AUSLEY & MCMULLEN

ATTORNEYS AND COUNSELORS AT LAW

227 SOUTH CALHOUN STREET
P.O. BOX 391 (ZIP 32302)
TALLAHASSEE, FLORIDA 32301
(850) 224-9115 FAX (850) 222-7560

June 1, 2009

HAND DELIVERED

Ms. Ann Cole, Director
Office of Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Re: Commission review of numeric conservation goals (Tampa Electric Company); FPSC Docket No. 080409-EG

Dear Ms. Cole:

Enclosed for filing in the above docket, on behalf of Tampa Electric Company, are the original and fifteen (15) copies of each of the following:

1. Tampa Electric Company's Petition for Approval of Numeric Conservation Goals.

2. Direct Testimony and Exhibit of Howard T. Bryant.

Please acknowledge receipt and filing of the above by stamping the duplicate copy of this letter and returning same to this writer.

Thank you for your assistance in connection with this matter.

Sincerely,

James D. Beasley

COM 5
ECR 2 JDB/pp
GCL 2 Enclosures
cc: All parties of record (w/encls.)
CLK 1

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Commission review of numeric conservation goals (Florida Power & Light Company).	DOCKET NO. 080407-EG
In re: Commission review of numeric conservation goals (Progress Energy Florida, Inc.).	DOCKET NO. 080408-EG
In re: Commission review of numeric conservation goals (Tampa Electric Company).	DOCKET NO. 080409-EG
In re: Commission review of numeric conservation goals (Gulf Power Company).	DOCKET NO. 080410-EG
In re: Commission review of numeric conservation goals (Florida Public Utilities Company).	DOCKET NO. 080411-EG
In re: Commission review of numeric conservation goals (Orlando Utilities Commission).	DOCKET NO. 080412-EG
In re: Commission review of numeric conservation goals (JEA).	DOCKET NO. 080413-EG FILED: June 1, 2009

TAMPA ELECTRIC COMPANY'S PETITION
FOR APPROVAL OF NUMERIC CONSERVATION GOALS

Tampa Electric Company ("Tampa Electric" or "the company"), pursuant to Section 366.82, Florida Statutes, Rules 25-17.001 and 25-17.0021, Florida Administrative Code, and Orders Nos. PSC-08-0816-PCO-EG and PSC-09-0152-PCO-EG entered in these consolidated proceedings on December 18, 2008 and March 12, 2009, respectively, hereby petitions the Commission in Docket No. 080409-EG for approval of numeric conservation, or Demand Side

Management ("DSM"), Goals for Tampa Electric for application during the period 2010 through 2019 and, in support thereof, says:

1. The name and address of petitioner are as follows:

Tampa Electric Company
702 North Franklin Street
Tampa, FL 33602

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

Mr. Lee L. Willis Mr. James D. Beasley Ausley & McMullen Post Office Box 391 Tallahassee, Florida 32302 (850) 224-9115 (850) 222-7952 (fax)	Paula K. Brown Administrator, Regulatory Coordination Tampa Electric Company Post Office Box 111 Tampa, Florida 33601 (813) 228-4111 (813) 228-1770 (fax)

3. The agency affected by this petition is:

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

4. Tampa Electric is an investor-owned public utility operating under the Commission's jurisdiction under Chapter 366, Florida Statutes. The company provides generation, transmission and distribution service to approximately 667,000 retail customers in Hillsborough County and portions of Polk, Pinellas and Pasco Counties in Florida. The company also provides wholesale full requirements service and other wholesale bulk power services to a number of other electric utilities in Florida.

5. Tampa Electric is subject to Section 366.82, Florida Statutes, part of the Florida Energy Efficiency and Conservation Act ("FEECA"), which requires the Commission to adopt goals to increase the efficiency 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. Pursuant to Section 366.82(6), Florida Statutes, the Commission must review a utility's conservation goals not less than every five years. These statutes are implemented by Rules 25-17.001 and 25-17.0021, Florida Administrative Code.

6. This docket and separate dockets for each of the other six FEECA utilities in Florida were established for the purpose of developing and prescribing numeric conservation or DSM goals for each of the seven Florida FEECA utilities to be applicable during the period 2010 – 2019. The seven separate dockets were consolidated in Order No. PSC-08-0816-PCO-EG for the conduct of Staff workshops and for hearing.

7. Given the size of the task and the similarity of the activities across all FEECA utilities, a collaborative team was established among the FEECA utilities, the Southern Alliance for Clean Energy ("SACE") and the National Resources Defense Council ("NRDC"). The team selected a consulting firm, Itron, Inc., whose professionals have provided consulting services to the energy industry since the early 1980's, primarily to electric and gas related public and private sector institutions, to perform the requisite tasks associated with a comprehensive DSM evaluation for all FEECA utilities. A comprehensive list of DSM measures that meet the requirements of Rule 25-17.0021, Florida Administrative Code, was identified. After this, technical, economic and achievable potentials were established through systematic cost-effective evaluations of the various DSM measures. Finally, proposed DSM savings were established for each of the FEECA utilities.

8. Tampa Electric's proposed DSM goals are based upon the analytical work described above and are separated into summer demand, winter demand and annual energy components for both residential and commercial/industrial sectors.

9. The appropriate and reasonable cumulative DSM goals for Tampa Electric for the period 2010-2019 are segmented into the residential and commercial/industrial sectors. For the residential sector, the proposed goals are 33.3 MW of summer demand, 28.5 MW of winter demand and 59.0 GWH of annul energy. For the commercial/industrial sector, the proposed goals are 48.5 MW of summer demand, 12.4 MW of winter demand and 142.7 GWH of annual energy. These goals were developed using the Commission-approved cost-effectiveness methodology and are based on the rate impact measure ("RIM") test. Tampa Electric believes these goals are reasonably achievable, cost-effective goals that comport with the requirements of Rule 25-17.0021, Florida Administrative Code.

10. Tampa Electric is simultaneously filing herewith the direct testimony and exhibit of Tampa Electric witness Howard T. Bryant, which explain and support the appropriateness of the company's proposed DSM goals for 2010-2019. Tampa Electric is also co-sponsoring the direct testimony and exhibits of Itron witness Mike Rufo, currently a Managing Director of Itron Inc.'s Consulting and Analysis ("C&A") Group, which specializes in the analysis of energy efficiency, demand response, distributed generation, resource planning, and advanced metering infrastructure ("AMI/SmartGrid"). Mr. Rufo presents and summarizes the methodology, input data and findings contained in the studies of technical potential and achievable potential for cost-effective energy efficiency and load management for the seven FEECA utilities.

11. The testimony and exhibits of witnesses Bryant and Ruffo establish the reasonableness and appropriateness of Tampa Electric's proposed DSM goals to be applicable during the period 2010-2019.

12. Tampa Electric is not aware of any disputed issues of material fact relating to the matters set forth in this petition.

WHEREFORE, Tampa Electric Company urges the Commission to approve Tampa Electric's proposed DSM goals as being appropriate and reasonably achievable for application during the period 2010-2019.

DATED this 1st day June, 2009.

Respectfully submitted,

LEE L. WILLIS
JAMES D. BEASLEY
Ausley & McMullen
Post Office Box 391
Tallahassee, FL 32302
(850) 224-9115

ATTORNEYS FOR TAMPA ELECTRIC COMPANY

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing Petition, filed on behalf of Tampa Electric Company, has been furnished by hand delivery(*) or U. S. Mail on this 1st day of June 2009 to the following:

Katherine E. Fleming
Senior Attorney
Office of General Counsel
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

Mr. Richard F. Spelman, President
GDS Associates, Inc.
1850 Parkway Place, Suite 800
Marietta, GA 3067

Ms. Susan F. Clark
Radey, Thomas, Yon & Clark, P.A.
301 South Bronough Street, Suite 200
Tallahassee, FL 32301

Mr. John T. Burnett
Progress Energy Service Company, LLC
P. O. Box 14042
St. Petersburg, FL 33733-4042

Mr. E. Leon Jacobs, Jr.
Williams & Jacobs, LLC
1720 S. Gadsden Street, MS14
Suite 201
Tallahassee, FL 32301

Mr. Michael Ting
Principal Consultant
Itron, Inc.
Consulting and Analysis Services
1111 Broadway, Suite 1800
Oakland, CA 94607

Mr. Paul Lewis
Progress Energy Florida, Inc.
106 East College Avenue, Suite 800
Tallahassee, FL 32301-7740

Ms. Suzanne Brownless
Suzanne Brownless, P.A.
1975 Buford Boulevard
Tallahassee, FL 32308

Mr. Steven R. Griffin
Beggs & Lane Law Firm
Post Office Box 12950
Pensacola, FL 32591-2950

Mr. John T. English
Florida Public Utilities Company
P. O. Box 3395
West Palm Beach, FL 33402-3395

Ms. Teala A. Milton
V.P., Governmental Relations
Jacksonville Electric Authority
21 West Church Street, Tower 16
Jacksonville, FL 32202-3158

Mr. Jeff Curry
Lakeland Electric
501 East Lemon Street
Lakeland, FL 33801

Mr. Jeremy Susac
Executive Director
Florida Energy and Climate Commission
c/o Governor's Energy Office
600 South Calhoun Street, Suite 251
Tallahassee, FL 32399-0001

Ms. Susan D. Ritenour
Secretary and Treasurer
Gulf Power Company
One Energy Place
Pensacola, FL 32520-0780

Mr. Chris Browder
Orlando Utilities Commission
P.O. Box 3193
Orlando, FL 32802-3193

Mr. Bob Krasowski
1086 Michigan Avenue
Naples, FL 34103

Mr. J. R. Kelley
Mr. Stephen Burgess
Office of Public Counsel
111 West Madison Street, Rom 812
Tallahassee, FL 32399-1400

Mr. Norman H. Horton, Jr.
Messer Caparello & Self
Post Office Box 15579
Tallahassee, FL 32317

Mr. R. Wade Litchfield
Ms. Carla Pettus
Florida Power & Light Company
700 Universe Boulevard
Juno Beach, FL 33408-0420

ATTORNEY

TECO
TAMPA ELECTRIC

BEFORE THE

FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 080409-EI

IN RE: COMMISSION REVIEW OF

NUMERIC CONSERVATION GOALS

TAMPA ELECTRIC COMPANY

DIRECT TESTIMONY AND EXHIBIT

OF

HOWARD T. BRYANT

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OF

HOWARD T BRYANT

BEFORE THE PUBLIC SERVICE COMMISSION

PREPARED DIRECT TESTIMONY

OF

HOWARD T. BRYANT

Q. Please state your name, address, occupation and employer.

A. My name is Howard T. Bryant. My business address is 702 North Franklin Street, Tampa, Florida 33602. I am employed by Tampa Electric Company ("Tampa Electric" or "company") as Manager, Rates in the Regulatory Affairs Department.

Q. Please provide a brief outline of your educational background and business experience.

A. I graduated from the University of Florida in June 1973 with a Bachelor of Science degree in Business Administration. I have been employed at Tampa Electric since 1981. My work has included various positions in Customer Service, Energy Conservation Services, Demand Side Management ("DSM") Planning, Energy Management and Forecasting, and Regulatory Affairs. In my current position I am responsible for the company's Energy Conservation Cost Recovery ("ECCR") clause, the

Environmental Cost Recovery Clause ("ECRC"), and retail rate design.

Q. Have you previously testified before the Florida Public Service Commission ("Commission")?

A. Yes. I have testified before this Commission on conservation and load management activities, DSM goals setting and DSM plan approval dockets, and other ECCR dockets since 1993, and ECRC activities since 2001.

