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April 2, 2024

VIA ELECTRONIC FILING

Mr. Adam J. Teitzman
Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

Re: Docket No. 20240014-EG; Commission Review of Numeric Conservation Goals (Tampa Electric Company)

Dear Mr. Teitzman:

Attached for filing on behalf of Tampa Electric Company is the company's Petition for Approval of Numeric Conservation Goals and Proposed Demand Side Management Programs for 2025-2034. Also included is the Testimony and Exhibit MRR-1 of Mark R. Roche.

Thank you for your assistance in connection with this matter.

Sincerely,

Malcolm N. Means

Malcolm N. Means

MNM/bml
Attachment

cc: All Parties of Record

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 electronic mail on this 2nd day of April, 2024 to the following:

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Malcolm N. Means

ATTORNEY

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Commission review of)
Numeric Conservation Goals)
(Tampa Electric Company))
)

DOCKET NO. 20240014-EG

FILED: April 2, 2024

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

Tampa Electric Company ("Tampa Electric" or "the company"), by and through its undersigned attorneys, files this petition with proposed numeric conservation goals and proposed Demand Side Management ("DSM") programs for the 2025-2034 period. Tampa Electric respectively requests that the Florida Public Service Commission ("Commission") accept, approve, and adopt Tampa Electric's proposed 2025-2034 numeric conservation goals, and the proposed DSM programs that were designed in combination with the development of these numeric conservation goals, as the numeric goals established by the Commission for Tampa Electric Company pursuant to Section 366.82, Florida Statutes, and Rules 27-17.001 and 25.17.0021, Florida Administrative Code. In support of this petition, the company says:

I. Introduction

1. The Petitioner's name and address are:

Tampa Electric Company.
702 North Franklin Street
Tampa, Florida 33602

2. Any pleading, motion, notice, order, or other document required to be served upon Tampa Electric or filed by any party to this proceeding shall be served upon the following individuals:

J. Jeffry Wahlen
Malcolm N. Means
Virginia Ponder
Ausley & McMullen

Paula Brown, Manager
Regulatory Coordination
Tampa Electric Company
Post Office Box 111

Post Office Box 391	Tampa, FL 33601
Tallahassee, Florida 32302	(813) 228-1444
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3. Tampa Electric is a wholly owned subsidiary of Emera Incorporated. ("Emera"). Tampa Electric became part of Emera in 2016 when Emera purchased all common stock of TECO Energy, Inc. Tampa Electric is an investor-owned public utility regulated by the Florida Public Service Commission ("FPSC" or "the Commission") and the Federal Energy Regulatory Commission.

4. Tampa Electric currently provides retail electric service to approximately 844,000 customers in a 2,000 square mile service territory in Hillsborough and portions of Polk, Pasco, and Pinellas counties, Florida. Tampa Electric and its 2,500 employees are committed to being a trusted energy partner for customers now and in the future.

5. The agency affected by this Petition is the Florida Public Service Commission, located at 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399. This petition represents an original pleading and is not filed in response to any proposed action by the Commission. Accordingly, the company is not responding to any proposed agency action.

6. In compliance with paragraph (2)(d) of Rule 28-106.201, Tampa Electric states that it is not aware of any disputed issues of material fact at this time, but acknowledges that such disputed issues of material fact could arise in this docket.

II. Ultimate Facts Entitling Tampa Electric to Relief

7. Tampa Electric is subject to Section 366.92, Florida Statutes, part of the Florida Energy Efficiency and Conservation Act ("FEECA"), which requires the Commission to adopt appropriate goals to increase the efficiency of energy consumption, increase the development of demand side renewable energy systems, reduce and control the growth rates of electric consumption

and weather sensitive peak demand, and encourage the development of demand side renewable energy resources.

8. Docket No. 20240014-EG is one of six that has been opened by the Commission to establish numeric conservation goals for each of Florida's utilities subject to FEECA (collectively the "FEECA Utilities") pursuant to Section 366.82, Florida Statutes, and Rule 25-17.0021, Florida Administrative Code. The six separate dockets were consolidated for hearing in Order No. PSC-2024-0022-PCO-EG, issued January 23, 2024.

9. As a result of Tampa Electric's evaluations, the company proposes the following numeric conservation goal which Tampa Electric has determined to be reasonably achievable in the residential, commercial, and industrial classes within Tampa Electric's service area over a ten-year period. The company's proposed conservation goals at the generator for years 2025 through 2034 are as follows:

Residential

Summer Demand: 88.6 MW

Winter Demand: 145.4 MW

Annual Energy: 246.2 GWh

Commercial/Industrial

Summer Demand: 60.5 MW

Winter Demand: 51.7 MW

Annual Energy: 204.4 GWh

Combined

Summer Demand: 149.0 MW

Winter Demand: 197.1 MW

Annual Energy: 450.5 GWh

10. The testimony of Mark Roche, filed contemporaneously with this petition, along with the exhibit and schedules attached thereto, sets forth the company's ten-year projections of the total cost-effective winter and summer peak MW demand reduction and the annual GWh savings which are reasonably achievable through implementation of demand side measures in Tampa Electric's service area for the residential, commercial, and industrial classes. Mr. Roche’s testimony also includes the proposed DSM programs that were developed in combination with the company’s proposed numerical conservation goals as required by the recent changes to Rule 25-17.0021.

11. As demonstrated by the testimony of witness Roche, the company's proposed numeric conservation goals for the period 2025 through 2034 are reasonable and are consistent with the requirements of Section 366.82, Florida Statutes, and Rule 25-17.0021, Florida Administrative Code.

12. Tampa Electric is entitled to relief pursuant to Sections 366.81 and 366.82, Florida Statutes, and Rule 25-17.0021, Florida Administrative Code.

WHEREFORE, Tampa Electric Company requests that the Commission enter an order approving and establishing the company's proposed numeric conservations goals and proposed DSM programs that support these goals as set forth in this filing for the period 2025 through 2034 pursuant to Section 366.82, Florida Statutes, and Rule 25-17.0021 , Florida Administrative Code, and grant such other relief as is just and reasonable under the facts and law as determined by the Commission.

DATED this 2nd day of April 2024.

Respectfully submitted,

Malcolm N. Means

J. JEFFRY WAHLEN
MALCOLM N. MEANS
VIRGINIA PONDER
Ausley McMullen
Post Office Box 391
Tallahassee, Florida 32302
(850) 224-9115

ATTORNEYS FOR TAMPA ELECTRIC COMPANY

BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 20240014-EG

IN RE: COMMISSION REVIEW OF
NUMERIC CONSERVATION GOALS
TAMPA ELECTRIC COMPANY

TESTIMONY AND EXHIBIT

OF

MARK R. ROCHE

ON BEHALF OF TAMPA ELECTRIC COMPANY

FILED: April 2, 2024

TAMPA ELECTRIC COMPANY
DOCKET NO. 20240014-EG
FILED: APRIL 2, 2024

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

PREPARED DIRECT TESTIMONY

OF

MARK R. ROCHE

ON BEHALF OF TAMPA ELECTRIC COMPANY

TABLE OF CONTENTS:

INTRODUCTION:

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

A. My name is Mark R. Roche. My business address is 219 Lithia Pinecrest Road, Brandon, Florida, 33511. I am employed by Alternative Energy Applications ("AEA") as their Vice President of North America Customer Energy Efficiency Solutions. In this proceeding, I am a consultant supporting Tampa Electric Company ("Tampa Electric" or "the company").

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

A. I graduated from Thomas Edison State College in 1994 with a Bachelor of Science degree in Nuclear Engineering Technology and from Colorado State University in 2009 with a Master's degree in Business Administration. My work experience includes twelve years with the US Navy in nuclear operations as well as twenty-six years of electric and gas utility experience. My utility work has included various positions in Marketing and Sales, Customer Service, Distributed Resources, Load Management, Power Quality, Distribution Control Center Operations, Meter Department, Meter Field Operations, Service Delivery, Revenue Assurance, Commercial and Industrial Energy Management Services, and Electric and Gas Demand Side Management ("DSM") Planning and Forecasting. I also have twenty-three years of experience in training and certification of energy managers and DSM program administrators around the world. I have been an instructor and course developer for three professional certification courses offered through the Associations of Energy Engineers: Certified Energy Manager (CEM) since 2001, Business Energy Professional (BEP) since 2003, and the Certified Demand Side Management Professional (CDSM) since 2011. I also authored two college courses offered through the National Energy Center of Excellence (NECE) at Bismarck State College on business and operational impacts of the Smart Grid in 2011.

Most recently, in February of 2024, I transitioned from Tampa Electric in which I was responsible for Tampa Electric's Energy Conservation Cost Recovery ("ECCR")

Clause and Storm Protection Plan Cost Recovery Clause ("SPPCRC") Clause to my current position at AEA where I am responsible for the development and implementation of energy efficiency programs and offerings to utilities, DSM program facilitators, and customers.

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 and DSM programs for the 2025–2034 period. Tampa Electric's proposed goals and programs are based upon the analytical work performed by the company and Resource Innovations. Resource Innovations is a consulting and analysis services firm with an exclusive focus on energy in providing support to clients in the areas of demand management, demand response, grid management and renewables as well as offering a comprehensive suite of software designed to support these areas. Resource Innovations acquired Nexant, the company that assisted Tampa Electric in the prior 2020-2029 DSM Goals development, on May 12, 2021. Resource Innovations has almost 30 years of experience in the field of DSM evaluations and was chosen through a rigorous request for proposal vetting process. Tampa Electric's goals are separated into summer demand, winter demand, and annual energy components for both the residential and commercial/industrial sectors. In support of the proposed DSM goals and programs, my testimony will demonstrate that the process Tampa Electric utilized to establish its reasonably achievable, cost-effective goals complies with the requirements of Rule 25-17.0021, Florida Administrative Code ("F.A.C.").

In addition, my testimony complies with the requirements of the Order Establishing Procedure for this proceeding and provides the information requested by Commission Staff in the November 1, 2023, preliminary meeting for this docket by addressing the following components within my testimony:

- Provide a description of how the utility's Technical Potential Study has been updated and modified, including any measures eliminated or added since the utility's last filed Technical Potential Study.
- Provide the complete 2023 comprehensive measure list that was evaluated and identify measures that were eliminated or added as compared to the last technical potential study.
- Provide a description of how the utility's Base Case with no incremental demand-side management was developed.
- Provide the impact from energy efficiency that is

occurring in Tampa Electric’s service area stemming from Energy Efficiency and Appliance Standards.

- Provide a detailed description of how any sensitivities were developed and how they compare to the Base Case, including forecasts for fuel prices and emissions costs.
- Provide a description of the Base Case’s next avoidable generating unit and describe the methodology used to determine it.
- For the utility’s proposed goals, as well as for the goals developed under the two cost-effectiveness scenarios as required by Rule 25-17.0021(3), F.A.C., provide the estimated rate impact on a residential 1,000 kWh/month bill and a breakdown at the program level with demand and energy savings, program costs and benefits, cost-effectiveness test results, list of measures included, and participation rates.
- Provide a description of the program development process, and identify measures excluded during each stage of process and why. As part of this description, identify restrictions, if any, on program design due to current settlements, such as rebate amounts.
- For the utility’s proposed goals, as well as for the goals developed under the two cost-effectiveness scenarios as required by Rule 25-17.0021(3), F.A.C.,

provide a description of how free-ridership is addressed.

- Provide the number of measures that were screened out during free-ridership consideration and the list of measures that remained cost-effective at the achievable potential.
- Provide a description of the efforts made to address customers who rent in program development, including a list of programs they would be eligible to participate in.
- Provide a description of how supply-side efficiencies are incorporated in the utility’s most recent planning process and how supply-side efficiencies impact demand-side management programs.
- Provide a comparison of the programs used to determine utility’s proposed goals to its current DSM program offerings.
- Provide the proposed goals breakdown at the program level including participation rates, savings, costs, and cost effectiveness results.
- Provide a discussion of how the utility’s proposed goals encourage the development of demand-side renewable energy systems.

Q. Have you prepared any exhibits in support of your testimony?

A. Yes. I have prepared an exhibit entitled, "Exhibit of Mark R. Roche", which is identified as Exhibit No. MRR-1. It consists of 21 documents including:

- Document No. 1 contains Tampa Electric's proposed DSM goals at the generator for the 2025-2034 period and the portfolio of DSM programs that make up this goal.
- Document No. 2 contains Tampa Electric's Rate Impact Measure test ("RIM") based DSM goals at the generator for the 2025-2034 period and the portfolio of DSM programs that make up this goal.
- Document No. 3 contains Tampa Electric's Total Resource Cost test ("TRC") based DSM goals at the generator for the 2025-2034 period and the portfolio of DSM programs that make up this goal.
- Document No. 4 provides the overall process used to develop the company's proposed DSM goals for the 2025-2034 period.
- Document No. 5 provides Tampa Electric's Technical Potential Study of Demand Side Management Report.
- Document No. 6 provides the Comprehensive Measure List.
- Document No. 7 provides the process used to develop the Technical Potential.
- Document No. 8 provides Tampa Electric's DSM Technical Potential for Energy Efficiency, Demand Response, and

Distributed Energy Resources.

- Document No. 9 provides the process used to develop the Economic Potential.
- Document No. 10 contains Tampa Electric’s avoided unit cost data used for cost-effectiveness evaluations.
- Document No. 11 contains all the assumptions used for the performance of cost-effectiveness.
- Document No. 12 provides Tampa Electric’s 2025-2034 DSM Economic Potential for the RIM and TRC cost-effectiveness tests.
- Document No. 13 provides the process used to develop the Economic Potential sensitivity analyses.
- Document No. 14 provides the DSM Economic Potential sensitivities.
- Document No. 15 provides the Free-Ridership Consideration.
- Document No. 16 provides the proposed individual DSM program detail that supports the proposed DSM goals for the 2025-2034 period.
- Document No. 17 provides the RIM based individual DSM program detail that supports the RIM based DSM goals for the 2025-2034 period.
- Document No. 18 provides the TRC based individual DSM program detail that supports the TRC based DSM goals for the 2025-2034 period.

- Document No. 19 provides Tampa Electric's current DSM programs and achievements.
- Document No. 20 provides Tampa Electric's proposed DSM Goals.
- Document No. 21 provides Tampa Electric's proposed DSM programs that achieve the proposed goals.

Q. Is Resource Innovations providing direct testimony?

A. Yes, Jim Herndon, Resource Innovation's Vice President, Strategy and Planning Consulting, will be filing direct testimony that will support the goals Tampa Electric is proposing for the 2025-2034 DSM goals period.

TAMPA ELECTRIC'S PROPOSED DSM GOALS:

Q. What are Tampa Electric's proposed cumulative DSM goals that are appropriate and reasonably achievable for the period 2025-2034?

A. The proposed appropriate and reasonable cumulative DSM goals at the generator for Tampa Electric for the period 2025-2034 are as follows:

Residential

Summer Demand:	88.6 MW
Winter Demand:	145.4 MW

Annual Energy: 246.2 GWh

Commercial/Industrial

Summer Demand: 60.5 MW

Winter Demand: 51.7 MW

Annual Energy: 204.4 GWh

Combined

Summer Demand: 149.0 MW

Winter Demand: 197.1 MW

Annual Energy: 450.5 GWh

Q. What are Tampa Electric’s cumulative DSM goals that are appropriate and reasonably achievable for the period 2025-2034 based upon the RIM cost-effectiveness test?

A. The appropriate and reasonable cumulative DSM goals at the generator for Tampa Electric for the period 2025-2034 based upon the RIM test are as follows:

Residential

Summer Demand: 88.6 MW

Winter Demand: 145.4 MW

Annual Energy: 246.2 GWh

Commercial/Industrial

Summer Demand: 60.5 MW

Winter Demand: 51.7 MW

Annual Energy: 204.4 GWh

Combined

Summer Demand: 149.0 MW
Winter Demand: 197.1 MW
Annual Energy: 450.5 GWh

Q. What are Tampa Electric's cumulative DSM goals that are appropriate and reasonably achievable for the period 2025-2034 based upon the TRC cost-effectiveness test?

A. The appropriate and reasonable cumulative DSM goals at the generator for Tampa Electric for the period 2025-2034 based upon the TRC test are as follows:

Residential

Summer Demand: 88.6 MW
Winter Demand: 145.4 MW
Annual Energy: 246.2 GWh

Commercial/Industrial

Summer Demand: 60.5 MW
Winter Demand: 51.9 MW
Annual Energy: 204.7 GWh

Combined

Summer Demand: 149.0 MW
Winter Demand: 197.4 MW
Annual Energy: 450.8 GWh

Q. What cost-effectiveness methodology does Tampa Electric recommend for its proposed 2025-2034 DSM goals?

A. Tampa Electric recommends the adoption of the RIM test in conjunction with the Participant Cost Test ("PCT"). The RIM test, when used in tandem with the PCT test, provides a cost-effective, fair, reasonable, and equitable determination of DSM expenditures for both the DSM program participants and 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 longstanding decisions in the past to approve a utility's DSM goals based on the RIM test have not hindered the DSM performance of Tampa Electric. Based on these results and the fairness of the methodology, Tampa Electric believes its DSM goals for the 2025-2034 period should be established on the RIM test basis.

Q. What is the annual portion of these proposed goals for each segment on an annual basis for the upcoming period of 2025-2034?

A. The annual portion for these Proposed, RIM, and TRC goals for each segment (Residential, Commercial/Industrial and Combined) for the upcoming period of 2025-2034 are included in my Exhibit No. MRR-1, Documents No. 1, 2, and 3 respectively. These documents detail the incremental annual and cumulative amounts that comprise these goals.

Q. How do Tampa Electric's proposed DSM goals for the upcoming period of 2025-2034 compare to the company's proposed DSM goals for the 2020-2029 period?

A. Tampa Electric's proposed cumulative DSM goals for the upcoming period of 2025-2034 show an increase in overall demand reduction and an increase in the annual energy ("AE") as compared to the company's proposed DSM goals for the 2020-2029 period. It is also important to compare the proposed goals for the upcoming period with the actual goals for the 2015-2024 period as those goals were the DSM goals approved by the Commission. These comparisons are set out below:

<u>2025-2034 Proposed DSM Goals</u>

Summer Demand:	149.0 MW
Winter Demand:	197.1 MW
Annual Energy:	450.5 GWh

Prior Period DSM Goals

	Proposed 2020-2029	Actual 2015-2024
Summer Demand:	79.7 MW	56.3 MW
Winter Demand:	43.3 MW	78.3 MW
Annual Energy:	165.0 GWh	144.3 GWh

Q. Why are the proposed goals for the 2025-2034 period greater than those proposed by the company in the last DSM goal-setting process?

A. There are several factors that influenced the final DSM goal amounts. While some of these factors placed downward pressure on potential savings, the net effect of all these factors is an increase in the company’s current proposed DSM goals for demand and energy as compared to those proposed five years ago. These factors include:

- The most significant factor that influenced the increase in the company’s current proposed DSM goals is that the cost of the current avoided generating unit is substantially higher than the avoided unit cost five years ago. This increased potential energy savings.
- The fixed O&M cost increased for the current avoided generating unit as compared to the unit five years ago, which increased potential energy savings.

- Other factors such as K-factor, variable O&M, and escalation rates declined and the in-service year of the avoided generating unit moved farther out, all of which decreased the overall potential increase amount.
- As in the past, Florida building codes have become more stringent from previous levels, which places more downward pressure on customer usage and decreases the overall potential increase.
- Various Federal energy efficiency and appliance standards have been enacted, causing several baseline measures to be removed from the evaluation of potential DSM measures, which also decreased the overall potential increase.

Q. What is Tampa Electric’s average electricity usage per month for a typical residential customer and how does this compare to the usage of five years ago?

A. In 2023, a typical Tampa Electric residential customer used a weather adjusted kWh amount of 1,128 kWh on a monthly basis. In 2018, the typical Tampa Electric residential customer used a weather adjusted kWh amount of 1,107 kWh on a monthly basis.

Q. What is the proposed avoided unit and associated costs that

Tampa Electric utilized in the preparation of these proposed DSM goals?

A. The proposed avoided unit is a Natural Gas Reciprocating Engine that has a winter and summer capacity rating of 18.7 MW. The proposed unit would be placed into service in January of 2030. The unit has a base year avoided generating cost of $1,307.06 per kW and a fixed O&M cost of $30.02 per kW per year.

Q. How do these avoided unit costs compare to the avoided unit that was used five years ago?

A. The avoided unit cost five years ago had a base year avoided generating cost of $526.30 per kW and a fixed O&M cost of $5.83 per kW per year.

Q. How do the avoided generating unit fuel cost and fuel escalation rate used in the new goal setting compare to the avoided generating unit that was used five years ago?

A. The current avoided generating fuel cost is 5.27 cents per kilowatt-hour (“kWh”) with a fuel escalation rate of 2.61 percent. The avoided generating fuel cost five years ago was 3.75 cents per kWh and the fuel escalation rate was

4.54 percent.

Q. For the 2025-2034 DSM goals setting period, what are the company's projected energy and demand impacts due to more stringent energy efficiency and appliance standards improvements?

A. The company's estimate for the energy and demand impacts due to more stringent energy efficiency and appliance standards over the 2025-2034 DSM goals period is an overall reduction of customer energy usage of 1.11 GWh, a reduction in overall summer demand of 41 MW, and a reduction in overall winter demand of 39 MW.

Q. Regardless of the results of the RIM or TRC cost-effectiveness analysis, do you believe that DSM goals should always be set higher than previously set goals?

A. No, I do not. Setting goals too high just for the sake of having higher goals can lead to costly, unfair, and imprudent results for Tampa Electric's customers. DSM goals should be set with a clear focus on the costs the utility would have to incur to serve the load that the conservation efforts are reasonably projected to avoid. In addition, the conservation measures selected should minimize rate impacts and avoid cross-subsidization between customers. The Commission has been able to accomplish these objectives in the past through the primary use of the RIM test (to minimize rate impacts and avoid cross-subsidization), the two-year payback screen to minimize free ridership, and a process that focuses on the utility's most recently projected resource needs.

Q. How do 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 United States. 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 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 effect 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 Commission approved programs through the end of 2023, the company has achieved the following cumulative demand and energy savings:

Summer Demand: 835.4 MW
Winter Demand: 1,349.8 MW
Annual Energy: 1,950.1 GWh

In comparison to the end of 2018 and 2023, incrementally, the company achieved the following demand and energy savings over this past five-year period,

Summer Demand: 105.7 MW
Winter Demand: 113.8 MW
Annual Energy: 389.6 GWh

These cumulative peak load achievements have eliminated the need for over seven 180 MW power plants.

The magnitude of these continuing efforts by Tampa Electric, as well as other utilities in Florida, is clearly demonstrated by Florida's ranking in the United States Energy Information Administration's recent analyses. With respect to "Total Energy Consumed per Capita, 2021", Florida ranks 45th (of 51 States). With respect to "Total Energy Expenditures per Capita, 2021", Florida ranks 50th. Finally, with respect to "Average Retail Price of Electricity to the Residential Sector, November 2023", Florida ranks 21st. Florida's average Residential Retail price of 15.38 cents per kWh which is five percent below the national average and substantially lower than other States such as Massachusetts with a residential retail price of 28.25 cents per kWh, New York at 22.72 cents per kWh, and California at 29.41 cents per kWh is especially notable given that Tampa Electric has achieved a high level of DSM reductions by offering a comprehensive portfolio of DSM programs that reduce rates for all customers, both DSM participants and non-participants alike. It is also worth noting that Tampa Electric's current Residential Retail Price of 14.35 cents per kWh continues to be lower than the Florida average.

TAMPA ELECTRIC'S PROPOSED DSM PROGRAMS:

Q. What are Tampa Electric's proposed DSM programs that support the proposed DSM annual goals that are appropriate and reasonably achievable for the period 2025-2034?

A. The proposed residential and commercial/industrial DSM programs that support the proposed DSM goals for the period 2025-2034 are as follows:

Residential Programs:

1. Residential Walk-Through Audit (Free Energy Check)
2. Residential Customer Assisted Energy Audit (Online)

3. Residential Computer Assisted Energy Audit (RCS)(Paid)
4. Residential Ceiling Insulation
5. Residential Duct Repair
6. Energy and Renewable Education, Awareness and Agency Outreach
7. ENERGY STAR for New Multi-Family Residences
8. ENERGY STAR for New Homes
9. ENERGY STAR Thermostats
10. Residential Heating and Cooling
11. Neighborhood Weatherization
12. Residential Price Responsive Load Management (Energy Planner)
13. Residential Prime Time Plus
14. Renewable Energy Program (Sun-To-Go)

Commercial/Industrial Programs:

1. Commercial/Industrial Audit (Free)
2. Comprehensive Commercial/Industrial Audit (Paid)
3. Cogeneration
4. Commercial/Industrial Custom Energy Efficiency
5. Demand Response
6. Industrial Load Management (GSLM 2&3)
7. Lighting Conditioned Space
8. Lighting Non-Conditioned Space
9. Lighting Occupancy Sensors

10. Commercial Load Management (GSLM 1)
11. Standby Generator
12. VFD and Motor Controls
13. Commercial Heat Pump Water Heater and Drain Water Heat Recovery
14. Conservation Research and Development ("R&D")
15. Renewable Energy Program (Sun-To-Go)

Q. You stated that Tampa Electric's proposed DSM goals are RIM based. Is this proposed portfolio of DSM programs for the period 2025-2034 listed above identical to the portfolio of DSM programs that would be considered the RIM portfolio?

A. Yes, the proposed portfolio of DSM programs listed above is identical to the RIM based portfolio.

Q. Is this proposed portfolio of DSM programs for the period 2025-2034 listed above identical to the portfolio of DSM programs that would be considered the TRC portfolio? If not, please explain.

A. No, the proposed portfolio of DSM programs listed above is not identical, but it is very close to the TRC based portfolio. For the TRC portfolio, there is one additional DSM program for commercial/industrial customers that is not in the proposed or RIM based portfolios. The additional

DSM program is Destratification Fans, which are essentially very large ceiling fans installed within conditioned commercial or industrial spaces that provide some energy and demand savings during the winter period. The residential DSM programs are identical across all three portfolios. All portfolios for the 2025-2034 period are included in my Exhibit No. MRR-1, Documents No. 1, 2, and 3 (Proposed, RIM based, TRC based respectively).

OVERALL PROCESS TO DEVELOP DSM GOALS:

Q. Would you describe the overall process that Tampa Electric utilized to develop the proposed DSM goals in this proceeding.

A. Yes, the overall process first starts with the development of a technical potential study, which is the theoretical maximum amount of energy and capacity that could be displaced by energy efficiency, demand response and distributed energy resources regardless of cost, acceptability to customers, and other barriers that may prevent the installation or adoption of an energy efficiency measure. The technical potential is only constrained by factors such as technical feasibility and the applicability of measures.

Once the technical potential is developed, the company determines the economic potential. The economic potential is determined by evaluating each of the measures' cost-effectiveness under the RIM and TRC cost effectiveness tests. The economic potential is the amount of energy and capacity that could be reduced by those energy efficiency, demand response, and distributed energy resource measures that pass cost-effectiveness. For the RIM economic potential, lost revenue is the only cost component that is introduced. For the TRC economic potential, the full incremental cost of the measure is the only cost component introduced.

Once the economic potential is achieved, the company removes programs that have a negative PCT, runs the sensitivity analyses for low and high fuel, and then performs the consideration of free ridership in addition to determining the one and three-year free ridership sensitivities. After these sensitivity analyses are performed, the company takes the surviving permutations, combines them into single measures, and introduces program administration costs and potential incentive levels to evaluate which measures could be turned into DSM programs. Once these potential programs are identified, the company evaluates the annual adoption rates and participation rates over the 2025-2034 period based upon incentive levels, current program participation rates, other incentives such as the Inflation Reduction Act ("IRA"), and current market conditions and develops the annual summer and winter demand savings and annual energy savings for each program. Once the annual summer and winter demand savings and annual energy savings for each program are determined, they are added together to develop the proposed DSM goals for each year. This overall process is included in my Exhibit No. MRR-1, Document No. 4.

Q. Is this the same process that was used by Tampa Electric in the DSM goals setting proceeding conducted in 2019?

A. The process is almost the same, with the exception of the final few steps beyond the addition of administration and incentive costs that were performed in this proceeding. In the prior proceeding, each of the measures surviving cost-effectiveness would be evaluated to determine their achievable potential. After this determination, each of the individual achievable potentials would be added together to form the proposed DSM goals. The actual development of proposed or supporting DSM programs would be performed in a later and separate proceeding.

Q. Why did Tampa Electric follow a new process?

A. This new process is a result of following the new Rule requirements within the amended Rule 25-17.0021, F.A.C., which requires the proposed DSM goals to be based upon cost-effective DSM programs.

Q. Did Tampa Electric calculate an achievable potential even though not required by Rule 25-17.0021, F.A.C.?

A. No, it would be unnecessary to calculate an achievable potential as the DSM goals being proposed need to meet the requirements of Rule 25-17.0021, F.A.C., which requires DSM goals to be based upon cost-effective DSM programs.

Q. Did Tampa Electric develop its own Technical Potential Study?

A. No, Tampa Electric, in collaboration with Florida Power and Light, Duke Energy Florida, Orlando Utilities Commission, Jacksonville Electric Authority, and Florida Public Utilities (collectively the "FEECA Utilities") utilized a common vendor to develop the technical potential study.

Q. Did the vendor develop a technical potential study for all the FEECA Utilities to use or a technical potential study specific for each utility including Tampa Electric?

A. The vendor developed a technical potential study that was specific for each utility, including Tampa Electric.

Q. Why did Tampa Electric have a new technical potential study developed?

A. Tampa Electric, in collaboration with the other FEECA Utilities, made the decision to have a new technical potential study developed for several reasons. The first and foremost was due to the new methodology for DSM goal development required by the amended Rule 25-17.0021, F.A.C. The second reason was to account for new measures, such as electric vehicles and their associated charging systems, that were not included in prior technical potentials. The third and final reason was to ensure that the associated measure list addressed building code changes and any impacts due to the Inflation Reduction Act.

Q. Did Tampa Electric develop its own economic potential?

A. Yes.

Q. Did Tampa Electric perform its own fuel sensitivity analyses, free-ridership considerations, free ridership sensitivities, and the cost of carbon sensitivities?

A. Yes, although the company did not perform a sensitivity for the cost of carbon as Tampa Electric does not currently include the cost of carbon within its integrated resource planning and there is no current cost of carbon in the State of Florida.

Q. Did Tampa Electric perform its own analysis to determine the proposed DSM goals, RIM based goals, and TRC based goals and their associated DSM programs?

A. Yes.

PROCESS TO DEVELOP THE TECHNICAL POTENTIAL:

Q. Please discuss the process that Tampa Electric utilized to develop the technical potential that would be used to develop the company's proposed DSM goals.

A. Tampa Electric started the process of developing the proposed goals by collaborating with the other FEECA Utilities. The FEECA Utilities collectively decided to develop a new technical potential study. The FEECA

Utilities began meeting in early 2022 to discuss the timing and deliverables for the new study. Beginning in May of 2022, the FEECA Utilities began holding weekly conference calls to discuss the development of the study. In June 2022, the FEECA Utilities initiated a request for proposals to seek vendors that were capable of performing a technical potential study. From July 2022 through August 2022, the FEECA Utilities screened and evaluated the responses to the request for proposals. The proposals were screened based upon several criteria which included prior experience; quality of experience; ability to achieve deliverables and deadlines; methodology; data sources and uses; engineering methods; alternative approaches; discovery thoroughness; other supporting documentation; price; and price controls. In addition to reviewing written submissions from vendors, the FEECA Utilities also asked each vendor to submit at least two contacts at other utilities for which the vendor has performed work in the past. The FEECA Utilities called and interviewed these contacts to discuss the vendor’s working relationship, project management effectiveness, study quality, witness performance, overall outcome, other DSM related engagements, and overall impression. After the screening was completed, the FEECA Utilities invited the top two vendors to a final selection presentation in addition to a question-and-answer meeting that was held on

August 25, 2022. At the conclusion of this meeting, the FEECA utilities met and selected the vendor Resource Innovations to perform the technical potential study. The direct testimony of Jim Herndon and Resource Innovations' technical potential study for Tampa Electric provides more detail on the process Resource Innovations used to develop the technical potential. This report is included as my Exhibit No. MRR-1, Document No. 5.

Q. After the FEECA utilities selected Resource Innovations to perform the technical potential study, how did Resource Innovations gather the necessary data to be able to conduct a technical potential study specific to Tampa Electric?

A. Shortly after the FEECA utility meeting on August 25, 2022, Resource Innovations provided the company with a data request that outlined the comprehensive information needed that was specific to Tampa Electric. This data request included Tampa Electric's peak load and energy sales forecasts for 2022-2031, details used for developing the company's 10-year load forecast, customer premise forecasts for 2022-2031, customer characteristics and billing data, any load research data for 2018, 2019, and 2020, utility load shapes, prior utility potential studies, historical program and measure information, preliminary technical potential measure lists, and hourly utility system load data.

Q. Did Tampa Electric provide all the data that was requested by Resource Innovations for the performance of the technical potential study?

A. No, there were some items that Tampa Electric did not have. These items included having all of Tampa Electric business customers segmented by their NAICS or SIC code, availability of Advanced Metering Infrastructure ("AMI") and the associated 15-minute interval data for all customers and customer end use load shapes, recent end-use survey and baseline study data, and customer preferences for program or rate design.

Q. Is Resource Innovations' technical potential study for Tampa Electric less accurate due to these data items that were missing?

A. No, one of the main benefits of doing a technical potential study in a collaborative fashion with the other neighboring FEECA Utilities and Resource Innovations is to be able to use proxy data to fill in these sources of data when the data requested does not exist. Even if these data pieces could not have been fulfilled by proxy, I am confident that the technical potential developed by Resource Innovations specific for Tampa Electric would be accurate.

Q. How did the FEECA Utilities evaluate which measures would be included in the process of developing the technical potential study?

A. Resource Innovations and all the FEECA Utilities provided input into which measures would be included in the process of developing the technical potential study. Each of the provided measures was reviewed for its technical feasibility and applicability and had to meet the following two additional criteria:

1) The measure must be commercially available in the Florida marketplace.
2) The measure cannot be considered a behavioral savings.

Q. Did the FEECA Utilities seek any other input for which measures would be included in the process of developing the technical potential study?

A. Yes, the FEECA Utilities sent a formal letter on October 18, 2022, to the following organizations seeking input for measures to be used in the development of the Technical Potential and ultimately evaluated for consideration as a potential DSM program:

- Southern Alliance for Clean Energy ("SACE")
- League of United Latin American Citizens ("LULAC")
- PCS Phosphate
- Vote Solar
- The CLEO Institute
- Earthjustice
- Florida's Office of Public Counsel ("OPC")
- Florida Industrial Power Users Group ("FIPUG")
- Federal Executive Agencies ("FEA")(21)
- Florida Retail Federation and Stone Law Firm
- Walmart and Spilman Law Firm

Q. Did the FEECA Utilities receive feedback on the measures from any of the organizations listed above?

A. Yes, the FEECA Utilities received feedback from several of the organizations, most notably Earthjustice.

Q. Did the FEECA Utilities add any of the measures that were recommended by the organizations listed above to the final measures list?

A. Yes, the FEECA Utilities reviewed the recommended additions and added them where appropriate. Several of the recommended measures were already included in the measure list, some measures were removed as they are considered behavioral in nature, and some were excluded because they are emerging measures that are not commercially available at this time. However, the company's existing research and development program could be used to evaluate these emerging technologies further when they do become commercially available.

Q. Were there any measures, beyond behavioral or ones that would be considered emerging technologies, that were eliminated from the measure list?

A. Yes, for consistency with prior DSM goal setting periods, the company did not include any supply side efficiency measures as potential measures for this DSM goals setting proceeding.

Q. Please identify how many DSM measures were evaluated that support this 2025-2034 DSM goals setting proceeding?

A. Tampa Electric's comprehensive DSM measure list developed was comprised of the following:

Residential Energy Efficiency Measures:	119
Commercial Energy Efficiency Measures:	164
Industrial Energy Efficiency Measures:	112
Demand Response Measures:	29
Distributed Energy Resource Measures:	24
Combined Total DSM Measures:	448

Q. How does this measure list compare to the prior DSM goal setting proceeding that occurred in 2019?

A. Tampa Electric evaluated 277 total DSM measures in the prior DSM goal setting proceeding in 2019.

Q. How did Tampa Electric ensure that the DSM measure list was complete and accurate?

A. Tampa Electric and the other FEECA Utilities and Resource Innovations conducted weekly phones calls between May 2022 and early 2024 to ensure the DSM measure list and the associated demand and energy savings impacts from each measure were accurate.

Q. Beyond the measure list categories listed above, did the measures have further segmentation?

A. Yes, each of the energy efficiency, demand response, and distributed energy resources categories for residential, commercial, and industrial sectors were further segmented.

