
58 Night covers for display cases
59 Occupancy Sensor
60 Occupancy Sensor (hotels)
61 Optimize Controls
62 Outdoor LED 104W
63 Outdoor Lighting Controls (Photocell/Timeclock)
64 Oversized Air Cooled Condenser
65 PC Manual Power Management Enabling
66 PC Network Power Management Enabling
67 Premium T8, EB, Reflector
68 Premium T8, Electronic Ballast
69 Printer Power Management Enabling
70 PSMH, 250W, magnetic ballast
71 Refrigeration Commissioning
72 ROB Premium T8, 1EB
73 ROB Premium T8, EB, Reflector
74 Roof Insulation
75 Run Time Optimizer
76 Separate Makeup Air / Exhaust Hoods AC
77 Server Virtualization
78 Solar Water Heater
79 Steamer
80 Strip curtains for walk-ins
81 Thermal Energy Storage (TES)
82 Variable Speed Drive Control
83 Vending Misers (cooled machines only)
84 VSD for Chiller Pumps and Towers
85 Window Film (Standard)

RIM Portfolio
Industrial Energy Efficiency

1 Aerosole Duct Sealing
2 Aerosole Duct Sealing - Chiller
3 CFL Hardwired, Modular 18W
4 CFL Screw-in 18W
5 Chiller Tune Up/Diagnostics
6 Comp Air - Motor practices-1 (100+ HP)
7 Comp Air - Motor practices-1 (1-5 HP)
8 Comp Air - Motor practices-1 (6-100 HP)
9 Comp Air - Replace 100+ HP motor
10 Comp Air - Replace 1-5 HP motor

TRC Portfolio
Industrial Energy Efficiency

1 Aerosole Duct Sealing
2 Aerosole Duct Sealing - Chiller
3 Air conveying systems
4 Bakery - Process
5 Bakery - Process (Mixing) - O&M
6 Centrifugal Chiller, 0.51 kW/ton, 500 tons
7 CFL Hardwired, Modular 18W
8 CFL Screw-in 18W
9 Chiller Tune Up/Diagnostics
10 Clean Room - Controls

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Economic Potential Measure List

11 Comp Air - Replace 6-100 HP motor
12 Compressed Air - Controls
13 Compressed Air - System Optimization
14 Compressed Air - Sizing
15 Compressed Air - O&M
16 Cool Roof - Chiller
17 Cool Roof - DX
18 Dehumidification Hybrid Desiccant Heat Pump
19 Drives - Optimization process (M&T)
20 Duct/Pipe Insulation
21 Duct/Pipe Insulation - Chiller
22 DX Coil Cleaning
23 DX Tune Up/Advanced Diagnostics
24 Efficient Curing ovens
25 Efficient Refrigeration - Operations
26 EMS Optimization - Chiller
27 Fans - Controls
28 Fans - Motor practices-1 (100+ HP)
29 Fans - Motor practices-1 (1-5 HP)
30 Fans - Motor practices-1 (6-100 HP)
31 Fans - O&M
32 Fans - Replace 100+ HP motor
33 Fans - Replace 1-5 HP motor
34 Fans - Replace 6-100 HP motor
35 Fans - Improve Components
36 Flood LED 14W
37 Geothermal Heat Pump, EER=13, 10 tons
38 Heating - Optimization process (M&T)
39 High Bay T5
40 High Efficiency Chiller Motors
41 Hybrid Dessicant-DX System (Trane CDQ)
42 LED High Bay 83W (400W equivalent)
43 LED Linear Tube 22W
44 Machinery
45 Membranes for wastewater
46 New transformers welding
47 O&M/drives spinning machines
48 Optimization Refrigeration
49 Optimize Controls
50 Premium T8, Elecctronic Ballast
51 Pumps - Controls
52 Pumps - Motor practices-1 (100+ HP)
53 Pumps - Motor practices-1 (1-5 HP)
54 Pumps - Motor practices-1 (6-100 HP)
55 Pumps - O&M
56 Pumps - Replace 100+ HP motor
57 Pumps - Replace 1-5 HP motor
58 Pumps - Replace 6-100 HP motor
59 Pumps - Sizing
60 Pumps - System Optimization
61 Replace V-belts
62 Roof Insulation
63 Roof Insulation - Chiller
64 Run Time Optimizer
65 Window Film (Standard)