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony is to present, for Commission review and approval, Tampa Electric's proposed numerical DSM goals for 2010-2019. Tampa Electric's proposed goals are based upon the analytical work performed by the company and Itron, Inc. ("Itron"), a consulting and analysis services firm with over 20 years of experience in the field of DSM evaluations. The goals are separated into summer demand, winter demand and annual energy components for both residential and commercial/industrial sectors. In support of the proposed DSM goals, my testimony will demonstrate that the process Tampa Electric utilized to establish its reasonably achievable, cost-effective goals comports with the requirements of Rule 25-17.0021, Florida Administrative Code ("F.A.C.").

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

A. Yes. Under my direction and supervision, I have prepared an exhibit entitled, "Exhibit of Howard T. Bryant." It consists of eight documents and has been identified as Exhibit No. _____ (HTB-1). Document No. 1 contains Tampa Electric's proposed DSM goals for 2010-2019; Document No. 2 provides the comprehensive DSM measure list utilized in this proceeding; Document No. 3 contains Tampa Electric's avoided cost data used for cost-effectiveness evaluations; Document No. 4 lists the DSM measures associated with the Rate Impact Measure ("RIM") economic potential; Document No. 5 lists the DSM measures associated with the Total Resource Cost ("TRC") economic potential; Document No. 6 provides the 2010-2019 estimated annual DSM achievable potential for the RIM and TRC tests; Document No. 7 lists the DSM measures associated with the 2010-2019 RIM and TRC estimated achievable potentials; Document No. 8 provides the DSM Economic Potential Cost-Effectiveness Sensitivity Analyses; and Document No. 9 provides the 2010-2019 residential bill impacts for three scenarios: 1) no incremental DSM added to the forecast, 2) the RIM achievable potential added to the forecast, and 3) the TRC achievable potential added to the forecast.

TAMPA ELECTRIC'S PROPOSED DSM GOALS

Q. What overall DSM goals are appropriate and reasonably achievable for Tampa Electric for the period 2010-2019?

A. The appropriate and reasonable cumulative DSM goals for Tampa Electric for the period 2010-2019 are segmented into the residential and commercial/industrial sectors and provided at the generator level. For the residential sector, the proposed goals are 33.3 MW of summer demand, 28.5 MW of winter demand and 59.0 GWH of annual energy. For the commercial/industrial sector, the proposed goals are 48.5 MW of summer demand, 12.4 MW of winter demand and 142.7 GWH of annual energy. These goals were developed using the Commission-approved cost-effectiveness methodology and are based on the RIM test. Document No. 1 of my exhibit details the incremental and cumulative annual amounts that comprise these goals.

Q. How do Tampa Electric's proposed DSM goals for the upcoming period of 2010-2019 compare to the company's current DSM goals for the 2005-2014 period?

A. Tampa Electric's cumulative proposed goals across the residential and commercial/industrial sectors for the 2010-2019 period are 81.8 MW of summer demand, 40.9 MW of winter demand and 201.7 GWH of annual energy. The total cumulative goals at the generator level for the current 2005-2014 period are 70.6 MW of summer demand, 70.9 MW of winter demand and 116.5 GWH of annual energy.

Q. How does Tampa Electric's DSM goals accomplishments compare to other utilities in the nation?

A. Tampa Electric's accomplishments are significantly greater than most other utilities in the U.S. Tampa Electric began its DSM efforts in the late 1970s prior to the 1980 legislative enactment of the Florida Energy Efficiency and Conservation Act ("FEECA"). Since then, the company has aggressively sought Commission approval for numerous DSM programs designed to promote energy efficient technologies and to change customer behavioral patterns such that energy savings occur with minimal affect on customer comfort. Additionally, the company has modified existing DSM programs over time to promote evolving technologies and to maintain program cost-effectiveness.

From the inception of Tampa Electric's programs through 2008, the company has achieved 660 MW of winter reduction, 232 MW of summer reduction and 647 GWH of annual energy savings. These peak load reductions have eliminated the need for the equivalent of more than three power plants of 180 MW of winter capacity. Of greater significance is the fact that this accomplishment was achieved without subsidizing or penalizing customers who were not participants. Tampa Electric achieved this level of reduction by offering only those DSM programs that reduce rates for all customers, both DSM participants and non-participants alike.

The reality of these continuing efforts by Tampa Electric is demonstrated by the statistics from the Energy Information Administration ("EIA") of the Department of Energy. For the 2001-2007 period, EIA has nationally ranked Tampa Electric as high as the 96th percentile for cumulative conservation and the 90th percentile for load management achievements.

OVERALL COLLABORATIVE PROCESS TO DEVELOP DSM SAVINGS

Q. Please describe the overall collaborative process used to develop each member's proposed DSM savings.

A. There were several key steps in the overall collaborative process that sequentially supported the development of each utility's proposed DSM goals. These steps included: 1) the establishment of a collaborative team among the FEECA utilities, the Southern Alliance for Clean Energy ("SACE"), and the National Resources Defense Council ("NRDC"); 2) the selection of a consultant capable of performing the requisite tasks associated with a comprehensive DSM evaluation for all FEECA utilities; 3) the identification of a comprehensive list of DSM measures that met the requirements of Rule 25-17.0021, F.A.C., 4) the establishment of technical, economic and achievable potentials through systematic cost-effectiveness evaluations of the DSM measures; and 5) the establishment of each utility's proposed DSM savings.

Q. Why was a collaborative approach taken?

A. A collaborative approach was taken primarily due to the size of the task and the similarity of the activities across all FEECA utilities. Also, SACE and NRDC requested intervenor status in each utility's docket;

therefore, it was felt that a collaborative effort was a more efficient manner to facilitate major aspects of the goals setting process.

Q. Please identify the FEECA utilities.

A. FEECA utilities are those utilities that fall under the requirements of Sections 366.80 and 366.82, F.S. Specific to electric utilities, the group includes Tampa Electric, Florida Power and Light Company, Progress Energy Florida, Gulf Power Company, Florida Public Utilities Company, Jacksonville Electric Authority, and Orlando Public Utilities.

Q. Has the collaborative process brought value to the overall DSM goals setting process?

A. Yes. At the outset, the entire team participated in the Request for Proposal process for selecting a consultant to conduct the DSM potential study. This included the identification of several potential consultants and the ultimate selection of Itron. Once Itron was selected, the team, along with Itron, established the comprehensive list of DSM measures for evaluation. Additionally, many meetings, conference calls, and presentations that included Itron have occurred to assist in applying consistent methodologies to the evaluation process. SACE and NRDC have provided expertise in areas of measure incentive levels, program development aspects such as capturing lost opportunities, and providing judgment as to the appropriateness of the technical potential. Ultimately, the collaborative team worked as close as possible to provide reasonable achievable potential DSM goals for each member utility while respecting key differences among the group. To suggest the collaborative team has been in total agreement on all matters throughout the process would be incorrect; however, each member has contributed value to the process.

Q. As the utility consultant to the DSM goals setting process, what were Itron's responsibilities?

A. Itron's responsibilities to each member of the collaborative team were categorized into four major areas. These areas were:

- Develop DSM measures and estimate the technical potential;
- Collect building characteristics and end-use measure saturation data;

- Estimate the economic and achievable potentials; and
- Provide regulatory support, reporting and project management.

As these areas of responsibility were executed, there were frequent exchanges of data and calibration checks made in order to provide the best estimates of the three potentials. Additional details surrounding these key areas can be found in the direct testimony of Itron witness Michael Rufo.

Q. Please identify the comprehensive DSM measure list developed.

A. Tampa Electric's comprehensive DSM measure list developed by input from all collaborative members was comprised of 67 residential sector measures, 82 commercial sector measures, and 118 industrial sector measures for a combined total of 267 DSM measures. For residential, the measures were applied to new and existing building vintages in the single family, multi-family and mobile home building types. Commercially, the measures were applied to new and existing building vintages in the college, food store, hospital, office, lodging, restaurant, retail, school, warehouse, other health care and miscellaneous building types. For industrial, the measures were applied to the existing building vintage in the food processing, textiles, lumber, paper-pulp, printing, chemicals, petroleum, rubber-plastics, stone-clay-glass, primary metals, fabrication metals, industrial machinery, electronics, transportation equipment, instruments and miscellaneous building types. When the comprehensive DSM measure list was applied to the various building types within each sector, a total of almost 2,300 specific DSM measure applications was developed for evaluation. Document No. 2 of my exhibit provides Tampa Electric's comprehensive DSM measure list.

Q. Other than the energy efficiency, demand response and renewable measures identified by the collaborative team, what other DSM measures were identified for potential inclusion in the DSM goals?

A. In addition to the 267 energy efficiency, demand response and renewable measures, Tampa Electric identified three natural gas measures for potential inclusion. The specifics on these measures will be addressed later in my testimony.

TAMPA ELECTRIC'S PROCESS TO DEVELOP ITS SPECIFIC DSM GOALS

Q. What was Tampa Electric's first step in developing its specific DSM goals?

A. Tampa Electric's first step in developing its DSM goals was to assist Itron with establishing the company's technical potential. The technical potential is the total amount of DSM technically feasible in the company's service area based on the comprehensive DSM measure list established by the collaborative team. As stated on page ES-1 in Itron's report for Tampa Electric, the "…technical potential is a theoretical construct that represents the upper bound of [energy efficiency], [demand response] and [photovoltaic] potential from a technical feasibility sense, regardless of cost or acceptability to customers. Specifically, technical potential does not account for other real-world constraints such as product availability, contractor/vendor capacity, cost-effectiveness, or customer preferences." The report further states, "…the technical potential estimates for [energy efficiency], [demand response], and [photovoltaics] are not strictly additive." This is due to the interactive affect of certain measures on end uses. With this backdrop, the energy efficiency demand and energy values represented by the technical potential are 1,412 MW of summer demand, 903 MW of winter demand and 5,853 GWH of annual energy. The demand response demand reduction values represented by the technical potential are 550 MW of summer demand and 485 MW of winter demand. Finally, the photovoltaic demand and energy values represented by the technical potential are 2,854 MW of summer demand, 436 MW of winter demand and 7,693 GWH of annual energy.

Q. Has Tampa Electric filed the Itron technical potential final report?

A. Yes. Tampa Electric filed the report, dated April 6, 2009, entitled "Technical Potential for Electric Energy and Peak Demand Savings in Tampa Electric Company - Final Report." That report was logged in at the Commission Clerk's office on April 28, 2009, and assigned FPSC Document No. 03950-09. Rather than making that voluminous report an exhibit to my testimony I adopt by reference the report filed with the Commission.

Q. Once the technical potential was established, what was Tampa Electric's next step?

A. The next step involved initiating Tampa Electric's integrated resource planning ("IRP") process. The company's IRP process has been utilized and approved in all previous DSM goals setting proceedings and is clearly delineated in the company's annual Ten-Year Site Plan filing. The IRP process began by establishing Tampa Electric's supply-only resource plan for the base years of 2010 through 2019. The supply-only resource plan was developed by having no additional DSM impacting the company's forecast after 2009. In so doing, the avoided unit for the upcoming cost-effectiveness analyses was identified. Document No. 3 of my exhibit provides the detail of this avoided unit.

Q. Once the avoided unit information was determined, what was the next step in the process?

A. The next step for Tampa Electric was to establish its economic potential. The company developed its economic potential by utilizing the Commission's approved cost-effectiveness tests, namely, the RIM and TRC tests. When calculating the RIM test, only lost revenues were considered on the cost side of the equation. For the TRC test, only the customer's equipment cost was considered on the cost side of the equation. For both the RIM and TRC tests, the benefits were comprised of supply side costs that included the avoided generator, transmission and distribution, and fuel costs.