Residential energy efficiency and demand response was segmented into:

- Single family homes
- Multi-family homes
- Manufactured homes

The residential distributed energy resources category was segmented into:

- Single family homes
- Multi-family homes

Commercial energy efficiency was segmented into:

- Assembly
- College and University
- Grocery
- Healthcare
- Hospitals
- Institutional
- Lodging/Hospitality
- Miscellaneous
- Restaurants

- Retail
- School K-12
- Warehouse

Commercial demand response was segmented into customers using the following energy usages:

- 0 – 15,000 kWh
- 15,0001 – 25,000 kWh
- 25,001 – 50,000 kWh
- ≥ 50,001 kWh

The commercial distributed energy resources category was segmented into the following:

Battery storage:

  - 0 - 15 MWh
  - >15 MWh - 25 MWh
  - >25 - 50 MWh
  - >50 MWh

Photovoltaics:

  - Assembly
  - College and University
  - Grocery
  - Healthcare
  - Hospitals
  - Institutional

- Lodging/Hospitality
- Miscellaneous
- Restaurants
- Retail
- School K-12
- Warehouse

Combined Heat and Power:

- 5500 kW Steam Turbine-Biomass
- 3500 kW Steam Turbine-Biomass
- 3500 kW Gas Turbine
- 3000 kW Gas Turbine
- 2500 kW Gas Turbine
- 4500 kW Reciprocating Engine
- 1500 kW Steam Turbine-Biomass
- 3000 kW Reciprocating Engine
- 1125 kW Fuel Cell
- 800 kW Fuel Cell-Biogas
- 1250 kW Reciprocating Engine
- 1250 kW Reciprocating Engine-Biogas
- 500 kW Fuel Cell
- 350 kW Reciprocating Engine
- 175 kW Fuel Cell
- 200 kW Micro Turbine
- 150 kW Reciprocating Engine
- 100 kW Micro Turbine

    - 100 kW Micro Turbine-Biogas
    - 50 kW Micro Turbine

Industrial energy efficiency was segmented into:

- Agriculture and Assembly
- Chemicals and Plastics
- Construction
- Electrical and Electronic Equipment
- Lumber/Furniture/Pulp/Paper
- Metal Products and Machinery
- Miscellaneous Manufacturing
- Primary Resource Industries
- Stone/Clay/Glass/Concrete
- Textiles and Leather
- Transportation Equipment
- Water and Wastewater

Large Commercial and Industrial demand response was segmented into customers using the following demand usages:

- 0 – 50 kW
- 51 – 300 kW
- 301 – 500 kW
- ≥ 501 kW

Q. How do these residential, commercial, and industrial segments affect the measure list?

A. Segmentation allows the company to examine each measure’s cost effectiveness in multiple scenarios. For example, a residential smart thermostat is one measure, but it will be analyzed six ways, including installation in: (1) a new single-family home; (2) an existing single-family home; (3) a new multi-family home; (4) an existing multiple-family home; (5) a new manufactured home; and (6) an existing manufactured home. These additional analyses are called permutations. The residential, commercial, and industrial segmentation provided above involved cost-effectiveness analysis of 8,042 individual permutations of the measure list.

Q. Were there any commercial or industrial segments that were excluded from the technical potential?

A. No, the technical potential was based upon the load forecast of Tampa Electric, so all customers and market segments were included in the technical potential analysis.

Q. Does the measure list contain demand-side renewable energy systems?

A. Yes, the Distributed Energy Resource measures contains residential and commercial photovoltaic systems, in addition to photovoltaic systems paired with battery storage.

Q. Do you have a list of all the DSM measures you provide the count for above?

A. Yes, the comprehensive list of all the DSM measures the company utilized in the development of the company's proposed 2025-2034 DSM goals is included in my Exhibit No. MRR-1, Document No. 6, with more detail for each measure provided in my Exhibit No. MRR-1, Document No. 5 in the Appendices A, B and C.

Q. Do you have a list of all the DSM measures that were eliminated from consideration as compared to the 2019 technical potential study?

A. Yes, in my Exhibit No. MRR-1, Document No. 5 provides the measures that were eliminated from consideration and their reason for elimination near the end of each of the Appendices A, B, and C.

Q. Did the collaborative process among the FEECA utilities bring value to the overall DSM goals setting process?

A. Yes, the process provided significant benefits including economic benefits from sharing in the total costs, providing an open platform to thoroughly vet differences and establish consistency, and establishing accurate baselines to begin the new period of setting DSM goals. My Exhibit No. MRR-1, Document No. 7, contains an outline of the overall process to determine the technical potential.

TAMPA ELECTRIC'S TECHNICAL POTENTIAL:

Q. What is Tampa Electric's technical potential?

A. The company's technical potential is made up of estimates for energy efficiency, demand response, and distributed energy resources. The technical potential estimates from these categories are not additive due to the interactive effect of certain measures on end uses. With this backdrop, Tampa Electric's technical potential for energy efficiency is:

Summer Demand: 1,390 MW
Winter Demand: 779 MW
Annual Energy: 5,469 GWh

Tampa Electric's technical potential for demand response is:

Summer Demand: 3,112 MW

Winter Demand:	3,130 MW
Annual Energy:	0 GWh

Tampa Electric’s technical potential for distributed energy resources is:

Summer Demand:	1,725 MW
Winter Demand:	1,424 MW
Annual Energy:	12,004 GWh

The full detail of these values is included in my Exhibit MRR-1, Document No. 8, including how these values compare to the company’s Technical Potential developed in 2019.

PROCESS USED TO DEVELOP THE ECONOMIC POTENTIAL:

Q. Please describe the process Tampa Electric utilized to develop the company’s economic potential?

A. Tampa Electric began developing the economic potential in early 2022 by asking the company’s Load Research and Forecasting Department to prepare a load forecast specifically for the DSM goals setting 2025-2034 period and asking the Resource Planning Department to utilize this forecast to perform an updated integrated resource planning (“IRP”) process to determine the timing and costs of the next avoided unit and fuel costs.

The company determined the remaining cost-effectiveness inputs by taking the current 2023 values and escalating them into the year 2025.

Tampa Electric then took the comprehensive list of all DSM measures contained in the technical potential that were spread across the various categories and building types and developed the 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 full incremental equipment cost was considered on the cost side of the equation. For both the RIM and TRC tests, the benefits were comprised of avoided supply side costs that included the generator, transmission and distribution, and fuel costs. This process to develop the economic potential is included in my Exhibit No. MRR-1, Document No. 9.

Q. Is the load forecast that was generated to support the 2025-2034 DSM goals setting period the same as Tampa Electric's typical annual forecast used to develop the company's Ten-Year Site Plan?

A. No. This load forecast uses the same methodology as the company’s typical annual forecast used to develop the company’s Ten-Year Site Plan with the exception that it assumes that all DSM activities stop as of December 31, 2024.

Q. Is the IRP process used with this modified load forecast to support the 2025-2034 DSM goals setting period the same as Tampa Electric’s typical annual process used to develop the company’s Ten-Year Site Plan?

A. Yes, it is identical.

Q. Is the IRP process used to support the 2025-2034 DSM goals setting period the same process that Tampa Electric used in prior DSM goals setting periods?

A. Yes, the IRP process that Tampa Electric used for this docket 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.

Q. Can you describe the avoided unit and projected fuel costs that were determined in the IRP process you previously described?

A. Yes. My Exhibit No. MRR-1, Document No. 10 provides this information.

Q. Please identify all input assumptions that were used in the RIM and TRC cost-effectiveness tests to develop the economic potential?

A. My Exhibit No. MRR-1, Document No. 11 identifies all the input assumptions that were used in the cost-effectiveness RIM and TRC tests to develop the economic potential.

TAMPA ELECTRIC'S ECONOMIC POTENTIAL:

Q. What is Tampa Electric's economic potential?

A. Under the RIM cost-effectiveness test evaluation, the economic potential resulted in the following savings:

Summer Demand:	5,259 MW
Winter Demand:	4,986 MW
Annual Energy:	8,571 GWh

Under the TRC cost-effectiveness test evaluation, this economic potential resulted in the following savings:

Summer Demand:	3,326 MW
Winter Demand:	3,414 MW
Annual Energy:	1,377 GWh

These values are separated in my Exhibit MRR-1, Document No. 12 to show their respective contributions in energy efficiency, demand response, and distributed energy resources.

TAMPA ELECTRIC'S ECONOMIC POTENTIAL SENSITIVITIES:

Q. Please describe what economic potential sensitivities Tampa Electric conducted to be compliant with the Commission's Order Establishing Procedure in this proceeding.

A. Tampa Electric's economic potential sensitivity analyses were conducted based upon the RIM and TRC economic potentials with regard to the following factors:

1) Lower fuel costs;
2) Higher fuel costs;
3) Shorter free-ridership consideration;
4) Longer free-ridership consideration; and
5) Consideration of the cost of carbon.

Q. How did the company perform the sensitivity for lower and higher fuel costs?

A. The sensitivity for lower and higher fuel costs was performed by varying the fuel cost up (High) and down (Low) by 20 percent, which was a similar percentage of variation that was used in prior DSM goal proceedings for fuel cost sensitivities. This process is outlined in my Exhibit No. MRR-1, Document No. 13.

Q. How did the company perform the sensitivity for shorter and longer free-ridership consideration?

A. The sensitivity for shorter and longer free-ridership consideration was performed by changing the requirement from a two-year simple payback to a one-year simple payback (shorter) and a three-year simple payback (longer) for each individual permutation. This process is also outlined in my Exhibit No. MRR-1, Document No. 13

Q. Did the company consider the cost of carbon?

A. Yes, the company did consider it and chose not to include the cost of carbon dioxide ("CO_2" or "Carbon") in the process of establishing the economic potential or to perform sensitivities with some cost of carbon.

Q. Why did Tampa Electric choose not to include the cost of carbon in the development of the economic potential or perform sensitivities that included the cost of carbon?

A. Tampa Electric has two reasons for not including the cost of carbon in the development of the economic potential or performing sensitivities that included the cost of carbon. The first reason is that Tampa Electric does not include the cost of carbon in the IRP process that was used to establish the costs and fuel costs of the next avoided unit for this 2025-2034 DSM goals setting proceeding and the company does not include the cost of carbon in the IRP process that is used to develop the company's annual ten-year site plan. The second is that there are currently no State or Federal laws or regulations that impose a cost on emissions of greenhouse gases like carbon.

Q. Has the company ever considered the cost of carbon in a DSM goal setting proceeding?

A. Yes. At the request of Commission Staff, the company performed a sensitivity analysis using a cost of carbon in the 2005-2014 DSM goals setting proceeding.

Q. Please describe the results of the sensitivity analyses that were applied to Tampa Electric's 2025-2034 RIM and TRC DSM economic potentials.

A. Tampa Electric's sensitivity analyses results on the 2025-

2034 RIM and TRC DSM economic potentials were modest at best. From both RIM and TRC perspectives, the greater variation occurred with annual energy relative to fuel costs and payback duration. The full detail of the sensitivity analyses performed is included in my Exhibit MRR-1, Document No. 14.

Q. Should the results of these sensitivity analyses be used in any manner to influence or establish Tampa Electric's DSM goals for the 2025-2034 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 that assumption changes modeled by the company for this sensitivity exercise will, in some manner, become more plausible than the actual assumptions utilized.

TAMPA ELECTRIC'S AVOIDED GENERATING UNIT SELECTION:

Q. What is the avoided generating unit that Tampa Electric used in the preparation of these proposed DSM goals?

A. The avoided generating unit the company used in the preparation of these proposed DSM goals is a natural gas reciprocating engine.

Q. When is the projected date for this natural gas reciprocating engine to be placed in service?

A. This natural gas reciprocating engine is projected to be placed into service in January of 2030.

Q. Does Tampa Electric have any other generating units that would begin construction and are scheduled to be placed into service during this DSM goals period, but prior to this natural gas reciprocating engine?

A. Yes, Tampa Electric has one planned 74.5 MW solar site with an in-service date of January 2027.

Q. Why did Tampa Electric choose to use the natural gas reciprocating unit as the avoided unit used for this DSM goals period?

A. Tampa Electric selected the natural gas reciprocating engine as the next avoided unit after considering the following:

- The unit is fueled by fossil fuels, and the company believes avoidance of a fossil fueled unit adheres more to advancing the policy objectives of FEECA.

- Historically, the company has always used fossil fueled generating units as the avoided units for DSM goal planning.
- The unit is within this proceeding’s DSM goal planning horizon.

Q. Would you provide a comparison of these generating units?

A. Yes, a comparison of the generating units is below:

Natural Gas Reciprocating Engine:

In service date: January 2030
Cost: $1,307.06 per kW
Fixed O&M: $30.02 per kW per year
Fuel Cost: $5.99 per MMBtu
Rating: 18.7 MW

Solar Site:

In service date: January 2027
Cost: $1,416.40 per kW
Fixed O&M: $18.55 per kW per year
Fuel Cost: $0.00
Rating: 74.5 MW

Q. If Tampa Electric chose to use the solar site as the avoided generating unit for this DSM goals period, would you explain how the goals the company proposed would change?

A. If Tampa Electric used the solar site coming online in 2027 as the avoided unit for the development of DSM goals in this proceeding, the company's proposed goals would be approximately the same for the following reasons:

- The cost of the fossil fuel avoided generating unit and the cost of the solar generating unit are relatively close to each other.
- The net fuel benefits for the evaluation between both units would be the same (i.e., if both units were avoided, the fuel consumption would still be using Tampa Electric's existing generation fleet).
- The fuel cost of the solar site is zero, which would place some downward pressure on the amount of cost-effective DSM offered, but this would be offset by the planned in-service date of the solar unit in 2027 as it is closer to the DSM base year of 2025, as compared to the 2030 natural gas reciprocating engine. This avoided unit timing change would place upward pressure on the amount of cost-effective DSM to be offered.
- Both of these units feature high avoided generation benefits in the cost-effectiveness evaluation. The

limiting component on most of the measures beyond the economic potential, with the addition of program administration costs and possible incentives, is the incentive being limited to the two-year simple payback. With this incentive limitation for the same cost-effective programs, leads to the programs' incentive, participation projections, and resulting energy and demand savings to be approximately the same for both units.

Q. Do you believe the avoided generating unit used for DSM goals planning should always be a fossil fueled unit?

A. For the reasons I explained above, Tampa Electric believes that if there is a fossil fuel unit within the DSM goals planning period, then that unit should be used.

Tampa Electric also believes that the company will eventually reach the point that some other FEECA Utilities have already reached, when there is no fossil fuel generating unit within the company's planning horizon. In this situation, we believe that it is very appropriate to use the next planned generating source (solar site, utility battery, etc.) as the avoided unit for DSM planning purposes.

TAMPA ELECTRIC'S CONSIDERATION OF FREE-RIDERS:

Q. Please describe the process that Tampa Electric utilized to consider free-riders in developing the proposed DSM goals in this proceeding.

A. Tampa Electric considered free-ridership through the application of a longstanding Commission recognized practice, known as the two-year payback screen. Under this method, which was initially approved in the 1994 DSM goals proceeding, any measure that has a simple payback of two years or less without a utility incentive is removed from the RIM and TRC achievable (now program) potential. The execution of this consideration for free-ridership required not only the use of the RIM and TRC cost-effectiveness tests, but also the PCT in conjunction with each.

Q. What does the term "free-ridership" mean to Tampa Electric?

A. The term "free-ridership" describes a situation where a customer willingly accepts a rebate or other type of incentive to purchase goods or services that the customer would have purchased anyway, without the rebate or other incentive, because of the cost-effectiveness of the goods or services purchased.

Q. Does Tampa Electric support the two-year or less simple payback screen as an appropriate way to consider for free-riders?

A. Yes, Tampa Electric supports the two-year or less simple payback screen as an appropriate method to consider free-riders for the following reasons:

- The two-year or less payback screen is very easy to understand from a customer's perspective. It is also very easy for customers to incorporate into a project's plan or proposal from a financial justification perspective (i.e., to not overstate their potential incentive).
- Historically, from a rate of return perspective, a 50 percent rate of return on an investment should provide sufficient natural, self-serving motivation to a customer to financially invest in a DSM measure without additional incentives, recognizing these additional incentives would be paid for by other rate payers.
- The two-year or less payback screen is easy, very inexpensive, and cost-effective to administer as compared to other methods. During the recent rulemaking workshops for amending Rule 25-17.0021, several vendors offered their estimates to perform

surveys and measurement and verification services as an alternative free ridership screening method. Their estimated costs for these services were equivalent to around five (5) percent of a utility's annual DSM portfolio spend. If this was adopted by Tampa Electric, it would increase the annual conservation costs by approximately $2,250,000 and essentially provide no additional participation or energy savings benefits to customers.

Because of these reasons and Rule 25-17.0021, F.A.C., which requires the minimization of free riders in the setting of DSM goals, the two-year simple payback criterion is the appropriate means to continue to apply to minimize free-ridership as required by Rule.

Q. How many measures remained qualified after consideration of free-ridership under the RIM and PCT evaluation?

A. After consideration of free-ridership, 1,364 individual measure permutations remained qualified under the RIM and PCT.

Q. How many measures were removed due to having a simple payback of two-years or less after consideration of free-ridership under the RIM and PCT evaluation?

A. After consideration of free-ridership, the two-year payback removed 1,679 individual measure permutations under the RIM and PCT evaluation. In perspective, the RIM test removed 534 measure permutations and the PCT removed 4,339 permutations under the RIM and PCT evaluation prior to applying the two-year payback consideration.

Q. How many measures remained qualified after consideration of free-ridership under the TRC and PCT evaluation?

A. After consideration of free-ridership, 1,364 individual measure permutations remained qualified under the TRC and PCT evaluation.

Q. How many measures were removed due to having a simple payback of two-years after consideration of free-ridership under the TRC and PCT evaluation?

A. After consideration of free-ridership, the two-year payback removed 1,766 individual measure permutations under the TRC and PCT evaluation. In perspective, the TRC test removed 4,664 measure permutations and the PCT removed 122 permutations under the TRC and PCT evaluation prior to applying the two-year payback consideration.

Q. Did Tampa Electric comply with Commission Staff’s request and the Order Establishing Procedure by performing a sensitivity analysis utilizing the consideration of free-ridership?

A. Yes. As described earlier, Tampa Electric complied with Staff’s request and the Order Establishing Procedure by performing a sensitivity analysis utilizing the consideration of free-ridership of a one-year and three-year period for the simple payback.

Q. How many individual measure permutations were removed under the RIM and PCT evaluation due to having a simple payback of either one or three-years as compared to the two-year free-ridership consideration?

A. The amount of individual measure permutations that were removed using a one, two, and three-year simple payback under the RIM and PCT evaluation was as follows:

Measure Permutations removed:	
One-year Free-Ridership Sensitivity:	1,177
Two-year Free Ridership Sensitivity:	1,679

Three-year Free-Ridership Sensitivity: 2,259

Q. How many individual measure permutations were removed under the TRC and PCT evaluation due to having a simple payback of either one or three-years as compared to the two-year free-ridership consideration?

A. The amount of individual measure permutations that were removed using a one, two, and three-year simple payback under the TRC and PCT evaluation was as follows:

Measure Permutations removed:	
One-year Free-Ridership Sensitivity:	1,225
Two-year Free Ridership Sensitivity:	1,766
Three-year Free-Ridership Sensitivity:	2,352

Q. Do you have a summary showing the free-ridership consideration, in addition to the results of the free-ridership sensitivities?

A. Yes, my Exhibit No. MRR-1, Document No. 14 provides a summary showing the results of the economic potential cost-effectiveness sensitivity analysis and my Exhibit MRR-1, Document No. 15 shows the free ridership consideration provided above showing the two-year simple payback consideration following the economic potential.

Q. Before we leave the free-ridership topic, did Tampa Electric include any of the measures which were screened out for having a simple payback of less than two years in any of the DSM portfolios the company established?

A. Yes, all three portfolios contain the company's Energy and Renewable Education, Awareness and Agency Outreach program and the Neighborhood Weatherization program. Each of these programs contains an energy efficiency kit which is comprised of several measures that have a very quick simple payback of less than two years.

Q. Are there other DSM programs in the company's portfolios that address measures that have less than a two-year payback with customers?

A. Yes, in the performance of the residential and commercial/industrial energy audits where a walk-through is performed, the company's certified energy analysts will identify and communicate to the customer identified no cost and low-cost conservation measures and practices, including those that have less than a two-year payback. Also, the residential customer assisted energy audit (online) program provides recommendations that include behavioral improvements that have instantaneous paybacks in addition to the recommendation of measures and practices that have paybacks that are less than two years.

PROCESS TO DEVELOP THE PROPOSED DSM PROGRAMS:

Q. Would you describe the overall process that Tampa Electric utilized to develop the program potential in this proceeding.

A. Yes. To develop the program potential, the company takes all the measures that successfully passed cost-effectiveness and the free-ridership consideration at the economic potential and further performs RIM and TRC cost-effectiveness by introducing additional costs. First, the company will include program administration costs without any incentives or rebates. The measures that pass this level of RIM and TRC cost-effectiveness are then analyzed to see if an incentive or a rebate can be introduced. In this process, for the RIM test the rebate is set at either the maximum level to drive the RIM cost-effectiveness score to be 1.01 or to the level that places the measure’s simple payback at two years. For the TRC cost-effectiveness test, the rebate is set at the level that places the measures simple payback at two years. Once the incentive levels have been determined that will maximize participation, the company used Bass Models, Adoption Curves, and its experience with current programs and incentives to estimate and project the activity over the 2025-2034 DSM goals setting period within each of the cost-effective measures. At this level the company is evaluating these measures as potential programs. The individual program's annual energy (in kWh) and summer and winter demand (in kW) are determined for their contributions in each of the 2025-2034 DSM goals period years. All the residential and commercial/industrial contributions are summed by year for these sectors and totaled to become the annual and cumulative DSM achievable potential. This process to develop the program potential is included in my Exhibit MRR-1, Document No 16.

Q. How did Tampa Electric develop the administrative costs utilized in the development of the achievable potential?

A. Tampa Electric has significant experience running effective DSM programs and utilized the administrative cost estimated based on its experience with the same or similar measures contained in the company's existing DSM programs.

Q. Did Tampa Electric develop all of the measures that passed cost effectiveness, beyond the economic potential and with administrative and incentive costs, for the RIM and TRC portfolios into programs within those portfolios?

A. No, in each of the portfolios there were measures that survived cost-effectiveness but were determined to be economically unattractive or the developed incentive was too low to support having it as a DSM program.

Q. Would you describe what an economically unattractive DSM program is?

A. An economically unattractive DSM program is one that either passes cost-effectiveness but the administration cost to run that program is significantly more than the potential rebate a customer would receive, the administration cost outweighs the incremental cost of the equipment, or the rebate is so small that it is unlikely that a customer would take the time to participate. An example of this would be weather stripping. The estimated cost to administer this as a residential DSM program is $35 per participant and it has an incremental equipment cost of $16.94 per installation. Its simple payback is 7.19 years, so a rebate could be developed, but it does not make economic sense to charge customers $35 dollars in administration cost, plus a few dollars for the potential rebate, for a measure that customers could purchase for less than half of the administration and incentive costs at a home improvement store.

Q. Would you list those measures/programs that were removed from consideration due to this situation?

A. Yes, below is the list of energy efficiency measures/programs that were removed from consideration due to this situation:

Residential - RIM portfolio

- ENERGY STAR room air conditioner
- Five (5) Watt LED bulbs
- Hot water pipe insulation
- Variable refrigerant flow system
- Weather stripping

Residential – TRC portfolio

- ENERGY STAR clothes washer
- ENERGY STAR freezer
- ENERGY STAR room air conditioner
- Five (5) Watt LED bulbs
- Hot water pipe insulation
- Linear LED fixtures

- Variable refrigerant flow system
- Weather stripping

Commercial - RIM portfolio

- Anti-sweat controls
- Auto off time switch
- Efficient battery charger
- ENERGY STAR combination oven
- ENERGY STAR room air conditioner
- Hotel energy card system
- Ozone laundry
- Water source heat pump

Commercial – TRC portfolio

- Anti-sweat controls
- Auto off time switch
- Efficient battery charger
- ENERGY STAR combination oven
- ENERGY STAR commercial glass door freezer
- ENERGY STAR convection oven
- ENERGY STAR room air conditioner
- ENERGY STAR steamer
- Faucet aerators
- High efficiency DX air conditioner
- Hotel energy card system

- Low flow showerheads
- Ozone laundry

Industrial - RIM portfolio

- Energy efficient transformers
- Low pressure drop filter

Industrial – TRC portfolio

- Energy efficient transformers
- LEED new construction

Q. Did Tampa Electric include the remaining cost-effective DSM programs into one of the programs that the company included in its RIM or TRC portfolios?

A. Yes, Tampa Electric included all of the remaining cost-effective programs into either a separate and stand-alone DSM program or combined measures where appropriate to establish a DSM program.

Q. Would you provide an example of how Tampa Electric combined measures to establish a DSM program?

A. Yes. The following DSM programs are examples of DSM programs that Tampa Electric designed using a combination of measures:

Commercial/Industrial VFD and Motor Controls – this program is comprised of eight (8) cost-effectiveness passing measures. Each of these measures either controls a motor's operation (2 measures) or controls the motor's speed of operation through a speed drive (6 measures). Since all of these measures are controlling the operation of a motor for energy efficiency and demand savings purposes, the company designed this program to support all of the measures. It is important to note that this design is expanding the current program offering that was limited to only speed drive installation on air or refrigerant compressors.

Commercial/Industrial Custom Energy Efficiency – this program will include identification of additional potential measures for participation including ENERGY STAR steamers, reflective roof treatments, windows, duct sealing, air sealing. These additional measures can be served better in a custom program rather than a stand-alone DSM program.

TAMPA ELECTRIC'S PROPOSED PORTFOLIO OF DSM PROGRAMS:

Q. What are Tampa Electric's proposed DSM programs that support the proposed DSM annual goals that are appropriate and reasonably achievable for the period 2025-2034?

A. The proposed residential and commercial/industrial DSM programs that support the proposed DSM goals for the period 2025-2034 are as follows:

Residential Programs:

1. Residential Walk-Through Audit (Free Energy Check)
2. Residential Customer Assisted Energy Audit (Online)
3. Residential Computer Assisted Energy Audit (RCS)(Paid)
4. Residential Ceiling Insulation
5. Residential Duct Repair
6. Energy and Renewable Education, Awareness and Agency Outreach
7. ENERGY STAR for New Multi-Family Residences
8. ENERGY STAR for New Homes
9. ENERGY STAR Thermostats
10. Residential Heating and Cooling
11. Neighborhood Weatherization
12. Residential Price Responsive Load Management (Energy Planner)
13. Residential Prime Time Plus
14. Renewable Energy Program (Sun-To-Go)

Commercial/Industrial Programs:

1. Commercial/Industrial Audit (Free)

2. Comprehensive Commercial/Industrial Audit (Paid)
3. Cogeneration
4. Commercial/Industrial Custom Energy Efficiency
5. Demand Response
6. Industrial Load Management (GSLM 2&3)
7. Lighting Conditioned Space
8. Lighting Non-Conditioned Space
9. Lighting Occupancy Sensors
10. Commercial Load Management (GSLM 1)
11. Standby Generator
12. VFD and Motor Controls
13. Commercial Heat Pump water Heater and Drain water Heat Recovery
14. Conservation Research and Development ("R&D")
15. Renewable Energy Program (Sun-To-Go)

Q. Did Tampa Electric perform a cost-effectiveness analysis for each of the proposed DSM programs listed above?

A. No. The company did not apply a cost-effectiveness analysis to the following programs:

- Residential Walk-Through Audit (Free Energy Check)
- Residential Customer Assisted Energy Audit (Online)
- Residential Computer Assisted Energy Audit (RCS)(Paid)
- Commercial/Industrial Audit (Free)

- Comprehensive Commercial/Industrial Audit (Paid)
- Cogeneration
- Conservation Research and Development ("R&D")
- Renewable Energy Program (Sun-To-Go)

Q. Does the company currently offer any of these DSM programs?

A. Yes, Tampa Electric has offered each of these DSM programs for almost 20 years in the company's Commission approved DSM Plans.

Q. Why is the Renewable Energy Program (Sun-To-Go) listed as a proposed DSM program?

A. The Commission originally approved the Renewable Energy (Sun-To-Go) Program in Order No. PSC-2006-1062-TRF-EG, issued December 26, 2006, in Docket No. 20060678. In that Order, the Commission required Tampa Electric to include the financial and participation data for the program in the company's Energy Conservation Cost Recovery Clause filings. The company accordingly lists the Renewable Energy Program (Sun-To-Go) in each of the DSM program portfolios.

TAMPA ELECTRIC'S RIM PORTFOLIO OF DSM PROGRAMS:

Q. What are Tampa Electric's RIM based DSM programs that are appropriate and reasonably achievable for the period 2025-2034?

A. The RIM based residential and commercial/industrial DSM programs that are appropriate and reasonably achievable for the period 2025-2034 are as follows:

Residential Programs:

1. Residential Walk-Through Audit (Free Energy Check)
2. Residential Customer Assisted Energy Audit (Online)
3. Residential Computer Assisted Energy Audit (RCS)(Paid)
4. Residential Ceiling Insulation
5. Residential Duct Repair
6. Energy and Renewable Education, Awareness and Agency Outreach
7. ENERGY STAR for New Multi-Family Residences
8. ENERGY STAR for New Homes
9. ENERGY STAR Thermostats
10. Residential Heating and Cooling
11. Neighborhood Weatherization
12. Residential Price Responsive Load Management (Energy Planner)
13. Residential Prime Time Plus
14. Renewable Energy Program (Sun-To-Go)

Commercial/Industrial Programs:

1. Commercial/Industrial Audit (Free)
2. Comprehensive Commercial/Industrial Audit (Paid)
3. Cogeneration
4. Commercial/Industrial Custom Energy Efficiency
5. Demand Response
6. Industrial Load Management (GSLM 2&3)
7. Lighting Conditioned Space
8. Lighting Non-Conditioned Space
9. Lighting Occupancy Sensors
10. Commercial Load Management (GSLM 1)
11. Standby Generator
12. VFD and Motor Controls
13. Commercial Heat Pump Water Heater and Drain Water Heat Recovery
14. Conservation Research and Development ("R&D")
15. Renewable Energy Program (Sun-To-Go)

Q. Do all of the DSM programs listed above pass the RIM and PCT test?

A. No, not all of these DSM programs in the RIM portfolio pass the RIM test. As Commission Staff explained in their Recommendation to adopt the current version of Rule 25-17.002, a DSM program may include measures that do not pass the RIM test, so long as the program itself passes the RIM test. Staff also explained that the Commission has a history of including low-income DSM measures that do not pass cost-effectiveness in approved DSM plans along with measures that do. All of the DSM programs in the RIM portfolio that are evaluated for cost-effectiveness performed all pass the PCT test.

TAMPA ELECTRIC'S TRC PORTFOLIO OF DSM PROGRAMS:

Q. What are Tampa Electric's TRC based DSM programs that are appropriate and reasonably achievable for the period 2025-2034?

A. The TRC based residential and commercial/industrial DSM programs that are appropriate and reasonably achievable for the period 2025-2034 are as follows:

Residential Programs:

1. Residential Walk-Through Audit (Free Energy Check)
2. Residential Customer Assisted Energy Audit (Online)
3. Residential Computer Assisted Energy Audit (RCS)(Paid)
4. Residential Ceiling Insulation
5. Residential Duct Repair
6. Energy and Renewable Education, Awareness and Agency Outreach

7. ENERGY STAR for New Multi-Family Residences
8. ENERGY STAR for New Homes
9. ENERGY STAR Thermostats
10. Residential Heating and Cooling
11. Neighborhood Weatherization
12. Residential Price Responsive Load Management (Energy Planner)
13. Residential Prime Time Plus
14. Renewable Energy Program (Sun-To-Go)

Commercial/Industrial Programs:

1. Commercial/Industrial Audit (Free)
2. Comprehensive Commercial/Industrial Audit (Paid)
3. Cogeneration
4. Commercial/Industrial Custom Energy Efficiency
5. Demand Response
6. Destratification Fans
7. Industrial Load Management (GSLM 2&3)
8. Lighting Conditioned Space
9. Lighting Non-Conditioned Space
10. Lighting Occupancy Sensors
11. Commercial Load Management (GSLM 1)
12. Standby Generator
13. VFD and Motor Controls
14. Commercial Heat Pump Water Heater and Drain Water

Heat Recovery

15. Conservation Research and Development ("R&D")
16. Renewable Energy Program (Sun-To-Go)

Q. Do all of the DSM programs listed above pass the TRC and PCT test?

A. No. As I explained above with respect to the RIM portfolio, not all of these DSM programs in the TRC portfolio pass the TRC test, but the Commission has a history of including measures that do not pass cost-effectiveness in approved DSM plans. All of the DSM programs that are evaluated for cost-effectiveness performed all pass the PCT test.

COMPARISON OF PROPOSED DSM PROGRAMS WITH TAMPA ELECTRIC'S CURRENT DSM PROGRAMS:

Q. Please provide a comparison of the company's proposed DSM programs and Tampa Electric's current DSM portfolio of programs:

A. The comparison below lists each of the company's current DSM programs, describes any proposed changes to those programs, and, for the programs that are retiring, explains why they should be retired. The comparison also identifies the new programs that the company does not currently offer.

Finally, the comparison describes any settlement agreement requirements that impacted program design.

1. **Residential Walk-Through Audit (Free Energy Check)**
   - No modifications recommended.

2. **Residential Customer Assisted Energy Audit (Online)**
   - No modifications recommended.

3. **Residential Computer Assisted Energy Audit (RCS)(Paid)**
   - No modifications recommended.

4. **Residential Ceiling Insulation**
   - Increase the rebate to $0.16, from $0.15, per square foot of insulation installed.
   - Add requirement for installation minimum of R-11.
   - Enable rebates to be stacked in amounts of R-11 (i.e. – if customer installs R-22, customer will receive $0.32 per square foot of insulation installed.
   - Remove a restriction that makes premises that previously participated in the program ineligible.

5. **Residential Duct Repair**
   - Increase the rebate to $270, from $125, per air distribution system ("ADS") repaired.

6. **Energy and Renewable Education, Awareness and Agency Outreach**
   - No modifications recommended.
   - In the settlement that resolved Tampa Electric's 2021 base rate case, the company agreed to increase the number of energy efficiency kits provided to qualifying customers each year. Tampa Electric is proposing to maintain this higher level of energy efficiency kits being provided each year.

7. **ENERGY STAR for New Multi-Family Residences**
   - Increase the rebate to $345, from $300, per qualifying multi-family residence receiving the ENERGY STAR Certificate.

8. **ENERGY STAR for New Homes**
   - Decrease the rebate to $425, from $1,000, per qualifying new residence receiving the ENERGY STAR Certificate.

9. **ENERGY STAR Pool Pumps**
   - The program will be retired at the end of 2024 when the Federal Energy Efficiency Requirements for pool pumps will require all pool pumps to be variable speed eliminating the need for this program.

10. ENERGY STAR Thermostats

- Decrease the rebate to $22, from $50, per qualifying ENERGY STAR thermostat installed.

11. Residential Heating and Cooling

- Split the existing program into two (2) Tiers.
- Tier 1: lower the rebate to $40, from $135, per qualifying air conditioning system.
- Maintain the existing energy efficiency requirement for Tier 1 qualifying air conditioner, which is to meet or exceed the current appliance SEER rating requirement by 1 SEER level (≥ 16 SEER) or by 1 SEER2 level (≥ 15.2 SEER2).
- Tier 2: increase the rebate to $550, from $135, per qualifying air conditioning system.
- Increase the existing energy efficiency requirement for Tier 2 qualifying air conditioner, to require participants to meet or exceed the current appliance SEER rating requirement by 2 SEER levels (≥ 17 SEER) or by 2 SEER2 level (≥ 16.2 SEER2).
- Add requirement that rebates are not stackable.

12. Neighborhood Weatherization

- Historically, if the customer had duct work that needed to be repaired (beyond sealing), Tampa Electric would require the customer to repair the duct system before the company would install insulation and seal the duct system. Tampa Electric proposes to include repairs to up to one duct run within the program to enable some customers with damaged ducts to participate in the program. If this change is approved, the company intends to go back to prior customers that were disqualified from participation in the program to offer this repair work. The cost for this repair is approximately $500 per home. The company projects this situation will occur on about 10 percent of eligible homes.

- In the settlement that resolved Tampa Electric's 2021 base rate case, the company agreed to increase the number of customers receiving the Neighborhood Weatherization program. Tampa Electric is proposing to maintain this higher level of Neighborhood Weatherization being provided each year.

13. Residential Price Responsive Load Management (Energy Planner)

- Add electric vehicle charging appliances (Level 2 or greater) to the list of appliances that are eligible for the program.
- Change the Tier (Low, Medium, and High) hours of the

program to align with proposed time of use rate periods in the company’s 2024 rate case filings, with one exception.

	Current Summer Hours	**Proposed Summer Hours**
Weekdays		
Low:	11 P.M. – 6 A.M.	10 A.M. – 5 P.M.
Medium:	6 A.M. – 1 P.M. 6 P.M. – 11 P.M.	9 P.M. – 10 A.M.
High:	1 P.M. – 6 P.M.	5 P.M. – 9 P.M.

	Current Summer Hours	**Proposed Summer Hours**
Weekends and Holidays		
Low:	11 P.M. – 6 A.M.	10 A.M. – 5 P.M.
Medium:	6 A.M. – 11 P.M.	5 P.M. – 10 A.M.
High:	Not used	Not used

	Current Winter Hours	**Proposed Winter Hours**
Weekdays		
Low:	11 P.M. – 5 A.M.	10 A.M. – 5 P.M.
Medium:	5 A.M. – 6 A.M. 10 A.M. – 11 P.M.	9 P.M.– 6 A.M.
High:	6 A.M. – 10 A.M.	6 A.M. – 10 A.M. 5 P.M. – 9 P.M.

	Current Winter Hours	**Proposed Winter Hours**
Weekends and Holidays		
Low:	11 P.M. – 6 A.M.	10 A.M. – 5 P.M.
Medium:	6 A.M. – 11 P.M.	5 P.M. – 10 A.M.
High:	Not used	Not used

The schedule above aligns the Low Tier with the Super-Off-Peak time of use period, Medium Tier with the Off- Peak period, and the High Tier with the Peak time of use period. The company does not propose any changes to the Critical Pricing Tier since that price is only reflected to participating customers during a load control event. The company's proposed new time of use periods and the Energy Planner hours do not align in one instance – the Peak period for 6am to 10am in the summer. Because this time window is not a peaking time for residential customers, the company is proposing that those summer morning hours remain in the Medium Tier (Off-Peak) for the Energy Planner program.

14. Residential Prime Time Plus

- Add electric vehicle charging appliances (Level 2 or greater) to the list of eligible appliances.
- Establish credit for electric vehicle charging appliances (Level 2 or greater) of $9 per month.
- Increase the credit for heating and cooling equipment

to $12, from $6, per month.

- Increase the credit for water heaters to $6, from $3, per month.
- Maintain the credit for pool pumps at $3 per month.

15. Residential Window Replacement

- Tampa Electric is proposing to discontinue this program because it is no longer cost-effective to offer. All of the permutations had failing TRC scores and failing PCT scores. The average TRC was 0.49 and the average PCT was negative 2,677.03. All permutations passed RIM at the Technical Potential level. The reason for the drop in cost effectiveness is a drop in winter kW from 0.41 kW in the prior DSM Plan to the current level of 0.07 kW. Summer kW and annual energy both increased slightly.