11 Clean Room - New Designs
12 Comp Air - ASD (100+ hp)
13 Comp Air - ASD (6-100 hp)
14 Comp Air - Motor practices-1 (100+ HP)
15 Comp Air - Motor practices-1 (1-5 HP)
16 Comp Air - Motor practices-1 (6-100 HP)
17 Comp Air - Replace 100+ HP motor
18 Comp Air - Replace 6-100 HP motor
19 Compressed Air - Controls
20 Compressed Air - System Optimization
21 Compressed Air- Sizing
22 Compressed Air-O&M
23 Cool Roof - Chiller
24 Cool Roof - DX
25 Dehumidification Hybrid Desiccant Heat Pump
26 Direct drive Extruders
27 Drives - EE motor
28 Drives - Optimization process (M&T)
29 Drives - Process Control
30 Drives - Process Controls (batch + site)
31 Drives - Scheduling
32 Drying (UV/IR)
33 DX Coil Cleaning
34 DX Tune Up/ Advanced Diagnostics
35 Efficient Curing ovens
36 Efficient desalter
37 Efficient drives
38 Efficient drives - rolling
39 Efficient electric melting
40 Efficient grinding
41 Efficient Machinery
42 Efficient practices printing press
43 Efficient Printing press (fewer cylinders)
44 Efficient processes (welding, etc.)
45 Efficient Refrigeration - Operations
46 EMS - Chiller
47 EMS Optimization - Chiller
48 Extruders/injection Moulding-multipump
49 Fans - ASD (100+ hp)
50 Fans - ASD (6-100 hp)
51 Fans - Controls
52 Fans - Motor practices-1 (100+ HP)
53 Fans - Motor practices-1 (1-5 HP)
54 Fans - Motor practices-1 (6-100 HP)
55 Fans - O&M
56 Fans - Replace 100+ HP motor
57 Fans - Replace 6-100 HP motor
58 Fans - System Optimization
59 Fans - Improve Components
60 Flood LED 14W
61 Gap Forming papermachine
62 Heat Pumps - Drying
63 Heating - Optimization process (M&T)
64 Heating - Process Control
65 Heating - Scheduling

Economic Potential Measure List

66 Window Film (Standard) - Chiller

66 High Bay T5
67 High Consistency forming
68 High Efficiency Chiller Motors
69 Hybrid Dessicant-DX System (Trane CDQ)
70 Injection Moulding - Direct drive
71 Injection Moulding - Impulse Cooling
72 Intelligent extruder (DOE)
73 LED High Bay 83W (400W equivalent)
74 LED Linear Tube 22W
75 Light cylinders
76 Machinery
77 Membranes for wastewater
78 Near Net Shape Casting
79 New transformers welding
80 O&M - Extruders/Injection Moulding
81 O&M/drives spinning machines
82 Occupancy Sensor
83 Optimization control PM
84 Optimization Refrigeration
85 Optimize Controls
86 Optimize drying process
87 Other Process Controls (batch + site)
88 Power recovery
89 Premium T8, Electronic Ballast
90 Process control
91 Process Drives - ASD
92 Process optimization
93 Pumps - ASD (100+ hp)
94 Pumps - ASD (6-100 hp)
95 Pumps - Controls
96 Pumps - Motor practices-1 (100+ HP)
97 Pumps - Motor practices-1 (1-5 HP)
98 Pumps - Motor practices-1 (6-100 HP)
99 Pumps - O&M
100 Pumps - Replace 100+ HP motor
101 Pumps - Replace 6-100 HP motor
102 Pumps - Sizing
103 Pumps - System Optimization
104 Refinery Controls
105 Replace V-belts
106 Roof Insulation
107 Roof Insulation - Chiller
108 Run Time Optimizer
109 Top-heating (glass)
110 VSD for Chiller Pumps and Towers
111 Window Film (Standard)
112 Window Film (Standard) - Chiller