Tampa Electric's economic potential established under the RIM test evaluation resulted in 250 individual measures remaining from the original list. The measures that remained are provided in Document No. 4 of my exhibit. The resulting demand and energy values of the economic potential were 1,465 MW of summer demand, 919 MW of winter demand and 6,629 GWH of annual energy.

Tampa Electric's economic potential established under the TRC test evaluation resulted in 251 individual measures remaining from the original list. The measures that remained are provided in Document No. 5 of my exhibit. The resulting demand and energy values of the economic potential were 1,339 MW of summer demand, 799 MW of winter demand and 6,266 GWH of annual energy.

Q. After the RIM and TRC economic potentials were determined, what was the next step in Tampa Electric's process?

A. The next step in Tampa Electric's process was to perform a systematic analysis to determine the appropriate incentive for each measure under the RIM and TRC economic potential scenarios. Since this step required the identification of measures that could cost-effectively manage the application of incentives, it was necessary to employ a series of screenings such that when completed, the appropriate measures would remain.

Q. Please describe the steps involved in the screening process.

A. The first step in the screening process was to screen those measures out of the RIM and TRC economic potential scenarios by evaluating their cost-effectiveness for the inclusion of administrative costs but with no incentives. Tampa Electric developed the administrative costs though its experience with the same or similar measures contained in existing DSM programs. Under the RIM test evaluation, this screening resulted in 146 measures remaining with summer demand savings of 877 MW, winter demand savings of 505 MW, and annual energy savings of 3,447 GWH. Under the TRC test evaluation, this screening resulted 225 measures remaining with summer demand savings of 926 MW, winter demand savings of 496 MW, and annual energy savings of 4,013 GWH.

The second step in the screening process was to screen those measures out of the RIM and TRC potential scenarios that had a participant payback of two years or less without a utility incentive. The introduction of this screening level required not only the use of the RIM and TRC tests, but also the Participants' test in conjunction with each. The collaborative team established the two-year payback criterion to minimize free ridership. Free ridership is the situation where a customer's investment in a DSM measure will naturally pay for itself over a relatively short period of time. The two-year or less period of time is sufficient motivation for a customer's natural adoption of the DSM measure. Simplistically, it was thought that Tampa Electric, and ultimately its customers, should not pay specific customers to do what they would do on their own without an incentive. Therefore, the two-year payback criterion minimized free ridership. By utilizing this naturally occurring free ridership screen, 113 measures remained under the RIM and Participants' tests evaluation and had summer demand savings of 574 MW, winter demand savings of 175 MW, and annual energy savings of 2,066 GWH. Under the TRC and Participants' tests evaluation, 196 measures remained with 785 MW of summer demand savings, 328 MW of winter demand savings, and 3,705 GWH of annual energy savings.

The third step in the screening process was the development of the incentive levels to be applied to the remaining measures. For this step, the collaborative team chose three incentive levels for evaluation. As these incentive levels were applied, cost-effectiveness was maintained under the RIM and TRC methodologies and in conjunction with the Participants' test. The first level was an incentive applied to the incremental measure cost such that the measure payback for the customer was decreased to two years. This screen typically identified the maximum incentive available for each measure. The second level was an incentive equal to the lesser of 50 percent of the incremental cost of the measure or an incentive that provides a two-year payback. The third level was an incentive equal to either 33 percent of the incremental cost of the measure or an incentive that provides a two-year payback, whichever is less.

Q. Once the third step in the screening process was completed, what did Tampa Electric do with the results?

A. At the completion of the screening process, the results of each incentive level under the RIM and TRC scenarios were provided to Itron. Itron, in turn, through their supply curve adoption modeling, developed the achievable

DSM potential for each incentive level under both RIM and TRC scenarios. This actually created six different DSM achievable potentials.

Q. How did Tampa Electric utilize the achievable potential data received from Itron?

A. Tampa Electric selected the achievable potential that was associated with the maximum incentive level, namely, the two-year payback. This was done for both RIM and TRC scenarios and provided the largest achievable potential for each scenario.

Q. Based on the Itron data, what are Tampa Electric's estimated energy efficiency DSM achievable potential goals for the 2010-2019 period under the RIM and TRC scenarios?

A. For the 2010-2019 period, Tampa Electric's estimated energy efficiency DSM achievable potential goals under the RIM scenario are 65.3 MW of summer demand savings, 28.8 MW of winter demand savings, and 201.7 GWH of annual energy savings. Under the TRC scenario Tampa Electric's estimated energy efficiency DSM achievable potential goals are 102.7 MW of summer demand savings, 61.1 MW of winter demand savings, and 310.3 GWH of annual energy savings. These values are stated at the generator level.

Q. Do these estimated DSM achievable potential goals include demand response, renewable and natural gas measures?

A. No. These estimated DSM achievable potential goals only account for energy efficiency measures. Tampa Electric evaluated the potential of demand response, renewable and natural gas measures separately.

Q. Please describe the method Tampa Electric employed to estimate the achievable potential demand and energy savings from demand response, renewable and natural gas measures.

A. The achievable potential for demand response and renewable measures was developed separately by Itron. Tampa Electric utilized internal data to evaluate natural gas measures.

For demand response, Itron utilized its expertise to estimate the achievable potential for dispatchable and non-dispatchable demand response. Dispatchable is analogous to direct load control and non-dispatchable is dependent upon the customer's decision to control their usage based on pricing. Sometimes called critical peak pricing, non-dispatchable demand response is a relatively new DSM measure that requires advanced technologies, dynamic tariffs and advanced communications networks. Based on Itron modeling of the various forms of demand response, Tampa Electric selected Itron's high scenario estimate of demand response for its achievable potential goals. The associated demand and energy components are 16.5 MW of summer demand savings, 12.1 MW of winter demand savings, and no GWH of annual energy savings.

For renewables, Itron evaluated photovoltaic ("PV") measures that could be applied to various building types in the residential and commercial sectors; however, solar water heating measures were evaluated through the energy efficiency process previously discussed. For PV evaluation under the RIM scenario, the measures did not fail cost-effectiveness screening until incentives were applied. Under the TRC scenario, the measures failed from the outset. Therefore, based on the evaluation results, no PV contribution to the company's estimated achievable potential was available.

As previously stated, Tampa Electric evaluated the potential for commercially available natural gas measures based on its own internal data. The residential gas measures evaluated included conventional and tankless water heaters. The commercial gas measure evaluated was a conventional water heater. The measures were evaluated under the RIM and TRC cost-effectiveness criteria and failed both tests at the initial screening level; therefore, the measures provided no contribution to the company's estimated DSM achievable potential goals.

Q. Based on the estimated achievable potentials for energy efficiency and demand response, what is Tampa Electric's total estimated maximum achievable potential for DSM measures?

A. When the estimated achievable potentials for energy efficiency and demand response are combined, Tampa Electric's total estimated maximum DSM achievable potential for the 2010-2019 period under the RIM scenario is 81.8 MW of summer demand savings, 40.9 MW of winter demand savings, and 201.7 GWH of annual energy savings. Tampa Electric's total estimated maximum achievable potential for the 2010-2019 period under the TRC scenario is 119.2 MW of summer demand savings, 73.2 MW of winter demand savings, and 310.3 GWH of annual energy savings.

These are generator level values. Document No. 6 of my exhibit provides the annual and cumulative totals for the RIM and TRC cost-effectiveness scenarios. Document No. 7 of my exhibit provides the list of measures that were used to form the 2010-2019 estimated maximum achievable potentials for the RIM and TRC scenarios.

Q. What are Tampa Electric's proposed residential and commercial/industrial DSM goals for the 2010-2019 period?

A. For the 2010-2019 period, Tampa Electric's proposed DSM goals for the residential and commercial/industrial sectors are the generator level achievable potential demand and energy results developed by Itron under the RIM *maximum incentive scenario*. Specifically, the residential sector DSM goals are 33.3 MW of summer demand savings, 28.5 MW of winter demand savings, and 59.0 GWH of annual energy savings. The commercial/industrial sector DSM goals are 48.5 MW of summer demand savings, 12.4 MW of winter demand savings, and 142.7 GWH of annual energy savings. Document No. 1 of my exhibit provides the annual and cumulative amounts for both sectors for the 2010-2019 period. Document No. 7 provides a listing, under the RIM scenario, of the measures broken into sectors that were used to form the company's proposed DSM goals.

Q. What is the cost-effectiveness basis for Tampa Electric's proposed DSM goals?

A. The cost-effectiveness basis for Tampa Electric's goals is the RIM test in conjunction with the Participants' test. The RIM test, when used in tandem with the Participants' test, provides a cost-effective, fair, reasonable and equitable determination of DSM expenditures for both the participants and the non-participants. The RIM test puts the least amount of upward pressure on rates while allowing for significant accomplishments of DSM measure deployment. Furthermore, the RIM test does not promote cross-subsidization among participants and non-participants. Finally, history indicates that this Commission's decisions in the past to approve a utility's DSM goals based on the RIM test have not hindered the DSM performance of the Florida utilities relative to other utilities in the industry. According to EIA, since 2001, Florida's four largest investor-owned utilities have consistently ranked among the nation's leaders for cumulative energy efficiency accomplishments with the top three utilities having achieved rankings in the top ten. Based on these results and the fairness of the methodology, Tampa Electric believes its DSM goals for the 2010-2019 period should continue to be established on the RIM test basis.

ADHERENCE TO F.A.C. RULE AND STATUTORY DSM GOALS SETTING REQUIREMENTS

Q. Does the evaluation process utilized by Tampa Electric to establish its proposed DSM goals for the 2010-2019 period address the requirements of Rule 25-17.0021, F.A.C.?

A. Yes. The Rule requires a utility to 1) project its proposed DSM goals in both the residential and commercial/industrial sectors, 2) give consideration to measures applicable for new and existing construction, 3) ensure that major end-use categories specified in the Rule be assessed, and 4) consider such things as overlapping measures, appliance efficiency standards, interactions with building codes, free riders, rebound effects and the utility's latest monitoring and evaluation data. To the extent data was available, the comprehensive DSM measure list developed by the collaborative process, the company's utilization of Itron as a leading DSM consulting firm in the industry, and Tampa Electric's overall evaluation process from its technical potential to its proposed DSM goals for the 2010-2019 period comport with Rule 25-17.0021, F.A.C.

Q. Has Tampa Electric 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. Tampa Electric has been an integral member of a statewide collaborative process that developed a comprehensive DSM measure list and conducted an adequate assessment of the full technical potential of all available demand-side conservation and efficiency measures that included renewable energy systems. A total of 270 measures, including energy efficiency, demand response, renewable energy and natural gas measures were identified and evaluated by Itron and Tampa Electric.

Q. Section 366.82(3), F.S., requires utilities to perform an adequate assessment of supply-side conservation measures. Has Tampa Electric performed that assessment and, if not, why?

A. Tampa Electric has not performed an assessment of supply-side conservation measures. The company recognizes this is a requirement of the statute; however, the enormity of the task to adequately assess supply-side conservation measures to the degree this Commission would expect is unreasonable for the timeline of this docket. Given the immediate need of properly assessing the demand-side conservation and efficiency measures in this docket, Tampa Electric believes a better approach is to complete all work associated with establishing DSM goals for the 2010-2019 period and then perform an assessment of supply-side conservation measures. In so doing, adequate time will be available to properly evaluate the new requirement of supply-side conservation measures.

Q. Has Tampa Electric 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. Tampa Electric has been an integral member of a statewide collaborative process that has conducted an adequate assessment of the full technical, economic and achievable potentials of all available demand-side conservation and efficiency measures including renewable energy systems and natural gas measures. The company employed a reasonable approach to identifying administrative costs and incentives for the measures and evaluated the measures against the appropriate supply-side avoided cost data.