16. Commercial/Industrial Audit (Free)

- No modifications recommended.

17. Comprehensive Commercial/Industrial Audit (Paid)

- No modifications recommended.

18. Commercial Chiller

- Tampa Electric is proposing to discontinue this program because it is no longer cost-effective to offer. The majority of permutations had failing TRC and PCT scores at the Technical Potential level. The chillers measures that did have passing TRC, PCT and RIM scores had variable frequency drives. These chillers with passing scores will be shifted to be covered in the proposed VFD and Motor Controls program. The drop in cost-effectiveness in commercial chillers without variable frequency drives is the drop in winter kW benefit from 2.475 kW in the prior DSM Plan to the current value of 0.00. Summer demand and annual energy increased slightly.

19. Cogeneration

- No modifications recommended.

20. Conservation Value

- Retitle program to industry standard title of "Commercial/Industrial Custom Energy Efficiency".
- Increase the advertising of this program with all potential technologies that would be eligible for participation.
- Perform cost-effectiveness to determine the rebate using the same inputs that establishes the program during the DSM goals setting. Set rebate amount at

the level of a two-year simple payback or a RIM score of 1.01, whichever is more restrictive.

21. Commercial Cooling

- Tampa Electric is proposing to discontinue this program because it is no longer cost-effective to offer. All commercial cooling failed TRC with an average permutation score of 0.48 and all permutations also failed PCT with an average score of negative 3,217.53. All permutations passed RIM but with the failing PCT this measure was removed from consideration.

22. Demand Response

- No modifications recommended.
- In the settlement that resolved Tampa Electric's 2021 base rate case, the company agreed to increase the amount of credit per kW to participating customers. Tampa Electric agreed that the level of these credits would remain in effect even after the 2021 Settlement expires unless they are changed by a future settlement agreement or Commission order in the company's next base rate case.

23. Facility Energy Management System

- Tampa Electric is proposing to discontinue this program because it is no longer cost-effective to offer. This program has failing cost-effectiveness scores with no incentive. The drop in cost effectiveness is due to a dramatic drop in demand and energy savings as compared to the last DSM Plan. Summer kW dropped from 33.20 KW to 7.18 kW, winter kW dropped from 12.35 kW to 3.18 kW, and annual energy dropped from 175,633 kWh to 36,837 kWh.

24. Industrial Load Management (GSLM 2&3)

- No modifications recommended.
- In the settlement that resolved Tampa Electric's 2021 base rate case, the company agreed to increase the amount of credit per kW to participating customers. Tampa Electric agreed that the level of these credits would remain in effect even after the 2021 Settlement expires unless they are changed by a future settlement agreement or Commission order in the company's next base rate case.

25. Street and Outdoor Lighting Conversion

- This program was completed and retired in the first quarter of 2023 when Tampa Electric completed the conversion of the company’s high-pressure sodium and mercury vapor outdoor and streetlights to light emitting diode technology.

26. Lighting Conditioned Space

- Increase the rebate to $400, from $250, per kW reduced.
- Add refrigerated display cases to eligibility.

27. Lighting Non-Conditioned Space

- Increase the rebate to $350, from $200, per kW reduced.

28. Lighting Occupancy Sensors

- Modify the rebate from a per occupancy sensor installed to $26 per kW of controlled lighting. This will eliminate confusion with customers as many new Light Emitting Diode luminaires come with their own integrated occupancy sensor.

29. Commercial Load Management (GSLM 1)

- Increase the monthly credit to $5.00, from $3.00, per kW of demand reduction for cyclic control.
- Increase the monthly credit to $5.50, from $3.50, per kW of demand reduction for extended control.
- The company is transitioning to use the same technology that supports Energy Planner and Prime Time

Plus for this program. Once the technology transition occurs, Tampa Electric will be able to market this program to new participants.

30. Commercial Smart Thermostats

- Tampa Electric is proposing to discontinue this program because it is no longer cost-effective to offer. 12 of the permutations failed TRC at the Technical Potential level, the same market segments had failing PCT scores. This drop in TRC and PCT scores was due to an over 50 percent drop in energy savings per installation as compared to the prior DSM Plan's values (45,895 kWh dropping to 17,190 kWh). Even though all the permutations passed the RIM test, the company removed this program because it has an overall failing PCT score of negative 12,932.

31. Standby Generator

- No modifications recommended.
- In the settlement that resolved Tampa Electric's 2021 base rate case, the company agreed to increase the amount of credit per kW to participating customers. Tampa Electric agreed that the level of these credits would remain in effect even after the 2021 Settlement expires unless they are changed by a future settlement

agreement or Commission order in the company’s next base rate case.

32. Variable Frequency Drive Control for Compressors

- This program is being expanded from the current eligibility of variable frequency control for compressors to all variable frequency control and motor controls.
- This program will expand to include speed drives controlling large chillers, commercial cooling units, variable air volume systems, demand circulating systems, escalator motors, and energy efficiency exhaust hoods.
- Retitle program to VFD and Motor Controls.
- Increase the rebate to $75, from $50, per HP controlled.

33. Commercial Water Heating

- Retitle program to “Commercial Heat Pump Water Heater and Drain Water Heat Recovery”.
- Increase the rebate to $10, from $0.01, per Btu up to 50 percent of the cost of the equipment.
- Qualifying equipment includes ENERGY STAR certified Heat Pump Water Heater or a Heat Pump Water Heater with a COP $\geq$ 3.0.

- Drain water heat recovery must recover heat from an electrically heated source.

34. Integrated Renewable Energy System (Pilot)

- This pilot program will conclude at the end of 2024. Updates have been provided annually within the company's Annual DSM Report filed with the Commission on March 1 of each year. The final report concluding this pilot program will be filed on March 1, 2025.

35. Conservation Research and Development ("R&D")

- No modifications recommended.

36. Renewable Energy Program (Sun-To-Go)

- No modifications recommended.

Q. Are any of the above DSM programs impacted by the Inflation Reduction Act ("IRA") that provides tax credits for energy efficient home improvements and clean energy property credits?

A. Yes, the proposed new tiered Residential Heating and Cooling DSM is impacted by the IRA. In this proposed program, the values used to model this program would make participants in the lower tier eligible for $315 in tax credits, and participants in the higher tier eligible for $667 in tax credits. The actual eligibility for these credits depends on the taxpayer’s eligibility for the tax credits with the Internal Revenue Service.

Q. Were there any other measures that would qualify for the tax credits from the IRA evaluated by the company?

A. Yes, the company identified all measures that would qualify for a tax credit from the IRA in the development of the comprehensive measure list. From this identification, the typical or appropriate tax credit was determined and was included in the cost effectiveness evaluation for the TRC and PCT test as benefits in both of these tests. Tax credits are not analyzed within the RIM test.

COMPARISON OF PORTFOLIO COSTS AND PROJECTED 2025-2034 RESIDENTIAL BILL IMPACTS:

Q. What is Tampa Electric’s total proposed DSM program potential by year and overall total for the 2025-2034 period?

A. The proposed DSM program portfolio potential for each year for Summer Demand (MW), Winter Demand (MW), and Annual Energy (GWh) and the cumulative amounts for the 2025-2034 period are provided below:

	Summer Demand (MW)	Winter Demand (MW)	Annual Energy (GWh)
2025	14.2	19.2	46.5
2026	14.2	19.2	46.5
2027	15.6	20.3	47.1
2028	14.9	19.8	46.5
2029	14.9	19.8	46.5
2030	15.5	20.1	43.8
2031	14.8	19.5	43.3
2032	14.8	19.5	43.3
2033	15.5	20.1	43.8
2034	14.8	19.5	43.3
Total	149.0	197.1	450.5

Q. What are Tampa Electric’s projected costs to support the proposed DSM program potential by year and overall total for the 2025-2034 period and the estimated residential rate impacts at 1,000 kWh per month by year?

A. The projected portfolio costs to support the proposed DSM program potential by year for the 2025-2034 period and estimated residential rate impacts at 1,000 kWh per month are below:

	Projected Portfolio Cost	Estimated Residential Rate Impact Per 1,000 kWh Month
2025	$47,074,346	$2.69
2026	$47,387,199	$2.71
2027	$48,324,419	$2.76
2028	$48,905,976	$2.79
2029	$49,701,363	$2.84
2030	$51,252,893	$2.93
2031	$52,177,984	$2.98
2032	$53,450,517	$3.05
2033	$54,923,880	$3.14
2034	$56,118,277	$3.21
Total	$509,316,856	

Q. Would you describe what is included in the projected portfolio costs above?

A. Yes. The costs above include the costs from each DSM program to achieve the proposed Summer and Winter Demand and Annual Energy DSM goals. These costs also include ongoing costs that are paid to customers as active participants in one of the company's load management and demand response DSM programs. The costs also include common costs that support facilitating the portfolio of DSM programs.

Q. How does the proposed DSM program portfolio of projected costs compare to the company's current DSM plans projected costs?

A. The comparison of the company's proposed DSM program portfolio of projected costs to the company's current DSM plans projected costs is provided below:

	Projected Portfolio Cost	Current **"2020-2029"** DSM Plan Projected Cost
2025	$47,074,346	$48,279,419
2026	$47,387,199	$48,461,883
2027	$48,324,419	$45,587,347
2028	$48,905,976	$43,482,498
2029	$49,701,363	$41,027,430
2030	$51,252,893	$42,579,643
2031	$52,177,984	$43,645,357
2032	$53,450,517	$45,176,571
2033	$54,923,880	$45,843,785
2034	$56,118,277	$46,510,999
Total	$509,316,856	$450,594,932

Q. Could you explain why the projected portfolio costs for the proposed DSM goals are lower in the first two years even though the proposed DSM goals are higher than they were in the prior 2020-2029 DSM Plan?

A. Yes. These lower proposed projected costs in the first two years are the result of the company completing two DSM Programs included in the prior plan. First, the company's Integrated Renewable Energy System was paid for in the beginning of the 2020-2029 DSM plan and, since it was a pilot program, there were no demand and energy savings quantified to that program. Second, the company completed the Street and Outdoor Lighting Conversion program which converted 209,821 high-pressure and mercury vapor luminaires to light emitting diode technology in early 2023. While this program achieved significant winter demand and annual energy savings, the Commission did not count these contributions toward the achievement of the company's annual DSM goals. Completion of these programs resulted in lower projected costs in the first two years of the company's 2025-2034 proposed DSM goals as compared to 2020-2029 DSM Plan projected costs.

Q. What are Tampa Electric's projected costs to support the RIM based DSM program potential by year and for the entire

2025-2034 period and what are the estimated residential rate impacts at 1,000 kWh per month by year?

A. The projected portfolio costs to support the RIM based DSM program potential by year for the 2025-2034 period and estimated residential rate impacts at 1,000 kWh per month are below (note – it is identical to the proposed program potential above):

	Projected Portfolio Cost	Estimated Residential Rate Impact Per 1,000 kWh Month
2025	$47,074,346	$2.69
2026	$47,387,199	$2.71
2027	$48,324,419	$2.76
2028	$48,905,976	$2.79
2029	$49,701,363	$2.84
2030	$51,252,893	$2.93
2031	$52,177,984	$2.98
2032	$53,450,517	$3.05
2033	$54,923,880	$3.14
2034	$56,118,277	$3.21
Total	$509,316,856	

Q. Does this RIM based DSM program portfolio of costs include the same costs that you explained above for the proposed portfolio of DSM programs?

A. Yes, it does.

Q. What are Tampa Electric’s projected costs to support the TRC based DSM program potential by year and for the entire 2025-2034 period and what are the estimated residential rate impacts at 1,000 kWh per month by year?

A. The projected DSM program portfolio costs to support the TRC based program potential by year for the 2025-2034 period and estimated residential rate impacts at 1,000 kWh per month are below:

	Projected Portfolio Cost	Estimated Residential Rate Impact Per 1,000 kWh Month
2025	$47,079,896	$2.69
2026	$47,392,749	$2.71
2027	$48,329,969	$2.76
2028	$48,911,526	$2.79
2029	$49,706,913	$2.84
2030	$51,258,443	$2.93
2031	$52,183,534	$2.98

2032	$53,456,067	$3.05
2033	$54,929,430	$3.14
2034	$56,123,827	$3.21
Total	$509,372,356	

Q. Does this TRC based portfolio of costs include the similar characterization of costs that you explained above for the proposed portfolio of DSM programs?

A. Yes, it does.

EQUITY OF DSM PROGRAM OFFERINGS FOR ALL CUSTOMER CLASSES

Q. Could you explain how Tampa Electric ensures that the company offers equitable DSM programs for all customer classes?

A. First, there are always ways to improve how DSM programs are offered, whether it is the actual program offerings and how they are designed, or the processes put in place to offer those programs to customers. Tampa Electric collaborates with other utilities in the United States and Canada and many local and North American non-profit organizations to understand ways to design and offer more equitable DSM programs for all customers and to ensure the processes the company uses to facilitate DSM programs are free from barriers that would be considered inequitable to customer participation. Tampa Electric considers equity and fairness throughout the process of developing and designing the potential DSM programs. The company works hard to avoid creating inequitable barriers to participation in DSM programs and to avoid creating a DSM program that gives advantages to only a select class or market segment of customers.

Q. Could you provide examples of your recent or current work with these local and North American non-profit organizations as it applies to equity with DSM programs?

A. Certainly, here are recent and current examples of the organizations the company has been collaborating with:

American Council for an Energy Efficient Economy ("ACEEE"): From 2019 to the beginning of 2022, the company participated in an energy equity committee through ACEEE to assist in the development of city, state, and utility scorecards for measuring and benchmarking energy equity. In addition, the company provides a variety of information annually to the ACEEE through several surveys throughout the year on the DSM Programs the company offers.

Consortium for Energy Efficiency ("CEE"): In 2022, the company started its participation in a four-year study for Energy Equity through CEE. Through this participation, the company collaborates with other trusted and respected United States and Canadian program administrators with both equity and behavior responsibilities and seasoned CEE staff. This group has successfully convened broad participation for the energy efficiency industry's behavior professionals and have helped build consensus on characterizing and defining hard to reach audiences to increasingly ensure that they are equitably serving all their customers, including audiences such as income eligible, low-English proficient, and rural residential and small/medium business. This also provides the company with the opportunity to learn successful approaches to engaging precisely defined underserved customers. This committee is also facilitating the development of social science-based guidance for designing, implementing, and marketing programs that are more tailored to specific energy customers not currently benefitting from programs and also providing additional insight into what non-energy factors move people to take action that will ultimately make energy efficiency programs more effective (e.g., if the opportunity for improved indoor air quality is more compelling than saving on one's utility bill).

Distributed Energy Financial Group’s Executive Advisory Panel of the Equity in the Clean Energy Economy (“ECEE”): In 2022, the company began sponsoring the Distributed Energy Financial Group’s Executive Advisory Panel of ECEEE Collaborative which examines the impacts on the grid, the traditional utility business model, and customers, especially around affordability and access with particular attention provided to ensure that at-risk customers share the benefits of the transition to a clean energy economy. This sponsorship focuses on improving customer options, experience, and service to low-income customers through the low-Income Energy Issues Forum (LIEIF).

The Center of Economic Development Organization: In 2022, the company joined in a new partnership to create awareness and provide education to veterans, disabled customers, seniors, and low-income homeowners. This partnership allows Tampa Electric to be in several communities working with other community volunteers to deliver energy education and installation of our weatherization program. This partnership has allowed the company to educate a significant number of customers in addition to weatherizing their homes with energy efficiency measures including duct seal and insulation.

Tampa Housing Authority: Tampa Electric collaborates with the Tampa Housing Authority to assist in the streamlining of delivery of Energy Education and Neighborhood Weatherization to qualifying customers within entire communities within the company’s service area.

Hillsborough County Schools (“HCS”) and The Green Team: The company participates in a collaborative initiative with HCS and The Green Team (McKinstry) to work hand in hand to provide an overview of how smart energy usage can be incorporated into our local schools for School Employees, Teachers, Parents and Students.

Q. Could you explain how Tampa Electric’s proposed DSM programs portfolio is equitable to low-income customers?

A. Yes, there are several reasons why the company’s proposed DSM programs portfolio is equitable to low-income customers. First, Tampa Electric has always been a leader in Florida for Low-Income Programs. Tampa Electric recognizes there may be times where customers may not have the financial resources to invest in and install energy efficient technologies. To maximize the help provided to these customers, the company believes in providing a multi-program approach. This approach involves offering neighborhood weatherization, energy education, awareness and agency outreach, free energy audit programs, and other DSM programs where needed.

Tampa Electric’s Neighborhood Weatherization program will continue to offer the comprehensive energy efficiency kit, increased energy education, and a walk-through energy audit, to assist low-income residential customers in becoming more energy efficient. In the company’s proposed DSM programs, Tampa Electric is recommending adding a “repair to qualify” section for those customers that need some level of duct repair (beyond duct sealing) to enable the sealing of duct work and installation of ceiling insulation. The comprehensive energy efficiency kit includes the following 12 energy savings measures, in addition to ceiling insulation and/or duct sealing, depending on the needs of the home:

- Six light emitting diode (“LED”) lamps
- HVAC filter whistle
- Installation of up to three low flow faucet aerators
- Installation of up to two low flow shower heads
- Installation of a wall plate thermometer
- A water heating temperature check card for adjustment of the water heater
- Installation of hot water pipe insulation, if necessary

- Installation of weather stripping, if necessary
- Installation of caulking to seal windows, if necessary
- Installation of sealing foam to seal air infiltration issues, if necessary
- Refrigerator coil cleaning brush
- Installation of ceiling insulation, if needed
- Repair of duct seal, if needed
- Walk-Through Energy Audit
- Energy savings education handout

Tampa Electric's Energy and Renewable Education, Awareness and Agency Outreach program will continue to offer a subset of the comprehensive energy efficiency kit to assist low-income customers in becoming more energy efficient. Tampa Electric commits to continue partnering with neighborhood service centers to ensure customers who need this assistance in reducing their energy usage and associated cost will receive the appropriate energy education and guidance. The smaller subset kit includes the following six energy savings measures:

- Four LED lamps
- HVAC filter whistle
- Two low flow faucet aerators
- Wall plate thermometer
- Water heating temperature check card for adjustment of

the water heater

- Energy savings education handout.

For participation in the two programs above, it is important to note that all premise types are eligible (i.e., single family homes, multi-family homes, and manufactured/mobile homes) to participate as long as the customer is a qualifying customer. Since both of these programs are designed mainly for low-income customers, the Commission has historically approved them for inclusion in DSM Plans even if they do not pass the RIM test or TRC test. Tampa Electric supports continuing this practice as it recognizes that these customers are being charged monthly to fund the ECCR, and as such should have opportunities to participate in the company's DSM programs. Tampa Electric uses Florida Census Tract Data to determine eligibility and, based on this data, the company currently estimates that 17.46 percent of the company's customers fall into this category of low-income/vulnerable status. The company performs weatherization on about 8,000 homes annually and about 44 percent of the qualifying homes in our service area have participated in this program. Tampa Electric is proud of this achievement. For the Energy Education program, the company provides approximately 1,500 to 2,500 energy efficiency kits provided to qualifying customers on an annual basis.

Secondly, in addition to the two DSM programs above, low-income customers can also participate in any of the residential energy audit programs, two of which are free, and they can also participate in the company's Residential Price Responsive Load Management (Energy Planner) and Prime Time Plus programs, both of which are also free to sign up for.

The third reason there is equity to low-income customers is through the company's proposal of DSM goals and a supporting portfolio of DSM programs based upon the RIM test. The use of the RIM test ensures that all customers receive benefits, including customers that do not participate in the company's DSM programs and that all customers, not just low-income customers, receive more benefits than the costs they pay to the ECCR.

Q. Could you explain how Tampa Electric's proposed DSM programs portfolio is equitable to those customers that rent?

A. Yes, the company believes the proposed DSM programs portfolio is equitable to those customers that rent because it includes many DSM programs they can participate in. Residential renters can participate in seven of the thirteen proposed DSM programs, including:

- Residential Walk-Through Audit (Free Energy Check)
- Residential Customer Assisted Energy Audit (Online)
- Energy and Renewable Education, Awareness and Agency Outreach (if qualifying for energy efficiency kit)
- ENERGY STAR Thermostats
- Neighborhood Weatherization (if qualifying)
- Residential Price Responsive Load Management (Energy Planner)
- Residential Prime Time Plus

Q. Did Tampa Electric look at establishing any other specific DSM programs that could be offered to customers that rent?

A. Yes, during the rulemaking workshops to revise Rule 25-17.0021, F.A.C., the company noted a desire for utilities to examine potential additional DSM program offerings that could be designed for customers that rent. The company moved forward with interviewing apartment complex managers and owners to see what type of DSM programs they would be more likely to participate in. In late 2022 and early 2023, the company interviewed over 30 apartment complex managers and owners and identified that the majority of these premises replaced equipment only upon failure. This failed equipment is typically replaced within 24-hours which places the manager’s and owner’s emphasis on the availability of the equipment being in stock and very little priority on replacement of the existing equipment with more energy efficient equipment. The common equipment that was identified for potential participation in a DSM program were ENERGY STAR smart thermostats, upgraded HVAC system replacement, and upgraded water heating equipment. While the water heating equipment continued to fail cost-effectiveness, the company offers DSM programs for ENERGY STAR smart thermostats and HVAC equipment that owners/landlords of all residential rental property types can participate in.

Q. Did Tampa Electric make any other changes to its proposed DSM programs based on comments in the rulemaking workshops?

A. Yes. At one of the rulemaking workshops, a commenter expressed frustration that his son’s home was not eligible for Tampa Electric’s ceiling insulation program because the house had already participated in the program. The company evaluated this scenario and decided to propose a change to this program to allow customers to add any amounts of R-11 insulation and to remove the eligibility restriction that participation in this program was limited to once.

Q. Do you have any other general comments as they apply to the equity of offering DSM programs to residential, commercial, and industrial customers?

A. In general, historically, Tampa Electric has always offered a much larger portfolio of DSM programs than any other utility in Florida. The proposed DSM programs portfolio that supports the proposed DSM goals is comprehensive, while being cost-effective, which should provide many opportunities for all classes of Tampa Electric’s customers the ability to participate in.

ADHERENCE TO F.A.C. RULES AND STATUTORY REQUIREMENTS:

Q. Do Tampa Electric’s proposed DSM goals and associated programs include or consider demand response and distributed energy resources?

A. Yes, the proposed DSM goals and associated programs include energy efficiency and load management/demand response programs. The company did evaluate and consider distributed energy resources, however no measures within distributed energy resources remained cost-effective.

Q. Has Tampa Electric provided an adequate assessment of the proposed program potential of all available demand-side conservation and efficiency measures, including demand response and distributed energy resources?

A. Yes, Tampa Electric has conducted an adequate assessment of the full technical, economic, and developed the proposed, RIM based, and TRC based program potentials of all available demand-side conservation and efficiency measures including demand response and distributed energy resources. 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. Does the evaluation process utilized by Tampa Electric to establish its proposed DSM goals for the 2025-2034 period address the requirements of Rule 25-17.0021, F.A.C.?

A. Yes, the Rule requires a utility to:

1) Assess the technical potential of available measures.
2) Estimate the total cost-effective kW and kWh savings reasonably achievable through demand-side management programs in each utility’s service area over a ten-year period.

3) Project its proposed DSM goals in both the residential and commercial/industrial sectors.
4) Give consideration so that measures applicable for new and existing construction are separately evaluated.
5) Ensure that major end-use categories specified in the Rule are assessed.
6) Consider such things as consideration of overlapping measures, rebound effects, free riders, interactions with building codes and appliance efficiency standards, and the utility’s latest monitoring and evaluation of conservation programs and measures.
7) Provide the overall estimated annual program costs over a ten-year period for each potential demand-side management program identified in the proposed goals and in each of the scenarios required.

The comprehensive DSM measure list developed by the FEECA Utilities and Resource Innovations for electric energy and peak demand savings for Tampa Electric, and the company’s overall evaluation process for its technical potential to its proposed DSM goals for the 2025-2034 period fully meet the requirements of Rule 25-17.0021, F.A.C.

Q. Does your testimony provide the demand and energy savings, program costs and benefits, and participation rates for each of the company’s Proposed, RIM-based, and TRC-based programs?

A. Yes, my Exhibit No. MRR-1, Documents No. 16, 17, and 18 (Proposed, RIM based, TRC based respectively) provide the individual program details that show the demand and energy savings, program costs and benefits, and projected participation rates.

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

A. Yes, Tampa Electric, in conjunction with the other FEECA Utilities, developed a comprehensive DSM measure list. Subsequently, the company conducted an adequate assessment of the full technical potential of all available demand-side conservation and efficiency measures, demand response and distributed energy resources which included renewable energy systems. A total of 448 measures, including energy efficiency, demand response and distributed energy resources measures were identified and evaluated by the company. These 448 measures and the additional residential and commercial segmentation required over 80,000 cost-effectiveness evaluations.

Q. How has Tampa Electric incorporated supply-side efficiencies into its planning process?

A. Supply-side efficiencies include improvements in generation, transmission, and distribution. Therefore, Tampa Electric's motivation to deliver electric service to its customers in the most economical and efficient manner possible makes executing supply-side efficiencies a naturally occurring result. A review of Tampa Electric's plans for supply-side endeavors is an inherent element of the company's annual Ten-Year Site Plan, which is routinely reviewed by this Commission. Furthermore, both supply-side efficiency and conservation resources are analyzed in every need determination for new sources of generation. When Tampa Electric selects its avoided supply-side costs for utilization in DSM cost-effectiveness evaluations, it is selecting resources that have previously been reviewed and determined to be efficient. Of further note is the fact that, while efficiency improvements in supply-side resources are important, these improvements have a tendency to reduce potential savings available through DSM activity.

Q. Do Tampa Electric's proposed DSM goals adequately reflect the costs and benefits to customers who will participate in programs developed to promote DSM measures?

A. Yes. Tampa Electric, the other FEECA Utilities, and Resource Innovations worked together to develop the technical potential study with updated baselines and incremental equipment costs to ensure that the company's proposed DSM goals adequately reflect the costs and benefits to customers who will participate in programs developed to promote DSM measures.

Q. Does 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 without subsidization within or across rate classes is to employ the continued use of the RIM cost-effective test for DSM goals setting and program approval. Since the inception of DSM in Florida, this 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. Tampa Electric strongly encourages the Commission to continue this practice so as to establish meaningful DSM goals while minimizing overall rate impacts.

Q. For comparison, can you provide a list of the company's current DSM programs and the achievements of these programs?

A. Yes, the list of the company's current DSM programs within the company's 2020-2029 DSM plan and the achievements of these programs through the end of 2023 is provided in my Exhibit No. MRR-1, Document No. 19.

OTHER INFORMATION REQUESTED BY THE COMMISSION'S ORDER ESTABLISHING PROCEDURE:

Q. What goals, if any, should be established for increasing the development of demand-side renewable energy systems, pursuant to Section 366.82(2), F.S.?

A. Currently, there are a few key reasons why there is no need for a DSM goal or incentives for the development of demand-side renewable energy systems. The company gained a lot of information when it offered incentives under the renewable energy systems initiative pilot program that was offered during the 2010 through 2015 DSM goals period and the price of solar renewable energy systems continues to decrease. As the company saw in the 2020-2029 DSM Goals proceeding, the residential renewable energy systems still are not cost-effective in all three cost-effectiveness tests (TRC, RIM and PCT). The commercial renewable energy systems continue to pass under the RIM cost-effectiveness test but significantly failed the other two cost-effectiveness tests (TRC and PCT). The residential and commercial renewable energy systems were both screened out without any program administration or incentive costs so they will not pass cost-effectiveness as a DSM program over the foreseeable horizon. Another main reason for not having a DSM goal or incentives for renewable energy systems is the current market continues to grow each year, even with these systems being not cost-effective, meaning many residential and commercial customers are making the choice to lease or purchase and install these systems on their own. Since the renewable energy systems initiative pilot closed, the company has seen the following new customer interconnections of renewable energy systems at the end of each of these years:

2016: 286
2017: 740
2018: 1,259
2019: 2,083
2020: 2,592
2021: 3,597
2022: 6,604
2023: 6,989

From the beginning of 2020 through the end of 2023, 19,782 customers have installed renewable energy systems on their premises.

Q. If the renewable energy systems passed cost-effectiveness, would Tampa Electric offer a DSM program that had goals and incentives for these systems?

A. Yes, if the renewable energy systems passed cost-effectiveness and the other screenings that are performed, Tampa Electric would design a DSM program to offer and incentivize the installation of renewable energy systems.

Q. Does Tampa Electric support renewable energy system installations?

A. Yes, the company supports both customer and utility installed renewable energy system installations. When customers install a renewable energy system, the interconnection process they go through is very customer friendly and we have many solar experts that will assist the customer with any questions. In addition, from the Commission approved 2020-2029 DSM Plan, the company expanded the energy education program to include a focus on renewable education. In that proceeding, the company identified the need for additional education with the increase in home systems ownership, leasing opportunities, participation in a renewable block program, participation in a community shared solar program, or some of the other mechanisms that we see around the United States today. Currently, Tampa Electric offers customers the ability to use an independent third-party website, accessed through the company's website, which provides unbiased renewable education on all of the details to consider before selecting and installing a renewable energy system. From a utility perspective, Tampa Electric has more solar generation on a per customer basis than any other utility in the state, and the company plans to install additional cost-effective utility scale solar in the future.

Q. Has Tampa Electric affirmatively addressed or complied with each issue listed in Appendix "A" of the Tentative List of Issues in the Commission's Order Establishing Procedure in this proceeding?

A. Yes.

Q. Has Tampa Electric provided information within your testimony that affirmatively addresses each testimony requirement listed in Appendix "B" of the Minimum Testimony

Requirements for Utilities in the Commission’s Order Establishing Procedure in this proceeding?

A. Yes.

CONCLUSIONS:

Q. What overall DSM goals are reasonably achievable for Tampa Electric for the 2025-2034 period?

A. Based on the thorough and rigorous analysis performed by Resource Innovations and Tampa Electric for this current DSM goals setting process, the company’s reasonably achievable generator level combined DSM goals for the 2025-2034 period are:

Summer Demand:	149.0 MW
Winter Demand:	197.1 MW
Annual Energy:	450.5 GWh

These amounts are detailed on an annual basis for both the residential and commercial/industrial sectors in my Exhibit No. MRR-1, Document No. 20.

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 2025-2034 period comply with statutory and F.A.C. requirements?

A. Yes. Tampa Electric began its evaluation with having a technical potential study developed that utilized a comprehensive and up to date list of potential DSM measures for residential and commercial and industrial sectors. These measures were applied over multiple construction and building types and considered several aspects of measure interaction as well as free-ridership. Tampa Electric adhered to Rule requirements by developing three sets of DSM goals based upon a RIM based, TRC based, and a proposed portfolio of supporting programs while properly reflecting cost and benefits to all customers. 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. Tampa Electric’s proposed DSM programs supporting the proposed DSM goals for both the residential and commercial/industrial sectors are included in my Exhibit No. MRR-1, Document No. 21.

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 2034?

A. Yes, through the continued use of the RIM cost-effectiveness 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 2025-2034 DSM goals be approved?

A. Yes. Tampa Electric’s proposed 2025-2034 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 the company’s customers, and are reasonably achievable.

Q. Are the company’s proposed goals based on an adequate assessment of the full technical potential of all available demand-side and supply-side conservation and efficiency measures, including demand-side renewable energy systems, pursuant to Section 366.82(3), F.S.?

A. Yes.

Q. Do the company’s proposed goals adequately reflect the costs and benefits to customers participating in the measure, pursuant to Section 366.82(3)(a), F.S.?

A. Yes.

Q. Do the company’s proposed goals adequately reflect the costs and benefits to the general body of ratepayers as a whole, including utility incentives and participant contributions, pursuant to Section 366.82(3)(b), F.S.?

A. Yes.

Q. Do the company’s proposed goals adequately reflect the need for incentives to promote both customer-owned and utility-owned energy efficiency and demand-side renewable energy systems, pursuant to Section 366.82(3)(c), F.S.?

A. Yes.

Q. Do the company’s proposed goals adequately reflect the costs imposed by state and federal regulations on the emission of greenhouse gases, pursuant to Section

366.82(3)(d), F.S.?

A. Yes.

Q. What cost-effectiveness test or tests should the Commission use to set goals, pursuant to Section 366.82, F.S.?

A. The company recommends use of the RIM cost-effectiveness test to set DSM goals.

Q. Do the company's proposed goals appropriately reflect consideration of free riders?

A. Yes.

Q. What residential summer and winter megawatt (MW) and annual Gigawatt-hour (GWh) goals should be established for the period 2025-2034?

A. Tampa Electric's proposed reasonably achievable generator level combined Residential DSM goals for the 2025-2034 period are:

Summer Demand:	88.6 MW
Winter Demand:	145.4 MW
Annual Energy:	246.2 GWh

Q. What commercial/industrial summer and winter megawatt (MW) and annual Gigawatt hour (GWh) goals should be established for the period 2025-2034?