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Table 1
Summary of Energy Efficiency Achievable Potential Results

	Annual Energy (GWh)		Summer System Peak (MW)		Winter System Peak (MW)	
	RIM	**TRC**	**RIM**	**TRC**	**RIM**	**TRC**
Residential						
Max Incentive (maximum or 2 yr payback)	49	146	23	45	3	19
Commercial/Industrial						
Max Incentive (maximum or 2 yr payback)	22	109	7	22	2	7
Total						
Max Incentive (maximum or 2 yr payback)	71	255	30	67	5	26

Table 2
Summary of Demand Response Achievable Potential Results

	Annual Energy (GWh)	Summer System Peak (MW)	Winter System Peak (MW)
Demand Response			
Achievable Potential	13	38	32

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Achievable Potential Measure List

RIM Portfolio
Residential Energy Efficiency

1. 15 SEER Split-System Air Conditioner
2. 17 SEER Split-System Heat Pump
3. AC Maintenance (Indoor Coil Cleaning)
4. AC Maintenance (Outdoor Coil Cleaning)
5. Default Window With Sunscreen
6. Double Pane Clear Windows to Double Pane Low-E Windows
7. Duct Repair
8. Electronically Commutated Motors (ECM) on an Air Handler Unit
9. HE Room Air Conditioner - EER 11
10. HE Room Air Conditioner - EER 12
11. Proper Refrigerant Charging and Air Flow
12. Radiant Barrier
13. Reflective Roof
14. Window Tinting

RIM Portfolio
Commercial Energy Efficiency

1. Ceiling Insulation
2. Centrifugal Chiller, 0.51 kW/ton, 500 tons
3. Chiller Tune Up/Diagnostics
4. Cool Roof - Chiller
5. Cool Roof - DX
6. Dehumidification Hybrid Desiccant Heat Pump
7. Demand Control Ventilation (DCV)
8. DX Tune Up/ Advanced Diagnostics
9. Electronically Commutated Motors (ECM) on an Air Handler Unit
10. Energy Recovery Ventilation (ERV)
11. Flood LED 14W
12. Geothermal Heat Pump, EER=13, 10 tons
13. LED (12-Watt)
14. LED High Bay 83W

TRC Portfolio
Residential Energy Efficiency

1. 15 SEER Split-System Air Conditioner
2. 15 SEER Split-System Heat Pump
3. 17 SEER Split-System Heat Pump
4. AC Maintenance (Indoor Coil Cleaning)
5. AC Maintenance (Outdoor Coil Cleaning)
6. Default Window With Sunscreen
7. Double Pane Clear Windows to Double Pane Low-E Windows
8. Duct Repair
9. Electronically Commutated Motors (ECM) on an Air Handler Unit
10. Energy Star CW CEE Tier 2 (MEF=2.0)
11. HE Room Air Conditioner - EER 11
12. HE Room Air Conditioner - EER 12
13. Heat Pump Water Heater (EF=2.9)
14. LED (12-Watt), 6.0 hr/day
15. LED (13-Watt) Outdoor
16. Low Flow Showerhead
17. Proper Refrigerant Charging and Air Flow
18. PV-Powered Pool Pumps
19. Radiant Barrier
20. Reflective Roof
21. Variable-Speed Pool Pump (<1 hp)
22. Water Heater Timeclock
23. Weather Strip/Caulk w/Blower Door
24. Window Film
25. Window Tinting

TRC Portfolio
Commercial Energy Efficiency

1. Air Handler Optimization
2. Ceiling Insulation
3. Centrifugal Chiller, 0.51 kW/ton, 500 tons
4. CFL Hardwired, Modular 18W
5. Chiller Tune Up/Diagnostics
6. Compressor VSD retrofit
7. Continuous Dimming
8. Cool Roof - Chiller
9. Cool Roof - DX
10. Dehumidification Hybrid Desiccant Heat Pump
11. Demand Control Ventilation (DCV)
12. Demand controlled circulating systems
13. DX Tune Up/ Advanced Diagnostics
14. Electronically Commutated Motors (ECM) on an Air Handler Unit