Q. Should the Commission establish separate goals for demand-side renewable energy systems?

A. No. Tampa Electric evaluated demand-side renewable energy systems as an integral part of its overall DSM measure evaluation process. The company believes that the appropriate renewable energy measures that contribute to demand and energy reductions on the customer side of the meter should simply be a part of the company's overall DSM goals and not stand alone as a separate requirement.

Q. Should the Commission establish additional goals for efficiency improvements in generation, transmission and distribution?

A. Tampa Electric believes that efficiency improvements in generation, transmission and distribution are supply-side options and that the Commission should evaluate these efficiency improvements in light of any potential goals in a separate proceeding from the current docket for demand-side goals.

Q. Should the Commission establish separate goals for residential and commercial/industrial customer participation in utility energy audit programs for the period 2010-2019?

A. No. Tampa Electric does not believe it is necessary to establish separate performance goals for residential and commercial/industrial customer participation in utility energy audit programs for a number of reasons. First, history from throughout the 1980s indicates that performing audits just for the sake of performing audits may not garner the intended results originally sought. Second, the company's customary practice today is to make known to its customers the availability of energy audits far more frequently than the minimum F.A.C. Rule requirement of twice a year. Third, customer service representatives utilize the availability of the various types of energy audits as an initial offering to assist customers who voice concerns over the magnitude of their electric bills. Fourth, Tampa Electric counts the demand and energy savings that result from the performance of energy audits toward its DSM goals accomplishments which is motivation in itself to conduct a meaningful number of audits on customer facilities. Finally, Tampa Electric would prefer to use its resources for a more targeted approach with specific programs that have greater potential for savings than to routinely attempt to perform a certain number of audits with less potential savings.

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

A. Yes. Through the statewide work of Itron and the local market input relative to baselines and incremental equipment costs supplied by Tampa Electric, the company's proposed DSM goals adequately reflect the costs and benefits to customers who will participate in the program promoting the measure.

Q. Do Tampa Electric'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. The surest way to adequately reflect the costs and benefits to the general body of ratepayers as a whole is to continue to employ the use of the RIM test for DSM goals setting and program approval. The Commission has a longstanding practice of utilizing the RIM test to provide fair, equitable and reasonable treatment for all ratepayers while minimizing overall rate impacts of DSM expenditures and Tampa Electric strongly encourages the Commission to continue this practice.

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

A. Yes. To date, laws for the emissions of greenhouse gases have not been enacted at the federal or state levels; however, Tampa Electric did include an estimated cost associated with CO_2 regulation in its evaluations. This estimate is based on a mid-range value of proposed legislation before Congress. The inclusion of an estimated cost for greenhouse gas puts DSM measures on a more level playing field with supply-side options.

Q. What is Tampa Electric'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. Tampa Electric is generally supportive of the Commission adopting strategic incentives in this area. Section 366.82(8),F.S., contemplates "…financial rewards for utilities that exceed their goals…." Tampa Electric believes this statutory provision can provide a useful purpose and may serve as a viable approach towards addressing a utility's performance as it strives to meet future DSM goals. The traditional application of Commission cost-effectiveness modeling has undergone a modification in this docket with the inclusion of carbon costs. There may be other changes which may adversely affect the company's base revenues. In light of the recent legislation and potential modifications to cost-effectiveness modeling, Tampa Electric expects to explore financial rewards for DSM performance at the appropriate time.

MISCELLANEOUS INFORMATION REQUESTED BY COMMISSION STAFF

Q. Please describe how Tampa Electric conducted the sensitivity analyses requested by Commission Staff.

A. Tampa Electric's sensitivity analyses were conducted on the RIM and TRC economic potentials with regard to the following factors: 1) high and low capital costs for generation, 2) high fuel and CO_2 costs, 3) low fuel and CO_2 costs, and 4) no future CO_2 costs. Specifically, the capital cost factor was varied by plus or minus 10 percent from the base case. The fuel cost factor was varied in a similar manner as to Tampa Electric's sensitivity conducted in the fuel docket, namely, a 25 percent variation on the cost of gas. Since a mid-range CO_2 cost from proposed national legislation was included in all cost-effectiveness analyses conducted from the outset of this docket, Tampa Electric varied the sensitivity analyses by the high and low CO_2 estimates from the proposed legislation.

Q. For Tampa Electric, please describe the results of the sensitivity analyses when applied to the 2010-2019 RIM and TRC DSM economic potentials.

A. Tampa Electric's sensitivity analyses on the 2010-2019 RIM and TRC DSM economic potentials were conducted by determining the change in four components for both potentials. These components were the total number of individual measures across housing and building types that passed RIM or TRC tests, annual energy, summer demand and winter demand. Document No. 8 provides the detailed results of the analyses.

For the RIM economic potential results, the greatest level of sensitivity was associated with the carbon cost factor. Whether carbon was evaluated as a separate factor or in conjunction with fuel, the percent change from the base case was the most dramatic. Specifically, the no carbon scenario produced component results that ranged from 31 to 52 percent of the base case while the fuel and carbon scenarios produced component results that ranged from 65 to 127 percent of the base case. Concerning the capital cost factor, the variability was almost non-existent. Specifically, the change from high to low capital scenarios produced a maximum percentage change from the base case of only two percent to any one component.

For the TRC economic potential results, the overall sensitivities of the four components relative to the various scenarios were somewhat less dramatic. Specifically, the no carbon scenario produced component results that ranged from 75 to 92 percent of the base case, the fuel plus carbon scenarios produced component results that ranged from 90 to 106 percent of the base case, while the capital cost scenarios produced component results that ranged from 75 to 100 percent of the base case.

Q. Should the results of these sensitivity analyses be used in any manner to influence or establish Tampa Electric's DSM goals for the 2010-2019 period?

A. No. Tampa Electric believes the sensitivity analyses simply provide a relative indication as to how cost-effectiveness evaluations may be affected by changes in assumptions. There is no basis to conclude the assumption changes modeled by the company for this exercise will in some manner become more plausible than the actual assumptions provided by the company's resource planning experts. The experience of the resource planning professionals is far more reliable than arbitrary increases or decreases of certain planning assumptions, and, as such, cannot be utilized to establish DSM goals above or below those DSM goals proposed by Tampa Electric in this proceeding.

Q. For Tampa Electric, what is the 2010-2019 annual bill impact on residential customers using 1,200 kWh/month with no incremental DSM added?

A. To make the determination of the 1,200 kWh/month annual residential bill impact for the 2010-2019 period relative to no incremental DSM, Tampa Electric's approach was to provide a total bill estimate that included all of the normal components that comprise a typical residential bill, namely, base rate, recovery clauses and customer charge. Also, for the no incremental DSM analysis, it was necessary to include the costs for maintaining existing DSM on the company's system. This principally included load management costs associated with maintaining the existing level of load management on the system as well as energy audit costs necessary to continue compliance with Rule 25-17.003, F.A.C. Three major bill components were affected by the analysis. These components were the base rate, fuel clause and ECCR clause. The result of this analysis for the 2010-2019 period is contained in Document No. 9 of my exhibit and demonstrates the estimated ten-year total cost for a 1,200 kWh/month bill would be $18,522.

Q. For Tampa Electric, what are the 2010-2019 annual bill impacts on residential customers using 1,200 kWh/month for the projected RIM achievable portfolio, the projected TRC achievable portfolio, and the company's proposed DSM goals?

A. To make the determination of the 1,200 kWh/month annual residential bill impact for the 2010-2019 period relative to the projected RIM and TRC achievable portfolios, Tampa Electric's approach was similar to the no DSM incremental scenario previously described. The only difference was identifying the impact of the two portfolios on the no incremental DSM case. Again, three major components of the bill were affected. These were the base rate, fuel clause and ECCR clause. The results of these analyses for the 2010-2019 period are contained in Document No. 9 of my exhibit and demonstrate the estimated ten-year total cost for a 1,200 kWh/month bill would be $18,368 for the RIM portfolio and $18,423 for the TRC portfolio. Since Tampa Electric's proposed DSM goals for the 2010-2019 period are the RIM achievable potential portfolio, it was not necessary to conduct additional analysis.

It is important to realize the dollar amounts for the RIM and TRC achievable portfolios are estimates for only one customer's electric bill. A more realistic view is gained by looking at the impact across the company's entire system and thus its entire customer base. The estimated ECCR clause cost to deliver the RIM portfolio for the 2010-2019 period is $414 million. The estimated ECCR clause cost to deliver the TRC portfolio for the 2010-2019 period is $503 million. Therefore, the TRC portfolio is an $89 million greater burden for customers.

Furthermore, the RIM portfolio, by definition of the RIM test, is cost-effective for both participating and non-participating customers; therefore, there are no losers. However, the TRC portfolio is cost-effective for program participants but not for non-participants. Under the TRC portfolio, non-participants will actually be subsidizing the program participants for their DSM efforts. Therefore, the RIM portfolio is the cost-effective, less expensive, more reasonable and equitable approach to take to provide another resource to assist the company in meeting future system needs.

CONCLUSIONS

Q. What overall DSM goals are reasonably achievable for Tampa Electric for the 2010-2019 period?

A. Based on the analysis performed by Tampa Electric for this current DSM goals setting process, the company's reasonably achievable generator level RIM-based DSM goals for the 2010-2019 period are 81.8 MW of summer demand savings, 40.9 MW of winter demand savings, and 201.7 GWH of annual energy savings. These amounts are detailed on an annual basis for both the residential and commercial/industrial sectors in Document No. 1 of my exhibit.

By accomplishing these DSM goals, Tampa Electric will increase overall energy efficiency in its service area and lower electric rates for all customers. The company is quite aware that keeping electric rates as low as possible while advancing broad scale efforts of overall conservation is important to its customers and therefore the company.

Q. Does the methodology used by Tampa Electric to set DSM goals for the 2010-2019 period comport with statutory and F.A.C. requirements?

A. Yes. Tampa Electric, through the coordinated effort of the FEECA utilities and intervenors, began its evaluation process with a comprehensive list of potential DSM measures for residential and commercial and industrial sectors, applied those measures over multiple construction and building types, and considered several aspects of measure interaction as well as free ridership. Tampa Electric adhered to recent statutory requirements by developing estimated technical and achievable potentials, properly reflecting cost and benefits to all customers, addressing green house gas and providing a reasonable approach to address supply-side efficiency goals and DSM incentives for utilities in the near term. Additionally, Tampa Electric utilized a sound, proven approach that has been used and approved in principle by this Commission in past DSM goals setting proceedings.

Q. Do Tampa Electric's proposed DSM goals provide a cost-effective means for all ratepayers to help meet the need for additional generation through 2019?

A. Yes. Through the use of the RIM test, Tampa Electric has assured its ratepayers that the most cost-effective resources will be used to meet future capacity needs.

Q. Should Tampa Electric's proposed 2010-2019 DSM goals be approved?

A. Yes. Tampa Electric's proposed 2010-2019 DSM goals meet rule and statutory requirements, are cost-effective for participants and non-participants, help to minimize the rate impact for future capacity needs, address the desires and needs of its customers, and are reasonably achievable.