A. Tampa Electric’s proposed reasonably achievable generator level combined Commercial/Industrial DSM goals for the 2025-2034 period are:

Summer Demand: 60.5 MW
Winter Demand: 51.7 MW
Annual Energy: 204.4 GWh

Q. Does this conclude your testimony?

A. Yes.

EXHIBIT

OF

MARK R. ROCHE

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Tampa Electric’s 2025 – 2034 Proposed Goals and Programs

Tampa Electric's
2025-2034 Proposed DSM Goals

Proposed Residential DSM Goals at the Generator

	Summer Demand (MW)		Winter Demand (MW)		Annual Energy (GWh)	
Year	Incremental	Cumulative	Incremental	Cumulative	Incremental	Cumulative
2025	7.8	7.8	13.8	13.8	24.2	24.2
2026	7.8	15.7	13.8	27.6	24.2	48.4
2027	8.7	24.4	14.4	42.0	24.8	73.2
2028	8.5	32.9	14.3	56.4	24.2	97.4
2029	8.5	41.4	14.3	70.7	24.2	121.6
2030	9.5	51.0	15.0	85.7	25.2	146.9
2031	9.4	60.3	14.9	100.6	24.7	171.6
2032	9.4	69.7	14.9	115.5	24.7	196.3
2033	9.5	79.2	15.0	130.5	25.2	221.5
2034	9.4	88.6	14.9	145.4	24.7	246.2

Proposed Commercial/Industrial DSM Goals at the Generator

	Summer Demand (MW)		Winter Demand (MW)		Annual Energy (GWh)	
Year	Incremental	Cumulative	Incremental	Cumulative	Incremental	Cumulative
2025	6.4	6.4	5.4	5.4	22.2	22.2
2026	6.3	12.7	5.4	10.8	22.2	44.5
2027	6.9	19.6	5.9	16.8	22.3	66.8
2028	6.4	26.0	5.4	22.2	22.3	89.1
2029	6.4	32.4	5.4	27.6	22.3	111.4
2030	5.9	38.3	5.1	32.7	18.6	130.0
2031	5.4	43.7	4.6	37.3	18.6	148.6
2032	5.4	49.1	4.6	42.0	18.6	167.2
2033	6.0	55.1	5.1	47.1	18.6	185.8
2034	5.4	60.5	4.6	51.7	18.6	204.4

Proposed Combined DSM Goals at the Generator

	Summer Demand (MW)		Winter Demand (MW)		Annual Energy (GWh)	
Year	Incremental	Cumulative	Incremental	Cumulative	Incremental	Cumulative
2025	14.2	14.2	19.2	19.2	46.5	46.5
2026	14.2	28.4	19.2	38.5	46.5	92.9
2027	15.6	44.0	20.3	58.8	47.1	140.0
2028	14.9	58.9	19.8	78.6	46.5	186.5
2029	14.9	73.8	19.8	98.3	46.5	233.0
2030	15.5	89.2	20.1	118.4	43.8	276.9
2031	14.8	104.0	19.5	138.0	43.3	320.2
2032	14.8	118.8	19.5	157.5	43.3	363.4
2033	15.5	134.3	20.1	177.6	43.8	407.3
2034	14.8	149.0	19.5	197.1	43.3	450.5

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Tampa Electric’s Proposed Programs:

Residential Programs:

1. Residential Walk-Through Audit (Free Energy Check)
2. Residential Customer Assisted Energy Audit (Online)
3. Residential Computer Assisted Energy Audit (RCS)(Paid)
4. Residential Ceiling Insulation
5. Residential Duct Repair
6. Energy and Renewable Education, Awareness and Agency Outreach
7. ENERGY STAR for New Multi-Family Residences
8. ENERGY STAR for New Homes
9. ENERGY STAR Thermostats
10. Residential Heating and Cooling
11. Neighborhood Weatherization
12. Residential Price Responsive Load Management (Energy Planner)
13. Residential Prime Time Plus
14. Renewable Energy Program (Sun-To-Go)

Commercial/Industrial Programs:

1. Commercial/Industrial Audit (Free)
2. Comprehensive Commercial/Industrial Audit (Paid)
3. Cogeneration
4. Commercial/Industrial Custom Energy Efficiency
5. Demand Response
6. Industrial Load Management (GSLM 2&3)
7. Lighting Conditioned Space
8. Lighting Non-Conditioned Space
9. Lighting Occupancy Sensors
10. Commercial Load Management (GSLM 1)
11. Standby Generator
12. VFD and Motor Controls
13. Commercial Heat Pump Water Heater and Drain Water Heat Recovery
14. Conservation Research and Development (“R&D”)
15. Renewable Energy Program (Sun-To-Go)

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Tampa Electric's 2025 – 2034 RIM Portfolio Goals and Programs

Tampa Electric's
2025-2034 RIM Portfolio DSM Goals

RIM Portfolio Residential DSM Goals at the Generator

Year	Summer Demand (MW)		Winter Demand (MW)		Annual Energy (GWh)	
	Incremental	Cumulative	Incremental	Cumulative	Incremental	Cumulative
2025	7.8	7.8	13.8	13.8	24.2	24.2
2026	7.8	15.7	13.8	27.6	24.2	48.4
2027	8.7	24.4	14.4	42.0	24.8	73.2
2028	8.5	32.9	14.3	56.4	24.2	97.4
2029	8.5	41.4	14.3	70.7	24.2	121.6
2030	9.5	51.0	15.0	85.7	25.2	146.9
2031	9.4	60.3	14.9	100.6	24.7	171.6
2032	9.4	69.7	14.9	115.5	24.7	196.3
2033	9.5	79.2	15.0	130.5	25.2	221.5
2034	9.4	88.6	14.9	145.4	24.7	246.2

RIM Portfolio Commercial/Industrial DSM Goals at the Generator

Year	Summer Demand (MW)		Winter Demand (MW)		Annual Energy (GWh)	
	Incremental	Cumulative	Incremental	Cumulative	Incremental	Cumulative
2025	6.4	6.4	5.4	5.4	22.2	22.2
2026	6.3	12.7	5.4	10.8	22.2	44.5
2027	6.9	19.6	5.9	16.8	22.3	66.8
2028	6.4	26.0	5.4	22.2	22.3	89.1
2029	6.4	32.4	5.4	27.6	22.3	111.4
2030	5.9	38.3	5.1	32.7	18.6	130.0
2031	5.4	43.7	4.6	37.3	18.6	148.6
2032	5.4	49.1	4.6	42.0	18.6	167.2
2033	6.0	55.1	5.1	47.1	18.6	185.8
2034	5.4	60.5	4.6	51.7	18.6	204.4

RIM Portfolio Combined DSM Goals at the Generator

Year	Summer Demand (MW)		Winter Demand (MW)		Annual Energy (GWh)	
	Incremental	Cumulative	Incremental	Cumulative	Incremental	Cumulative
2025	14.2	14.2	19.2	19.2	46.5	46.5
2026	14.2	28.4	19.2	38.5	46.5	92.9
2027	15.6	44.0	20.3	58.8	47.1	140.0
2028	14.9	58.9	19.8	78.6	46.5	186.5
2029	14.9	73.8	19.8	98.3	46.5	233.0
2030	15.5	89.2	20.1	118.4	43.8	276.9
2031	14.8	104.0	19.5	138.0	43.3	320.2
2032	14.8	118.8	19.5	157.5	43.3	363.4
2033	15.5	134.3	20.1	177.6	43.8	407.3
2034	14.8	149.0	19.5	197.1	43.3	450.5

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Tampa Electric's 2025 – 2034
TRC Portfolio Goals and Programs

Tampa Electric's 2025-2034 TRC Portfolio DSM Goals

TRC Portfolio Residential DSM Goals at the Generator

	Summer Demand (MW)		Winter Demand (MW)		Annual Energy (GWh)	
Year	Incremental	Cumulative	Incremental	Cumulative	Incremental	Cumulative
2025	7.8	7.8	13.8	13.8	24.2	24.2
2026	7.8	15.7	13.8	27.6	24.2	48.4
2027	8.7	24.4	14.4	42.0	24.8	73.2
2028	8.5	32.9	14.3	56.4	24.2	97.4
2029	8.5	41.4	14.3	70.7	24.2	121.6
2030	9.5	51.0	15.0	85.7	25.2	146.9
2031	9.4	60.3	14.9	100.6	24.7	171.6
2032	9.4	69.7	14.9	115.5	24.7	196.3
2033	9.5	79.2	15.0	130.5	25.2	221.5
2034	9.4	88.6	14.9	145.4	24.7	246.2

TRC Portfolio Commercial/Industrial DSM Goals at the Generator

	Summer Demand (MW)		Winter Demand (MW)		Annual Energy (GWh)	
Year	Incremental	Cumulative	Incremental	Cumulative	Incremental	Cumulative
2025	6.4	6.4	5.4	5.4	22.3	22.3
2026	6.3	12.7	5.4	10.9	22.3	44.5
2027	6.9	19.6	6.0	16.8	22.4	66.9
2028	6.4	26.0	5.5	22.3	22.3	89.2
2029	6.4	32.4	5.5	27.7	22.3	111.6
2030	5.9	38.3	5.1	32.9	18.6	130.2
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TRC Portfolio Combined DSM Goals at the Generator

	Summer Demand (MW)		Winter Demand (MW)		Annual Energy (GWh)	
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2025	14.2	14.2	19.3	19.3	46.5	46.5
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2029	14.9	73.8	19.8	98.4	46.5	233.2
2030	15.5	89.2	20.1	118.6	43.9	277.1
2031	14.8	104.0	19.6	138.1	43.3	320.4
2032	14.8	118.8	19.6	157.7	43.3	363.7
2033	15.5	134.3	20.1	177.8	43.9	407.5
2034	14.8	149.0	19.6	197.4	43.3	450.8

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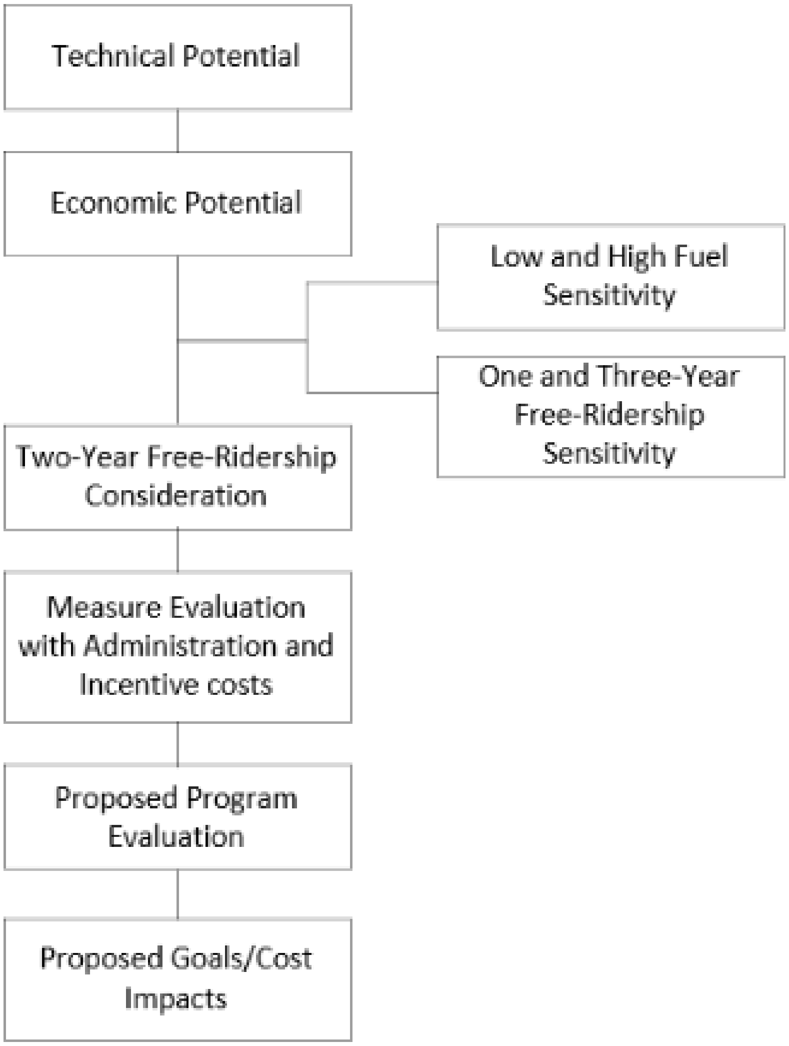
Overall DSM Program and Proposed Goals Determination Process



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Technical Potential Study of Demand Side Management

Tampa Electric Company

Date: 03.07.2024

Table of Contents

Executive Summary

In October 2022, the six electric utilities subject to the Florida Energy Efficiency and Conservation Act (FEECA Utilities) retained Resource Innovations, Inc. for the purpose of identifying and characterizing the market for demand-side management (DSM) opportunities, including energy efficiency (EE) improvement and building retrofits, peak load reductions from demand response (DR), and demand-side renewable energy (DSRE) systems.

The main objective of the study was to assess the technical potential of demand-side resources for reducing customer electric energy consumption and seasonal peak capacity demands.

This report provides the detailed methodology and results for the technical potential analysis of Tampa Electric Company's (TECO) service territory.

1.1 Methodology

Resource Innovations estimates DSM savings potential by applying an analytical framework that aligns baseline market conditions for energy consumption and demand with DSM opportunities. After describing the baseline condition, Resource Innovations applies estimated measure savings to disaggregated consumption and demand data. The approach varies slightly according to the type of DSM resources and available data; the specific approaches used for each type of DSM are described below.

1.1.1 EE Potential

This study utilized Resource Innovations' proprietary EE modeling tool, TEA-POT (Technical / Economic / Achievable POTential). This modeling tool was built on a platform that provides the ability to create and analyze multiple scenarios and recalculate potential savings based on variable inputs such as sales/load forecasts, electricity prices, discount rates, and actual program savings. The methodology for the EE potential assessment was based on a hybrid "top-down/bottom-up" approach, which started with the current utility load forecast, then disaggregated it into its constituent customer-class and end-use components. Our assessment examined the effect of the range of EE measures and practices on each end-use, taking into account current market saturations, and technical feasibility. These unique impacts were aggregated to produce estimates of potential at the end-use, customer class, and system levels for TECO.

1.1.2 DR Potential

The assessment of DR potential in TECO's service territory was an analysis of mass market direct load control programs for residential and small commercial and industrial (C&I) customers, and an analysis of DR programs for large C&I customers. The direct load control program assessment focused on the potential for demand reduction through heating, ventilation, and air conditioning (HVAC), water heater, managed electric vehicle charging, and pool pump load control. These end-uses were of particular interest because of their large contribution to peak period system load. For this analysis, a range of direct load control measures were examined for each customer segment to highlight the range of potential. The assessment further accounted for existing DR programs for TECO when calculating the total DR potential.

1.1.3 DSRE Potential

The DSRE technologies included in this study are rooftop solar photovoltaic (PV) systems, battery storage systems charged from customers' PV systems, and combined heat and power (CHP) systems. The study leveraged the customer segmentation and load disaggregation data assembled for the EE and DR analyses, and applied our DSRE model, SPIDER™ (Spatial Penetration and Integration of Distributed Energy Resources), for economic and adoption analysis of solar and battery storage. This model dynamically responds to rapidly changing technologies and accounts for all key time-varying elements such as technology costs, incentives, tax credits, and electric rates. To estimate technical potential for CHP, the study utilized a series of unique distributed generation potential models for each primary market sector (commercial and industrial), calculating the average building consumption, assigning minimum facility size thresholds, and estimating building energy savings share percentage for each CHP technology based on its generation capacity.

1.2 Savings Potential

Technical potential for EE, DR, and DSRE are as follows:

1.2.1 EE Potential

EE technical potential describes the savings potential when all technically feasible EE measures are fully implemented, ignoring all non-technical constraints on electricity savings, such as cost-effectiveness and customer willingness to adopt EE.

The estimated EE technical potential results are summarized in Table 1.

Table 1. EE Technical Potential

	Savings Potential		
	Summer Peak Demand (MW)	Winter Peak Demand (MW)	Energy (GWh)
Residential	992	445	3,197
Non-Residential[1]	398	334	2,272
Total	1,390	779	5,469

1.2.2 DR Potential

DR technical potential describes the magnitude of loads that can be managed during conditions when grid operators need peak capacity. For residential and small C&I customers where DR generally takes the form of direct utility control, technical potential for DR is limited by the loads that can be controlled remotely at scale such as heating, cooling, water heaters, managed electric vehicle charging, and pool pumps. For large C&I customers, this included their entire electric demand during a utility's system peak, as many of these types of customers will forego virtually all electric demand temporarily if the financial incentive is large enough.

The estimated DR technical potential results are summarized in Table 2.

Table 2. DR Technical Potential

	Savings Potential	
	Summer Peak Demand (MW)	Winter Peak Demand (MW)
Residential	1,541	1,439
Non-Residential	1,571	1,691
Total	3,112	3,130

---

[1] Non-Residential results include all commercial and industrial customer segments.

1.2.3 DSRE Potential

DSRE technical potential estimates quantify all technically feasible distributed generation opportunities from PV systems, battery storage systems charged from PV, and CHP technologies based on the customer characteristics of TECO's customer base.

The estimated DSRE technical potential results are summarized in Table 3.

Table 3. DSRE Technical Potential[2]

	Savings Potential		
	Summer Peak Demand (MW)	Winter Peak Demand (MW)	Energy (GWh)
PV Systems			
Residential	484	51	8,000
Non-Residential	165	6	2,236
Total	649	57	10,236
Battery Storage charged from PV Systems			
Residential	598	876	0
Non-Residential	120	205	0
Total	718	1081	0
CHP Systems			
Total	358	286	1,768

---

[2] PV systems and CHP systems were independently analyzed for technical potential without consideration of the competition between technologies or customer preference for DSRE system.

2 Introduction

In October 2022, the six electric utilities subject to the Florida Energy Efficiency and Conservation Act (FEECA Utilities) retained Resource Innovations, Inc. for the purpose of identifying and characterizing the market for demand-side management (DSM) opportunities, including energy efficiency (EE) improvement and building retrofits, peak load reductions from demand response (DR), and demand-side renewable energy (DSRE) systems. The main objective of the study was:

- Assessing the technical potential of demand-side resources for reducing customer electric energy consumption and seasonal peak capacity demands.

This report provides the detailed methodology and results for the technical potential analysis of TECO's service territory.

The following deliverables were developed by Resource Innovations as part of the project and are addressed in this report:

- DSM measure list and detailed assumption workbooks
- Disaggregated baseline demand and energy use by year, sector, and end-use
- Baseline technology saturations, energy consumption, and demand
- Technical potential demand and energy savings
- Supporting calculation spreadsheets

2.1 Technical Potential Study Approach

Resource Innovations estimates technical potential according to the industry standard categorization, as follows:

> *Technical Potential is the theoretical maximum amount of energy and capacity that could be displaced by DSM, regardless of cost and other barriers that may prevent the installation or adoption of a DSM measure.*

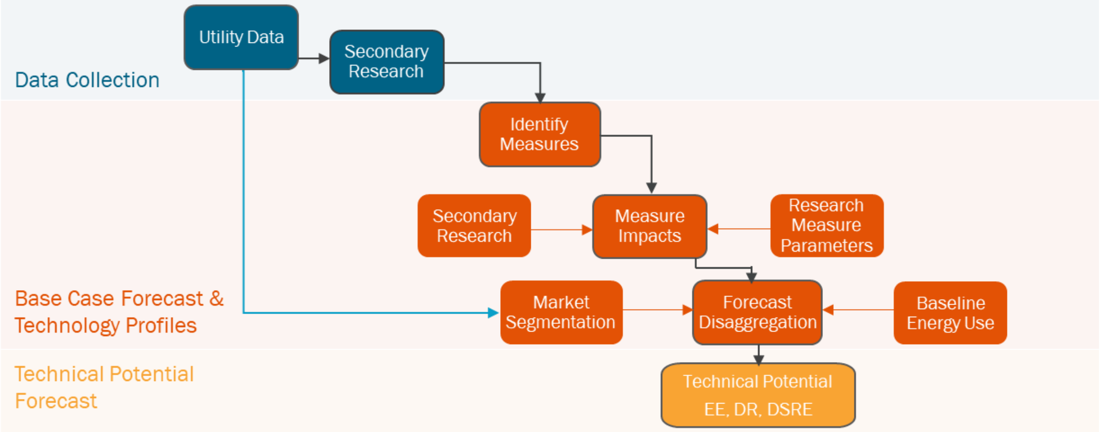
For this study, technical potential included full application of commercially available DSM technologies to all residential, commercial, and industrial customers in the utility's service territory.

Quantifying DSM technical potential is the result of an analytical process that refines DSM opportunities that align with TECO's customers' electric consumption patterns. Resource Innovations' general methodology for estimating technical potential is a hybrid "top-down/bottom-up" approach, which is described in detail in Sections 3 through 5 of this report and includes the following steps:

- Develop a baseline forecast: the study began with a disaggregation of the utility's official electric energy forecast to create a baseline electric energy forecast. This forecast does not include any utility-specific assumptions around DSM performance. Resource Innovations applied customer segmentation and consumption data from each utility and data from secondary sources to describe baseline customer-class and end-use components. Additional details on the forecast disaggregation are included in Section 3.
- Identify DSM opportunities: A comprehensive set of DSM opportunities applicable to TECO's climate and customers were analyzed to best depict DSM technical potential. Effects for a range of DSM technologies for each end-use could then be examined while accounting for current market saturations, technical feasibility, and impacts.
- Collect cost and impact data for measures: For those measures applicable to TECO's customers, Resource Innovations conducted primary and secondary research and estimated costs, energy savings, measure life, and demand savings. We differentiated between the type of cost (capital, installation labor, maintenance, etc.) to separately evaluate different implementation modes: retrofit (capital plus installation labor plus incremental maintenance); new construction (incremental capital and incremental maintenance); and burnout costs (incremental capital and incremental maintenance costs for replacement of appliances and equipment that has reached the end of its useful life). Additional details on measure development are included in Section 4.

Figure 1 provides an illustration of the technical potential modeling process conducted for TECO, with the assessment starting with the current utility load forecast, disaggregated into its constituent customer-class and end-use components, and calibrated to ensure consistency with the overall forecast. Resource Innovations considered the range of DSM measures and practices application to each end-use, accounting for current market saturations, and technical feasibility. These unique impacts were aggregated to produce estimates of potential at the technology, end-use, customer class, and system levels.

Figure 1. Approach to Technical Potential Modeling



Resource Innovations estimated DSM technical potential based on a combination of market research, utility load forecasts and customer data, and measure impact analysis, all in coordination with TECO. Resource Innovations examined the technical potential for EE, DR, and DSRE opportunities; this report is organized to offer detail on each DSM category, with additional details on technical potential methodology presented in Section 5.

2.2 EE Potential Overview

To estimate EE potential, this study utilized Resource Innovations' modeling tool, TEA-POT (Technical / Economic / Achievable POTential). This modeling tool was built on a platform that provides the ability to create and analyze multiple scenarios and recalculate potential savings based on variable inputs such as sales/load forecasts, electricity prices, discount rates, and actual utility program savings, as described in Section 5.1.1 below. While the analysis estimates the impacts of individual EE measures, the model accounts for interactions and overlap of individual measure impacts within an end-use or equipment type. The model provides transparency into the assumptions and calculations for estimating EE potential.

2.3 DR Potential Overview

To estimate DR market potential, Resource Innovations considered customer demand during utility peaking conditions and projected customer response to DR measures. Customer demand was determined by looking at account-level interval data for a sample of customers within each segment. For each segment, Resource Innovations determined the portion of a customer's load that could be curtailed during the system peak.

2.4 DSRE Potential Overview

The DSRE technologies included in this study are rooftop solar photovoltaic (PV) systems, battery storage systems charged from PV, and combined heat and power (CHP) systems. The study leveraged the customer segmentation and load disaggregation data assembled for the EE and DR analyses, and applied our DSRE model, SPIDER™ (Spatial Penetration and Integration of Distributed Energy Resources), for economic and adoption analysis of solar and battery storage. This model dynamically responds to rapidly changing technologies and accounts for all key time-varying elements such as technology costs, incentives, tax credits, and electric rates. To estimate technical potential for CHP, the study utilized a series of unique distributed generation potential models for each primary market sector (commercial and industrial), calculating the average building consumption, assigning minimum facility size thresholds, and estimating building energy savings share percentage for each CHP technology based on its generation capacity.

3 Baseline Forecast Development

3.1 Market Characterization

The TECO base year energy use and sales forecast provided the reference point to determine potential savings. The end-use market characterization of the base year energy use and reference case forecast included customer segmentation and load forecast disaggregation. The characterization is described in this section, while the subsequent section addresses the measures and market potential energy and demand savings scenarios.

3.1.1 Customer Segmentation

In order to estimate EE, DR, and DSRE potential, the sales forecast and peak load forecasts were segmented by customer characteristics. As electricity consumption patterns vary by customer type, Resource Innovations segmented customers into homogenous groups to identify which customer groups are eligible to adopt specific DSM technologies, have similar building characteristics and load profiles, or are able to provide DSM grid services.

Resource Innovations segmented customers according to the following:

1) By Sector – how much of TECO’s energy sales, summer and winter peak demand forecast is attributable to the residential, commercial, and industrial sectors?
2) By Customer – how much electricity does each customer typically consume annually and during system peaking conditions?
3) By End-Use – within a home or business, what equipment is using electricity during the system peak? How much energy does this end-use consume over the course of a year?

Table 4 summarizes the segmentation within each sector. In addition to the segmentation described here for the EE and DSRE analyses, the residential customer segments were further segmented by heating type (electric heat, gas heat, or unknown) and by annual consumption bins within each sub-segment for the DR analysis.

Table 4. Customer Segmentation

Residential	Commercial		Industrial	
Single Family	Assembly	Miscellaneous	Agriculture and Assembly	Primary Resources Industries
Multi-Family	College and University	Offices	Chemicals and Plastics	Stone/Glass/ Clay/Concrete
Manufactured Homes	Grocery	Restaurant	Construction	Textiles and Leather
	Healthcare	Retail	Electrical and Electronic Equipment	Transportation Equipment
	Hospitals	Schools K-12	Lumber/Furniture/ Pulp/Paper	Water and Wastewater
	Institutional	Warehouse	Metal Products and Machinery	Other
	Lodging/ Hospitality		Miscellaneous Manufacturing	

From an equipment and energy use perspective, each segment has variation within each building type or sub-sector. For example, the energy consuming equipment in a convenience store will vary significantly from the equipment found in a supermarket. To account for this variation, the selected end-uses describe energy consumption patterns that are consistent with those typically studied in national or regional surveys, such as the U.S. Energy Information Administration's (EIA) Residential Energy Consumption Survey (RECS), Commercial Building Energy Consumption Survey (CBECS) and Manufacturing Energy Consumption Survey (MECS), among others. The end-uses selected for this study are listed in Table 5.

Table 5. End-Uses

Residential End-Uses	Commercial End-Uses	Industrial End-Uses
Space heating[3]	Space heating[3]	Process heating
Space cooling[3]	Space cooling[3]	Process cooling
Domestic hot water	Domestic hot water	Compressed air
Ventilation and circulation	Ventilation and circulation	Motors/pumps

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[3] Includes the contribution of building envelope measures and efficiencies.

Residential End-Uses	Commercial End-Uses	Industrial End-Uses
Lighting	Interior lighting	Fan, blower motors
Cooking	Exterior lighting	Process-specific
Appliances	Cooking	Industrial lighting
Electronics	Refrigeration	Exterior lighting
Miscellaneous	Office equipment	HVAC[3]
	Miscellaneous	Other

For DR, the end-uses targeted were those with controllable load for residential customers (*i.e.,* HVAC, water heaters, pool pumps, and electric vehicles) and small C&I customers (HVAC and electric vehicles). For large C&I customers, all load during peak hours was included assuming these customers would potentially be willing to reduce electricity consumption for a limited time if offered a large enough incentive during temporary system peak demand conditions.

3.1.2 Forecast Disaggregation

A common understanding of the assumptions and granularity in the baseline load forecast was developed with input from TECO. Key discussion topics reviewed included:

- How current DSM offerings are reflected in the energy and demand forecast.
- Assumed weather conditions and hour(s) of the day when the system is projected to peak.
- Are there portions of the load forecast attributable to customers or equipment not eligible for DSM programs?
- How are projections of population increase, changes in appliance efficiency, and evolving distribution of end-use load shares accounted for in the peak demand forecast?

3.1.2.1 Electricity Consumption (kWh) Forecast

Resource Innovations segmented TECO's electricity consumption forecast into electricity consumption load shares by customer class and end-use. The baseline customer segmentation represents the electricity market by describing how electricity was consumed within the service territory. Resource Innovations developed the forecast for the year 2025, and based it on data provided by TECO, primarily their 2023 Ten-Year Site Plan, which was the most recent plan available at the time the studies were initiated. The data addressed current baseline consumption, system load, and sales forecasts.

3.1.2.2 Peak Demand (kW) Forecast

A fundamental component of DR potential was establishing a baseline forecast of what loads or operational requirements would be absent due to existing dispatchable DR or time varying rates. This baseline was necessary to assess how DR can assist in meeting specific planning and operational requirements. We utilized TECO's summer and winter peak demand forecast, which was developed for system planning purposes.

3.1.2.3 Estimating Consumption by End-Use Technology

As part of the forecast disaggregation, Resource Innovations developed a list of electricity end-uses by sector (Table 5). To develop this list, Resource Innovations began with TECO's estimates of average end-use consumption by customer and sector. Resource Innovations combined these data with other information, such as utility residential appliance saturation surveys, as available, to develop estimates of customers' baseline consumption. Resource Innovations calibrated the utility-provided data with data available from public sources, such as the EIA's recurring data-collection efforts that describe energy end-use consumption for the residential, commercial, and manufacturing sectors.

To develop estimates of end-use electricity consumption by customer segment and end-use, Resource Innovations applied estimates of end-use and equipment-type saturation to the average energy consumption for each sector. The following data sources and adjustments were used in developing the base year 2025 sales by end-use:

Residential Sector:

- The disaggregation was based on TECO's rate class load shares and intensities.
- Baseline intensity was calibrated to account for differences in end-use saturation, fuel source, and equipment saturation as follows:
    - TECO rate class load share is based on average per customer.
    - Resource Innovations made conversions to usage estimates generated by applying TECO's customer audit & saturation survey, EIA RECS data, residential end-use study data received from other FEECA utilities, and EIA's Annual Energy Outlook (AEO) 2023.

Commercial Sector:

- The disaggregation was based on TECO's rate class load shares, intensities, and EIA CBECS data.
- Segment data from EIA and TECO.

- Baseline intensity was calibrated to account for differences in end-use saturation, fuel source, and equipment saturation as follows:
    - Rate class load share based on EIA CBECS and end-use forecasts from TECO.

Industrial Sector:

- The disaggregation was based on rate class load shares, intensities, and EIA MECS data.
- Segment data from EIA and TECO.
- Baseline intensity was calibrated to account for differences in end-use saturation, fuel source, and equipment saturation as follows:
    - Rate class load share based on EIA MECS and end-use forecasts from TECO.

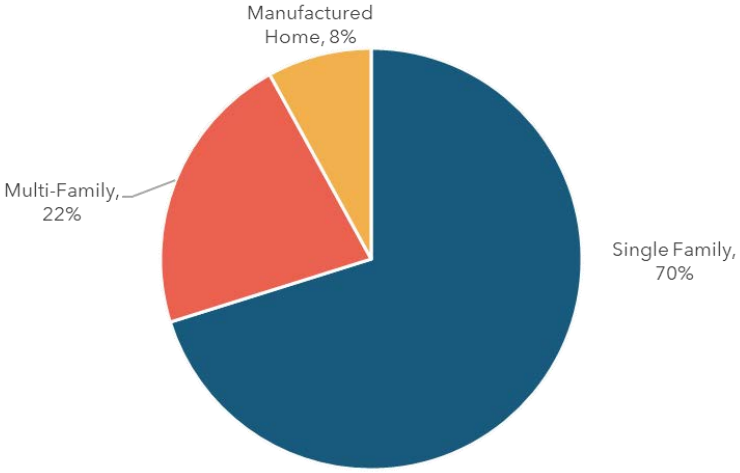
3.2 Analysis of Customer Segmentation

Customer segmentation is important to ensuring that a MPS examines DSM measure savings potential in a manner that reflects the diversity of energy savings opportunities existing across the utility's customer base. TECO provided Resource Innovations with data concerning the premise type and loads characteristics for all customers for the MPS analysis. Resource Innovations examined the provided data from multiple perspectives to identify customer segments. Resource Innovations' approach to segmentation varied slightly for non-residential and residential accounts, but the overall logic was consistent with the concept of expressing the accounts in terms that were relevant to DSM opportunities.

3.2.1 Residential Customers (EE, DR, and DSRE Analysis)

Segmentation of residential customer accounts enabled Resource Innovations to align DSM opportunities with appropriate DSM measures. Resource Innovations used utility customer data, supplemented with EIA data, to segment the residential sector by customer dwelling type (single family, multi-family, or manufactured home). The resulting distribution of customers according to dwelling unit type is presented in Figure 2.

Figure 2. Residential Customer Segmentation



3.2.2 Non-Residential (Commercial and Industrial) Customers (EE and DSRE Analysis)

For the EE and DSRE analysis, Resource Innovations segmented C&I accounts using the utility’s North American Industry Classification System (NAICS) or Standard Industrial Classification (SIC) codes, supplemented by data produced by the EIA’s CBECS and MECS. Resource Innovations classified the customers in this group as either commercial or industrial, on the basis of DSM measure information available and applicable to each. For example, agriculture and forestry DSM measures are commonly considered industrial savings opportunities. Resource Innovations based this classification on the types of DSM measures applicable by segment, rather than on the annual energy consumption or maximum instantaneous demand from the segment as a whole. The estimated energy sales distributions Resource Innovations applied are shown below in Figure 3 and Figure 4.

Figure 3. Commercial Customer Segmentation

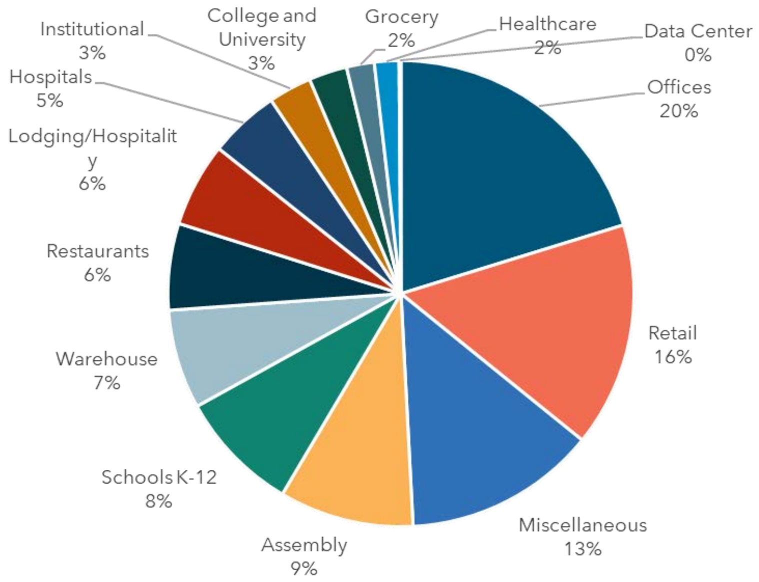
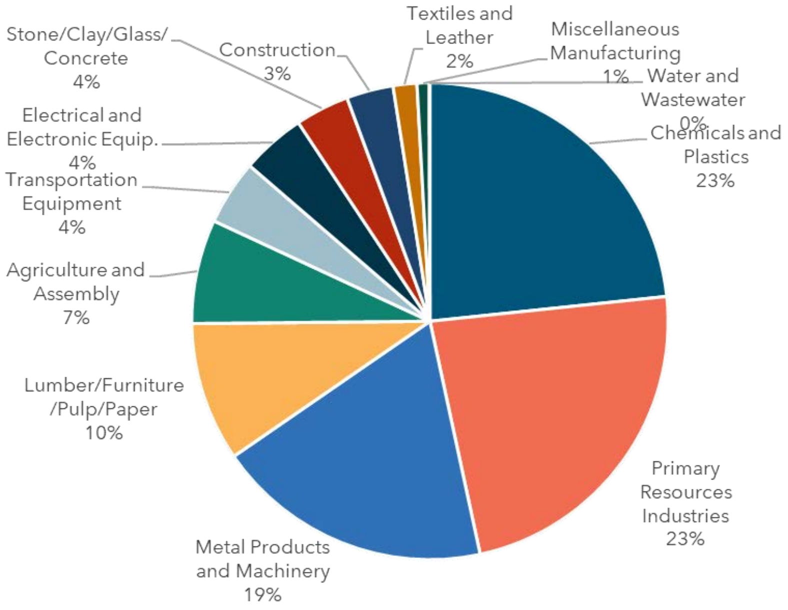


Figure 4. Industrial Customer Segmentation



3.2.3 Commercial and Industrial Accounts (DR Analysis)

For the DR analysis, Resource Innovations divided the non-residential customers into the two customer classes of small C&I and large C&I using rate class and annual consumption. For the purposes of this analysis, small C&I customers are those on the General Service (GS) tariff. Large C&I customers are all customers on the General Service Demand (GSD) tariff or on the General Service Large Demand (GSLD) tariff. Resource Innovations further segmented these two groups based on customer size. For small C&I, segmentation was determined using annual customer consumption and for large C&I the customer's maximum demand was used. Both customer maximum demand and customer annual consumption were calculated using billing data provided by TECO.

Table 6 shows the account breakout between small C&I and large C&I.

Table 6. Summary of Customer Classes for DR Analysis

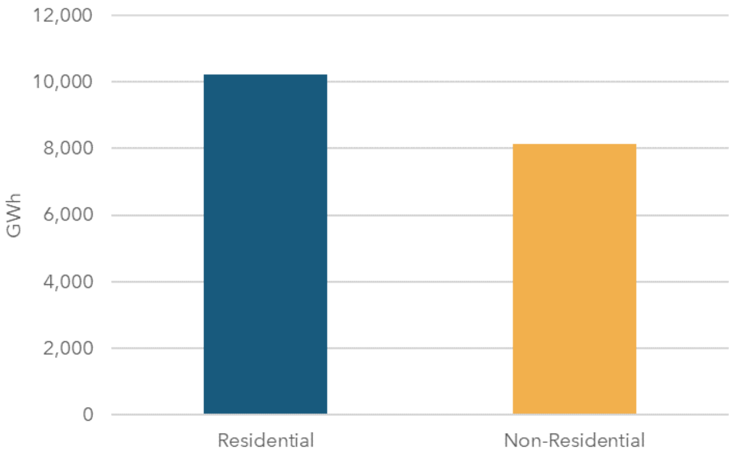
Customer Class	Annual kWh	Estimated Number of Accounts
Small C&I	0-15,000 kWh	43,294
	15,001-25,000 kWh	9,444
	25,001-50,000 kWh	9,104
	50,001 kWh +	3,304
	Total	65,146
Large C&I	0-50 kW	8,716
	51-300 kW	6,487
	301-500 kW	738
	501 kW +	738
	Total	16,679

3.3 Analysis of System Load

3.3.1 System Energy Sales

Technical potential is based on TECO's load forecast for the year 2025 from their 2023 Ten Year Site Plan, which is illustrated in Figure 5.

Figure 5. 2025 Electricity Sales Forecast by Sector



3.3.2 System Demand

To determine the technical potential for DR, Resource Innovations first established peaking conditions for each utility by looking at when each utility historically experienced its maximum demand. The primary data source used to determine when maximum DR impact was the historical system load for TECO. The data provided contained the system loads for all 8,760 hours of the most recent five years leading up to the study (2016-2021). The utility summer and winter peaks were then identified within the utility-defined peaking conditions. For TECO the summer peaking conditions were defined as August from 5:00-6:00 PM and the winter peaking conditions were defined as January from 7:00-8:00 AM. The seasonal peaks were then selected as the maximum demand during utility peaking conditions.

3.3.3 Load Disaggregation

The disaggregated annual electric loads[4] for the base year 2025 by sector and end-use are summarized in Figure 6, Figure 7, and Figure 8.

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[4] Full disaggregation of system demand by end-use was not conducted, as DR potential for residential and small C&I customers focused on specific end-uses of particular interest because of their large contribution to peak period system load, and was not end-use specific for large C&I customers. A description of the end-use analysis for residential and small C&I customers is included in Section 5.1.2

Figure 6. Residential Baseline (2025) Energy Sales by End-Use

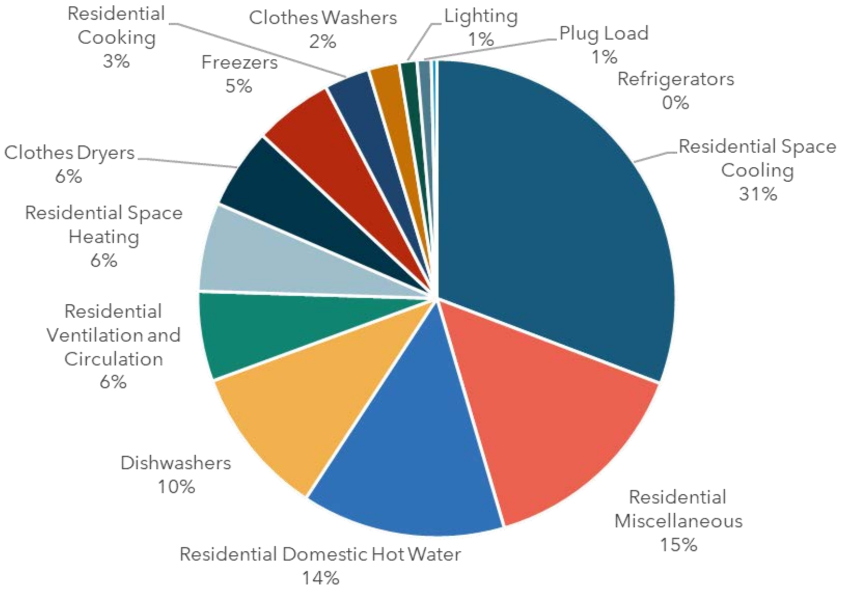


Figure 7. Commercial Baseline (2025) Energy Sales by End-Use

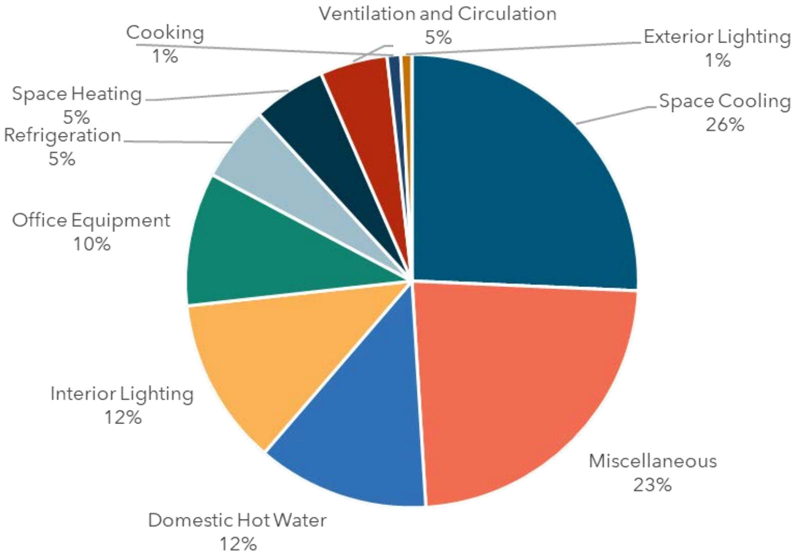
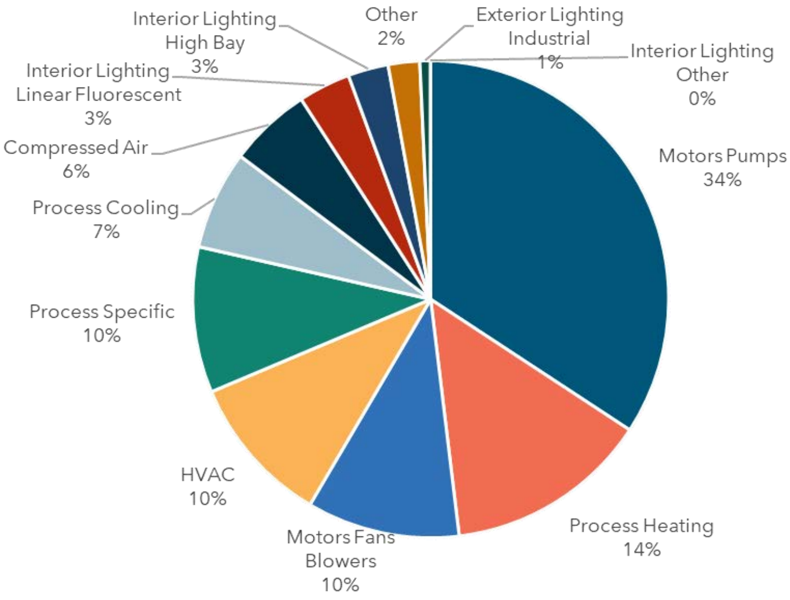


Figure 8. Industrial Baseline (2025) Energy Sales by End-Use



4 DSM Measure Development

DSM potential is described by comparing baseline market consumption with opportunities for savings. Describing these individual savings opportunities results in a list of DSM measures to analyze. This section presents the methodology to develop the EE, DR, and DSRE measure lists.