Achievable Potential Measure List

15 LED Linear Tube 22W
16 Roof Insulation
17 Separate Makeup Air/Exhaust Hoods AC

15 EMS - Chiller
16 EMS Optimization
17 Energy Recovery Ventilation (ERV)
18 Evaporator fan controller for MT walk-ins
19 Flood LED 14W
20 Geothermal Heat Pump, EER=13, 10 tons
21 Griddle
22 HE PTAC, EER=9.6, 1 ton
23 Heat Pump Water Heater (air source)
24 Heat Recovery Unit
25 High Efficiency Chiller Motors
26 High Pressure Sodium 250W Lamp
27 High R-Value Glass Doors
28 High-efficiency fan motors
29 Holding Cabinet
30 Hybrid Dessicant-DX System (Trane CDQ)
31 LED (12-Watt)
32 LED Display Lighting
33 LED High Bay 83W
34 LED Linear Tube 22W
35 Lighting Control Tuneup
36 Multiplex Compressor System
37 Occupancy Sensor
38 Occupancy Sensor (hotels)
39 Outdoor LED 104W
40 Outdoor Lighting Controls (Photocell/Timeclock)
41 Oversized Air Cooled Condenser
42 Premium T8, EB, Reflector
43 Premium T8, Electronic Ballast
44 ROB Premium T8, 1EB
45 ROB Premium T8, EB, Reflector
46 Roof Insulation
47 Run Time Optimizer
48 Separate Makeup Air / Exhaust Hoods AC
49 Server Virtualization
50 Solar Water Heater
51 Variable Speed Drive Control
52 VSD for Chiller Pumps and Towers
53 Window Film (Standard)

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Achievable Potential Measure List

RIM Portfolio

Industrial Energy Efficiency

1. CFL Hardwired, Modular 18W
2. Dehumidification Hybrid Desiccant Heat Pump
3. Flood LED 14W
4. Hybrid Dessicant-DX System (Trane CDQ)
5. LED High Bay 83W (400W equivalent)
6. LED Linear Tube 22W

TRC Portfolio

Industrial Energy Efficiency

1. CFL Hardwired, Modular 18W
2. Chiller Tune Up/Diagnostics
3. Clean Room - Controls
4. Clean Room - New Designs
5. Cool Roof - Chiller
6. Cool Roof - DX
7. Dehumidification Hybrid Desiccant Heat Pump
8. Direct drive Extruders
9. Drives - Process Controls (batch + site)
10. Drying (UV/IR)
11. Efficient Curing ovens
12. Efficient desalter
13. Efficient drives - rolling
14. Efficient electric melting
15. Efficient grinding
16. Efficient Printing press (fewer cylinders)
17. Efficient processes (welding, etc.)
18. EMS - Chiller
19. Extruders/injection Moulding-multipump
20. Fans - Controls
21. Fans - System Optimization
22. Flood LED 14W
23. Heat Pumps - Drying
24. Hybrid Dessicant-DX System (Trane CDQ)
25. Injection Moulding - Direct drive
26. Injection Moulding - Impulse Cooling
27. LED High Bay 83W (400W equivalent)
28. LED Linear Tube 22W
29. Light cylinders
30. Machinery
31. Membranes for wastewater
32. New transformers welding
33. O&M/drives spinning machines
34. Occupancy Sensor
35. Optimization Refrigeration
36. Optimize drying process
37. Other Process Controls (batch + site)
38. Process optimization
39. Pumps - System Optimization
40. Run Time Optimizer
41. VSD for Chiller Pumps and Towers