Q. Does this conclude your testimony?

A. Yes.

EXHIBIT

OF

HOWARD T. BRYANT

Table of Contents

Tampa Electric Company

2010 - 2019
Proposed Residential DSM Goals
(At the Generator)

Year	Summer Demand (MW)		Winter Demand (MW)		Annual Energy (GWH)	
	Incremental	Cumulative	Incremental	Cumulative	Incremental	Cumulative
2010	1.4	1.4	1.2	1.2	1.9	1.9
2011	2.1	3.5	1.9	3.1	3.6	5.5
2012	2.9	6.4	2.4	5.5	5.0	10.5
2013	3.5	9.9	3.0	8.5	6.3	16.8
2014	4.0	13.9	3.5	12.0	7.2	24.0
2015	4.3	18.2	3.5	15.5	7.7	31.7
2016	4.3	22.5	3.7	19.2	7.9	39.6
2017	3.9	26.4	3.4	22.6	7.2	46.8
2018	3.7	30.1	3.1	25.7	6.5	53.3
2019	3.2	33.3	2.8	28.5	5.7	59.0

2010 - 2019
Proposed Commercial/Industrial DSM Goals
(At the Generator)

Year	Summer Demand (MW)		Winter Demand (MW)		Annual Energy (GWH)	
	Incremental	Cumulative	Incremental	Cumulative	Incremental	Cumulative
2010	2.7	2.7	0.9	0.9	6.3	6.3
2011	3.9	6.6	1.0	1.9	9.8	16.1
2012	4.3	10.9	1.2	3.1	13.0	29.1
2013	5.2	16.1	1.3	4.4	15.0	44.1
2014	5.3	21.4	1.2	5.6	16.2	60.3
2015	5.5	26.9	1.3	6.9	16.9	77.2
2016	5.7	32.6	1.4	8.3	17.0	94.2
2017	5.3	37.9	1.4	9.7	16.7	110.9
2018	5.5	43.4	1.4	11.1	16.2	127.1
2019	5.1	48.5	1.3	12.4	15.6	142.7

Comprehensive Technical Potential Measure List

Residential Energy Efficiency

1 13 EER Geothermal Heat Pump
2 14 SEER Split-System Air Conditioner
3 14 SEER Split-System Heat Pump
4 15 SEER Split-System Air Conditioner
5 15 SEER Split-System Heat Pump
6 17 SEER Split-System Air Conditioner
7 17 SEER Split-System Heat Pump
8 19 SEER Split-System Air Conditioner
9 AC Heat Recovery Units
10 AC Maintenance (Indoor Coil Cleaning)
11 AC Maintenance (Outdoor Coil Cleaning)
12 Attic Venting
13 Ceiling R-0 to R-19 Insulation
14 Ceiling R-19 to R-38 Insulation
15 CFL (18-Watt integral ballast)
16 Default Window With Sunscreen
17 Double Pane Clear Windows to Double Pane Low-E Windows
18 Duct Repair
19 Electronically Commutated Motors (ECM) on an Air Handler Unit
20 Energy Star CW CEE Tier 1 (MEF=1.8)
21 Energy Star CW CEE Tier 2 (MEF=2.0)
22 Energy Star CW CEE Tier 3 (MEF=2.2)
23 Energy Star Desktop PC
24 Energy Star DVD Player
25 Energy Star DW (EF=0.68)
26 Energy Star Laptop PC
27 Energy Star Set-Top Box
28 Energy Star TV
29 Energy Star TV
30 Energy Star VCR
31 Faucet Aerators
32 HE Freezer
33 HE Refrigerator - Energy Star version of above
34 HE Room Air Conditioner - EER 11
35 HE Room Air Conditioner - EER 12
36 HE Water Heater (EF=0.93)
37 Heat Pump Water Heater (EF=2.9)
38 Heat Trap
39 High Efficiency CD (EF=3.01 w/moisture sensor)
40 High Efficiency One Speed Pool Pump (1.5 hp)
41 HVAC Proper Sizing

42 Low Flow Showerhead
43 Photocell/time clock
44 Pipe Wrap
45 Premium T8, Electronic Ballast
46 Proper Refrigerant Charging and Air Flow
47 PV-Powered Pool Pumps
48 Radiant Barrier
49 Reflective Roof
50 Sealed Attic w/Sprayed Foam Insulated Roof Deck
51 Single Pane Clear Windows to Double Pane Low-E Windows
52 Solar Water Heat
53 Two Speed Pool Pump (1.5 hp)
54 Variable-Speed Pool Pump (<1 hp)
55 Wall 2x4 R-0 to Blow-In R-13 Insulation
56 Water Heater Blanket
57 Water Heater Temperature Check and Adjustment
58 Water Heater Time clock
59 Weather Strip/Caulk w/Blower Door
60 Window Film
61 Window Tinting

Commercial Energy Efficiency

1 Aerosol 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
13 Copier Power Management Enabling
14 CRT Monitor 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=10.9, 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 CRT Monitor
31 Energy Star or Better LCD Monitor
32 Evaporator fan controller for MT walk-ins
33 Floating head pressure controls
34 Freezer-Cooler Replacement Gaskets
35 Geothermal Heat Pump, EER=13, 10 tons
36 Geothermal Heat Pump, EER=13, 10 tons
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 Efficiency Water Heater (electric)
45 High Pressure Sodium 250W Lamp
46 High R-Value Glass Doors
47 High-efficiency fan motors
48 Hot Water Pipe Insulation
49 Hybrid Desiccant-DX System (Trane CDQ)
50 LCD Monitor Power Management Enabling
51 LED Display Lighting
52 LED Exit Sign
53 Lighting Control Tune up
54 Multiplex Compressor System
55 Night covers for display cases
56 Occupancy Sensor
57 Occupancy Sensor (hotels)
58 Optimize Controls
59 Outdoor Lighting Controls (Photocell/Time clock)
60 Oversized Air Cooled Condenser
61 Packaged HP System, EER=10.9, 10 tons
62 PC Manual Power Management Enabling
63 PC Network Power Management Enabling
64 Premium T8, Electronic Ballast
65 Premium T8, EB, Reflector

66 Printer Power Management Enabling
67 PSMH, 250 W, electronic ballast
68 PSMH, 250W, magnetic ballast
69 Refrigeration Commissioning
70 Roof Insulation
71 Separate Makeup Air / Exhaust Hoods AC
72 Solar Water Heater
73 Strip curtains for walk-ins
74 Thermal Energy Storage (TES)
75 Variable Speed Drive Control
76 Vending Misers (cooled machines only)
77 VSD for Chiller Pumps and Towers
78 Window Film (Standard)

Industrial Energy Efficiency

1 Aerosol Duct Sealing - Chiller
2 Air conveying systems
3 Bakery - Process
4 Bakery - Process (Mixing) - O&M
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 Clean Room - Controls
10 Clean Room - New Designs
11 Comp Air - ASD (100+ hp)
12 Comp Air - ASD (1-5 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 1-5 HP motor
19 Comp Air - Replace 6-100 HP motor
20 Compressed Air - Controls
21 Compressed Air - System Optimization
22 Compressed Air- Sizing
23 Compressed Air-O&M
24 Cool Roof - Chiller
25 Direct drive Extruders
26 Drives - EE motor
27 Drives - Optimization process (M&T)
28 Drives - Process Control
29 Drives - Process Controls (batch + site)

30 Drives - Scheduling
31 Drying (UV/IR)
32 Duct/Pipe Insulation - Chiller
33 DX Coil Cleaning
34 DX Packaged System, EER=10.9, 10 tons
35 DX Tune Up/ Advanced Diagnostics
36 Efficient Curing ovens
37 Efficient de-salter
38 Efficient drives
39 Efficient drives - rolling
40 Efficient electric melting
41 Efficient grinding
42 Efficient Machinery
43 Efficient practices printing press
44 Efficient Printing press (fewer cylinders)
45 Efficient processes (welding, etc.)
46 Efficient Refrigeration - Operations
47 EMS - Chiller
48 EMS Optimization - Chiller
49 Extruders/injection Molding-multi-pump
50 Fans - ASD (100+ hp)
51 Fans - ASD (1-5 hp)
52 Fans - ASD (6-100 hp)
53 Fans - Controls
54 Fans - Motor practices-1 (100+ HP)
55 Fans - Motor practices-1 (1-5 HP)
56 Fans - Motor practices-1 (6-100 HP)
57 Fans - O&M
58 Fans - Replace 100+ HP motor
59 Fans - Replace 1-5 HP motor
60 Fans - Replace 6-100 HP motor
61 Fans - System Optimization
62 Fans- Improve components
63 Gap Forming paper machine
64 Geothermal Heat Pump, EER=13, 10 tons
65 Heat Pumps - Drying
66 Heating - Optimization process (M&T)
67 Heating - Process Control
68 Heating - Scheduling
69 High Bay T5
70 High Consistency forming
71 High Efficiency Chiller Motors
72 Hybrid Desiccant-DX System (Trane CDQ)
73 Injection Molding - Direct drive

74 Injection Molding - Impulse Cooling
75 Intelligent extruder (DOE)
76 Light cylinders
77 Low Pressure Nozzle
78 Machinery
79 Membranes for wastewater
80 Micro Watering System
81 Near Net Shape Casting
82 New transformers welding
83 O&M - Extruders/Injection Molding
84 O&M/drives spinning machines
85 Occupancy Sensor
86 Optimization control PM
87 Optimization Refrigeration
88 Optimize Controls
89 Optimize drying process
90 Other Process Controls (batch + site)
91 Power recovery
92 Premium T8, Electronic Ballast
93 Process control
94 Process control
95 Process Drives - ASD
96 Process optimization
97 Pump Retrofit - Irrigation
98 Pumps - ASD (100+ hp)
99 Pumps - ASD (1-5 hp)
100 Pumps - ASD (6-100 hp)
101 Pumps - Controls
102 Pumps - Motor practices-1 (100+ HP)
103 Pumps - Motor practices-1 (1-5 HP)
104 Pumps - Motor practices-1 (6-100 HP)
105 Pumps - O&M
106 Pumps - Replace 100+ HP motor
107 Pumps - Replace 1-5 HP motor
108 Pumps - Replace 6-100 HP motor
109 Pumps - Sizing
110 Pumps - System Optimization
111 Refinery Controls
112 Replace V-Belts
113 Replace V-belts
114 Roof Insulation - Chiller
115 Thermal Energy Storage (TES) - Chiller
116 Top-heating (glass)
117 VSD for Chiller Pumps and Towers

118 Window Film (Standard) - Chiller

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

Residential PhotoVoltaic

1 Rooftop solar PV

Commercial PhotoVoltaic

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

TAMPA ELECTRIC COMPANY
AVOIDED UNIT PARAMETERS
2010 DSM Goal Setting

1.	In-service Date:	May 1, 2012
2.	Type of Unit:	Aeroderivative CT
3.	Type of Fuel:	Natural Gas
4.	Average Annual heat rate:	
	Average (Btu/kWh)	10,200
5.	Cost of Fuel:	
	Natural Gas (2012 $/MMBtu)	8.33
6.	Construction Cost (W/O AFUDC)	
	a: 2010 $000	34,925
	b: $/kW (based on winter rating)	572.54
7.	Construction Escalation Rate	
	2009 & beyond	2.3%
8.	In-service Cost (W/AFUDC)	
	a: 2012 $000	38,116
	b: $/kW	624.85
9.	Incremental Capital Structure	
	a: Debt	51%
	c: Common Stock	49%
10.	Cost of Capital	
	a: Debt	6.80%
	c: Common Stock	11.75%
11.	Book Life	25
12.	Tax Life	15
13.	AFUDC Rate	7.79%
14.	Effective Tax Rate	38.575%
15.	Other Taxes (2012)	2.45%
16.	Other Taxes Escalation Rate	0.00%
17.	Discount Rate for Present Worth	7.89%
18.	Fixed O&M Costs (2010 $/kW/yr)	20.47
19.	Variable O&M Costs (2010 $/MWh)	3.81
20.	O&M Escalation Rate	
	2009 & beyond	2.3%
21.	Value of K-factor	1.6120
22.	Capacity (kW) Winter	61,000
23	Capacity (kW) Summer	56,000