4.1 Methodology

Resource Innovations identified a comprehensive catalog of DSM measures for the study. The measure list is the same for all FEECA Utilities. The iterative vetting process with the utilities to develop the measure list began by initially examining the list of measures included in the 2019 Goals docket. This list was then adjusted based on proposed measure additions and revisions provided by the FEECA Utilities. Resource Innovations further refined the measure list based on reviews of Resource Innovations' DSM measure library, compiled from similar market potential studies conducted in recent years throughout the United States, as well as measures included in other utility programs where Resource Innovations is involved with program design, implementation, or evaluation. The FEECA Utilities also reached out to interested parties and received input with recommendations on measure additions to the 2019 measure list. Their measure suggestions were reviewed and incorporated into the study as appropriate. External measure suggestions and actions are summarized in Appendix D. The extensive, iterative review process involving multiple parties has ensured that the study included a robust and comprehensive set of DSM measures.

See Appendix A for the list of EE measures, Appendix B for the list of DR measures, and Appendix C for the list of DSRE measures analyzed in the study.

4.2 EE Measures

EE measures represent technologies applicable to the residential, commercial, and industrial customers in the FEECA Utilities' service territories. The development of EE measures included consideration of:

- EE technologies that are applicable to Florida and commercially available: Measures that are not applicable due to climate or customer characteristics were excluded, as were "emerging" technologies that are not currently commercially available to FEECA utility customers.
- Current and planned Florida Building Codes and Federal equipment standards (Codes & Standards) for baseline equipment: Measures included from prior studies

were adjusted to reflect current Codes & Standards as well as updated efficiency tiers, as appropriate.

- Eligibility for utility DSM offerings in Florida: For example, behavioral measures were excluded from consideration, as they historically have not been allowed to count towards utility DSM goals. Behavioral measures are intended to motivate customers to operate in a more energy-efficient manner (*e.g.*, setting an air-conditioner thermostat to a higher temperature) without accompanying: a) physical changes to more efficient end-use equipment or to their building envelope, b) utility-provided products and tools to facilitate the efficiency improvements, or c) permanent operational changes that improve efficiency which are not easily revertible to prior conditions. These types of behavioral measures were excluded because of the variability in forecasting the magnitude and persistence of energy and demand savings from the utility's perspective. Additionally, decoupling behavioral measure savings from the installation of certain EE technologies like smart thermostats can be challenging and could result in overlapping potential with other EE measures included in the study.

Upon development of the final EE measure list, utility-specific measure details were developed. RI maintains a proprietary online database of energy efficiency measures for MPS studies, which was used as a starting point for measure development for this study. Measures are added or updated at the request of project stakeholders or because of changes to the EE marketplace (for example, new codes and standards, or current practice in the market). Measure data are refined as new data or algorithms are developed for estimating measure impacts, and updated for each study to incorporate inputs parameters specific to the service territory being analyzed. The database contains the following information for each of the measures:

- Measure description: measure classification by type, end-use, and subsector, and description of the base-case and the efficient-case scenarios.
- kWh savings: Energy savings associated with each measure were developed through engineering algorithms or building simulation modeling, taking climate data and customer segments into consideration as appropriate. Reference sources used for developing residential, commercial, and industrial measure savings included a variety of Florida-specific, as well as regional and national sources, such as utility-specific measurement & verification (M&V) data, technical reference manuals (TRM) from other jurisdictions, ENERGY STAR calculators, and manufacturer or retailer specifications for particular products.
- Energy savings were applied in RI's TEA-POT model as a percentage of total baseline consumption. Peak demand savings were determined using utility-specific load shapes or coincidence factors.

- Measure Expected Useful Lifetime: Sources included the Database for Energy Efficient Resources (DEER), the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) Handbook, TRMs, and other regional and national measure databases and EE program evaluations.
- Measure Costs: Per-unit costs (full or incremental, depending on the application) associated with measure installations. Sources included: TRMs, ENERGY STAR calculator, online market research, FEECA utility program data, and other secondary sources.

The measure details from the online measure library are exported for use in RI's TEA-POT model, accompanied by utility-specific estimates of measure applicability. Measure applicability is a general term encompassing an array of factors, including technical feasibility of installation, and the measure's current saturation as well as factors to allocate savings associated with competing measures. Information used was primarily derived from data in current regional and national databases, as well as TECO's program tracking data. These factors are described in Table 7.

Table 7. Measure Applicability Factors

Measure Impact	Explanation	Sources
Technical Feasibility	The percentage of buildings that can have the measure physically installed. Various factors may affect this, including, but not limited to, whether the building already has the baseline measure (*e.g.*, dishwasher), and limitations on installation (*e.g.*, size of unit and space available to install the unit).	Various secondary sources and engineering experience.
Measure Incomplete Factor	The percentage of buildings without the specific measure currently installed.	Utility RASS; EIA RECS, CBECS; MECS; ENERGY STAR sales figures; and engineering experience.
Measure Share	Used to distribute the percentage of market shares for competing measures (*e.g.*, only blown-in ceiling insulation or spray foam insulation, not both would be installed in an attic).	Utility customer data, Various secondary sources and engineering experience.

As shown in Table 8, the measure list includes 395 unique energy-efficiency measures. Expanding the measures to account for all appropriate installation scenarios resulted in

9,535 measure permutations, which are the application of individual measures to various customer segments, construction types, and end-uses (*i.e.*, a single air-source heat pump "measure" can be installed in single family, multi-family, and manufactured homes, as well as new and existing vintages of each home type, and impacts both space cooling and space heating end-uses, resulting in twelve separate measure "permutations" analyzed).

Table 8. EE Measure Counts by Sector

Sector	Unique Measures	Permutations
Residential	119	1,173
Commercial	164	5,798
Industrial	112	2,564

4.3 DR Measures

The DR measures included in the measure list utilize the following DR strategies:

- **Direct Load Control.** Utility control of selected equipment at the customer's home or business, such as HVAC or water heaters.
- **Critical Peak Pricing (CPP) with Technology.** Electricity rate structures that vary based on time of day. Includes CPP when the rate is substantially higher for a limited number of hours or days per year (customers receive advance notification of CPP event) coupled with technology that enables customer to lower their usage in a specific end-use in response to the event (e.g., HVAC via smart thermostat).
- **Contractual DR.** Customers receive incentive payments or a rate discount for committing to reduce load by a pre-determined amount or to a pre-determined firm service level upon utility request.
- **Automated DR.** Utility dispatched control of specific end-uses at a customer facility.

DR initiatives that do not rely on the installation of a specific device or technology to implement (such as a voluntary curtailment program or time of use rates) were not included.

A workbook was developed for each measure which included the same measure inputs as previously described for the EE measures. In addition, the DR workbook included expected load reduction from the measure, based on utility technical potential, existing utility DR programs, and other nationwide DR programs if needed.

For technical potential, Resource Innovations did not break out results by specific measure or control technology because all of the developed measures target the end-uses estimated for technical potential (*i.e.*, potential is reported for space cooling end-use and not allocated to switches, smart thermostats, etc.).

4.4 DSRE Measures

The DSRE measure list includes rooftop PV systems, battery storage systems charged from PV systems, and CHP systems.

PV Systems

PV systems utilize solar panels (a packaged collection of PV cells) to convert sunlight into electricity. A system is constructed with multiple solar panels, a DC/AC inverter, a racking system to hold the panels, and electrical system interconnections. These systems are often roof-mounted systems that face south-west, south, and/or, south-east. The potential associated with roof-mounted systems installed on residential and commercial buildings was analyzed.

Battery Storage Systems Charged from PV Systems

Distributed battery storage systems included in this study consist of behind-the-meter battery systems installed in conjunction with an appropriately-sized PV system at residential and commercial customer facilities. These battery systems typically consist of a DC-charged battery, a DC/AC inverter, and electrical system interconnections to a PV system. On their own battery storage systems do not generate or conserve energy, but can collect and store excess PV generation to provide power during particular time periods, which for DSM purposes would be to offset customer demand during the utility's system peak.

CHP Systems

In most CHP applications, a heat engine creates shaft power that drives an electrical generator (fuel cells can produce electrical power directly from electrochemical reactions). The waste heat from the engine is then recovered to provide other on-site needs. Common prime mover technologies used in CHP applications and explored in this study include:

- Steam turbines
- Gas turbines
- Micro turbines
- Fuel Cells
- Internal combustion engines

A workbook was developed for each measure which included the inputs previously described for EE measures and prime mover operating parameters.

5 Technical Potential

In the previous sections, the approach for DSM measure development was summarized, and the 2025 base year load shares and reference-case load forecast were described. The outputs from these tasks provided the input for estimating the technical potential scenario, which is discussed in this section.

The technical potential scenario estimates the potential energy and demand savings when all technically feasible and commercially available DSM measures are implemented without regard for cost-effectiveness and customer willingness to adopt the most impactful EE, DR, or DSRE technologies. Since the technical potential does not consider the costs or time required to achieve these savings, the estimates provide a theoretical upper limit on electricity savings potential. Technical potential is only constrained by factors such as technical feasibility and applicability of measures. For this study, technical potential included full application of the commercially available DSM measures to all residential, commercial, and industrial customers in the utility's service territory.

5.1 Methodology

5.1.1 EE Technical Potential

EE technical potential refers to delivering less electricity to the same end-uses. In other words, technical potential might be summarized as "doing the same thing with less energy, regardless of the cost."

DSM measures were applied to the disaggregated utility electricity sales forecasts to estimate technical potential. This involved applying estimated energy savings from equipment and non-equipment measures to all electricity end-uses and customers. Technical potential consists of the total energy and demand that can be saved in the market which Resource Innovations reported as single numerical values for each utility's service territory.

The core equation used in the residential sector EE technical potential analysis for each individual efficiency measure is shown in Equation 1 below, while the core equation used in the nonresidential sector technical potential analysis for each individual efficiency measure is shown in Equation 2.

Equation 1: Core Equation for Residential Sector EE Technical Potential

Technical Potential of Efficient Measures = Total Number of Households × Base Case Equipment Energy Use Intensity (kWh/unit) × Saturation Shares × Percent Incomplete × Feasibility Factor × Savings Factor

Where:

- **Baseline Equipment Energy Use Intensity** = the electricity used per customer per year by each baseline technology in each market segment. In other words, the baseline equipment energy-use intensity is the consumption of the electrical energy using equipment that the efficient technology replaces or affects.
- **Saturation Share** = the fraction of the end-use electrical energy that is applicable for the efficient technology in a given market segment. For example, for residential cooling, the saturation share would be the fraction of all residential electric customers that have central air conditioners in their household.
- **Percent Incomplete** = the fraction of equipment that is not considered to already be energy efficient. To extend the example above, the fraction of central air conditioners that is not already energy efficient.
- **Feasibility Factor** = the fraction of units that is technically feasible for conversion to the most efficient available technology from an engineering perspective (*i.e.*, it may not be possible to install LEDs in all light sockets in a home because the available styles may not fit in every socket).
- **Savings Factor** = the percentage reduction in electricity consumption resulting from the application of the efficient technology.

Equation 2: Core Equation for Non-Residential Sector EE Technical Potential

Technical Potential of Efficient Measures = Total Stock Sq. Footage by Building Type by EDC × Base Case Equipment Energy Use Intensity (kWh/unit) × Saturation Shares × Percent Incomplete × Feasibility Factor × Savings Factor

Where:

- **Total Stock Square Footage by Segment** = the forecasted square footage level for a given building type (*e.g.*, square feet of office buildings).
- **Baseline Equipment Energy Use Intensity** = the electricity used per square foot per year by each baseline equipment type in each market segment.

- **Saturation Shares** = the fraction of total end-use energy consumption associated with the efficient technology in a given market segment. For example, for packaged terminal air-conditioner (PTAC), the saturation share would be the fraction of all space cooling kWh in a given market segment that is associated with PTAC equipment.
- **Percent Incomplete** = the fraction of equipment that is not considered to already be energy efficient.
- **Feasibility Factor** = the fraction of the equipment or practice that is technically feasible for conversion to the efficient technology from an engineering perspective (*i.e.*, it may not be possible to install Variable Frequency Drives (VFD) on all motors in a given market segment).
- **Savings Factor** = the percentage reduction in electricity consumption resulting from the application of the efficient technology.

It is important to note that the technical potential estimate represents electricity savings potential at a specific point in time. In other words, the technical potential estimate is based on data describing status quo customer electricity use and technologies known to exist today. As technology and electricity consumption patterns evolve over time, the baseline electricity consumption will also change accordingly. For this reason, technical potential is a discrete estimate of a dynamic market. Resource Innovations reported the technical potential for 2025, based on currently known DSM measures and observed electricity consumption patterns.

Measure Interaction and Competition (Overlap)

While the technical potential equations listed above focus on the technical potential of a single measure or technology, Resource Innovations' modeling approach does recognize the overlap of individual measure impacts within an end-use or equipment type, and accounts for the following interactive effects:

- Measure interaction: Installing high-efficiency equipment could reduce energy savings in absolute terms (kWh) associated with non-equipment measures that impact the same end-use. For example, installing a high-efficiency heat pump will reduce heating and cooling consumption which will reduce the baseline against which attic insulation would be applied, thus reducing savings associated with installing insulation. To account for this interaction, Resource Innovations' TEA-POT model ranks measures that interact with one another and reduces the baseline consumption for the subsequent measure based on the savings achieved by the preceding measure. For technical potential, interactive measures are ranked based on total end-use energy savings percentage.
- Measure competition (overlap): The "measure share"—as defined above—accounted for competing measures, ensuring savings were not double-counted. This interaction

occurred when two or more measures "competed" for the same end-use. For example, a T-12 lamp could be replaced with a T-8 or linear LED lamp.

Addressing Naturally-Occurring EE

Naturally occurring energy efficiency includes actions taken by customers to improve the efficiency of their homes and businesses in the absence of utility program intervention. For the analysis of technical potential, Resource Innovations verified with TECO's forecasting group that the baseline sales forecasts incorporated two known sources of naturally-occurring efficiency:

- Codes and Standards: The sales forecasts already incorporated the impacts of known Code & standards changes.
- Baseline Measure Adoption: The sales forecast excluded the projected impacts of future DSM efforts but included already implemented DSM penetration.

By properly accounting for these factors, the technical potential analysis estimated the additional EE opportunities beyond what is already included in the utility sales forecast.

5.1.2 DR Technical Potential

The concept of technical potential applies differently to DR than for EE. Technical potential for DR is effectively the magnitude of loads that can be curtailed during conditions when utilities need peak capacity reductions. In evaluating this potential at peak capacity, the following were considered: which customers are consuming electricity at those times? What end-uses are in play? Can those end-use loads be managed? Large C&I accounts generally do not provide the utility with direct control over particular end-uses. Instead, many of these customers will forego electric demand temporarily if the financial incentive is large enough. For residential and small C&I customers where DR generally takes the form of direct utility control, technical potential for DR is limited by the loads that can be controlled remotely at scale.

This framework makes end-use disaggregation an important element for understanding DR potential, particularly in the residential and small C&I sectors. When done properly, end-use disaggregation not only provides insights into which loads are on and off when specific grid services are needed, it also provides insight concerning how key loads and end-uses, such as air conditioning use, vary across customers. Resource Innovations' approach used for load disaggregation is more advanced than what is used for most potential studies. Instead of disaggregating annual consumption or peak demand, Resource Innovations produced end-use load disaggregation for all 8,760 hours. This was needed because the loads available at times when different grid applications are needed can vary substantially. Instead of producing disaggregated loads for the average customer, the study was produced for several customer segments. For TECO, Resource Innovations examined three residential segments based on customer housing type, four different small C&I segments based on customer size, and four different large C&I segments based on customer size, for a total of 11 different customer segments.

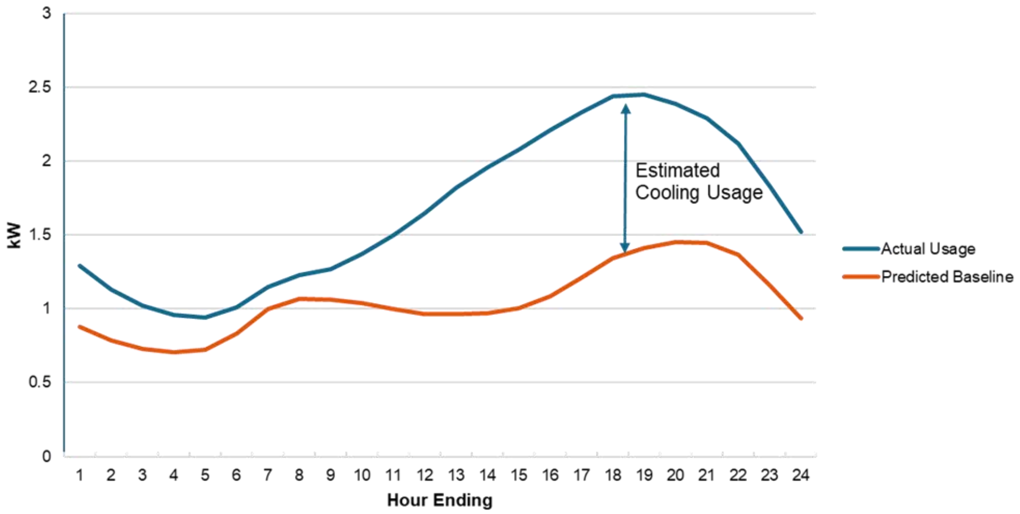
Technical potential, in the context of DR, is defined as the total amount of load available for reduction that is coincident with the period of interest; in this case, the system peak hour for the summer and winter seasons. Thus, two sets of capacity values are estimated: a summer capacity and a winter capacity.

As previously mentioned, for technical potential purposes, all coincident large C&I load is considered dispatchable, while residential and small C&I DR capacity is based on specific end-uses. Summer DR capacity for residential customers was comprised of air-conditioning (AC), pool pumps, water heaters, and managed electric vehicle charging. For small C&I customers, summer capacity was based on AC load. For winter DR capacity, residential was based on electric heating, pool pumps, and water heaters. For small C&I customers, winter capacity was based on electric heating.

AC and heating load profiles were generated for residential and small C&I customers using a sample of customers' interval data provided by TECO. This sample included a customer breakout based on housing type for residential customers and size for small C&I customers. Resource Innovations then used the interval data from these customers to create an average load profile for each customer segment.

The average load profile for each customer segment was combined with historical weather data, and used to estimate hourly load as a function of weather conditions. AC and heating loads were estimated by first calculating the baseline load on days when cooling degree days (CDD) and heating degree days (HDD) were equal to zero, and then subtracting this baseline load. This methodology is illustrated by Figure 9 (a similar methodology was used to predict heating loads).

Figure 9: Methodology for Estimating Cooling Loads



This method was able to produce estimates for average AC/heating load profiles for the seven different customer segments within the residential and small C&I sectors.

Profiles for residential water heater and pool pump loads were estimated by utilizing end-use load data from NREL's residential end-use load profile database.

For all eligible loads, the technical potential was defined as the amount that was coincident with system peak hours for each season, which are August from 5:00-6:00 PM for summer, and January from 7:00-8:00 AM for winter. As mentioned in Section 4, for technical potential there was also no measure breakout needed, because all measures will target the end-uses' estimated total loads.

5.1.3 DSRE Technical Potential

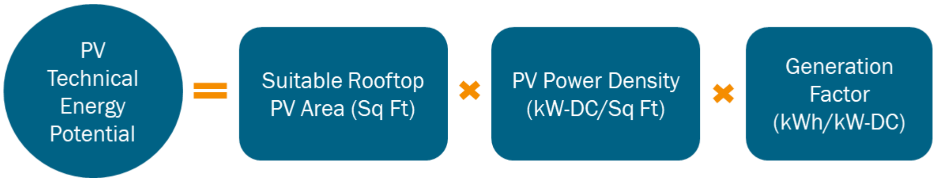
5.1.3.1 PV Systems

To determine technical potential for PV systems, RI estimated the percentage of rooftop square footage in Florida that is suitable for hosting PV technology. Our estimate of technical potential for PV systems in this report is based in part on the available roof area and consisted of the following steps:

- Step 1: Outcomes from the forecast disaggregation analysis were used to characterize the existing and new residential, commercial, and industrial building stocks.
    - To calculate the total roof area for residential buildings, the average roof area per household is multiplied by the number of households.
    - For commercial and industrial buildings, RI calculated the total roof area by first dividing the load forecast by the energy usage intensity, which provides an estimate of the total building square footage. This result is then divided by the average number of floors to derive the total roof area.
- Step 2: The total available roof area feasible for installing PV systems was calculated. Relevant parameters included unusable area due to other rooftop equipment and setback requirements, in addition to possible shading from trees and limitations of roof orientation (factored into a "technical suitability" multiplier).
- Step 3: Estimated the expected power density (kW per square foot of roof area).
- Step 4: Estimated the hourly PV generation profile using NREL's PV Watts Calculator
- Step 5: Calculated total energy and coincident peak demand potential by applying RI's Spatial Penetration and Integration of Distributed Energy Resources (SPIDER) Model.

The methodology presented in this report uses the following formula to estimate overall technical potential of PVs:

Equation 3: Core Equation for Solar DSRE Technical Energy Potential



Where:

- **Suitable Rooftop PV Area for Residential [Square Feet]:** Number of Residential Buildings x Average Roof Area Per Building x Technical Suitability Factor
- **Suitable Rooftop PV Area for Commercial [Square Feet] :** Energy Consumption [kWh] / Energy Intensity [kWh / Square Feet] / Average No. of Stories Per Building x Technical Suitability Factor
- **PV Power Density [kW-DC/Square Feet]:** Maximum power generated in Watts per square foot of solar panel.
- **Generation Factor:** Annual Energy Generation Factor for PV, from PV Watts (dependent on local solar irradiance)

5.1.3.2 Battery Storage Systems Charged from PV Systems

Battery storage systems on their own do not generate power or create efficiency improvements, but store power for use at different times. Therefore, in analyzing the technical potential for battery storage systems, the source of the stored power and overlap with technical potential identified in other categories was considered.

Battery storage systems that are powered directly from the grid do not produce annual energy savings but may be used to shift or curtail load during particular time periods. As the DR technical potential analyzes curtailment opportunities for the summer and winter peak period, and battery storage systems can be used as a DR technology, the study concluded that no additional technical potential should be claimed for grid-powered battery systems beyond that already attributed to DR.

Battery storage systems that are connected to on-site PV systems also do not produce additional energy savings beyond the energy produced from the PV system[5]. However, PV-connected battery systems do create the opportunity to store energy during period when the PV system is generating more than the home or business is consuming and use that stored power during utility system peak periods.

To determine the additional technical potential peak demand savings for “solar plus storage” systems, our methodology consisted of the following steps:

- Assume that every PV system included in PV Technical Potential is installed with a paired storage system.
- Size the storage system assuming peak storage power is equal to peak PV generation and energy storage duration is three hours.
- Apply RI’s hourly dispatch optimization module in SPIDER to create an hourly storage dispatch profile that flattens the individual customer’s load profile to the greatest extent possible accounting for a) customer hourly load profile, b) hourly PV generation profile, and c) battery peak demand, energy capacity, and roundtrip charge/discharge efficiency.
- Calculate the effective hourly impact for the utility using the above storage dispatch profile, aligned with the utility’s peak hour (calculated separately for summer and winter)
- Report the output storage kW impact on utility coincident peak demand in summer and winter.

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[5] PV-connected battery systems experience some efficiency loss due to storage, charging, and discharging. However, for this study, these losses were not quantified.

5.1.3.3 CHP Systems

The CHP analysis created a series of unique distributed generation potential models for each primary market sector (commercial and industrial).

Only non-residential customer segments whose electric and thermal load profiles allow for the application of CHP were considered. The technical potential analysis followed a three-step process. First, minimum facilities size thresholds were determined for each non-residential customer segment. Next, the full population of non-residential customers were segmented and screened based on the size threshold established for that segment. Finally, the facilities that were of sufficient size were matched with the appropriately sized CHP technology.

To determine the minimum threshold for CHP suitability, a thermal factor was applied to potential candidate customer loads to reflect thermal load considerations in CHP sizing. In most cases, on-site thermal energy demand is smaller than electrical demand. Thus, CHP size is usually dictated by the thermal load in order to achieve improved efficiencies.

The study collected electric and thermal intensity data from other recent CHP studies. For industrial customers, Resource Innovations assumed that the thermal load would primarily be used for process operations and was not modified from the secondary data sources for Florida climate conditions. For commercial customers, the thermal load is more commonly made up of water heating, space heating, and space cooling (through the use of an absorption chiller). Therefore, to account for the hot and humid climate in Florida, which traditionally limits weather-dependent internal heating loads, commercial customers' thermal loads were adjusted to incorporate a higher proportion of space cooling to space heating as available opportunities for waste heat recovery.

Resource Innovations worked with the utility-provided customer data, focusing on annual consumption due to the absence of NAICS or SIC codes for this utility data. Non-residential customers were subsequently classified based on annual consumption and size. Since NAICS or SIC codes were unavailable, no formal segmentation occurred. Instead, the analysis focused exclusively on annual utility usage. Facilities with annual loads below the kWh thresholds were deemed unlikely to possess the consistent electric and thermal loads necessary to support CHP and were consequently excluded from consideration. Conversely, those meeting the size criteria were aligned with the corresponding CHP technology.

In general, internal combustion engines are the prime mover for systems under 500kW with gas turbines becoming progressively more popular as system size increases above that. Based on the available load by customer, adjusted by the estimated thermal factor for each segment, CHP technologies were assigned to utility customers in a top-down fashion (*i.e.*, starting with the largest CHP generators).

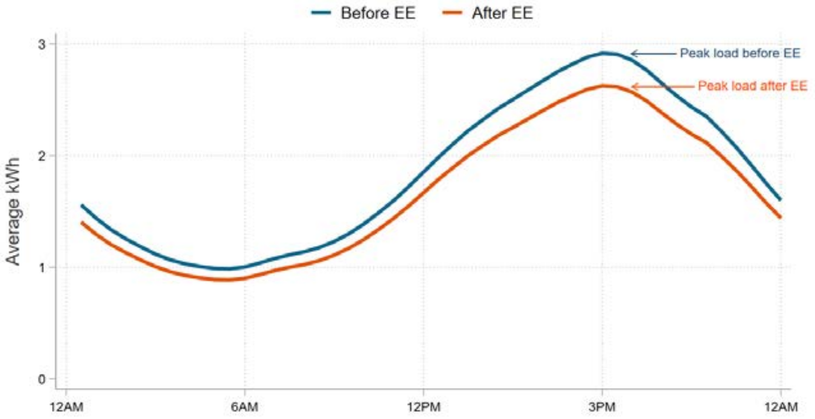
Measure Interaction

PV systems and battery storage charged from PV systems were analyzed collectively due to their common power generation source; and therefore, the identified technical potential for these systems is additive. However, CHP systems were independently analyzed for technical potential without consideration of the competition between DSRE technologies or customer preference for a particular DSRE system. Therefore, results for CHP technical potential should not be combined with PV systems or battery storage systems for overall DSRE potential but used as independent estimates.

5.1.4 Interaction of Technical Potential Impacts

As described above, the technical potential was estimated using separate models for EE, DR, and DSRE systems. However, there is interaction between these technologies; for example, a more efficient HVAC system would result in a reduced peak demand available for DR curtailment, as illustrated in Figure 10.

Figure 10: Illustration of EE Impacts on HVAC System Load Shape



Therefore, after development of the independent models, the interaction between EE, DR, and DSRE was incorporated as follows:

- The EE technical potential was assumed to be implemented first, followed by DR technical potential and DSRE technical potential.

- To account for the impact of EE technical potential on DR, the baseline load forecast for the applicable end-uses was adjusted by the EE technical potential, resulting in a reduction in baseline load available for curtailment.
- For DSRE systems, the EE and DR technical potential was incorporated in a similar fashion, adjusting the baseline load used to estimate DSRE potential.
  - For the PV analysis, this did not impact the results as the EE and DR technical potential did not affect the amount of PV that could be installed on available rooftops.
  - For the battery storage charged from PV systems, the reduced baseline load from EE resulted in additional PV-generated energy being available for the battery systems and for use during peak periods. The impact of DR events during the assumed curtailment hours was incorporated into the modeling of available battery storage and discharge loads.
- For CHP systems, the reduced baseline load from EE resulted in a reduction in the number of facilities that met the annual energy threshold needed for CHP installations. Installed DR capacity was assumed to not impact CHP potential as the CHP system feasibility was determined based on energy and thermal consumption at the facility. It should be noted that CHP systems not connected to the grid could impact the amount of load available for curtailment with utility-sponsored DR. Therefore, CHP technical potential should not be combined with DR potential but used as independent estimates.

5.2 EE Technical Potential

5.2.1 Summary

Table 9 summarizes the EE technical potential by sector:

Table 9. EE Technical Potential

	Savings Potential		
	Summer Peak Demand (MW)	Winter Peak Demand (MW)	Energy (GWh)
Residential	992	445	3,197
Non-Residential[6]	398	334	2,272
Total	1,390	779	5,469

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[6] Non-Residential results include all commercial and industrial customer segments.

5.2.2 Residential

Figure 11, Figure 12, and Figure 13 summarize the residential sector EE technical potential by end-use.

Figure 11: Residential EE Technical Potential by End-Use (Summer Peak Savings)

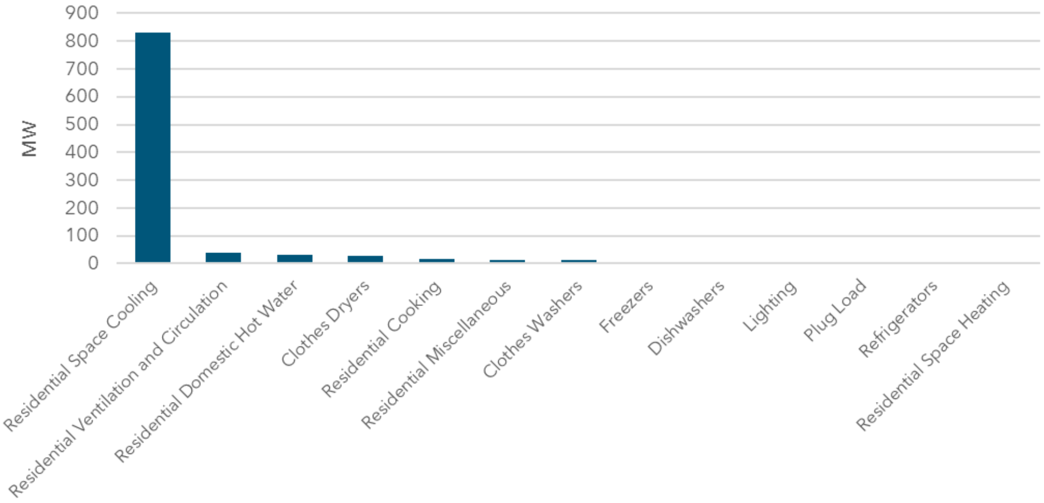


Figure 12: Residential EE Technical Potential by End-Use (Winter Peak Savings)

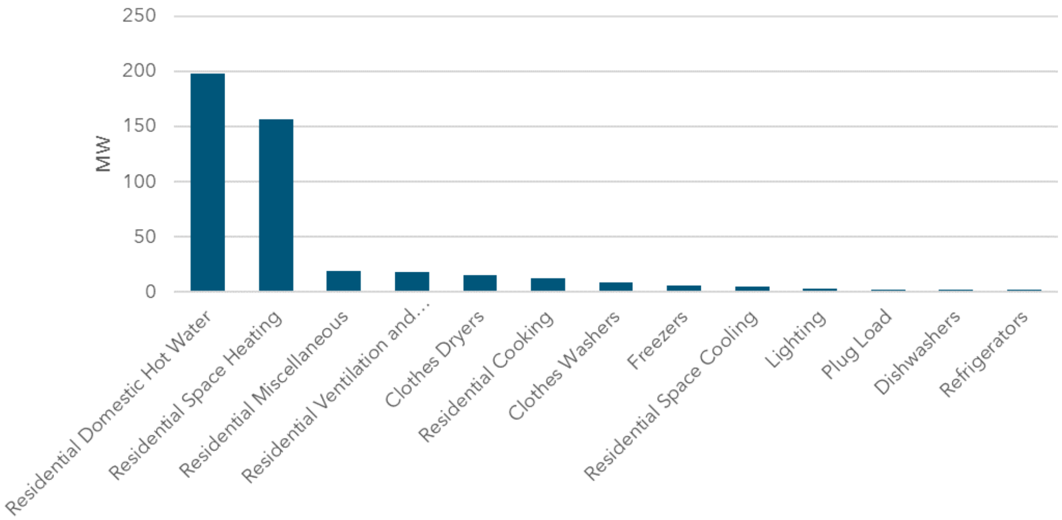
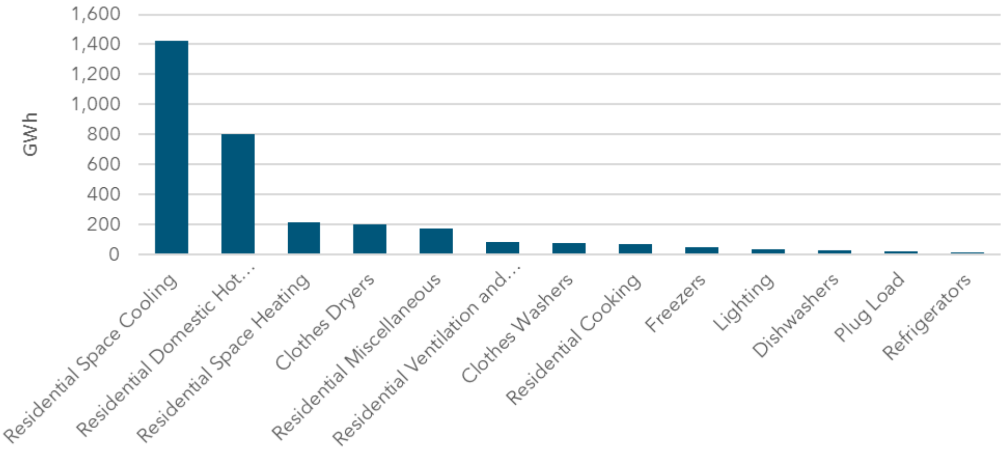


Figure 13: Residential EE Technical Potential by End-Use (Energy Savings)



5.2.3 Non-Residential

5.2.3.1 Commercial Segments

Figure 14, Figure 15, and Figure 16 summarize the commercial sector EE technical potential by end-use.