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		Annual Bill Impact for 1,200 kWh/Month Residential Customer									
		2015	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
RIM Portfolio/Proposed Goals		$ 8.71	$ 9.20	$ 9.80	$ 10.41	$ 10.94	$ 11.35	$ 11.73	$ 12.05	$ 12.34	$ 12.60
TRC Portfolio		$ 23.34	$ 28.99	$ 35.25	$ 41.59	$ 47.27	$ 52.10	$ 56.50	$ 60.30	$ 63.76	$ 66.82

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Summary of the Economic Potential Fuel Sensitivity Results

	# of Passing Measures		Annual Energy (GWh)		Summer System Peak (MW)		Winter System Peak (MW)	
	RIM	TRC	RIM	TRC	RIM	TRC	RIM	TRC
Residential								
Base	190	218	793	1,477	345	351	167	181
Low Fuel	165	207	666	1,422	303	341	116	176
High Fuel	193	232	804	1,591	348	382	172	201
Commercial/Industrial								
Base	576	1,950	359	1,372	120	248	66	115
Low Fuel	406	1,936	230	1,357	95	243	65	111
High Fuel	898	1,996	509	1,376	151	249	77	116
Total								
Base	766	2,168	1,153	2,849	465	599	233	296
Low Fuel	571	2,143	897	2,779	399	584	181	287
High Fuel	1,091	2,228	1,313	2,967	499	631	249	317

Note: Totals may not add due to rounding.

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Summary of the Economic Potential Free-Ridership Sensitivity Results

	# of Passing Measures		Annual Energy (GWh)		Summer System Peak (MW)		Winter System Peak (MW)	
	RIM	TRC	RIM	TRC	RIM	TRC	RIM	TRC
Residential								
1 year Payback	72	136	453	1,080	206	296	42	138
2 year Payback	64	109	364	727	168	223	43	96
3 year Payback	50	82	262	586	128	176	43	94
Commercial/Industrial								
1 year Payback	231	901	269	896	78	168	17	55
2 year Payback	216	694	257	759	73	148	17	46
3 year Payback	185	527	224	535	63	110	14	38
Total								
1 year Payback	303	1,037	722	1,975	284	464	60	194
2 year Payback	280	803	621	1,486	240	371	59	142
3 year Payback	235	609	486	1,121	191	286	57	131

Note: Totals may not add due to rounding.

Solar Pilot Participation History

	2010	2011	2012	2013	2014*
Solar PV	-	42	46	44	51
Solar Thermal Water Heating	-	32	22	22	5
Solar Thermal Water Heating - Low Income	-	15	14	1	14
Solar for Schools	-	-	1	1	1

* Projected values based on current enrollments and reservations.

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Solar Pilot Expense History (000s)

	2010	2011	2012	2013	2014*
Administrative Expenses	$ -	$ 161	$ 174	$ 234	$ 32
Solar PV	$ -	$ 424	$ 430	$ 435	$ 320
Solar Thermal Water Heating	$ -	$ 44	$ 22	$ 22	$ 3
Solar Thermal Water Heating - Low Income	$ -	$ 74	$ 66	$ 5	$ -
Solar for Schools	$ -	$ 70	$ 56	$ 83	$ -
Total	$ -	$ 773	$ 748	$ 779	$ 355

* YTD February 2014

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Solar PV Historical Customer Equipment Costs ($/Watt)

	2011	2012	2013	2014*
Average System Cost (w/out batteries)	$ 5.54	$ 4.75	$ 4.27	$ 3.42

* Projected values based on current enrollments and reservations.

Solar Thermal Water Heating Historical Customer Equipment Costs ($/System)

	2011	2012	2013	2014*
Average System Cost	$ 5,742	$ 5,972	$ 6,018	$ 5,480

* Projected values based on current enrollments and reservations.

Solar PV & STWH Cost Effectiveness Results

	RIM*	TRC
Solar PV	0.88	0.67
STWH - (Single Family)	0.74	0.56

* Results shown above did not include incentive payments

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

IN RE: **Commission review of numeric conservation goals**)
) Docket No.: **130202-EI**

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true copy of the foregoing was furnished by electronic mail this 2nd day of April, 2014 to the following:

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