RIM Economic Potential Measures

Residential

Measure #	Measure
101	14 SEER Split-System Air Conditioner
102	15 SEER Split-System Air Conditioner
103	17 SEER Split-System Air Conditioner
104	19 SEER Split-System Air Conditioner
105	14 SEER Split-System Heat Pump
106	15 SEER Split-System Heat Pump
107	17 SEER Split-System Heat Pump
109	HVAC Proper Sizing
111	Sealed Attic w/Sprayed Foam Insulated Roof Deck
112	AC Maintenance (Outdoor Coil Cleaning)
113	AC Maintenance (Indoor Coil Cleaning)
114	Proper Refrigerant Charging and Air Flow
115	Electronically Commutated Motors (ECM) on an Air Handler Unit
116	Duct Repair
117	Reflective Roof
118	Radiant Barrier
119	Window Film
120	Window Tinting
121	Default Window With Sunscreen
122	Single Pane Clear Windows to Double Pane Low-E Windows
124	Ceiling R-0 to R-19 Insulation
125	Ceiling R-19 to R-38 Insulation
126	Wall 2x4 R-0 to Blow-In R-13 Insulation
127	Weather Strip/Caulk w/Blower Door
137	Sealed Attics
191	HE Room Air Conditioner - EER 11
192	HE Room Air Conditioner - EER 12
221	CFL (18-Watt integral ballast), 0.5 hr/day
231	CFL (18-Watt integral ballast), 2.5 hr/day
241	CFL (18-Watt integral ballast), 6.0 hr/day
251	ROB 2L4'T8, 1EB
252	RET 2L4'T8, 1EB
301	HE Refrigerator - Energy Star version of above
351	HE Freezer
401	Heat Pump Water Heater (EF=2.9)
403	Solar Water Heat
404	AC Heat Recovery Units
405	Low Flow Showerhead

406	Pipe Wrap
407	Faucet Aerators
408	Water Heater Blanket
409	Water Heater Temperature Check and Adjustment
410	Water Heater Time clock
411	Heat Trap
502	Energy Star CW CEE Tier 2 (MEF=2.0)
610	High Efficiency CD (EF=3.01 w/moisture sensor)
701	Energy Star DW (EF=0.68)
801	Two Speed Pool Pump (1.5 hp)
802	High Efficiency One Speed Pool Pump (1.5 hp)
803	Variable-Speed Pool Pump (<1 hp)
804	PV-Powered Pool Pumps
901	Energy Star TV
911	Energy Star TV
921	Energy Star Set-Top Box
931	Energy Star DVD Player
941	Energy Star VCR
951	Energy Star Desktop PC
961	Energy Star Laptop PC

Commercial

Measure #	Measure
111	Premium T8, Electronic Ballast
112	Premium T8, EB, Reflector
113	Occupancy Sensor
114	Continuous Dimming
115	Lighting Control Tune up
121	ROB Premium T8, 1EB
122	ROB Premium T8, EB, Reflector
131	CFL Screw-in 18W
141	CFL Hardwired, Modular 18W
151	PSMH, 250W, magnetic ballast
153	High Bay T5
161	LED Exit Sign
201	High Pressure Sodium 250W Lamp
202	Outdoor Lighting Controls (Photocell/Time clock)
301	Centrifugal Chiller, 0.51 kW/ton, 500 tons
302	High Efficiency Chiller Motors
304	EMS - Chiller
305	Chiller Tune Up/Diagnostics

306	VSD for Chiller Pumps and Towers
307	EMS Optimization
308	Aerosol Duct Sealing
309	Duct/Pipe Insulation
313	Ceiling Insulation
314	Roof Insulation
315	Cool Roof - Chiller
317	Thermal Energy Storage (TES)
321	DX Packaged System, EER=10.9, 10 tons
322	Hybrid Desiccant-DX System (Trane CDQ)
323	Geothermal Heat Pump, EER=13, 10 tons
326	DX Tune Up/ Advanced Diagnostics
327	DX Coil Cleaning
328	Optimize Controls
336	Cool Roof - DX
341	Packaged HP System, EER=10.9, 10 tons
347	Window Film (Standard)
361	HE PTAC, EER=9.6, 1 ton
362	Occupancy Sensor (hotels)
401	High Efficiency Fan Motor, 15hp, 1800rpm, 92.4%
402	Variable Speed Drive Control
403	Air Handler Optimization
404	Electronically Commutated Motors (ECM) on an Air Handler Unit
405	Demand Control Ventilation (DCV)
406	Energy Recovery Ventilation (ERV)
407	Separate Makeup Air / Exhaust Hoods AC
501	High-efficiency fan motors
502	Strip curtains for walk-ins
503	Night covers for display cases
504	Evaporator fan controller for MT walk-ins
505	Efficient compressor motor
506	Compressor VSD retrofit
507	Floating head pressure controls
508	Refrigeration Commissioning
509	Demand Hot Gas Defrost
510	Demand Defrost Electric
511	Anti-sweat (humidistat) controls
513	High R-Value Glass Doors
514	Multiplex Compressor System
515	Oversized Air Cooled Condenser
516	Freezer-Cooler Replacement Gaskets
517	LED Display Lighting
601	High Efficiency Water Heater (electric)
603	Heat Pump Water Heater (air source)

604	Solar Water Heater
606	Demand controlled circulating systems
608	Heat Recovery Unit
609	Heat Trap
610	Hot Water Pipe Insulation
701	PC Manual Power Management Enabling
702	PC Network Power Management Enabling
711	Energy Star or Better Monitor
712	Monitor Power Management Enabling
731	Energy Star or Better Copier
732	Copier Power Management Enabling
741	Printer Power Management Enabling
801	Convection Oven
811	Efficient Fryer
901	Vending Misers (cooled machines only)

Industrial

Measure #	Measure
101	Compressed Air-O&M
102	Compressed Air - Controls
103	Compressed Air - System Optimization
104	Compressed Air- Sizing
105	Comp Air - Replace 1-5 HP motor
106	Comp Air - ASD (1-5 hp)
107	Comp Air - Motor practices-1 (1-5 HP)
108	Comp Air - Replace 6-100 HP motor
109	Comp Air - ASD (6-100 hp)
110	Comp Air - Motor practices-1 (6-100 HP)
111	Comp Air - Replace 100+ HP motor
112	Comp Air - ASD (100+ hp)
113	Comp Air - Motor practices-1 (100+ HP)
114	Power recovery
115	Refinery Controls
201	Fans - O&M
202	Fans - Controls
203	Fans - System Optimization
204	Fans- Improve components
205	Fans - Replace 1-5 HP motor
206	Fans - ASD (1-5 hp)
207	Fans - Motor practices-1 (1-5 HP)
208	Fans - Replace 6-100 HP motor

209	Fans - ASD (6-100 hp)
210	Fans - Motor practices-1 (6-100 HP)
211	Fans - Replace 100+ HP motor
212	Fans - ASD (100+ hp)
213	Fans - Motor practices-1 (100+ HP)
214	Optimize drying process
301	Pumps - O&M
302	Pumps - Controls
303	Pumps - System Optimization
304	Pumps - Sizing
305	Pumps - Replace 1-5 HP motor
306	Pumps - ASD (1-5 hp)
307	Pumps - Motor practices-1 (1-5 HP)
308	Pumps - Replace 6-100 HP motor
309	Pumps - ASD (6-100 hp)
310	Pumps - Motor practices-1 (6-100 HP)
311	Pumps - Replace 100+ HP motor
312	Pumps - ASD (100+ hp)
313	Pumps - Motor practices-1 (100+ HP)
401	Bakery - Process (Mixing) - O&M
402	O&M/drives spinning machines
403	Air conveying systems
404	Replace V-Belts
405	Drives - EE motor
406	Gap Forming paper machine
407	High Consistency forming
408	Optimization control PM
409	Efficient practices printing press
410	Efficient Printing press (fewer cylinders)
411	Light cylinders
412	Efficient drives
413	Clean Room - Controls
414	Clean Room - New Designs
415	Drives - Process Controls (batch + site)
416	Process Drives - ASD
417	O&M - Extruders/Injection Molding
418	Extruders/injection Molding-multi-pump
419	Direct drive Extruders
420	Injection Molding - Impulse Cooling
421	Injection Molding - Direct drive
422	Efficient grinding
423	Process control
424	Process optimization
425	Drives - Process Control

426	Efficient drives - rolling
427	Drives - Optimization process (M&T)
428	Drives - Scheduling
429	Machinery
430	Efficient Machinery
501	Bakery - Process
502	Drying (UV/IR)
503	Heat Pumps - Drying
504	Top-heating (glass)
505	Efficient electric melting
506	Intelligent extruder (DOE)
507	Near Net Shape Casting
508	Heating - Process Control
509	Efficient Curing ovens
510	Heating - Optimization process (M&T)
511	Heating - Scheduling
551	Efficient Refrigeration - Operations
552	Optimization Refrigeration
601	Other Process Controls (batch + site)
602	Efficient de-salter
603	New transformers welding
604	Efficient processes (welding, etc.)
701	Centrifugal Chiller, 0.51 kW/ton, 500 tons
702	High Efficiency Chiller Motors
703	EMS - Chiller
704	Chiller Tune Up/Diagnostics
705	VSD for Chiller Pumps and Towers
706	EMS Optimization - Chiller
707	Aerosol Duct Sealing - Chiller
709	Window Film (Standard) - Chiller
710	Roof Insulation - Chiller
711	Cool Roof - Chiller
721	DX Packaged System, EER=10.9, 10 tons
722	Hybrid Desiccant-DX System (Trane CDQ)
723	Geothermal Heat Pump, EER=13, 10 tons
724	DX Tune Up/ Advanced Diagnostics
725	DX Coil Cleaning
726	Optimize Controls
727	Aerosol Duct Sealing
728	Duct/Pipe Insulation
729	Window Film (Standard)
730	Roof Insulation
731	Cool Roof - DX
801	Premium T8, Electronic Ballast

802	CFL Hardwired, Modular 18W
803	CFL Screw-in 18W
804	High Bay T5
805	Occupancy Sensor
902	Membranes for wastewater

TRC Economic Potential Measures

Residential

Measure #	Measure
101	14 SEER Split-System Air Conditioner
102	15 SEER Split-System Air Conditioner
103	17 SEER Split-System Air Conditioner
104	19 SEER Split-System Air Conditioner
105	14 SEER Split-System Heat Pump
106	15 SEER Split-System Heat Pump
107	17 SEER Split-System Heat Pump
109	HVAC Proper Sizing
111	Sealed Attic w/Sprayed Foam Insulated Roof Deck
112	AC Maintenance (Outdoor Coil Cleaning)
113	AC Maintenance (Indoor Coil Cleaning)
114	Proper Refrigerant Charging and Air Flow
115	Electronically Commutated Motors (ECM) on an Air Handler Unit
116	Duct Repair
117	Reflective Roof
119	Window Film
120	Window Tinting
121	Default Window With Sunscreen
122	Single Pane Clear Windows to Double Pane Low-E Windows
124	Ceiling R-0 to R-19 Insulation
127	Weather Strip/Caulk w/Blower Door
137	Sealed Attics
153	Weather Strip/Caulk w/Blower Door
191	HE Room Air Conditioner - EER 11
192	HE Room Air Conditioner - EER 12
221	CFL (18-Watt integral ballast), 0.5 hr/day
231	CFL (18-Watt integral ballast), 2.5 hr/day
241	CFL (18-Watt integral ballast), 6.0 hr/day
301	HE Refrigerator - Energy Star version of above
351	HE Freezer
401	Heat Pump Water Heater (EF=2.9)
404	AC Heat Recovery Units
405	Low Flow Showerhead
406	Pipe Wrap
407	Faucet Aerators
408	Water Heater Blanket
409	Water Heater Temperature Check and Adjustment
410	Water Heater Time clock