Figure 14: Commercial EE Technical Potential by End-Use (Summer Peak Savings)

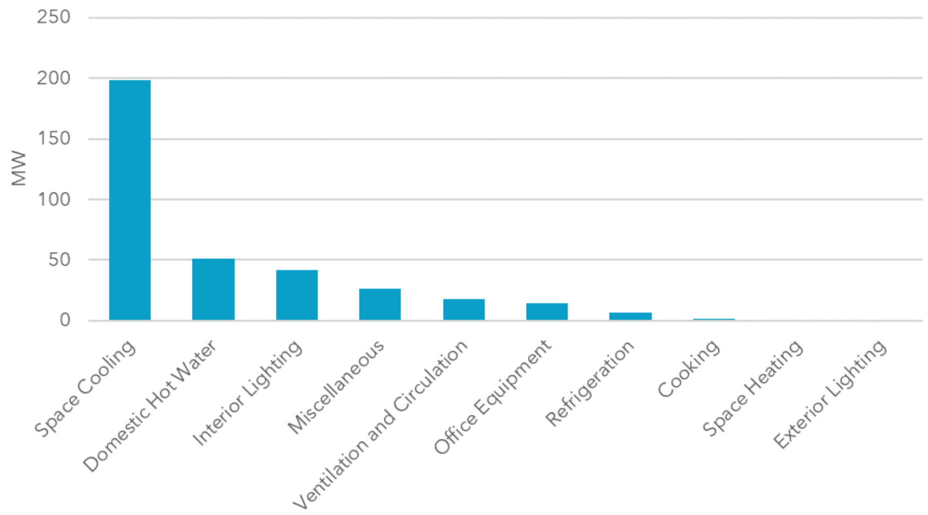


Figure 15: Commercial EE Technical Potential by End-Use (Winter Peak Savings)

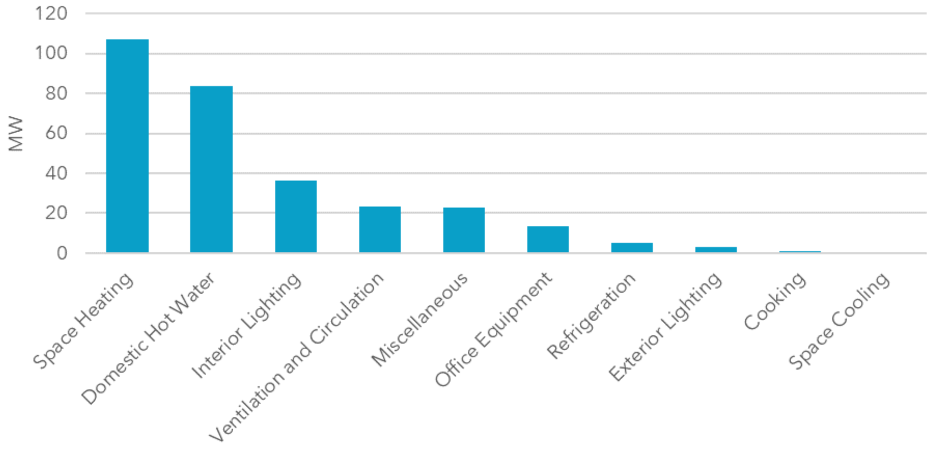
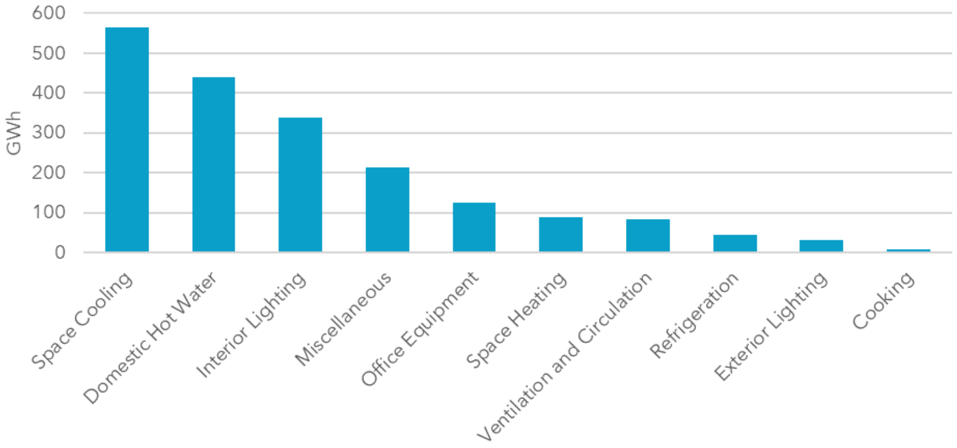


Figure 16: Commercial EE Technical Potential by End-Use (Energy Savings)



5.2.3.2 Industrial Segments

Figure 17, Figure 18, and Figure 19 summarize the industrial sector EE technical potential by end-use.

Figure 17: Industrial EE Technical Potential by End-Use (Summer Peak Savings)

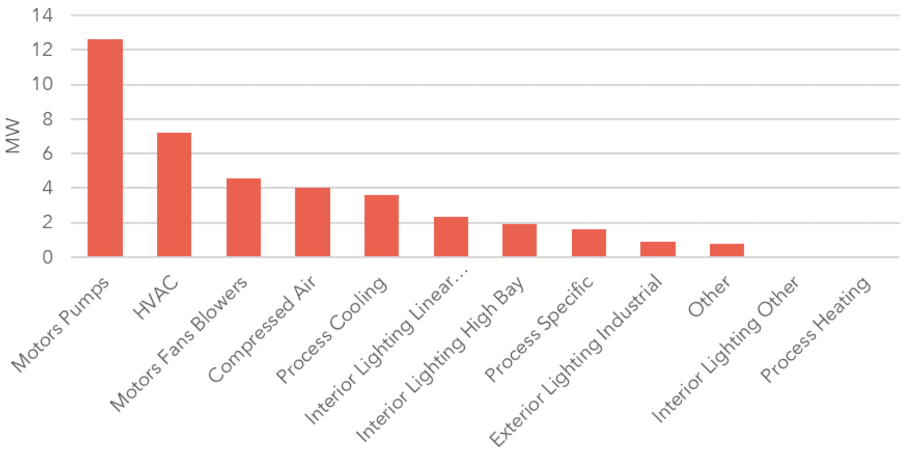


Figure 18: Industrial EE Technical Potential by End-Use (Winter Peak Savings)

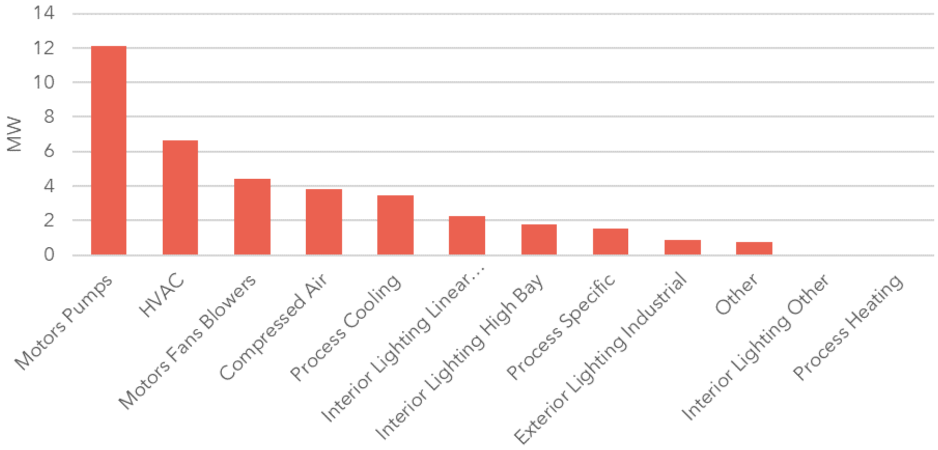
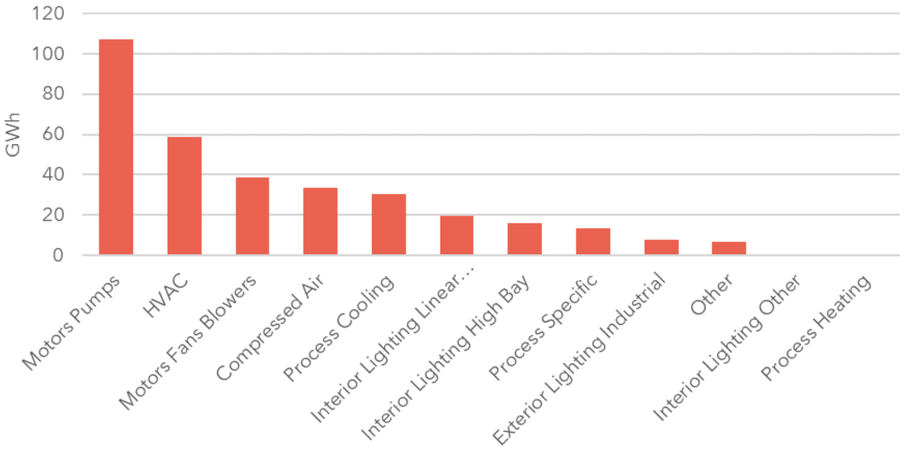


Figure 19: Industrial EE Technical Potential by End-Use (Energy Savings)



5.3 DR Technical Potential

Technical potential for DR is defined for each class of customers as follows:

- Residential & Small C&I customers – Technical potential is equal to the aggregate load for all end-uses that can participate in TECO's current programs plus DR measures not currently offered in which the utility uses specialized devices to control loads (*i.e.*, direct load control programs). This includes cooling and heating loads for residential and small C&I customers and water heater and pool pump loads for residential customers. Not all demand reductions are delivered via direct load control of end-uses. The magnitude of demand reductions from non-direct load control such as time varying pricing, peak time rebates and targeted notifications is linked to cooling and heating loads.
- Large C&I customers – Technical potential is equal to the total amount of load for each customer segment (*i.e.*, that customers reduce their total load to zero when called upon).

Table 10 summarizes the seasonal DR technical potential by sector:

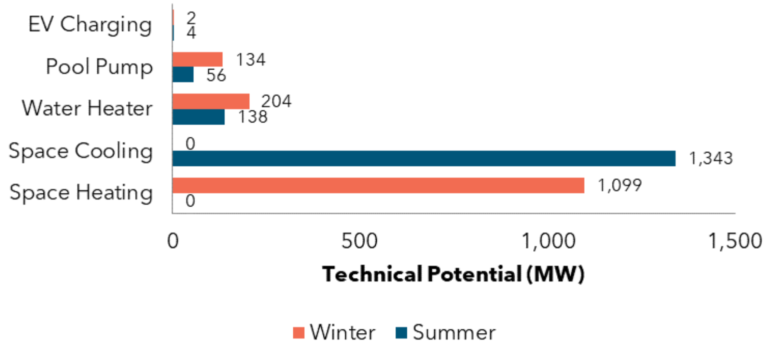
Table 10. DR Technical Potential

	Savings Potential	
	Summer Peak Demand (MW)	Winter Peak Demand (MW)
Residential	1,541	1,439
Non-Residential	1,571	1,691
Total	3,112	3,130

5.3.1 Residential

Residential technical potential is summarized in Figure 20.

Figure 20: Residential DR Technical Potential by End-Use

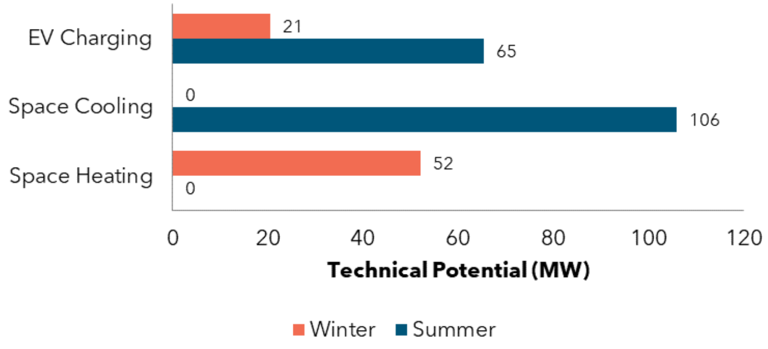


5.3.2 Non-Residential

5.3.2.1 Small C&I Customers

For small C&I technical potential, Resource Innovations looked at cooling and heating loads only. Small C&I technical potential is provided in Figure 21.

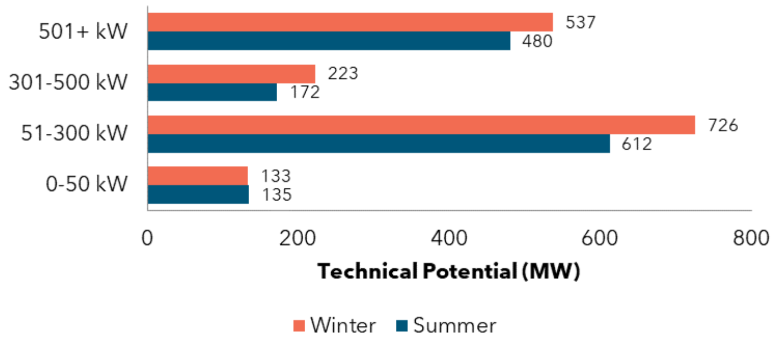
Figure 21: Small C&I DR Technical Potential by End-Use



5.3.2.2 Large C&I Customers

Figure 22 provides the technical potential for large C&I customers, broken down by customer size.

Figure 22: Large C&I DR Technical Potential by Segment



5.4 DSRE Technical Potential

Table 11 provides the results of the DSRE technical potential for each customer segment:

Table 11. DSRE Technical Potential[7]

	Savings Potential		
	Summer Peak Demand (MW)	Winter Peak Demand (MW)	Energy (GWh)
PV Systems			
Residential	484	51	8,000
Non-Residential	165	6	2,236
Total	649	57	10,236
Battery Storage charged from PV Systems			
Residential	598	876	0
Non-Residential	120	205	0
Total	718	1081	0
CHP Systems			
Total	358	286	1,768

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[7] PV systems and CHP systems were independently analyzed for technical potential without consideration of the competition between technologies or customer preference for DSRE system.

Appendix A EE Measure List

For information on how Resource Innovations developed this list, please see Section 4.

Table 12: Residential EE Measures

Measure	End-Use	Description	Baseline
120v Heat Pump Water Heater 50 Gallons	Residential Domestic Hot Water	120v Heat Pump Water Heater 50 Gallons	Code-Compliant 50 Gallon Electric Resistance Water Heater
Air Sealing-Infiltration Control	Residential Space Cooling, Residential Space Heating	Standard Heating and Cooling System with Improved Infiltration Control	Standard Heating and Cooling System with Standard Infiltration Control
Air-to-Water Heat Pump	Residential Space Cooling, Residential Space Heating	Energy Star Air-to-Water Heat Pump, 25 SEER, 13 HSPF	Code-Compliant ASHP, 15 SEER, 8.8 HSPF (updated)
ASHP - 15 SEER/14.3 SEER2 from base electric resistance	Residential Space Cooling, Residential Space Heating	ASHP 15 SEER from base electric resistance	Base AC, 15 SEER, Electric resistance heating
ASHP - 24 SEER/22.9 SEER2 (from elec resistance)	Residential Space Cooling, Residential Space Heating	ASHP: 24/22.9 SEER/SEER2, 10.5 HSPF	Base AC, 15 SEER, Electric resistance heating
ASHP - 24 SEER/22.9 SEER2, 10.5 HSPF	Residential Space Cooling, Residential Space Heating	ASHP: 24/22.9 SEER/SEER2, 10.5 HSPF	Code-Compliant ASHP, 15 SEER, 8.8 HSPF (updated)
ASHP - CEE Advanced Tier: 17.8 SEER/17 SEER2; 10.0 HSPF	Residential Space Cooling, Residential Space Heating	CEE Advanced Tier ASHP:17.8/17 SEER/SEER2; 10.0 HSPF	Code-Compliant ASHP, 15 SEER, 8.8 HSPF (updated)
ASHP - CEE Advanced Tier: 17.8 SEER/17 SEER2; 10.0 HSPF (from elec resistance)	Residential Space Cooling, Residential Space Heating	CEE Advanced Tier ASHP:17.8/17 SEER/SEER2; 10.0 HSPF	Base AC, 15 SEER, Electric resistance heating
ASHP - CEE Tier 2: 16.8 SEER/16 SEER2; 9.0 HSPF	Residential Space Cooling, Residential Space Heating	CEE Tier 2 ASHP: 16.8/16 SEER/SEER2; 9.0 HSPF	Code-Compliant ASHP, 15 SEER, 8.8 HSPF (updated)
ASHP - CEE Tier 2: 16.8 SEER/16 SEER2; 9.0 HSPF (from elec resistance)	Residential Space Cooling, Residential Space Heating	CEE Tier 2 ASHP: 16.8/16 SEER/SEER2; 9.0 HSPF	Base AC, 15 SEER, Electric resistance heating

Measure	End-Use	Description	Baseline
ASHP - ENERGY STAR/CEE Tier 1: 16 SEER/15.2 SEER2 (from elect resistance)	Residential Space Cooling, Residential Space Heating	ENERGY STAR/CEE Tier 1 ASHP: 16/15.2 SEER/SEER2, 9.0 HSPF	Base AC, 15 SEER, Electric resistance heating
ASHP - ENERGY STAR/CEE Tier 1: 16 SEER/15.2 SEER2, 9.0 HSPF	Residential Space Cooling, Residential Space Heating	ENERGY STAR/CEE Tier 1 ASHP: 16/15.2 SEER/SEER2, 9.0 HSPF	Code-Compliant ASHP, 15 SEER, 8.8 HSPF (updated)
Basement or Crawlspace Wall Insulation R-15	Residential Space Cooling, Residential Space Heating	Increased Basement or Crawlspace Wall Insulation (R-15)	Code-Compliant Exterior Below-Grade Wall Insulation (R-10)
Bathroom Faucet Aerators	Residential Domestic Hot Water	Low-Flow Faucet Aerator with Flow Rate of 1.5 gpm	Faucet Aerator with Federal Standard Flow Rate of 2.2 gpm
CEE Advanced Tier Clothes Dryer	Clothes Dryers	CEE Advanced Tier Clothes Dryer	One Clothes Dryer meeting Federal Standard
CEE Advanced Tier Clothes Washer	Clothes Washers	Tier 3 CEE Clothes washer	One Clothes Washer meeting Federal Standard
CEE Tier 3 Refrigerator	Refrigerators	Residential Tier 3 Refrigerator	One Refrigerator meeting Federal Standard
Ceiling Insulation (R11 to R38)	Residential Space Cooling, Residential Space Heating	Blown-in insulation in ceiling cavity/attic, existing (1982-1985) homes	Existing ceiling insulation based on building code at time of construction
Ceiling Insulation (R11 to R49)	Residential Space Cooling, Residential Space Heating	Blown-in insulation in ceiling cavity/attic, existing (1982-1985) homes - Beyond Code	Existing ceiling insulation based on building code at time of construction
Ceiling Insulation (R19 to R38)	Residential Space Cooling, Residential Space Heating	Blown-in insulation in ceiling cavity/attic, existing (1982-2020) homes	Existing ceiling insulation based on building code at time of construction
Ceiling Insulation (R19 to R49)	Residential Space Cooling, Residential Space Heating	Blown-in insulation in ceiling cavity/attic, existing (1982-2020) homes - Beyond Code	Existing ceiling insulation based on building code at time of construction
Ceiling Insulation (R2 to R38)	Residential Space Cooling, Residential Space Heating	Blown-in insulation in ceiling cavity/attic, older (pre-1982) homes	Existing ceiling insulation based on building code at time of construction
Ceiling Insulation (R2 to R49)	Residential Space Cooling, Residential Space Heating	Blown-in insulation in ceiling cavity/attic, older (pre-1982) homes - Beyond Code	Existing ceiling insulation based on building code at time of construction
Ceiling Insulation (R30 to R38)	Residential Space Cooling, Residential Space Heating	Blown-in insulation in ceiling cavity/attic, existing (1986-2020) homes	Existing ceiling insulation based on building code at time of construction
Ceiling Insulation (R30 to R49)	Residential Space Cooling, Residential Space Heating	Blown-in insulation in ceiling cavity/attic, existing (1986-2020) homes - Beyond Code	Existing ceiling insulation based on building code at time of construction

Measure	End-Use	Description	Baseline
Ceiling Insulation (R38 to R49)	Residential Space Cooling, Residential Space Heating	Blown-in insulation in ceiling cavity/attic, existing (1986-2020) homes - Beyond Code	Existing ceiling insulation based on building code at time of construction
Central AC - CEE Tier 2: 16.8 SEER/16 SEER2	Residential Space Cooling	Central AC - CEE Tier 2: 16.8 SEER/16 SEER2	Code-Compliant Central AC, 15 SEER (updated)
Central AC - 24 SEER/22.9 SEER2	Residential Space Cooling	Central AC - 24 SEER/22.9 SEER2	Code-Compliant Central AC, 15 SEER (updated)
Central AC - CEE Advanced Tier: 17.8 SEER/17 SEER2	Residential Space Cooling	Central AC - CEE Advanced Tier: 17.8 SEER/17 SEER2	Code-Compliant Central AC, 15 SEER (updated)
Central AC - ENERGY STAR/CEE Tier 1: 16 SEER/15.2 SEER2	Residential Space Cooling	Central AC - ENERGY STAR/CEE Tier 1: 16 SEER/15.2 SEER2	Code-Compliant Central AC, 15 SEER (updated)
Central AC Tune Up	Residential Space Cooling	System tune-up, including coil cleaning, refrigerant charging, and other diagnostics	Existing Typical Central AC without Regular Maintenance/tune-up
Dehumidifier Recycling	Plug Load	No dehumidifier	One Dehumidifier meeting Federal Standard
Drain Water Heat Recovery	Residential Domestic Hot Water	50 Gallon Electric Resistance Heater and Drain Water Heat Exchanger	50 Gallon Electric Resistance Heater, No Drain Water Heat Recovery
Duct Insulation	Residential Space Cooling, Residential Space Heating	Standard Electric Heating and Central AC with Insulated Ductwork	Standard Electric Heating and Central AC with Uninsulated Ductwork
Duct Repair	Residential Space Cooling, Residential Space Heating	Duct Repair to eliminate/minimize leaks, includes testing and sealing	Standard Electric Heating and Central AC with typical duct leakage
ECM Circulator Pump	Residential Miscellaneous	Install ECM Circulator Pump	Install Standard Circulator Pump
Energy Star Air Purifier	Plug Load	One Air Purifier meeting ENERGY STAR 2.0 Standards	One Standard Conventional Air Purifier
Energy Star Audio-Video Equipment	Plug Load	One DVD/Blu-Ray Player meeting current ENERGY STAR Standards	One Market Average DVD/Blu-Ray Player
Energy Star Bathroom Ventilating Fan	Residential Ventilation and Circulation	Bathroom Exhaust Fan meeting current ENERGY STAR Standards	Bathroom Exhaust Fan meeting Federal Standard
Energy Star Ceiling Fan	Residential Miscellaneous	60" Ceiling Fan Meeting ENERGY STAR 3.1 Standards	Standard 60" Ceiling Fan
Energy Star Clothes Dryer	Clothes Dryers	One Electric Resistance Clothes Dryer meeting ENERGY STAR 1.1 Standards	One Clothes Dryer meeting Federal Standard

Measure	End-Use	Description	Baseline
Energy Star Clothes Washer	Clothes Washers	One Clothes Washer meeting ENERGY STAR 8.1 Standards	One Clothes Washer meeting Federal Standard
Energy Star Dehumidifier	Plug Load	One Dehumidifier meeting ENERGY STAR 5.0 Standards	One Dehumidifier meeting Federal Standard
Energy Star Dishwasher	Dishwashers	One Dishwasher meeting ENERGY STAR 7.0 Requirements (effective on July 19, 2023), electric water heating	One Dishwasher meeting Federal Standard
Energy Star Dishwasher (Gas Water Heating)	Dishwashers	One Dishwasher meeting ENERGY STAR 7.0 Requirements, gas water heating	One Dishwasher meeting Federal Standard; gas water heating
Energy Star Door	Residential Space Cooling, Residential Space Heating	100ft2 of Opaque Door meeting Energy Star Version 6.0 Requirements (U-Value: 0.17)	100ft2 of Opaque Door meeting current FL Code Requirements
ENERGY STAR EV supply equipment (level 2 charger)	Residential Miscellaneous	Level 2 Electric Vehicle Supply Equipment (EVSE)	Level 1 Electric Vehicle Supply Equipment (EVSE)
Energy Star Freezer	Freezers	One Freezer meeting current ENERGY STAR 5.1 Standards	One Freezer meeting Federal Standard
Energy Star Ground Source Heat Pump	Residential Space Cooling, Residential Space Heating	Energy Star GSHP, 17.1 SEER, 12 HSPF	Code-Compliant ASHP, 15 SEER, 8.8 HSPF
Energy Star Imaging Equipment	Plug Load	One imaging device meeting current ENERGY STAR Standards	One non-ENERGY STAR imaging device
Energy Star Monitor	Plug Load	One Monitor meeting ENERGY STAR 8.0 Standards	One Standard Monitor
Energy Star Personal Computer	Plug Load	One Personal Computer meeting ENERGY STAR 8.0 Standards	One Personal Computer meeting ENERGY STARÂ® 3.0 Standards
Energy Star Refrigerator	Refrigerators	One Refrigerator/Freezer meeting ENERGY STAR 5.1 Standards	One Refrigerator/Freezer meeting Federal Standard
Energy Star Room AC	Residential Space Cooling	Room AC meeting current ENERGY STAR standards	Code-Compliant Room AC
Energy Star Set-Top Receiver	Plug Load	One Set-top Box meeting ENERGY STAR 4.1 Standards	One Market Average Set-top Box
Energy Star TV	Plug Load	One Television meeting ENERGY STAR 9.0 Standards	One non-ENERGY STAR Television
Energy Star Windows	Residential Space Cooling, Residential Space Heating	100ft2 of Window meeting Energy Star Version 6.0 Requirements (U-Value: 0.27, SHGC: 0.21)	100ft2 of Window current FL energy code requirements

Measure	End-Use	Description	Baseline
Exterior Wall Insulation	Residential Space Cooling, Residential Space Heating	Increased Exterior Above-Grade Wall Insulation (R-13)	Market Average Existing Exterior Above-Grade Wall Insulation
Filter Whistle	Residential Ventilation and Circulation	Install the Furnace Filter Alarm	No Furnace Filter Alarm on a Central Forced-Air Furnace
Floor Insulation	Residential Space Heating	Increased Floor Insulation (R-30)	Code-Compliant Floor Insulation
Freezer Recycling	Freezers	No Freezer	Current Market Freezer
Green Roof	Residential Space Cooling	Vegetated Roof Surface on top of Standard Roof	Standard Black Roof
Heat Pump Clothes Dryer	Clothes Dryers	One Heat Pump Clothes Dryer	One Clothes Dryer meeting Federal Standard
Heat Pump Pool Heater	Residential Miscellaneous	Heat Pump Swimming Pool Heater	Electric Resistance Swimming Pool Heater
Heat Pump Tune Up	Residential Space Cooling, Residential Space Heating	System tune-up, including coil cleaning, refrigerant charging, and other diagnostics	Standard Heating and Cooling System without Regular Maintenance/tune-up
Heat Pump Water Heater 50 Gallons-CEE Advanced Tier	Residential Domestic Hot Water	CEE Advanced Tier Heat Pump Water Heater 50 Gallons	Code-Compliant 50 Gallon Electric Resistance Water Heater
Heat Pump Water Heater 50 Gallons-ENERGY STAR	Residential Domestic Hot Water	Heat Pump Water Heater 50 Gallons	Code-Compliant 50 Gallon Electric Resistance Water Heater
Heat Pump Water Heater 80 Gallons-ENERGY STAR	Residential Domestic Hot Water	Energy Star Heat Pump Water Heater 80 Gallons	Code-Compliant 80 Gallon Electric Resistance Water Heater
Heat Trap	Residential Domestic Hot Water	Heat Trap	Existing Water Heater without heat trap
High Efficiency Convection Oven	Residential Cooking	One Full-Size Convection Oven meeting ENERGY STAR 3.0 Standards	One Standard Economy-Grade Full-Size Oven
High Efficiency Induction Cooktop	Residential Cooking	One residential induction cooktop	One standard residential electric cooktop
Home Energy Management System	Lighting, Plug Load, Residential Space Cooling, Residential Space Heating	Typical HVAC by Building Type Controlled by Energy Management System	Typical HVAC by Building Type, Manually Controlled
Hot Water Pipe Insulation	Residential Domestic Hot Water	1' of Insulated Pipe in Unconditioned Spaces, Insulation of R-5	1' of Pipe in Unconditioned Spaces with Code Minimum of 1"of Insulation
HVAC ECM Motor	Residential Ventilation and Circulation	A brushless permanent magnet (ECM) blower motor for electric furnace	Permanent Split Capacitor Motor for Electric Furnace
HVAC Economizer	Residential Space Cooling	Install residential economizer	No economizer

Measure	End-Use	Description	Baseline
HVAC Zoning System	Residential Space Cooling, Residential Space Heating	Install dampers in the ducts, dividing home into multiple zones, each controlled by its own thermostat	Single zone HVAC system
Indoor Daylight Sensor	Lighting	Install Indoor Daylight Sensors, 500 Watts Controlled	500 Watts of Lighting, Manually Controlled
Induction Range	Residential Cooking	Residential induction range	Electric range
Instantaneous Hot Water System	Residential Domestic Hot Water	Instantaneous Hot Water System	Standard Efficiency Storage Tank Water Heater
Kitchen Faucet Aerators	Residential Domestic Hot Water	Low-Flow Faucet Aerator with Flow Rate of 1.5 gpm	Faucet Aerator with Federal Standard Flow Rate of 2.2 gpm
LED - 9W_CFL Baseline	Lighting	LED (assume 9W) replacing CFL baseline lamp	14W CFL (60W equivalent)
LED - 9W_Halogen Baseline	Lighting	LED (assume 9W) replacing EISA-2020 compliant baseline lamp	EISA-2020 compliant baseline lamp (60W equivalent)
LED Specialty Lamps-5W Chandelier	Lighting	5 W Chandelier LED	Standard incandescent chandelier lamp
Linear LED	Lighting	Linear LED Lamps in Linear Fluorescent Fixture	Standard (32w) T8 lamps in Linear Fluorescent Fixture
Low Flow Showerhead	Residential Domestic Hot Water	Low-Flow Handheld Showerhead, Flow Rate: 1.60 gpm	Standard Handheld Showerhead, Flow Rate: 2.50 gpm
New Construction - Whole Home Improvements - Tier 1	Whole Home	Performance-based improvements in new homes - 20% savings	Residential New Construction (Baseline Efficiency)
New Construction - Whole Home Improvements - Tier 2	Whole Home	Performance-based improvements in new homes - 35% savings	Residential New Construction (Baseline Efficiency)
Occupancy Sensors Switch Mounted	Lighting	Switch Mounted Occupancy Sensor, 500 Watts Controlled	500 Watts of Lighting, Manually Controlled
Outdoor Lighting Timer	Lighting	Timer on Outdoor Lighting, Controlling 120 Watts	120 Watts of Lighting, Manually Controlled
Outdoor Motion Sensor	Lighting	Motion Sensor on Outdoor Lighting, Controlling 120 Watts	120 Watts of Lighting, Manually Controlled
Ozone Laundry	Clothes Washers	Add a New, Single-Unit Ozone Laundry System to the Clothes Washer	One Clothes Washer meeting Federal Standard

Measure	End-Use	Description	Baseline
Programmable Thermostat	Residential Space Cooling, Residential Space Heating	Standard Heating and Cooling System with Programmable Thermostat	Standard Heating and Cooling System with Manual Thermostat
Properly Sized CAC	Residential Space Cooling	Properly Sized Central Air Conditioning	Standard Central Air Conditioning, Oversized
Radiant Barrier	Residential Space Cooling	Radiant Barrier	No radiant barrier
Reflective Roof	Residential Space Cooling	Reflective Roof Treatment	Standard dark shingle
Refrigerator Coil Cleaning	Refrigerators	Refrigerator Coil Cleaning	
Refrigerator Recycling	Refrigerators	No Refrigerator	Current Market Average Refrigerator
Residential Whole House Fan	Residential Space Cooling	Standard Central Air Conditioning with Whole House Fan	Standard Central Air Conditioning, No Whole House Fan
Sealed crawlspace	Residential Space Cooling, Residential Space Heating	Encapsulated and semi-conditioned crawlspace	Naturally vented, unconditioned crawlspace
Smart Breaker	Whole Home	Smart Breaker	standard electric breakers
Smart Panel	Whole Home	Multi-channel device that attaches to customer's circuit breaker to enable monitoring and control of major end-use appliances by customer	standard electric panel
Smart Power Strip	Plug Load	Smart plug strips for entertainment centers and home office	Standard entertainment center or home office usage, no smart strip controls
Smart Thermostat	Residential Space Cooling, Residential Space Heating	Standard Heating and Cooling System with Smart Thermostat	Standard Heating and Cooling System with Manual Thermostat
Solar Attic Fan	Residential Space Cooling	Standard Central Air Conditioning with Solar Attic Fan	Standard Central Air Conditioning, No Solar Attic Fan
Solar Pool Heater	Residential Miscellaneous	Solar Swimming Pool Heater	Electric Resistance Swimming Pool Heater
Solar Powered Pool Pumps	Residential Miscellaneous	Solar Powered Pool Pump	Variable Speed Pool Pump Motor
Solar Thermal Water Heating System	Residential Domestic Hot Water	Solar Thermal System with Electric Backup	Code-Compliant 50 Gallon Electric Resistance Water Heater
Spray Foam Insulation(Base R11)	Residential Space Cooling, Residential Space Heating	Open cell spray foam along roofline in existing (1982-1985) homes	Existing ceiling insulation based on building code at time of construction
Spray Foam Insulation(Base R19)	Residential Space Cooling, Residential Space Heating	Open cell spray foam along roofline in existing (1982-1985) homes	Existing ceiling insulation based on building code at time of construction

Measure	End-Use	Description	Baseline
Spray Foam Insulation(Base R2)	Residential Space Cooling, Residential Space Heating	Open cell spray foam along roofline in older (pre-1982) homes	Existing ceiling insulation based on building code at time of construction
Spray Foam Insulation(Base R30)	Residential Space Cooling, Residential Space Heating	Open cell spray foam along roofline in existing (1986-2020) homes	Existing ceiling insulation based on building code at time of construction
Thermostatic Shower Restriction Valve	Residential Domestic Hot Water	50 Gallon Electric Resistance Heater and Thermostatic Shower Valves	50 Gallon Electric Resistance Heater and Standard Shower Valves
Variable Refrigerant Flow (VRF) HVAC Systems	Residential Space Cooling, Residential Space Heating	Variable Refrigerant Flow (VRF) HVAC Systems	Code-Compliant ASHP, 15 SEER, 8.8 HSPF
Water Heater Blanket	Residential Domestic Hot Water	50 Gallon Electric Resistance Water Heater with Insulated Tank Wrap	Code-Compliant 50 Gallon Electric Resistance Water Heater, No Tank Wrap
Water Heater Thermostat Setback	Residential Domestic Hot Water	50 Gallon Electric Resistance Water Heater with Temperature Setpoint of 119°F	Code-Compliant 50 Gallon Electric Resistance Water Heater (Temp. Setpoint = 130Â°F)
Water Heater Timeclock	Residential Domestic Hot Water	Water Heater Timeclock	Existing Water Heater without time clock
Weather stripping	Residential Space Cooling, Residential Space Heating	Specific quantity of weather stripping to seal	
Window Caulking	Residential Space Cooling, Residential Space Heating	Window caulking	
Window Sun Protection	Residential Space Cooling	Window Film Applied to Standard Window	Standard Window with below Code Required Minimum SHGC

Table 13: Commercial EE Measures

Measure	End-Use	Description	Baseline
1.5HP Open Drip-Proof (ODP) Motor	Ventilation and Circulation	High Efficiency 1.5 HP Open-Drip Proof Motor	1.5HP Open-Drip Proof Motor with Current Minimum EPACT Efficiency
10HP Open Drip-Proof (ODP) Motor	Ventilation and Circulation	High Efficiency 10 HP Open-Drip Proof Motor	10HP Open-Drip Proof Motor with Current Minimum EPACT Efficiency
20HP Open Drip-Proof (ODP) Motor	Ventilation and Circulation	High Efficiency 20 HP Open-Drip Proof Motor	20HP Open-Drip Proof Motor with Current Minimum EPACT Efficiency

Measure	End-Use	Description	Baseline
Advanced Rooftop Controller	Ventilation and Circulation	Advanced Rooftop Controller	Without Advanced Rooftop Controller
Air Compressor Optimization	Miscellaneous	Performing Routine Maintenance on 20HP Inlet Modulation Fixed-Speed Compressor	20 HP Inlet Modulation Fixed-Speed Compressor
Air Curtains	Space Cooling, Space Heating	Air Curtain across door opening	Door opening with no air curtain
Airside Economizer	Space Cooling	Airside Economizer	No economizer
Anti-Sweat Controls	Refrigeration	One Medium Temperature Reach-In Case with Anti-Sweat Heater Controls	One Medium Temperature Reach-In Case without Anti-Sweat Heater Controls
Auto Off Time Switch	Interior Lighting	Auto-Off Time Switch on Interior Lighting, 500 Watts Controlled	500 Watts of Lighting, Manually Controlled
Automatic Door Closer for Walk-in Coolers and Freezers	Refrigeration	One Medium Temperature Walk-In Refrigerator Door with Auto-Closer	One Medium Temperature Walk-In Refrigerator Door without Auto-Closer
Beverage Vending Machine Controls	Refrigeration	One non-ENERGY STAR beverage vending machine equipped with infrared occupancy sensing controls	One non-ENERGY STAR beverage vending machine, no controls
Bi-Level Lighting Control (Exterior)	Exterior Lighting	Bi-Level Controls on Exterior Lighting, 500 Watts Controlled	500 Watts of Lighting, Manually Controlled
Bi-Level Lighting Control (Interior)	Interior Lighting	Bi-Level Controls on Interior Lighting, 500 Watts Controlled	500 Watts of Lighting, Manually Controlled
Ceiling Insulation(R19 to R38)	Space Cooling, Space Heating	Blown-in insulation in ceiling cavity/attic	Market Average Existing Ceiling Insulation in older steep slope, residential style commercial building
Ceiling Insulation(R19 to R49)	Space Cooling, Space Heating	Blown-in insulation in ceiling cavity/attic - Beyond Code	Market Average Existing Ceiling Insulation in older steep slope, residential style commercial building
Ceiling Insulation(R2 to R38)	Space Cooling, Space Heating	Blown-in insulation in ceiling cavity/attic	Market Average Existing Ceiling Insulation in older steep slope, residential style commercial building
Ceiling Insulation(R2 to R49)	Space Cooling, Space Heating	Blown-in insulation in ceiling cavity/attic - Beyond Code	Market Average Existing Ceiling Insulation in older steep slope, residential style commercial building