411	Heat Trap
502	Energy Star CW CEE Tier 2 (MEF=2.0)
503	Energy Star CW CEE Tier 3 (MEF=2.2)
610	High Efficiency CD (EF=3.01 w/moisture sensor)
701	Energy Star DW (EF=0.68)
801	Two Speed Pool Pump (1.5 hp)
802	High Efficiency One Speed Pool Pump (1.5 hp)
803	Variable-Speed Pool Pump (<1 hp)
804	PV-Powered Pool Pumps
901	Energy Star TV
921	Energy Star Set-Top Box
931	Energy Star DVD Player
941	Energy Star VCR
951	Energy Star Desktop PC
961	Energy Star Laptop PC

Commercial

Measure #	Measure
111	Premium T8, Electronic Ballast
112	Premium T8, EB, Reflector
113	Occupancy Sensor
114	Continuous Dimming
115	Lighting Control Tune up
121	ROB Premium T8, 1EB
122	ROB Premium T8, EB, Reflector
123	Occupancy Sensor
124	Lighting Control Tune up
131	CFL Screw-in 18W
141	CFL Hardwired, Modular 18W
151	PSMH, 250W, magnetic ballast
153	High Bay T5
161	LED Exit Sign
201	High Pressure Sodium 250W Lamp
202	Outdoor Lighting Controls (Photocell/Time clock)
211	Outdoor Lighting Controls (Photocell/Time clock)
301	Centrifugal Chiller, 0.51 kW/ton, 500 tons
302	High Efficiency Chiller Motors
304	EMS - Chiller
305	Chiller Tune Up/Diagnostics
306	VSD for Chiller Pumps and Towers
307	EMS Optimization

308	Aerosol Duct Sealing
311	Window Film (Standard)
313	Ceiling Insulation
314	Roof Insulation
315	Cool Roof - Chiller
321	DX Packaged System, EER=10.9, 10 tons
322	Hybrid Desiccant-DX System (Trane CDQ)
323	Geothermal Heat Pump, EER=13, 10 tons
326	DX Tune Up/ Advanced Diagnostics
327	DX Coil Cleaning
328	Optimize Controls
329	Aerosol Duct Sealing
332	Window Film (Standard)
334	Ceiling Insulation
335	Roof Insulation
336	Cool Roof - DX
341	Packaged HP System, EER=10.9, 10 tons
342	Geothermal Heat Pump, EER=13, 10 tons
344	Aerosol Duct Sealing
347	Window Film (Standard)
349	Ceiling Insulation
350	Roof Insulation
351	Cool Roof - DX
361	HE PTAC, EER=9.6, 1 ton
362	Occupancy Sensor (hotels)
401	High Efficiency Fan Motor, 15hp, 1800rpm, 92.4%
402	Variable Speed Drive Control
403	Air Handler Optimization
404	Electronically Commutated Motors (ECM) on an Air Handler Unit
405	Demand Control Ventilation (DCV)
406	Energy Recovery Ventilation (ERV)
407	Separate Makeup Air / Exhaust Hoods AC
501	High-efficiency fan motors
502	Strip curtains for walk-ins
503	Night covers for display cases
504	Evaporator fan controller for MT walk-ins
505	Efficient compressor motor
506	Compressor VSD retrofit
507	Floating head pressure controls
508	Refrigeration Commissioning
509	Demand Hot Gas Defrost
510	Demand Defrost Electric
511	Anti-sweat (humidistat) controls
513	High R-Value Glass Doors

514	Multiplex Compressor System
515	Oversized Air Cooled Condenser
516	Freezer-Cooler Replacement Gaskets
517	LED Display Lighting
601	High Efficiency Water Heater (electric)
603	Heat Pump Water Heater (air source)
604	Solar Water Heater
606	Demand controlled circulating systems
608	Heat Recovery Unit
609	Heat Trap
610	Hot Water Pipe Insulation
701	PC Manual Power Management Enabling
702	PC Network Power Management Enabling
711	Energy Star or Better Monitor
712	Monitor Power Management Enabling
731	Energy Star or Better Copier
732	Copier Power Management Enabling
741	Printer Power Management Enabling
901	Vending Misers (cooled machines only)

Industrial

Measure #	Measure
101	Compressed Air-O&M
102	Compressed Air - Controls
103	Compressed Air - System Optimization
104	Compressed Air- Sizing
105	Comp Air - Replace 1-5 HP motor
106	Comp Air - ASD (1-5 hp)
107	Comp Air - Motor practices-1 (1-5 HP)
108	Comp Air - Replace 6-100 HP motor
109	Comp Air - ASD (6-100 hp)
110	Comp Air - Motor practices-1 (6-100 HP)
111	Comp Air - Replace 100+ HP motor
112	Comp Air - ASD (100+ hp)
113	Comp Air - Motor practices-1 (100+ HP)
114	Power recovery
115	Refinery Controls
201	Fans - O&M
202	Fans - Controls
203	Fans - System Optimization
204	Fans- Improve components
205	Fans - Replace 1-5 HP motor

206	Fans - ASD (1-5 hp)
207	Fans - Motor practices-1 (1-5 HP)
208	Fans - Replace 6-100 HP motor
209	Fans - ASD (6-100 hp)
210	Fans - Motor practices-1 (6-100 HP)
211	Fans - Replace 100+ HP motor
212	Fans - ASD (100+ hp)
213	Fans - Motor practices-1 (100+ HP)
214	Optimize drying process
301	Pumps - O&M
302	Pumps - Controls
303	Pumps - System Optimization
304	Pumps - Sizing
305	Pumps - Replace 1-5 HP motor
306	Pumps - ASD (1-5 hp)
307	Pumps - Motor practices-1 (1-5 HP)
308	Pumps - Replace 6-100 HP motor
309	Pumps - ASD (6-100 hp)
310	Pumps - Motor practices-1 (6-100 HP)
311	Pumps - Replace 100+ HP motor
312	Pumps - ASD (100+ hp)
313	Pumps - Motor practices-1 (100+ HP)
401	Bakery - Process (Mixing) - O&M
402	O&M/drives spinning machines
403	Air conveying systems
404	Replace V-Belts
405	Drives - EE motor
406	Gap Forming paper machine
407	High Consistency forming
408	Optimization control PM
409	Efficient practices printing press
410	Efficient Printing press (fewer cylinders)
411	Light cylinders
412	Efficient drives
413	Clean Room - Controls
414	Clean Room - New Designs
415	Drives - Process Controls (batch + site)
416	Process Drives - ASD
417	O&M - Extruders/Injection Molding
418	Extruders/injection Molding-multi-pump
419	Direct drive Extruders
420	Injection Molding - Impulse Cooling
421	Injection Molding - Direct drive
422	Efficient grinding

423	Process control
424	Process optimization
425	Drives - Process Control
426	Efficient drives - rolling
427	Drives - Optimization process (M&T)
428	Drives - Scheduling
429	Machinery
430	Efficient Machinery
501	Bakery - Process
502	Drying (UV/IR)
503	Heat Pumps - Drying
504	Top-heating (glass)
505	Efficient electric melting
506	Intelligent extruder (DOE)
507	Near Net Shape Casting
508	Heating - Process Control
509	Efficient Curing ovens
510	Heating - Optimization process (M&T)
511	Heating - Scheduling
551	Efficient Refrigeration - Operations
552	Optimization Refrigeration
601	Other Process Controls (batch + site)
602	Efficient de-salter
603	New transformers welding
604	Efficient processes (welding, etc.)
701	Centrifugal Chiller, 0.51 kW/ton, 500 tons
702	High Efficiency Chiller Motors
703	EMS - Chiller
704	Chiller Tune Up/Diagnostics
705	VSD for Chiller Pumps and Towers
706	EMS Optimization - Chiller
710	Roof Insulation - Chiller
711	Cool Roof - Chiller
721	DX Packaged System, EER=10.9, 10 tons
722	Hybrid Desiccant-DX System (Trane CDQ)
723	Geothermal Heat Pump, EER=13, 10 tons
724	DX Tune Up/ Advanced Diagnostics
725	DX Coil Cleaning
726	Optimize Controls
727	Aerosol Duct Sealing
729	Window Film (Standard)
730	Roof Insulation
731	Cool Roof - DX
801	Premium T8, Electronic Ballast

802	CFL Hardwired, Modular 18W
803	CFL Screw-in 18W
804	High Bay T5
805	Occupancy Sensor
902	Membranes for wastewater

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Tampa Electric Company
Achievable Potential
(At the Generator)

2010 - 2019
Residential Achievable Potential
RIM Evaluation

Year	Summer Demand (MW) Incremental	Summer Demand (MW) Cumulative	Winter Demand (MW) Incremental	Winter Demand (MW) Cumulative	Annual Energy (GWH) Incremental	Annual Energy (GWH) Cumulative
2010	1.4	1.4	1.2	1.2	1.9	1.9
2011	2.1	3.5	1.9	3.1	3.6	5.5
2012	2.9	6.4	2.4	5.5	5.0	10.5
2013	3.5	9.9	3.0	8.5	6.3	16.8
2014	4.0	13.9	3.5	12.0	7.2	24.0
2015	4.3	18.2	3.5	15.5	7.7	31.7
2016	4.3	22.5	3.7	19.2	7.9	39.6
2017	3.9	26.4	3.4	22.6	7.2	46.8
2018	3.7	30.1	3.1	25.7	6.5	53.3
2019	3.2	33.3	2.8	28.5	5.7	59.0

2010 - 2019
Residential Achievable Potential
TRC Evaluation

Year	Summer Demand (MW) Incremental	Summer Demand (MW) Cumulative	Winter Demand (MW) Incremental	Winter Demand (MW) Cumulative	Annual Energy (GWH) Incremental	Annual Energy (GWH) Cumulative
2010	2.7	2.7	2.8	2.8	4.8	4.8
2011	4.7	7.4	4.9	7.7	9.0	13.8
2012	6.5	13.9	6.6	14.3	12.7	26.5
2013	8.0	21.9	7.9	22.2	15.6	42.1
2014	8.9	30.8	8.6	30.8	17.6	59.7
2015	9.0	39.8	8.0	38.8	18.0	77.7
2016	7.9	47.7	6.5	45.3	16.3	94.0
2017	7.1	54.8	5.2	50.5	14.4	108.4
2018	6.4	61.2	4.4	54.9	13.3	121.7
2019	5.9	67.1	3.8	58.7	12.3	134.0

2010 - 2019
Commercial/Industrial Achievable Potential
RIM Evaluation

Year	Summer Demand (MW) Incremental	Summer Demand (MW) Cumulative	Winter Demand (MW) Incremental	Winter Demand (MW) Cumulative	Annual Energy (GWH) Incremental	Annual Energy (GWH) Cumulative
2010	2.7	2.7	0.9	0.9	6.3	6.3
2011	3.9	6.6	1.0	1.9	9.8	16.1
2012	4.3	10.9	1.2	3.1	13.0	29.1
2013	5.2	16.1	1.3	4.4	15.0	44.1
2014	5.3	21.4	1.2	5.6	16.2	60.3
2015	5.5	26.9	1.3	6.9	16.9	77.2
2016	5.7	32.6	1.4	8.3	17.0	94.2
2017	5.3	37.9	1.4	9.7	16.7	110.9
2018	5.5	43.4	1.4	11.1	16.2	127.1
2019	5.1	48.5	1.3	12.4	15.6	142.7