Measure	End-Use	Description	Baseline
Chilled Water Reset	Space Cooling	One Chiller with Reset of Chilled Water Temperature Setpoint	One Chiller with Fixed Chilled Water Temperature
Chiller maintenance	Space Cooling	O&M improvements to restore chiller performance	
CO Sensors for Parking Garage Exhaust	Miscellaneous	Enclosed Parking Garage Exhaust with CO Control	Constant Volume Enclosed Parking Garage Exhaust
Commercial Duct Sealing	Space Cooling, Space Heating	Standard Electric Heating and Central AC with Improved Duct Sealing	Standard Electric Heating and Central AC, Standard Duct Sealing
Commercial Strategic Energy Management	Whole Building	Commercial Strategic Energy Management	No active energy management
Custom measure - Non-lighting	Space Cooling, Space Heating	Custom Improvement to Facility's Operations	Baseline Technology/Process
Data Center Hot Cold Aisle	Office Equipment	Equipment configuration that saves HVAC	No hot, cold aisle containment
Dedicated Outside Air System (DOAS)	Space Cooling, Space Heating	Install Dedicated Outside Air System (DOAS)	Typical HVAC by Building Type
Demand Controlled Circulating Systems	Domestic Hot Water	Recirculation Pump with Demand Control Mechanism	Uncontrolled Recirculation Pump
Demand Controlled Ventilation	Ventilation and Circulation	Return Air System with CO2 Sensors	Standard Return Air System, No Sensors
Demand Defrost	Refrigeration	Walk-In Freezer System with Demand-Controlled Electric Defrost Cycle	Walk-In Freezer System with Timer-Controlled Electric Defrost Cycle
Destratification Fans	Space Heating	Destratification Fans improve temperature distribution by circulating warmer air from the ceiling back down to the floor level	No destratification fan
Door Gasket (Cooler)	Refrigeration	New Door Gasket on One-Door Medium Temperature Reach-In Case	Worn or Damaged Door Gasket on One-Door Medium Temperature Reach-In Case
Door Gasket (Freezer)	Refrigeration	New Door Gasket on One-Door Medium Temperature Reach-In Case	Worn or Damaged Door Gasket on One-Door Medium Temperature Reach-In Case
Drain water heat recovery	Domestic Hot Water	Hot Water Loop with 50 Gallon Electric Resistance Heater and Drain Water Heat Exchanger	Standard Hot Water Loop with 50 Gallon Electric Resistance Heater, No Drain Water Heat Recovery
Dual Enthalpy Economizer	Ventilation and Circulation	Standard HVAC Unit with an economizer and dual enthalpy differential control	HVAC unit with no economizer or with a non-functional disabled economizer

Measure	End-Use	Description	Baseline
Duct Insulation	Space Cooling, Space Heating	Standard Electric Heating and Central AC with Insulated Ductwork (R-8)	Standard Electric Heating and Central AC with Uninsulated Ductwork (R-4)
Ductless Mini-Split AC	Space Cooling	Ductless Mini-Split AC, 4 Ton, 16 SEER	Code-Compliant AC Unit, 4 Ton, 15 SEER
Ductless Mini-Split HP	Space Cooling, Space Heating	Ductless Mini-Split HP, 17 SEER, 9.5 HSPF	Code-Compliant ASHP, 15 SEER, 8.8 HSPF
DX Coil Cleaning	Space Cooling	DX Coil Cleaning	DX Coil Not Cleaned
ECM Motors on Furnaces	Space Heating	Variable Speed Electronically Commutated Motor for an Electric Furnace	Permanent Split Capacitor Motor for Electric Furnace
Efficient Battery Charger	Miscellaneous	Efficient Battery Charger	FR or SCR charging stations with power conversion efficiency < 89% or > 10 W
Efficient Exhaust Hood	Cooking	Kitchen ventilation with automatically adjusting fan controls	Kitchen ventilation with constant speed ventilation motor
Efficient Motor Belts	Miscellaneous	Synchronous belt, 98% efficiency	Standard V-belt drive
Efficient New Construction Lighting	Interior Lighting	Efficient New Construction Lighting, 15% Better than Code	New Construction with Lighting Power Density meeting Code Minimum
Energy Recovery Ventilation System (ERV)	Space Cooling	Unitary Cooling Equipment that Incorporates Energy Recovery	Current Market Packaged or Split DX Unit
Energy Star Combination Oven	Cooking	Energy Star Combination Oven meeting ENERGY STAR Version 3.0 Standards	One Standard Economy-Grade 10-Pan Combination Oven
Energy Star Commercial Clothes Washer	Miscellaneous	One Commercial Clothes Washer meeting current ENERGY STAR Version 8.1 Standards	One Commercial Clothes Washer meeting Federal Standard
Energy Star Commercial Dishwasher	Domestic Hot Water	One Commercial Dishwasher meeting ENERGY STAR Version 3.0 Standards	One Dishwasher meeting Federal Standard
Energy Star Commercial Glass Door Freezer	Refrigeration	One Glass Door Freezer meeting ENERGY STAR Version 5.0 Standards	One Glass Door Freezer meeting Federal Standards
Energy Star Commercial Glass Door Refrigerator	Refrigeration	One Glass Door Refrigerator meeting ENERGY STAR Version 5.0 Standards	One Glass Door Refrigerator meeting Federal Standards
Energy Star Commercial Solid Door Freezer	Refrigeration	One Solid Door Freezer meeting ENERGY STAR Version 5.0 Standards	One Solid Door Freezer meeting Federal Standards
Energy Star Commercial Solid Door Refrigerator	Refrigeration	One Solid Door Refrigerator meeting ENERGY STAR Version 5.0 Standards	One Solid Door Refrigerator meeting Federal Standards

Measure	End-Use	Description	Baseline
Energy Star convection oven	Cooking	Energy Star convection oven meeting ENERGY STAR Version 3.0 Standards	One Standard Economy-Grade Full-Size Convection Oven
Energy Star EV Chargers	Miscellaneous	Level 2 Electric Vehicle Supply Equipment (EVSE)	Level 1 Electric Vehicle Supply Equipment (EVSE)
Energy Star Fryer	Cooking	One Standard Vat Electric Fryer meeting ENERGY STAR Version 3.0 Standards	One Standard Economy-Grade Standard Vat Electric Fryer
Energy Star Griddle	Cooking	One Griddle meeting current ENERGY STAR Version 1.2 Standards	One Conventional Griddle
Energy Star Hot Food Holding Cabinet	Cooking	One Hot Food Holding Cabinet meeting current ENERGY STAR Version 2.0 Standards	One Standard Hot Food Holding Cabinet
Energy Star Ice Maker	Refrigeration	One Continuous Self-Contained Ice Maker meeting ENERGY STAR Version 3.0 Standards	One Continuous Self-Contained Ice Maker meeting Federal Standard
ENERGY STAR Imaging Equipment	Office Equipment	One imaging device meeting current ENERGY STAR Standards	One non-ENERGY STAR imaging device
Energy Star LED Directional Lamp	Interior Lighting	Energy Star 7.6W Directional LED lamp	50W Incandescent lamp
Energy Star Monitors	Office Equipment	One Monitor meeting ENERGY STAR 8.0 Standards	One Standard Monitor
Energy Star PCs	Office Equipment	One Personal Computer (desktop or laptop) meeting current ENERGY STARÂ® Standards	One non-ENERGY STARÂ® Personal Computer
Energy Star room AC	Space Cooling	Room AC meeting current ENERGY STAR standards	Code-Compliant Room AC, 1 Ton, 10.9 CEER
Energy Star Servers	Office Equipment	One Server meeting ENERGY STAR 2.0 Standards	One Standard Server
Energy Star Steamer	Cooking	One 4-Pan Electric Steamer meeting ENERGY STARÂ® 2.0 Standards	One Standard Economy-Grade 4-Pan Steamer
Energy Star Uninterruptable Power Supply	Office Equipment	Standard Desktop Plugged into Energy Star Uninterruptable Power Supply at 25% Load	Standard Desktop Plugged into Average Rotary Uninterruptable Power Supply at 25% Load
Energy Star Vending Machine	Refrigeration	One Refrigerated Vending Machine meeting ENERGY STAR Version 4.0 Standards	One Refrigerated Vending Machine meeting ENERGY STARÂ® 1.0 Standards
ENERGY STAR Water Cooler	Miscellaneous	One Storage Type Hot/Cold Water Cooler Unit meeting	One Standard Storage Type Hot/Cold Water Cooler Unit

Measure	End-Use	Description	Baseline
		ENERGY STAR Version 3.0 Standards	
Energy Star windows	Space Cooling, Space Heating	100ft2 of Window meeting Energy Star Version 6.0 Requirements (U-Value: 0.27, SHGC: 0.21)	100ft2 of Window meeting Energy Star Version 5.0 Requirements (U-Value: 0.3, SHGC: 0.3)
Engine Block Timer	Miscellaneous	Plug-in timer that activates engine block timer to reduce unnecessary run time	Engine block heater (typically used for backup generators) running continuously
Escalator Motor Efficiency Controller	Miscellaneous	Install Escalator Motor Efficiency Controller	Escalator without Motor Efficiency Controller
Facility Commissioning	Space Cooling, Space Heating, Ventilation and Circulation	Perform facility commissioning to optimize building operations in new facilities	Standard new construction facility with no commissioning
Facility Energy Management System	Space Cooling, Space Heating, Ventilation and Circulation	Typical HVAC by Building Type Controlled by Energy Management System	Standard/manual facility equipment controls
Faucet Aerator	Domestic Hot Water	Low-flow lavatory faucet aerator, flow rate: 1.0 gpm	Federal lavatory flow rate standard, 1994, flow rate: 2.2 gpm
Floating Head Pressure Controls	Refrigeration	Medium-Temperature Refrigeration System with 5HP Compressor and Adjustable Condenser Head Pressure Control Valve	Medium-Temperature Refrigeration System with 5 HP Compressor without Adjustable Condenser Head Pressure Control Valve
Floor Insulation	Space Cooling, Space Heating	Increased Floor Insulation (R-19)	Market Average Existing Floor Insulation
Geothermal Heat Pump	Space Cooling, Space Heating	Geothermal Heat Pump	Code-Compliant Air Source Heat Pump
Green roof	Space Cooling, Space Heating	Vegetated Roof Surface on top of Standard Roof	Standard Black Roof
HE Air Cooled Chiller - All Compressor Types - 100 Tons	Space Cooling	HE Air Cooled Chiller - Air Compressor Types - 100 Tons	Code-Compliant Air Cooled Positive Displacement Chiller, 100 Tons
HE DX 11.25-20.0 Tons Elec Heat	Space Cooling, Space Heating	High Efficiency Packaged or Split DX Unit, 15 Tons, 11.5 SEER	Code-Compliant Packaged or Split DX Unit, 15 Tons, 11 SEER
HE DX 11.25-20.0 Tons Other Heat	Space Cooling	High Efficiency Packaged or Split DX Unit, 15 Tons, 11.5 SEER	Code-Compliant Packaged or Split DX Unit, 15 Tons, 11 SEER
HE DX 5.4-11.25 Tons Elect Heat	Space Cooling, Space Heating	High Efficiency Packaged or Split DX Unit, 7.5 Tons, 12 SEER	Code-Compliant Packaged or Split DX Unit, 7.5 Tons, 11 SEER

Measure	End-Use	Description	Baseline
HE DX 5.4-11.25 Tons Other Heat	Space Cooling	High Efficiency Packaged or Split DX Unit, 7.5 Tons, 12 SEER	Code-Compliant Packaged or Split DX Unit, 7.5 Tons, 11 SEER
HE DX Less than 5.4 Tons Elect Heat	Space Cooling, Space Heating	High Efficiency Packaged or Split DX Unit, 5 Tons, 14.5 SEER	Code-Compliant Packaged or Split DX Unit, 5 Tons, 13 SEER
HE DX Less than 5.4 Tons Other Heat	Space Cooling	High Efficiency Packaged or Split DX Unit, 5 Tons, 14.5 SEER	Code-Compliant Packaged or Split DX Unit, 5 Tons, 13 SEER
HE Water Cooled Chiller - Centrifugal Compressor - 200 Tons	Space Cooling	Water Cooled Centrifugal Chiller with Integral VFD, 200 Tons	Code-Compliant Water Cooled Centrifugal Chiller, 200 Tons
HE Water Cooled Chiller - Centrifugal Compressor - 500 Tons	Space Cooling	Water Cooled Centrifugal Chiller with Integral VFD, 500 Tons	Code-Compliant Water Cooled Centrifugal Chiller, 500 Tons
HE Water Cooled Chiller - Rotary or Screw Compressor - 175 Tons	Space Cooling	Water Cooled Positive Displacement Chiller with Integral VFD, 175 Tons	Code-Compliant Water Cooled Positive Displacement Chiller, 175 Tons
HE Water Cooled Chiller - Rotary or Screw Compressor - 50 Tons	Space Cooling	Water Cooled Positive Displacement Chiller with Integral VFD, 50 Tons	Code-Compliant Water Cooled Positive Displacement Chiller, 50 Tons
Heat Pump Pool Heater Commercial	Miscellaneous	High Efficiency Pool Heater Eff. >=84%	Standard Efficiency Pool Heater 78% Eff.
Heat Pump Water Heater	Domestic Hot Water	Efficient 50 Gallon Electric Heat Pump Water Heater	Code-Compliant 50 Gallon Electric Heat Pump Water Heater
High Efficiency Air Compressor	Miscellaneous	20 HP VFD Air Compressor	20 HP Inlet Modulation Fixed-Speed Compressor
High Efficiency Data Center Cooling	Space Cooling	High Efficiency CRAC (computer room air conditioner)	Standard Efficiency CRAC
High Efficiency PTAC	Space Cooling	High Efficiency PTAC	Code-Compliant PTAC
High Efficiency PTHP	Space Cooling, Space Heating	High Efficiency PTHP	Code-Compliant PTHP
High Efficiency Refrigeration Compressor_Discus	Refrigeration	High Efficiency Refrigeration Compressors	Standard Compressor
High Efficiency Refrigeration Compressor_Scroll	Refrigeration	High Efficiency Refrigeration Compressors	Standard Compressor
High Speed Fans	Ventilation and Circulation	High Speed Fan, 24" - 35" Blade Diameter	Standard Speed Fan, 24" - 35" Blade Diameter

Measure	End-Use	Description	Baseline
Hot water pipe insulation	Domestic Hot Water	1' of Insulated Pipe in Unconditioned Spaces, Insulation of R-4	1' of Pipe in Unconditioned Spaces with Code Minimum of 1"of Insulation
Hotel Card Energy Control Systems	Space Cooling, Space Heating	Guest Room HVAC Unit Controlled by Hotel-Key-Card Activated Energy Control System	Guest Room HVAC Unit, Manually Controlled by Guest
Indoor daylight sensor	Interior Lighting	Install Indoor Daylight Sensors, 500 Watts Controlled	500 Watts of Lighting, Manually Controlled
Induction Cooktops	Cooking	Efficient Induction Cooktop	One Standard Electric Cooktop
Infiltration Reduction - Air Sealing	Space Cooling, Space Heating	Reduced leakage through caulking, weather-stripping	Standard Heating and Cooling System with Moderate Infiltration
Instantaneous Hot Water System Commercial	Domestic Hot Water	Instantaneous Hot Water System	Code-Compliant Electric Storage Water Heater
LED - 14W_CFL Baseline	Interior Lighting	LED (assume 14W) replacing CFL	100W equivalent CFL
LED - 9W Flood_CFL Baseline	Exterior Lighting	LED (assume 9W) replacing CFL	14W CFL
LED Canopy Lighting (Exterior)	Exterior Lighting	One 67.2W LED Canopy Light	Average Lumen Equivalent Exterior Incandescent Area Lighting
LED Display Lighting (Exterior)	Exterior Lighting	One Letter of LED Signage, < 2ft in Height	One Letter of Neon or Argon-mercury Signage, < 2ft in Height
LED Display Lighting (Interior)	Interior Lighting	One Letter of LED Signage, < 2ft in Height	One Letter of Neon or Argon-mercury Signage, < 2ft in Height
LED Exit Sign	Interior Lighting	One 5W Single-Sided LED Exit Sign	One 9W Single-Sided CFL Exit Sign
LED Exterior Wall Packs	Exterior Lighting	One 35W LED Wall Pack	Average Lumen Equivalent Exterior Incandescent Area Lighting
LED High Bay_HID Baseline	Interior Lighting	One 140W High Bay LED Fixture	Lumen-Equivalent HID High Bay Fixture
LED High Bay_LF Baseline	Interior Lighting	One 140W High Bay LED Fixture	Lumen-Equivalent Linear Fluorescent High Bay Fixture
LED Linear - Fixture Replacement	Interior Lighting	2x4 LED Troffer	Lumen-Equivalent 32-Watt T8 Lamp
LED Linear - Lamp Replacement	Interior Lighting	Linear LED (16W)	Lumen-Equivalent 32-Watt T8 Lamp
LED Parking Lighting	Exterior Lighting	One 160W LED Area Light	Average Lumen Equivalent Exterior HID Area Lighting
LEED New Construction Whole Building	Space Cooling, Space Heating	LEED New Construction Whole Building	Comparable facility, code-compliance construction

Measure	End-Use	Description	Baseline
Light Tube	Interior Lighting	One 14" Light Tube, Delivering light to 250 S.F. of Commercial Space	250 S.F. of Commercial Space Lit by Typical Lighting Strategies
Low Flow Shower Head	Domestic Hot Water	Low-Flow Handheld Showerhead, Flow Rate: 1.50 gpm	Standard Handheld Showerhead, Flow Rate: 2.50 gpm
Low-Flow Pre-Rinse Sprayers	Domestic Hot Water	Low-Flow Pre-Rinse Sprayer with Flow Rate of 1.6 gpm	Pre-Rinse Sprayer with Federal Standard Flow Rate of 2.25 gpm
Network PC Power Management	Office Equipment	One computer and monitor attached to centralized energy management system that controls when desktop computers and monitors plugged into a n	One computer and monitor, manually controlled
Networked Lighting Controls	Interior Lighting	Install Networked Lighting Controls System on Interior Lighting, 500 Watts Controlled	500 Watts of Lighting, Controlled either Manually or by Sensor as Specified by Code
Night Covers for Display Cases	Refrigeration	One Open Vertical Case with Night Covers	One Existing Open Vertical Case, No Night Covers
Occupancy Sensors, Ceiling Mounted	Interior Lighting	Ceiling Mounted Occupancy Sensor, 500 Watts Controlled	500 Watts of Lighting, Manually Controlled
Occupancy Sensors, Switch Mounted	Interior Lighting	Switch Mounted Occupancy Sensor, 500 Watts Controlled	500 Watts of Lighting, Manually Controlled
Outdoor Lighting Controls	Exterior Lighting	Install Exterior Photocell Dimming Controls, 500 Watts Controlled	500 Watts of Lighting, Manually Controlled
Outdoor motion sensor	Exterior Lighting	Install Exterior Motion Sensor, 500 Watts Controlled	500 Watts of Lighting, Manually Controlled
Ozone Laundry Commercial	Miscellaneous	Add a new ozone laundry system onto a commercial clothes washer	One commercial clothes washer without ozone laundry system
Programmable thermostat	Space Cooling, Space Heating	Pre-set programmable thermostat that replaces manual thermostat	Standard Heating and Cooling System with Manual Thermostat
PSC to ECM Evaporator Fan Motor (Reach-In)	Refrigeration	Medium Temperature Reach-In Case with equivalent size Electronically Commutated Evaporator Fan Motor	Medium Temperature Reach-In Case with Permanent Split Capacitor Evaporator Fan Motor
PSC to ECM Evaporator Fan Motor (Walk-In, Refrigerator)	Refrigeration	Medium Temperature Walk-In Case with Electronically Commutated Evaporator Fan Motor	Medium Temperature Walk-In Case with Permanent Split Capacitor Evaporator Fan Motor

Measure	End-Use	Description	Baseline
Q-Sync Evaporator Fan Motor	Refrigeration	Medium Temperature Reach-In Case with equivalent size Q-Sync Evaporator Fan Motor	Medium Temperature Reach-In Case with 20W Permanent Split Capacitor Fan Motor
Reflective Roof Treatment	Space Cooling	Reflective Roof Treatment	Standard Black Roof
Refrigerated Display Case LED Lighting	Refrigeration	60" Refrigerated Case LED Strip	Lumen-Equivalent 32-Watt T8 Fixture
Refrigerated Display Case Lighting Controls	Refrigeration	Occupancy Sensors for Refrigerated Case Lighting to reduce run time	Market-Share Weighted Existing Linear Fluorescent Fixture
Refrigeration Commissioning	Refrigeration	Commissioned Refrigeration System	Non-Commissioned Refrigeration System
Refrigeration Economizer	Refrigeration	Walk-in refrigerator with economizer	Walk-in refrigerator without economizer
Regenerative Drive Elevator Motor	Miscellaneous	Regenerative drive produced energy when motor in overhaul condition	Standard motor
Retro-Commissioning (Existing Construction)	Space Cooling, Space Heating, Ventilation and Circulation	Perform facility retro-commissioning, including assessment, process improvements, and optimization of energy-consuming equipment and systems	
Roof Insulation	Space Cooling, Space Heating	Roof Insulation (built-up roof applicable to flat/low slope roofs)	Code-Compliant Flat Roof
Server Virtualization	Office Equipment	2 Virtual Host Server	20 Single Application Servers
Smart Strip Plug Outlet	Office Equipment	One Smart Strip Plug Outlet	One Standard plug strip/outlet
Smart thermostat	Space Cooling, Space Heating	Thermostats that include "smart" features such as occupancy sensors, geo-fencing, multi-zone sensors	Standard Heating and Cooling System with Manual Thermostat
Solar Pool Heater Commercial	Miscellaneous	Solar Swimming Pool Heater	Electric Resistance Swimming Pool Heater
Solar Powered Pool Pump	Miscellaneous	Solar Powered Pool Pump Motor	Variable Speed Pool Pump Motor
Solar Thermal Water Heating System Commercial	Domestic Hot Water	Solar Thermal System with Electric Backup	Code-Compliant 50 Gallon Electric Resistance Water Heater
Strip Curtains - Freezers	Refrigeration	Walk-in freezer with strip curtains at least 0.06 inches thick covering the entire area of the doorway	Walk-in freezer without strip curtains

Measure	End-Use	Description	Baseline
Strip Curtains - Refrigerators	Refrigeration	Walk-in cooler with strip curtains at least 0.06 inches thick covering the entire area of the doorway	Walk-in cooler without strip curtains
Suction Pipe Insulation - Freezers	Refrigeration	Suction Pipe Insulation - Freezers	Uninsulated freezer suction lines
Suction Pipe Insulation - Refrigerators	Refrigeration	Suction Pipe Insulation - Refrigerators	Uninsulated refrigeration suction lines
Thermal Energy Storage	Space Cooling	Deploy thermal energy storage technology (ice harvester, etc.) to shift load	Code compliant chiller
Thermostatic Shower Restriction Valve Commercial	Domestic Hot Water	Hot Water Loop with 50 Gallon Electric Resistance Heater and Pressure Balance Shower Valves	Standard Hot Water Loop with 50 Gallon Electric Resistance Heater and Standard Shower Valves
Time Clock Control	Interior Lighting	Time Clock Controlled Lighting, 500 Watts Controlled	500 Watts of Lighting, Controlled either Manually or by Sensor as Specified by Code
Variable Refrigerant Flow (VRF) HVAC Systems	Space Cooling, Space Heating	Variable Refrigerant Flow (VRF) HVAC Systems	Code-Compliant PTHP
VAV System	Ventilation and Circulation	Variable Air Volume Distribution System	Constant Air Volume Distribution System
VFD on Cooling Tower Fans	Space Cooling	Cooling Tower Fans with VFD Control	Cooling Tower Fans without VFD Control
VFD on HVAC Pump	Space Cooling, Space Heating	VFD on HVAC Pump	7.5 HP HVAC Pump Motor, no VFD Control
VSD Controlled Compressor	Refrigeration	Refrigeration System with VSD Control	Refrigeration System with Standard Slide-Valve Control System
Wall Insulation	Space Cooling, Space Heating	Increased Exterior Above-Grade Wall Insulation	Market Average Existing Exterior Above-Grade Wall Insulation
Warehouse Loading Dock Seals	Space Cooling, Space Heating	Seals to reduce infiltration losses at loading dock	Loading dock with no seals
Water Cooled Refrigeration Heat Recovery	Domestic Hot Water	The heat reclaim system transfers waste heat from refrigeration system to space heating or hot water	No heat recovery
Water Heater Setback	Domestic Hot Water	A 50 gallon electric hot water tank with a thermostat setting reduced to no lower than 120 degrees.	A 50 gallon electric hot water tank with a thermostat setting that is higher than 120 degrees, typically hot water tanks with settings of 130 degrees or higher.
Water source heat pump	Space Cooling, Space Heating	Water Source Heat Pump, 2.5 Tons, 17.4 EER, 4.4 COP	Code-Compliant ASHP

Measure	End-Use	Description	Baseline
Waterside Economizer	Space Cooling	Waterside Economizer	No economizer
Window shade film	Space Cooling	Window Film with SHGC of 0.35 Applied to Standard Window	Standard Window with below Code Required Minimum SHGC
Zero Energy Doors	Refrigeration	Install zero energy doors for a reach-in refrigerated cooler or freezer	Standard vertical reach-in refrigerated cooler or freezer with anti-sweat heaters on the glass surface of the doors

Table 14: Industrial EE Measures

Measure	End-Use	Description	Baseline
1.5HP Open Drip-Proof (ODP) Motor	Motors Pumps	High Efficiency 1.5 HP Open-Drip Proof Motor	1.5HP Open-Drip Proof Motor with Current Minimum EPACT Efficiency
10HP Open Drip-Proof (ODP) Motor	Motors Pumps	High Efficiency 10 HP Open-Drip Proof Motor	10HP Open-Drip Proof Motor with Current Minimum EPACT Efficiency
20HP Open Drip-Proof (ODP) Motor	Motors Pumps	High Efficiency 20 HP Open-Drip Proof Motor	20HP Open-Drip Proof Motor with Current Minimum EPACT Efficiency
3-phase High Frequency Battery Charger - 1 shift	Other	3-phase High Frequency Battery Charger	Standard Charger
Advanced Rooftop Controller	HVAC	Advanced Rooftop Controller	Without Advanced Rooftop Controller
Air Compressor Optimization	Compressed Air	Performing Routine Maintenance on 20HP Inlet Modulation Fixed-Speed Compressor	20 HP Inlet Modulation Fixed-Speed Compressor
Air curtains	HVAC	Air Curtain across door opening	Door opening with no air curtain
Airside economizer	HVAC	Airside Economizer	No economizer
Auto Closer on Refrigerator Door	Process Cooling	One Medium Temperature Walk-In Refrigerator Door with Auto-Closer	One Medium Temperature Walk-In Refrigerator Door without Auto-Closer
Auto Off Time Switch	Interior Lighting High Bay	Auto-Off Time Switch on Interior Lighting, 500 Watts Controlled	500 Watts of Lighting, Manually Controlled
Bi-Level Lighting Control (Exterior)	Exterior Lighting Industrial	Install Exterior Bi-Level Lighting Control, 500 Watts Controlled	500 Watts of Lighting, No Dim Setting

Measure	End-Use	Description	Baseline
Bi-Level Lighting Control (Interior)	Interior Lighting High Bay	Bi-Level Controls on Interior Lighting, 500 Watts Controlled	500 Watts of Lighting, No Dim Setting
Chilled Water Reset	HVAC	One Chiller with Reset of Chilled Water Temperature Setpoint	One Chiller with Fixed Chilled Water Temperature
Cogged Belt on 15hp ODP Motor	Motors Pumps	15HP ODP Motor with Cogged Belts Installed on Supply and/or Return Air Fans	15HP ODP Motor with Smooth V-Belts Installed on Supply and/or Return Air Fans
Cogged Belt on 40hp ODP Motor	Motors Pumps	40HP ODP Motor with Cogged Belts Installed on Supply and/or Return Air Fans	40HP ODP Motor with Smooth V-Belts Installed on Supply and/or Return Air Fans
Compressed Air Desiccant Dryer	Process Specific	heated regenerative desiccant dryer without dew point demand controls	heatless regenerative desiccant dryer without dew point demand controls
Compressed Air No-Loss Condensate Drains	Process Specific	Install no-loss condensate drains	Install standard condensate drains
Compressed Air Storage Tank	Compressed Air	20 HP Inlet Modulation Fixed-Speed Compressor with Receiver Tank	20 HP Inlet Modulation Fixed-Speed Compressor, No Receiver Tank
Custom Measure - Non-Lighting	HVAC	Custom Improvement to Facility's Operations	Baseline Technology/Process
Dairy Refrigeration Heat Recovery	Other	refrigeration equipment with refrigeration heat recovery tank installed	existing dairy farm with refrigeration equipment and a water heater unit without an RHR unit
Dedicated Outside Air System (DOAS)	HVAC	Install Dedicated Outside Air System (DOAS)	Typical HVAC by Building Type
Demand Controlled Ventilation	HVAC	Return Air System with CO2 Sensors	Standard Return Air System, No Sensors
Demand Defrost	Process Cooling	Walk-In Freezer System with Demand-Controlled Electric Defrost Cycle	Walk-In Freezer System with Timer-Controlled Electric Defrost Cycle
Dew Point Sensor Control for Dessicant CA Dryer	Compressed Air	1000 CFM Heated Desicant Air Dryer with Dew Point Controls	1000 CFM Modulating Heated Desicant Air Dryer
Drip Irrigation Nozzles	Other	Flow Control Nozzles	Standard Irrigation Nozzles
Dual Enthalpy Economizer	Process Cooling	Standard HVAC Unit with an economizer and dual enthalpy differential control	HVAC unit with no economizer or with a non-functional disabled economizer
DX Coil Cleaning	HVAC	DX Coil Cleaning	DX Coil Not Cleaned
Efficient Compressed Air Nozzles	Compressed Air	1/4" Engineered Air Nozzle	1/4" Open-End Air Nozzle

Measure	End-Use	Description	Baseline
Efficient New Construction Lighting	Interior Lighting High Bay	Efficient New Construction Lighting, 15% Better than Code	New Construction with Lighting Power Density meeting Code Minimum
Electric Actuators	Other	Electric Actuator	Pneumatic Actuator
Energy Efficient Laboratory Fume Hood	HVAC	Variable Air Volume High Performance Fume Hood	Constant Volume Conventional Bypass Fume Hood
Energy Efficient Transformers	Other	Energy Efficient Dry Type Transformer (CSL-3)	Standard Transformer (TP-1)
Energy Recovery Ventilation System	HVAC	Unitary Cooling Equipment that Incorporates Energy Recovery	Code-Compliant Packaged or Split DX Unit, 7.5 Tons, 11.2 EER
Energy Star LED Directional Lamp	Interior Lighting Other	Energy Star 7.6W Directional LED lamp	50W Incandescent lamp
Energy Star room ac	HVAC	Room AC meeting current ENERGY STAR standards	Code-Compliant Room AC
Energy Star windows	HVAC	100ft2 of Window meeting Energy Star Version 6.0 Requirements (U-Value: 0.27, SHGC: 0.21)	100ft2 of Window meeting Energy Star Version 5.0 Requirements (U-Value: 0.3, SHGC: 0.3)
Engine Block Timer	Other	An engine block heater operated by an outdoor plug-in timer	An engine block heater that is manually plugged in
Facility Commissioning	HVAC	Perform facility commissioning	Comparable facility, no commissioning
Facility Energy Management System	HVAC	Typical HVAC by Building Type Controlled by Energy Management System	Typical HVAC by Building Type, Manually Controlled
Fan Thermostat Controller	HVAC	Typical HVAC by Building Type with Fan Thermostat Controller Installed	Typical HVAC by Building Type with Programmable Thermostat
Floating Head Pressure Controller	Process Cooling	Medium-Temperature Refrigeration System with 5HP Compressor and Adjustable Condenser Head Pressure Control Valve	Medium-Temperature Refrigeration System with 5 HP Compressor without Adjustable Condenser Head Pressure Control Valve
Grain Bin Aeration Control System	Process Specific	Grain Storage Fan System with Automatic Controls	Grain Storage Fan System with Manual Controls
HE Air Cooled Chiller - All Compressor Types - 100 Tons	HVAC	HE Air Cooled Chiller - All Compressor Types - 100 Tons	Code-Compliant Air Cooled Positive Displacement Chiller, 100 Tons
HE Air Cooled Chiller - All Compressor Types - 300 Tons	HVAC	Air Cooled Positive Displacement Chiller with Integral VFD, 300 Tons, 13.7 EER	Code-Compliant Air Cooled Positive Displacement Chiller, 300 Tons, 12.5 EER

Measure	End-Use	Description	Baseline
HE DX 11.25-20.0 Tons Elec Heat	HVAC	High Efficiency Packaged or Split DX Unit, 15 Tons, 11.5 SEER	Code-Compliant Packaged or Split DX Unit, 15 Tons, 11 SEER
HE DX 11.25-20.0 Tons Other Heat	HVAC	High Efficiency Packaged or Split DX Unit, 15 Tons, 11.5 SEER	Code-Compliant Packaged or Split DX Unit, 15 Tons, 11 SEER
HE DX 5.4-11.25 Tons Elect Heat	HVAC	High Efficiency Packaged or Split DX Unit, 7.5 Tons, 12 SEER	Code-Compliant Packaged or Split DX Unit, 7.5 Tons, 11 SEER
HE DX 5.4-11.25 Tons Other Heat	HVAC	High Efficiency Packaged or Split DX Unit, 7.5 Tons, 12 SEER	Code-Compliant Packaged or Split DX Unit, 7.5 Tons, 11 SEER
HE DX Less than 5.4 Tons Elect Heat	HVAC	High Efficiency Packaged or Split DX Unit, 5 Tons, 14.5 SEER	Code-Compliant Packaged or Split DX Unit, 5 Tons, 13 SEER
HE DX Less than 5.4 Tons Other Heat	HVAC	High Efficiency Packaged or Split DX Unit, 5 Tons, 14.5 SEER	Code-Compliant Packaged or Split DX Unit, 5 Tons, 13 SEER
HE Water Cooled Chiller - Centrifugal Compressor - 200 Tons	HVAC	Water Cooled Centrifugal Chiller with Integral VFD, 200 Tons	Code-Compliant Water Cooled Centrifugal Chiller, 200 Tons
HE Water Cooled Chiller - Centrifugal Compressor - 500 Tons	HVAC	Water Cooled Centrifugal Chiller with Integral VFD, 500 Tons	Code-Compliant Water Cooled Centrifugal Chiller, 500 Tons
HE Water Cooled Chiller - Rotary or Screw Compressor - 175 Tons	HVAC	Water Cooled Positive Displacement Chiller with Integral VFD, 175 Tons	Code-Compliant Water Cooled Positive Displacement Chiller, 175 Tons
HE Water Cooled Chiller - Rotary or Screw Compressor - 50 Tons	HVAC	Water Cooled Positive Displacement Chiller with Integral VFD, 50 Tons	Code-Compliant Water Cooled Positive Displacement Chiller, 50 Tons
High Bay Occupancy Sensors, Ceiling Mounted	Interior Lighting High Bay	Ceiling Mounted Occupancy Sensor, 800 Watts Controlled	800 Watts of Lighting, Manually Controlled
High Efficiency Air Compressor	Compressed Air	20 HP VFD Air Compressor	20 HP Inlet Modulation Fixed-Speed Compressor
High Efficiency Refrigeration Compressor - Discus	Process Cooling	High Efficiency Refrigeration Compressors	Standard Compressor
High Efficiency Refrigeration Compressor - Scroll	Process Cooling	High Efficiency Refrigeration Compressors	Standard Compressor

Measure	End-Use	Description	Baseline
High Efficiency Welder	Process Specific	High Efficiency Welder	Standard Welding Practices
High Speed Fans	HVAC	High Speed Fan, 24" - 35" Blade Diameter	Standard Speed Fan, 24" - 35" Blade Diameter
High Volume Low Speed Fan (HVLS)	Motors Fans Blowers	20' High Volume Low Speed Fan	Conventional Circulating Fan
Indoor Agriculture - LED Grow Lights	Interior Lighting High Bay	LED grow light	1000W High Pressure Sodium
Indoor daylight sensor	Interior Lighting High Bay	Install Indoor Daylight Sensors, 500 Watts Controlled	500 Watts of Lighting, Manually Controlled
Industrial Duct Sealing	HVAC	Standard Electric Heating and Central AC with Improved Duct Sealing	Standard Electric Heating and Central AC, Standard Duct Sealing
Injection Mold and Extruder Barrel Wraps	Other	2' Diameter, 20' Long Machine Barrel with 1" Insulation	2' Diameter, 20' Long Machine Barrel with no Insulation
Insulated Pellet Dryer Tanks and Ducts	Process Heating	Insulation for Pellet Tank and Duct	Uninsulated Pellet Tank and Duct
LED - 14W_CFL Baseline	Interior Lighting Other	LED (assume 14W) replacing CFL	100W equivalent CFL
LED Canopy Lighting (Exterior)	Exterior Lighting Industrial	One 67.2W LED Canopy Light	Average Lumen Equivalent Exterior Incandescent Area Lighting
LED Display Lighting (Exterior)	Exterior Lighting Industrial	One Letter of LED Signage, < 2ft in Height	One Letter of Neon or Argon-mercury Signage, < 2ft in Height
LED Display Lighting (Interior)	Interior Lighting Other	One Letter of LED Signage, < 2ft in Height	One Letter of Neon or Argon-mercury Signage, < 2ft in Height
LED exit sign	Interior Lighting Other	One 5W Single-Sided LED Exit Sign	One 9W Single-Sided CFL Exit Sign
LED Exterior Wall Packs	Exterior Lighting Industrial	One 35W LED Wall Pack	Average Lumen Equivalent Exterior Incandescent Area Lighting
LED High Bay_HID Baseline	Interior Lighting High Bay	One 140W High Bay LED Fixture	Lumen-Equivalent HID High Bay Fixture
LED High Bay_LF Baseline	Interior Lighting High Bay	One 140W High Bay LED Fixture	Lumen-Equivalent Linear Fluorescent High Bay Fixture
LED Linear - Fixture Replacement	Interior Lighting Linear Fluorescent	2x4 LED Troffer Fixture	Lumen-Equivalent 32-Watt T8 Fixture
LED Linear - Lamp Replacement	Interior Lighting Linear Fluorescent	Linear LED	Lumen-Equivalent 32-Watt T8 Lamp