2010 - 2019
Commercial/Industrial Achievable Potential
TRC Evaluation

Year	Summer Demand (MW) Incremental	Summer Demand (MW) Cumulative	Winter Demand (MW) Incremental	Winter Demand (MW) Cumulative	Annual Energy (GWH) Incremental	Annual Energy (GWH) Cumulative
2010	2.5	2.5	0.9	0.9	6.5	6.5
2011	3.6	6.1	1.1	2.0	10.6	17.1
2012	4.3	10.4	1.4	3.4	15.4	32.5
2013	5.1	15.5	1.3	4.7	16.2	48.7
2014	5.4	20.9	1.5	6.2	19.5	68.2
2015	6.0	26.9	1.7	7.9	20.9	89.1
2016	6.2	33.1	1.6	9.5	21.6	110.7
2017	6.3	39.4	1.6	11.1	21.8	132.5
2018	6.4	45.8	1.7	12.8	22.1	154.6
2019	6.3	52.1	1.7	14.5	21.7	176.3

Achievable Potential Measure List
RIM Evaluation

Residential Number	Measure
114	Proper Refrigerant Charging and Air Flow
115	Electronically Commutated Motors (ECM) on an Air Handler Unit
116	Duct Repair
117	Reflective Roof
120	Window Tinting
121	Default Window With Sunscreen
122	Single Pane Clear Windows to Double Pane Low-E Windows
140	Proper Refrigerant Charging and Air Flow
141	Electronically Commutated Motors (ECM) on an Air Handler Unit
143	Reflective Roof
146	Window Tinting
148	Single Pane Clear Windows to Double Pane Low-E Windows
191	HE Room Air Conditioner - EER 11
196	Reflective Roof
198	Window Tinting
200	Single Pane Clear Windows to Double Pane Low-E Windows

Commercial Number	Measure
101	Lighting 15% More Efficient Design
102	Lighting 25% More Efficient Design
111	Premium T8, Electronic Ballast
112	Premium T8, EB, Reflector
121	ROB Premium T8, 1EB
122	ROB Premium T8, EB, Reflector
141	CFL Hardwired, Modular 18W
153	High Bay T5
161	LED Exit Sign
301	Centrifugal Chiller, 0.51 kW/ton, 500 tons
301	Cooling & Ventilation 10% More Efficient Design
302	High Efficiency Chiller Motors
302	Cooling & Ventilation 30% More Efficient Design
304	EMS - Chiller
305	Chiller Tune Up/Diagnostics
306	VSD for Chiller Pumps and Towers
311	Window Film (Standard)
313	Ceiling Insulation
314	Roof Insulation
315	Cool Roof - Chiller

321	DX Packaged System, EER=10.9, 10 tons
322	Hybrid Desiccant-DX System (Trane CDQ)
326	DX Tune Up/ Advanced Diagnostics
332	Window Film (Standard)
334	Ceiling Insulation
335	Roof Insulation
336	Cool Roof - DX
342	Geothermal Heat Pump, EER=13, 10 tons
347	Window Film (Standard)
349	Ceiling Insulation
350	Roof Insulation
351	Cool Roof - DX
361	HE PTAC, EER=9.6, 1 ton
362	Occupancy Sensor (hotels)
402	Variable Speed Drive Control
404	Electronically Commutated Motors (ECM) on an Air Handler Unit
406	Energy Recovery Ventilation (ERV)
501	High-efficiency fan motors
501	Refrigeration 10% More Efficient Design
502	Refrigeration 20% More Efficient Design
506	Compressor VSD retrofit
513	High R-Value Glass Doors
514	Multiplex Compressor System
515	Oversized Air Cooled Condenser
603	Heat Pump Water Heater (air source)
608	Heat Recovery Unit

Industrial Number	**Measure**
202	Fans - Controls
203	Fans - System Optimization
214	Optimize drying process
303	Pumps - System Optimization
402	O&M/drives spinning machines
410	Efficient Printing press (fewer cylinders)
414	Clean Room - New Designs
418	Extruders/injection Molding-multi-pump
419	Direct drive Extruders
420	Injection Molding - Impulse Cooling
421	Injection Molding - Direct drive
422	Efficient grinding
502	Drying (UV/IR)
503	Heat Pumps - Drying
505	Efficient electric melting

509	Efficient Curing ovens
552	Optimization Refrigeration
603	New transformers welding
604	Efficient processes (welding, etc.)
701	Centrifugal Chiller, 0.51 kW/ton, 500 tons
722	Hybrid Desiccant-DX System (Trane CDQ)
731	Cool Roof - DX
802	CFL Hardwired, Modular 18W
902	Membranes for wastewater

Achievable Potential Measure List
TRC Evaluation

Residential Number	Measure
114	Proper Refrigerant Charging and Air Flow
115	Electronically Commutated Motors (ECM) on an Air Handler Unit
116	Duct Repair
117	Reflective Roof
120	Window Tinting
121	Default Window With Sunscreen
122	Single Pane Clear Windows to Double Pane Low-E Windows
140	Proper Refrigerant Charging and Air Flow
141	Electronically Commutated Motors (ECM) on an Air Handler Unit
143	Reflective Roof
146	Window Tinting
147	Default Window With Sunscreen
148	Single Pane Clear Windows to Double Pane Low-E Windows
191	HE Room Air Conditioner - EER 11
196	Reflective Roof
198	Window Tinting
199	Default Window With Sunscreen
200	Single Pane Clear Windows to Double Pane Low-E Windows
301	HE Refrigerator
405	Low Flow Showerhead

Commercial Number	Measure
101	Lighting 15% More Efficient Design
102	Lighting 25% More Efficient Design
111	Premium T8, Electronic Ballast

112	Premium T8, EB, Reflector
121	ROB Premium T8, 1EB
122	ROB Premium T8, EB, Reflector
141	CFL Hardwired, Modular 18W
153	High Bay T5
161	LED Exit Sign
211	Outdoor Lighting Controls (Photocell/Time clock)
301	Cooling & Ventilation 10% More Efficient Design
301	Centrifugal Chiller, 0.51 kW/ton, 500 tons
302	Cooling & Ventilation 30% More Efficient Design
302	High Efficiency Chiller Motors
304	EMS - Chiller
305	Chiller Tune Up/Diagnostics
306	VSD for Chiller Pumps and Towers
307	EMS Optimization
311	Window Film (Standard)
313	Ceiling Insulation
314	Roof Insulation
315	Cool Roof - Chiller
321	DX Packaged System, EER=10.9, 10 tons
322	Hybrid Desiccant-DX System (Trane CDQ)
326	DX Tune Up/ Advanced Diagnostics
328	Optimize Controls
332	Window Film (Standard)
334	Ceiling Insulation
335	Roof Insulation
336	Cool Roof - DX
342	Geothermal Heat Pump, EER=13, 10 tons
347	Window Film (Standard)
349	Ceiling Insulation
350	Roof Insulation
350	Roof Insulation
351	Cool Roof - DX
361	HE PTAC, EER=9.6, 1 ton
362	Occupancy Sensor (hotels)
401	High Efficiency Fan Motor, 15hp, 1800rpm, 92.4%
402	Variable Speed Drive Control
403	Air Handler Optimization
404	Electronically Commutated Motors (ECM) on an Air Handler Unit
406	Energy Recovery Ventilation (ERV)
501	Refrigeration 10% More Efficient Design
501	High-efficiency fan motors
502	Refrigeration 20% More Efficient Design
506	Compressor VSD retrofit

513	High R-Value Glass Doors
514	Multiplex Compressor System
515	Oversized Air Cooled Condenser
601	High Efficiency Water Heater (electric)
603	Heat Pump Water Heater (air source)
606	Demand controlled circulating systems
608	Heat Recovery Unit

Industrial Number	**Measure**
102	Compressed Air - Controls
107	Comp Air - Motor practices-1 (1-5 HP)
202	Fans - Controls
203	Fans - System Optimization
203	Fans - System Optimization
207	Fans - Motor practices-1 (1-5 HP)
214	Optimize drying process
303	Pumps - System Optimization
307	Pumps - Motor practices-1 (1-5 HP)
402	O&M/drives spinning machines
408	Optimization control PM
410	Efficient Printing press (fewer cylinders)
413	Clean Room - Controls
414	Clean Room - New Designs
415	Drives - Process Controls (batch + site)
418	Extruders/injection Molding-multi-pump
419	Direct drive Extruders
420	Injection Molding - Impulse Cooling
421	Injection Molding - Direct drive
422	Efficient grinding
424	Process optimization
425	Drives - Process Control
502	Drying (UV/IR)
503	Heat Pumps - Drying
505	Efficient electric melting
509	Efficient Curing ovens
552	Optimization Refrigeration
601	Other Process Controls (batch + site)
602	Efficient de-salter
603	New transformers welding
604	Efficient processes (welding, etc.)
605	Process control
701	Centrifugal Chiller, 0.51 kW/ton, 500 tons

703	EMS - Chiller
704	Chiller Tune Up/Diagnostics
705	VSD for Chiller Pumps and Towers
710	Roof Insulation - Chiller
721	DX Packaged System, EER=10.9, 10 tons
722	Hybrid Desiccant-DX System (Trane CDQ)
724	DX Tune Up/ Advanced Diagnostics
729	Window Film (Standard)
730	Roof Insulation
731	Cool Roof - DX
802	CFL Hardwired, Modular 18W
805	Occupancy Sensor
902	Membranes for wastewater

DSM Economic Potential Cost - Effectiveness Sensitivity Analyses

RIM Economic Potential Results

Sensitivity Scenarios	Total Individual Measures	Percent to Base	Annual Energy (GWH)	Annual Energy Percent to Base	Summer Demand (MW)	Summer Demand Percent to Base	Winter Demand (MW)	Winter Demand Percent to Base
Base	1,078	100%	4,978	100%	1,483	100%	826	100%
Low Capital	1,072	99%	4,911	99%	1,476	100%	808	98%
High Capital	1,081	100%	4,998	100%	1,485	100%	827	100%
Low Fuel/Carbon	698	65%	3,646	73%	1,285	87%	642	78%
High Fuel/Carbon	1,365	127%	5,563	112%	1,555	105%	928	112%
No Carbon	538	50%	2,606	52%	775	52%	254	31%

TRC Economic Potential Results

Sensitivity Scenarios	Total Individual Measures	Percent to Base	Annual Energy (GWH)	Annual Energy Percent to Base	Summer Demand (MW)	Summer Demand Percent to Base	Winter Demand (MW)	Winter Demand Percent to Base
Base	1,997	100%	4,673	100%	1,086	100%	474	100%
Low Capital	1,994	100%	4,227	90%	887	82%	355	75%
High Capital	1,999	100%	4,674	100%	1,086	100%	475	100%
Low Fuel/Carbon	1,832	92%	4,431	95%	1,030	95%	426	90%
High Fuel/Carbon	2,097	105%	4,885	105%	1,151	106%	487	103%
No Carbon	1,829	92%	4,219	90%	887	82%	355	75%

TAMPA ELECTRIC COMPANY
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Annual Bill Impact - Residential Customer
Based on 1,200 KWH per Month

Year	Base Case No Incremental DSM	RIM DSM Portfolio	TRC DSM Portfolio
2010	$1,679	$1,683	$1,685
2011	1,664	1,669	1,673
2012	1,697	1,704	1,710
2013	1,764	1,764	1,779
2014	1,814	1,815	1,823
2015	1,850	1,848	1,848
2016	1,880	1,880	1,878
2017	2,017	1,930	1,937
2018	2,068	1,978	1,985
2019	2,089	2,097	2,105
Total:	$18,522	$18,368	$18,423