Measure	End-Use	Description	Baseline
LED Parking Lighting	Exterior Lighting Industrial	One 160W LED Area Light	Average Lumen Equivalent Exterior HID Area Lighting
LEED New Construction Whole Building	HVAC	LEED Qualifying New Construction	Comparable facility, code-compliance construction
Light Tube	Interior Lighting Other	One 14" Light Tube, Delivering light to 250 S.F. of Industrial Space	250 S.F. of Industrial Space Lit by Typical Lighting Strategies
Low Energy Livestock Waterer	Motors Pumps	Install Thermostatically Controlled Livestock Watering System	Standard Livestock Watering System
Low Pressure Sprinkler Nozzles	Motors Pumps	Low Pressure Irrigation Nozzles operate at 35 psi or lower	Standard high pressure irrigation nozzles that operate at 50 psi or greater
Low Pressure-drop Filters	Compressed Air	20 HP Inlet Modulation Fixed-Speed Compressor with Low Pressure Drop Filter	20 HP Inlet Modulation Fixed-Speed Compressor, No Particulate Removal
Milk Pre-Cooler	Other	Installed pre-cooler heat exchanger	no pre-cooler heat exchanger installed
Networked Lighting Controls	Interior Lighting Linear Fluorescent	Install Networked Lighting Controls System on Interior Lighting, 500 Watts Controlled	500 Watts of Lighting, Controlled either Manually or by Sensor as Specified by Code
Occupancy Sensors, Ceiling Mounted	Interior Lighting High Bay	Ceiling Mounted Occupancy Sensor, 500 Watts Controlled	500 Watts of Lighting, Manually Controlled
Occupancy sensors, switch mounted	Interior Lighting Linear Fluorescent	Switch Mounted Occupancy Sensor, 500 Watts Controlled	500 Watts of Lighting, Manually Controlled
Outdoor Lighting Controls	Exterior Lighting Industrial	Install Exterior Photocell Dimming Controls, 500 Watts Controlled	500 Watts of Lighting, Manually Controlled
Outdoor motion sensor	Exterior Lighting Industrial	Install Exterior Motion Sensor, 500 Watts Controlled	500 Watts of Lighting, Manually Controlled
Packaged Terminal AC	HVAC	High Efficiency Packaged Terminal AC	Code-Compliant PTAC, 10.9 EER
Process Cooling Ventilation Reduction	Process Cooling	Standard Process Cooling with Reduced Ventilation	Standard Process Cooling
Programmable thermostat	HVAC	Standard Heating and Cooling System with Programmable Thermostat	Standard Heating and Cooling System with Manual Thermostat
Reflective Roof Treatment	HVAC	Reflective Roof Treatment	Standard Black Roof

Measure	End-Use	Description	Baseline
Refrigeration Commissioning	Process Cooling	Commissioned Refrigeration System	Non-Commissioned Refrigeration System
Retro-Commissioning (Existing Construction)	HVAC	Perform Facility Retro-commissioning	
Roof insulation	HVAC	Roof Insulation (built-up roof applicable to flat/low slope roofs)	Code-Compliant Flat Roof
Smart thermostat	HVAC	Standard Heating and Cooling System with Smart Thermostat	Standard Heating and Cooling System with Manual Thermostat
Strategic Energy Management	HVAC	SEM goal setting and tracking	No active energy management
Synchronous Belt on 15hp ODP Motor	Motors Pumps	15 HP Open-Drip Proof Motor with Synchronous Belts Installed on Supply and/or Return Air Fans	15 HP Open-Drip Proof Motor with Smooth V-Belts Installed on Supply and/or Return Air Fans
Synchronous Belt on 5hp ODP Motor	Motors Pumps	5 HP Open-Drip Proof Motor with Synchronous Belts Installed on Supply and/or Return Air Fans	5 HP Open-Drip Proof Motor with Smooth V-Belts Installed on Supply and/or Return Air Fans
Synchronous Belt on 75hp ODP Motor	Motors Pumps	75 HP Open-Drip Proof Motor with Synchronous Belts Installed on Supply and/or Return Air Fans	75 HP Open-Drip Proof Motor with Smooth V-Belts Installed on Supply and/or Return Air Fans
Thermal energy storage	HVAC	Deploy thermal energy storage technology (ice harvester, etc.) to shift load	Code compliant chiller
Time Clock Control	Interior Lighting High Bay	Time Clock Controlled Lighting, 500 Watts Controlled	500 Watts of Lighting, Manually Controlled
VAV System	HVAC	Variable Air Volume Distribution System	Constant Air Volume Distribution System
VFD on Air Compressor	Compressed Air	20 HP VFD Air Compressor	20 HP Inlet Modulation Fixed-Speed Compressor
VFD on Cooling Tower Fans	Process Cooling	Cooling Tower Fans with VFD Control	Cooling Tower Fans without VFD Control
VFD on HVAC Fan	Motors Fans Blowers	5 HP HVAC Fan Motor, with VFD Control	5 HP HVAC Fan Motor, no VFD Control
VFD on HVAC Pump	Motors Pumps	VFD on HVAC Pump	7.5 HP HVAC Pump Motor, no VFD Control
VFD on process pump	Motors Pumps	20 HP Process Pump Equipped with VFD Control	20 HP Process Pump, Constant Speed
VSD Controlled Compressor	Process Cooling	Refrigeration System with VSD Control	Refrigeration System with Standard Slide-Valve Control System

Measure	End-Use	Description	Baseline
Water source heat pump	HVAC	Water Source Heat Pump, 2.5 Tons, 17.4 EER, 4.4 COP	Code-Compliant ASHP
Waterside economizer	HVAC	Waterside Economizer	No economizer
Window shade film	HVAC	Window Film with SHGC of 0.35 Applied to Standard Window	Standard Window with below Code Required Minimum SHGC

The following EE measures from the 2019 Technical Potential Study were eliminated from the current study[8]:

Table 15: 2019 EE Measures Eliminated from Current Study

Sector	Measure	End-Use	Reason for Removal
Residential	CFL – 15W Flood	Lighting	Better technology (LED) available
Residential	CFL – 15W Flood (Exterior)	Lighting	Better technology (LED) available
Residential	CFL – 13W	Lighting	Better technology (LED) available
Residential	CFL – 23W	Lighting	Better technology (LED) available
Residential	Low Wattage T8 Fixture	Lighting	Better technology (LED) available
Residential	15 SEER Central AC	Space Cooling	Updated Federal Standard
Residential	15 SEER Air Source Heat Pump	Space Cooling, Space Heating	Updated Federal Standard
Residential	14 SEER ASHP from base electric resistance heating	Space Cooling, Space Heating	Updated Federal Standard
Residential	Two Speed Pool Pump	Miscellaneous	Updated Florida Energy Code
Residential	Variable Speed Pool Pump	Miscellaneous	Updated Florida Energy Code
Residential	Storm Door	Space Cooling, Space Heating	Minimal/uncertain energy savings
Commercial	CFL – 15W Flood	Exterior Lighting	Better technology (LED) available
Commercial	High Efficiency HID Lighting	Exterior Lighting	Better technology (LED) available

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[8] Additional measures from the 2019 study were updated to reflect current vintage/technology for the current study.

Sector	Measure	End-Use	Reason for Removal
Commercial	LED Street Lights	Exterior Lighting	Market standard
Commercial	LED Traffic and Crosswalk Lighting	Exterior Lighting	Market standard
Commercial	CFL-23W	Interior Lighting	Better technology (LED) available
Commercial	High Bay Fluorescent (T5)	Interior Lighting	Better technology (LED) available
Commercial	Premium T8 - Fixture Replacement	Interior Lighting	Better technology (LED) available
Commercial	Premium T8 - Lamp Replacement	Interior Lighting	Better technology (LED) available
Commercial	Two Speed Pool Pump	Miscellaneous	Updated Florida Energy Code
Commercial	Variable Speed Pool Pump	Miscellaneous	Updated Florida Energy Code
Commercial	Tank Wrap on Water Heater	Domestic Hot Water	Limited applicability
Commercial	Ceiling Insulation (R12 to R38)	Space Cooling, Space Heating	Consolidated measure baseline assumptions
Commercial	Ceiling Insulation (R30 to R38)	Miscellaneous	Consolidated measure baseline assumptions

Appendix B DR Measure List

Table 16: Residential DR Measures

Measure	Type	Season	Description
Central air conditioner - Load Shed	Direct load control	Summer	Direct load control program where utility provides day ahead notification that it will send remote signal to shed AC unit load during peak usage period.
Central Heating - Load Shed	Direct load control	Winter	Direct load control program where utility provides day ahead notification that it will send remote signal to shed AC unit load during peak usage period.
Central air conditioner - 50% cycling	Direct load control	Summer	Direct load control program where utility provides day ahead notification that it will send remote signal to cycle AC unit during peak usage period
Central Heating - 50% cycling	Direct load control	Winter	Direct load control program where utility provides day ahead notification that it will send remote signal to cycle AC unit during peak usage period
Smart thermostats - Utility Installation	Direct load control	Summer and Winter	Similar to AC load control program, but allows customers to participate using a compatible smart thermostat rather than an AC switch
Smart thermostats – BYOT	Direct load control	Summer and Winter	Similar to AC load control program, but allows customers to participate using a compatible smart thermostat rather than an AC switch
CPP + Tech	Pricing	Summer and Winter	Electricity rate that varies based on time of day. Can be same rate schedule for every day during a given season (time of use, or TOU) and with critical peak pricing (CPP) days when peak period rates are substantially higher for a limited number of days per year (customers receive advance notification of CPP event). Customers also receive technology that they can pre-program to curtail load when an event is called.
Water heater control	Direct load control	Summer and Winter	Load control installed on a water heater (integrated or external switch)
Pool pump switches	Direct load control	Summer and Winter	Load control program with switch installed on pool pump
Room AC	Direct load control	Summer	Load control program that is focused on room AC units rather than central AC
Managed EV Charging – switch	Direct load control	Summer and Winter	Load control switch that is installed on an EV charger
Managed EV Charging – telematics	Direct load control	Summer and Winter	Direct load control program leveraging EV smart charging software
Battery Storage with PV	Pricing/Direct load control	Summer and Winter	PV charges battery and battery discharges to grid

Table 17: Small C&I DR Measures

Measure	Type	Season	Description
Central air conditioner - Load Shed	Direct load control	Summer	Direct load control program where utility provides day ahead notification that it will send remote signal to shed AC unit load during peak usage period.
Central Heating - Load Shed*	Direct load control	Winter	Direct load control program where utility provides day ahead notification that it will send remote signal to shed AC unit load during peak usage period.
Central air conditioner - 50% cycling	Direct load control	Summer	Direct load control program where utility provides day ahead notification that it will send remote signal to cycle AC unit during peak usage period
Central Heating - 50% cycling*	Direct load control	Winter	Direct load control program where utility provides day ahead notification that it will send remote signal to cycle AC unit during peak usage period
Smart thermostats - Utility Installation*	Direct load control	Summer and Winter	Similar to AC load control program, but allows customers to participate using a compatible smart thermostat rather than an AC switch
Smart thermostats – BYOT*	Direct load control	Summer and Winter	Similar to AC load control program, but allows customers to participate using a compatible smart thermostat rather than an AC switch
CPP + Tech	Pricing	Summer and Winter	Electricity rate that varies based on time of day. Can be same rate schedule for every day during a given season (time of use, or TOU) and with critical peak pricing (CPP) days when peak period rates are substantially higher for a limited number of days per year (customers receive advance notification of CPP event). Customers also receive technology that they can pre-program to curtail load when an event is called.
Managed EV Charging – switch	Direct load control	Summer and Winter	Load control switch that is installed on an EV charger
Managed EV Charging – telematics	Direct load control	Summer and Winter	Direct load control program leveraging EV smart charging software
Battery Storage with PV	Pricing/Direct load control	Summer and Winter	PV charges battery and battery discharges to grid

Table 18: Large C&I DR Measures

Measure	Type	Season	Description
CPP + Tech	Pricing	Summer and Winter	Electricity rate that varies based on time of day. Can be same rate schedule for every day during a given season (time of use, or TOU) and with critical peak pricing (CPP) days when peak period rates are substantially higher for a limited number of days per year (customers receive advance notification of

Measure	Type	Season	Description
			CPP event). Customers also receive technology that they can pre-program to curtail load when an event is called.
Auto DR	Utility-controlled loads	Summer and Winter	Custom load control of specific end-uses/processes that is triggered by utility signal to building management system; customer can sometimes opt-out of specific events
Firm Service Level	Contractual	Summer and Winter	Customer commits to a maximum usage level during peak periods and, when notified by the utility, agrees to cut usage to that level.
Guaranteed Load Drop	Contractual	Summer and Winter	Customer agrees to reduce usage by an agreed upon amount when notified

No DR measures from the 2019 Technical Potential Study were eliminated from the current study.

Appendix C DSRE Measure List

Table 19: Residential DSRE Measures

Measure	Description
PV System	Roof-mounted system, including multiple panels, AC/DC inverter, racking system, and electrical system interconnections
Battery Storage from PV System	Lithium-ion battery system designed to integrate with an on-site PV system to store and discharge excess energy from PV generation

Table 20: Non-Residential DSRE Measures

Measure	Description
PV System	Roof-mounted system, including multiple panels, AC/DC inverter, racking system, and electrical system interconnections
Battery Storage from PV System	Lithium-ion battery system designed to integrate with an on-site PV system to store and discharge excess energy from PV generation
CHP – Fuel Cell	An electrochemical cell-based generator that reacts hydrogen fuel with oxygen
CHP – Micro Turbine	Small combustion turbine that burns gaseous or liquid fuel to drive a generator
CHP – Gas Turbine	A combustion turbine that burns gaseous or liquid fuel to drive a generator
CHP – Reciprocating Engine	An engine that uses one or more pistons to convert pressure into rotational motion
CHP - Steam Turbine	A turbine that extracts thermal energy from pressured steam to drive a generator

No DSRE measures from the 2019 Technical Potential Study were eliminated from the current study.

Appendix D External Measure Suggestions

Table 21: External Measure Suggestions and Actions

Measure Suggestion	Stakeholder Comments	Action taken for FEECA Study
Efficient Electrification Measures	All measures that can produce substantial site energy savings by converting from natural gas or other fossil fuels should be included in the Florida electric utilities' next efficiency potential study. Key examples include efficient heat pumps to displace gas furnaces and efficient heat pump water heaters to displace gas water heaters. It is important to note that these electrification measures provide not only heating energy savings and water heating energy savings, but can also potentially provide cooling efficiency benefits as well. In the case of heat pumps, that can occur because efficient heat pumps can operate in cooling mode more efficiently than standard central air conditioners. In the case of heat pump water heaters, cooling and dehumidification benefits can occur when/if the water heater is in conditioned space because they transfer heat (particularly latent heat) from the air around them to the water they are heating. A growing number of jurisdictions – including Illinois, Minnesota and some northeastern states – have begun to include efficient electrification measures in their efficiency programs portfolios.	Fuel-switching and electrification are outside the scope of this study
Networked Lighting Controls	LED lighting technology has become increasingly accepted and installed in commercial buildings. The next big efficiency opportunity in commercial lighting efficiency is in sophisticated controls integrated into the light fixtures themselves – both luminaire level lighting controls and networked lighting controls. For example, a 2017 report for both the Northwest Energy Efficiency Alliance and the Design Lights Consortium, a non-profit that works with utilities and manufacturers of lighting products (and which many utilities across the country reference for determination of eligibility of lighting products for efficiency program rebates), found that networked lighting controls can provide on the order of 50% additional savings after LED conversion. Other studies have also found the national savings potential from such products to be enormous. Moreover, these products can be designed to provide not only lighting energy savings but also a number of other non-energy benefits (e.g., asset tracking, such as the ability of hospitals to know the location of all wheel chairs). Numerous utilities across the country now actively promote this technology through their efficiency programs. For example, Commonwealth Edison, the utility serving Chicago and other parts of northern Illinois, is currently getting a significant portion of its commercial lighting savings from promotion of networked lighting controls	Added to measure list for 2024 study

Measure Suggestion	Stakeholder Comments	Action taken for FEECA Study
Ductless mini-split heat pumps to displace inefficient electric baseboard heating	While most Florida residential buildings with electric heat provide that heat with heat pumps, at least some (perhaps most likely being older multi-family rental buildings) still use inefficient electric resistance heat. Ductless mini- split heat pump retrofits can very efficiently displace such inefficient electric heat and should be added to the residential measure list.	Added to measure list for 2024 study
Air Source Heat Pump baseline assumptions	There are seven air source heat pump (ASHP) measures included in the residential measure list. Two of them – one at SEER 14 and a second at SEER 21 – are listed as relative to an electric resistance baseline. Five of them – SEER 15, SEER 16, SEER 17, SEER 18 and SEER 21 – appear to be relative to a baseline of a standard new ASHP. Are we interpreting this correctly? If so, we have a couple of comments/questions/suggestions: • The efficiency standards assessed need to be modified to be consistent with new federal standards, including new testing procedures. • For cases where the baseline is "electric resistance", why only assessing two efficiency tiers (i.e., fewer than for standard ASHP baselines)? The same number of efficiency tiers should be assessed for both baselines.	Incorporated suggestions into 2024 study, including updated baseline standard and assessing same efficiency tiers for both baselines
Heat Pump Water Heater Efficiency	The Res EE tab of the utilities draft measure list suggests that the efficiency of a heat pump water heater is an EF of 2.50. That is unrealistically low. In fact, of the 222 products listed on the Energy Star website, none had UEFs less than 2.80 and only 29 (13%) had UEFs that were less than 3.4; the average was 3.57. Indeed, the first product listed on a search of heat pump water heaters on Home Depot's website is a 50 gallon, Rheem (Pro Terra) product with a UEF of 3.75 and a cost of $1699.	Incorporated suggestion into 2024 study
New Construction Measure Packages	The measures lists did not appear to include packages of measures for building new residential and/or new commercial buildings to levels of efficiency beyond those required by code. Utilities in many jurisdictions run new construction efficiency programs supporting such measure packages. In the residential sector, many base their programs on the long-standing Federal Energy Star standard. However, increasingly utility programs are promoting additional efficiency tiers – often as part of all-electric new construction program offerings – that go well beyond the Energy Star standard. For example, Consumers Energy (Michigan) offers $1000 rebates to builders who construct Energy Star single family homes	Incorporated suggestion into 2024 study with 2 tiers of residential new construction whole-home improvement measures.

Measure Suggestion	Stakeholder Comments	Action taken for FEECA Study
	with a Home Energy Rating (HERS) score of 57 or less, but offer higher rebates for more efficient buildings – up to $4000 for all electric homes with a HERS score of 40 or less. The Florida utilities potential study should assess savings potential for both the Energy Star level and a tier or two of additional efficiency beyond that level. Similar assessments of new commercial building savings potential should also be assessed.	
Custom Industrial Measures	The utilities' list of industrial efficiency measures addresses common industrial efficiency opportunities. However, it does not address efficiency opportunities that may be unique to individual industries or even to individual industrial facilities. That can include such things as changes in types of materials used in manufacturing, reductions in waste streams, improved use of water delivered by agricultural irrigation systems, and/or other things that are not directly related to energy using equipment or controls of such equipment. It is obviously not possible to list all such measures. However, a potential study will understate savings potential if it does not include a way of capturing such potential in its estimates. One potential way to get a sense of such potential is to review results of comprehensive industrial efficiency programs run by other utilities to identify the portion of actual program savings from such unique custom measures – and then assume that portion of custom savings could be added to the savings estimated in the study for named measures.	Added to measure list for 2024 study
Electric Vehicle measures	Some EV chargers are more efficient than others. The Federal Energy Star program has a standard for them. Savings potential may not be huge, but should be considered in the study. With a growing number of EV sales, the study should also consider the potential savings from promoting the most efficient EVs within different size/style categories	Added to measure list for 2024 study
Removing screw-based LEDs	The screw-based LEDs on both the Residential and Commercial measure lists should now be considered baseline due to federal efficiency standards adopted earlier this year. Utility load forecasts for IRPs should reflect resulting improvements in end use efficiency.	Screw-based LEDs were included in the study but with limited applicability to reflect current market
Removing Commercial fluorescent lighting	LED technology – for both fixtures and lamps – has advanced significantly in recent years, to the point where it should be the only technology considered for commercial lighting. Measures such as high performance T-8 fluorescent fixtures and high bay T-5 fluorescent fixtures should be replaced with LED alternatives in the study.	Updated measure list for 2024 study to only include LED-based lamps for linear fluorescent replacements

Measure Suggestion	Stakeholder Comments	Action taken for FEECA Study
Removing fossil-gas fueled CHP	Fossil-fuel fired CHP systems should not be considered "renewable" and have questionable benefits if electric generation is expected to get increasingly more renewable and clean. Biogas-fueled CHP – such as systems installed in wastewater treatment facilities that use methane byproducts of processing waste – should be included in the study.	2024 study will continue to assess all CHP options
Adding livestock methane power generation to renewables list	For example, see the "cow power" program currently being run by Green Mountain Power, Vermont's largest electric utility	2024 study will continue to assess DSRE options consistent with prior study, including customer-sited solar, solar plus storage, and CHP
Adding EV managed charging to DR list	With national market shares for EVs growing, it is important that utilities consider programs for managing when charging occurs. Numerous utilities are currently running managed charging programs. This does not currently appear to be on the measure list and should be added to the Florida utilities' potential study.	Added to measure list for 2024 study
Residential "smart thermostat" measure can provide both efficiency savings and demand response potential	This is recognized in the inclusion of smart thermostats in both the Res EE and DR tabs of the measure list spreadsheet. We simply want to flag that it is important when assessing cost-effectiveness of this measure that these two potential benefits are considered together. In other words, the cost should be considered compared to the combined efficiency and DR potential rather than separately considered relative to just EE savings and then separately again compared to just DR potential	2024 study will include interactive impacts of EE and DR opportunities
Emerging Technologies	The efficiency potential study measure list appears to be somewhat outdated. It does not include a number of new and emerging technologies. The potential list of such technologies is long. We suggest reviewing the attached list of emerging technologies developed almost two years ago by Consumers Energy (Michigan) and including them in the study.	Consumers Energy study was reviewed and commercially available measures were added to measure list for 2024 study, including heat pump water heaters - CEE advanced tier, heat pump clothes dryers, ozone laundry systems, and 21+ SEER HVAC units

Comprehensive Technical Potential Measure List

Energy Efficiency

Residential - Energy Efficiency

1 120v Heat Pump Water Heater 50 Gallons
2 Air Sealing-Infiltration Control
3 Air-to-Water Heat Pump
4 ASHP - 15 SEER/14.3 SEER2 from base electric resistance
5 ASHP - 24 SEER/22.9 SEER2 (from elec resistance)
6 ASHP - 24 SEER/22.9 SEER2, 10.5 HSPF
7 ASHP - CEE Advanced Tier: 17.8 SEER/17 SEER2; 10.0 HSPF
8 ASHP - CEE Advanced Tier: 17.8 SEER/17 SEER2; 10.0 HSPF (from elec resistance)
9 ASHP - CEE Tier 2: 16.8 SEER/16 SEER2; 9.0 HSPF
10 ASHP - CEE Tier 2: 16.8 SEER/16 SEER2; 9.0 HSPF (from elec resistance)
11 ASHP - ENERGY STAR/CEE Tier 1: 16 SEER/15.2 SEER2 (from elect resistance)
12 ASHP - ENERGY STAR/CEE Tier 1: 16 SEER/15.2 SEER2, 9.0 HSPF
13 Basement or Crawlspace Wall Insulation R-15
14 Bathroom Faucet Aerators
15 CEE Advanced Tier Clothes Dryer
16 CEE Advanced Tier Clothes Washer
17 CEE Tier 3 Refrigerator
18 Ceiling Insulation (R11 to R38)
19 Ceiling Insulation (R11 to R49)
20 Ceiling Insulation(R19 to R38)
21 Ceiling Insulation(R19 to R49)
22 Ceiling Insulation(R2 to R38)
23 Ceiling Insulation(R2 to R49)
24 Ceiling Insulation(R30 to R38)
25 Ceiling Insulation(R30 to R49)
26 Ceiling Insulation(R38 to R49)
27 Central AC - CEE Tier 2: 16.8 SEER/16 SEER2
28 Central AC - 24 SEER/22.9 SEER2
29 Central AC - CEE Advanced Tier: 17.8 SEER/17 SEER2
30 Central AC - ENERGY STAR/CEE Tier 1: 16 SEER/15.2 SEER2
31 Central AC Tune Up
32 Dehumidifier Recycling
33 Drain Water Heat Recovery
34 Duct Insulation
35 Duct Repair
36 ECM Circulator Pump
37 Energy Star Air Purifier
38 Energy Star Audio-Video Equipment
39 Energy Star Bathroom Ventilating Fan
40 Energy Star Ceiling Fan

41 Energy Star Clothes Dryer
42 Energy Star Clothes Washer
43 Energy Star Dehumidifier
44 Energy Star Dishwasher
45 Energy Star Dishwasher (Gas Water Heating)
46 Energy Star Door
47 ENERGY STAR EV supply equipment (level 2 charger)
48 Energy Star Freezer
49 Energy Star Ground Source Heat Pump
50 Energy Star Imaging Equipment
51 Energy Star Monitor
52 Energy Star Personal Computer
53 Energy Star Refrigerator
54 Energy Star Room AC
55 Energy Star Set-Top Receiver
56 Energy Star TV
57 Energy Star Windows
58 Exterior Wall Insulation
59 Filter Whistle
60 Floor Insulation
61 Freezer Recycling
62 Green Roof
63 Heat Pump Clothes Dryer
64 Heat Pump Pool Heater
65 Heat Pump Tune Up
66 Heat Pump Water Heater 50 Gallons- CEE Advanced Tier
67 Heat Pump Water Heater 50 Gallons-ENERGY STAR
68 Heat Pump Water Heater 80 Gallons-ENERGY STAR
69 Heat Trap
70 High Efficiency Convection Oven
71 High Efficiency Induction Cooktop
72 Home Energy Management System
73 Hot Water Pipe Insulation
74 HVAC ECM Motor
75 HVAC Economizer
76 HVAC Zoning System
77 Indoor Daylight Sensor
78 Induction Range
79 Instantaneous Hot Water System
80 Kitchen Faucet Aerators
81 LED - 9W_CFL Baseline
82 LED - 9W_Halogen Baseline
83 LED Specialty Lamps-5W Chandelier
84 Linear LED

85 Low Flow Showerhead
86 New Construction - Whole Home Improvements - Tier 1
87 New Construction - Whole Home Improvements - Tier 2
88 Occupancy Sensors Switch Mounted
89 Outdoor Lighting Timer
90 Outdoor Motion Sensor
91 Ozone Laundry
92 Programmable Thermostat
93 Properly Sized CAC
94 Radiant Barrier
95 Reflective Roof
96 Refrigerator Coil Cleaning
97 Refrigerator Recycling
98 Residential Whole House Fan
99 Sealed crawlspace
100 Smart Breaker
101 Smart Panel
102 Smart Power Strip
103 Smart Thermostat
104 Solar Attic Fan
105 Solar Pool Heater
106 Solar Powered Pool Pumps
107 Solar Thermal Water Heating System
108 Spray Foam Insulation(Base R11)
109 Spray Foam Insulation(Base R19)
110 Spray Foam Insulation(Base R2)
111 Spray Foam Insulation(Base R30)
112 Thermostatic Shower Restriction Valve
113 Variable Refrigerant Flow (VRF) HVAC Systems
114 Water Heater Blanket
115 Water Heater Thermostat Setback
116 Water Heater Timeclock
117 Weather stripping
118 Window Caulking
119 Window Sun Protection

Commercial - Energy Efficiency

1 1.5HP Open Drip-Proof(ODP) Motor
2 10HP Open Drip-Proof(ODP) Motor
3 20HP Open Drip-Proof (ODP) Motor
4 Advanced Rooftop Controller
5 Air Compressor Optimization
6 Air Curtains
7 Airside Economizer
8 Anti-Sweat Controls

9 Auto Off Time Switch
10 Automatic Door Closer for Walk-in Coolers and Freezers
11 Beverage Vending Machine Controls
12 Bi-Level Lighting Control (Exterior)
13 Bi-Level Lighting Control (Interior)
14 Ceiling Insulation(R19 to R38)
15 Ceiling Insulation(R19 to R49)
16 Ceiling Insulation(R2 to R38)
17 Ceiling Insulation(R2 to R49)
18 Chilled Water Reset
19 Chiller maintenance
20 CO Sensors for Parking Garage Exhaust
21 Commercial Duct Sealing
22 Commercial Strategic Energy Management
23 Custom measure - Non-lighting
24 Data Center Hot Cold Aisle
25 Dedicated Outside Air System (DOAS)
26 Demand Controlled Circulating Systems
27 Demand Controlled Ventilation
28 Demand Defrost
29 Destratification Fans
30 Door Gasket (Cooler)
31 Door Gasket (Freezer)
32 Drain water heat recovery
33 Dual Enthalpy Economizer
34 Duct Insulation
35 Ductless Mini-Split AC
36 Ductless Mini-Split HP
37 DX Coil Cleaning
38 ECM Motors on Furnaces
39 Efficient Battery Charger
40 Efficient Exhaust Hood
41 Efficient Motor Belts
42 Efficient New Construction Lighting
43 Energy Recovery Ventilation System (ERV)
44 Energy Star Combination Oven
45 Energy Star Commercial Clothes Washer
46 Energy Star Commercial Dishwasher
47 Energy Star Commercial Glass Door Freezer
48 Energy Star Commercial Glass Door Refrigerator
49 Energy Star Commercial Solid Door Freezer
50 Energy Star Commercial Solid Door Refrigerator
51 Energy Star convection oven
52 Energy Star EV Chargers
53 Energy Star Fryer
54 Energy Star Griddle

55 Energy Star Hot Food Holding Cabinet
56 Energy Star Ice Maker
57 ENERGY STAR Imaging Equipment
58 Energy Star LED Directional Lamp
59 Energy Star Monitors
60 Energy Star PCs
61 Energy Star room AC
62 Energy Star Servers
63 Energy Star Steamer
64 Energy Star Uninterruptable Power Supply
65 Energy Star Vending Machine
66 ENERGY STAR Water Cooler
67 Energy Star windows
68 Engine Block Timer
69 Escalator Motor Efficiency Controller
70 Facility Commissioning
71 Facility Energy Management System
72 Faucet Aerator
73 Floating Head Pressure Controls
74 Floor Insulation
75 Geothermal Heat Pump
76 Green roof
77 HE Air Cooled Chiller - All Compressor Types - 100 Tons
78 HE DX 11.25-20.0 Tons Elec Heat
79 HE DX 11.25-20.0 Tons Other Heat
80 HE DX 5.4-11.25 Tons Elect Heat
81 HE DX 5.4-11.25 Tons Other Heat
82 HE DX Less than 5.4 Tons Elect Heat
83 HE DX Less than 5.4 Tons Other Heat
84 HE Water Cooled Chiller - Centrifugal Compressor - 200 Tons
85 HE Water Cooled Chiller - Centrifugal Compressor - 500 Tons
86 HE Water Cooled Chiller - Rotary or Screw Compressor - 175 Tons
87 HE Water Cooled Chiller - Rotary or Screw Compressor - 50 Tons
88 Heat Pump Pool Heater Commercial
89 Heat Pump Water Heater
90 High Efficiency Air Compressor
91 High Efficiency Data Center Cooling
92 High Efficiency PTAC
93 High Efficiency PTHP
94 High Efficiency Refrigeration Compressor_Discus
95 High Efficiency Refrigeration Compressor_Scroll
96 High Speed Fans
97 Hot water pipe insulation
98 Hotel Card Energy Control Systems
99 Indoor daylight sensor
100 Induction Cooktops

101 Infiltration Reduction - Air Sealing
102 Instantaneous Hot Water System Commercial
103 LED - 14W_CFL Baseline
104 LED - 9W Flood_CFL Baseline
105 LED Canopy Lighting (Exterior)
106 LED Display Lighting (Exterior)
107 LED Display Lighting (Interior)
108 LED Exit Sign
109 LED Exterior Wall Packs
110 LED High Bay_HID Baseline
111 LED High Bay_LF Baseline
112 LED Linear - Fixture Replacement
113 LED Linear - Lamp Replacement
114 LED Parking Lighting
115 LEED New Construction Whole Building
116 Light Tube
117 Low Flow Shower Head
118 Low-Flow Pre-Rinse Sprayers
119 Network PC Power Management
120 Networked Lighting Controls
121 Night Covers for Display Cases
122 Occupancy Sensors, Ceiling Mounted
123 Occupancy Sensors, Switch Mounted
124 Outdoor Lighting Controls
125 Outdoor motion sensor
126 Ozone Laundry Commercial
127 Programmable thermostat
128 PSC to ECM Evaporator Fan Motor (Reach-In)
129 PSC to ECM Evaporator Fan Motor (Walk-In, Refrigerator)
130 Q-Sync Evaporator Fan Motor
131 Reflective Roof Treatment
132 Refrigerated Display Case LED Lighting
133 Refrigerated Display Case Lighting Controls
134 Refrigeration Commissioning
135 Refrigeration Economizer
136 Regenerative Drive Elevator Motor
137 Retro-Commissioning
138 Roof Insulation
139 Server Virtualization
140 Smart Strip Plug Outlet
141 Smart thermostat
142 Solar Pool Heater Commercial
143 Solar Powered Pool Pump
144 Solar Thermal Water Heating System Commercial
145 Strip Curtains - Freezers
146 Strip Curtains - Refrigerators

147 Suction Pipe Insulation - Freezers
148 Suction Pipe Insulation - Refrigerators
149 Thermal Energy Storage
150 Thermostatic Shower Restriction Valve Commercial
151 Time Clock Control
152 Variable Refrigerant Flow (VRF) HVAC Systems
153 VAV System
154 VFD on Cooling Tower Fans
155 VFD on HVAC Pump
156 VSD Controlled Compressor
157 Wall Insulation
158 Warehouse Loading Dock Seals
159 Water Cooled Refrigeration Heat Recovery
160 Water Heater Setback
161 Water source heat pump
162 Waterside Economizer
163 Window shade film
164 Zero Energy Doors

Industrial - Energy Efficiency

1 1.5HP Open Drip-Proof(ODP) Motor
2 10HP Open Drip-Proof (ODP) Motor
3 20HP Open Drip-Proof (ODP) Motor
4 3-phase High Frequency Battery Charger - 1 shift
5 Advanced Rooftop Controller
6 Air Compressor Optimization
7 Air curtains
8 Airside economizer
9 Auto Closer on Refrigerator Door
10 Auto Off Time Switch
11 Bi-Level Lighting Control (Exterior)
12 Bi-Level Lighting Control (Interior)
13 Chilled Water Reset
14 Cogged Belt on 15hp ODP Motor
15 Cogged Belt on 40hp ODP Motor
16 Compressed Air Desiccant Dryer
17 Compressed Air No-Loss Condensate Drains
18 Compressed Air Storage Tank
19 Custom Measure - Non-Lighting
20 Dairy Refrigeration Heat Recovery
21 Dedicated Outside Air System (DOAS)
22 Demand Controlled Ventilation
23 Demand Defrost
24 Dew Point Sensor Control for Dessicant CA Dryer
25 Drip Irrigation Nozzles

26 Dual Enthalpy Economizer
27 DX Coil Cleaning
28 Efficient Compressed Air Nozzles
29 Efficient New Construction Lighting
30 Electric Actuators
31 Energy Efficient Laboratory Fume Hood
32 Energy Efficient Transformers
33 Energy Recovery Ventilation System
34 Energy Star LED Directional Lamp
35 Energy Star room ac
36 Energy Star windows
37 Engine Block Timer
38 Facility Commissioning
39 Facility Energy Management System
40 Fan Thermostat Controller
41 Floating Head Pressure Controller
42 Grain Bin Aeration Control System
43 HE Air Cooled Chiller - All Compressor Types - 100 Tons
44 HE Air Cooled Chiller - All Compressor Types - 300 Tons
45 HE DX 11.25-20.0 Tons Elec Heat
46 HE DX 11.25-20.0 Tons Other Heat
47 HE DX 5.4-11.25 Tons Elect Heat
48 HE DX 5.4-11.25 Tons Other Heat
49 HE DX Less than 5.4 Tons Elect Heat
50 HE DX Less than 5.4 Tons Other Heat
51 HE Water Cooled Chiller - Centrifugal Compressor - 200 Tons
52 HE Water Cooled Chiller - Centrifugal Compressor - 500 Tons
53 HE Water Cooled Chiller - Rotary or Screw Compressor - 175 Tons
54 HE Water Cooled Chiller - Rotary or Screw Compressor - 50 Tons
55 High Bay Occupancy Sensors, Ceiling Mounted
56 High Efficiency Air Compressor
57 High Efficiency Refrigeration Compressor - Discus
58 High Efficiency Refrigeration Compressor - Scroll
59 High Efficiency Welder
60 High Speed Fans
61 High Volume Low Speed Fan (HVLS)
62 Indoor Agriculture - LED Grow Lights
63 Indoor daylight sensor
64 Industrial Duct Sealing
65 Injection Mold and Extruder Barrel Wraps
66 Insulated Pellet Dryer Tanks and Ducts
67 LED - 14W_CFL Baseline
68 LED Canopy Lighting (Exterior)
69 LED Display Lighting (Exterior)
70 LED Display Lighting (Interior)
71 LED exit sign

72 LED Exterior Wall Packs
73 LED High Bay_HID Baseline
74 LED High Bay_LF Baseline
75 LED Linear - Fixture Replacement
76 LED Linear - Lamp Replacement
77 LED Parking Lighting
78 LEED New Construction Whole Building
79 Light Tube
80 Low Energy Livestock Waterer
81 Low Pressure Sprinkler Nozzles
82 Low Pressure-drop Filters
83 Milk Pre-Cooler
84 Networked Lighting Controls
85 Occupancy Sensors, Ceiling Mounted
86 Occupancy sensors, switch mounted
87 Outdoor Lighting Controls
88 Outdoor motion sensor
89 Packaged Terminal AC
90 Process Cooling Ventilation Reduction
91 Programmable thermostat
92 Reflective Roof Treatment
93 Refrigeration Commissioning
94 Retro-Commissioning
95 Roof insulation
96 Smart thermostat
97 Strategic Energy Management
98 Synchronous Belt on 15hp ODP Motor
99 Synchronous Belt on 5hp ODP Motor
100 Synchronous Belt on 75hp ODP Motor
101 Thermal energy storage
102 Time Clock Control
103 VAV System
104 VFD on Air Compressor
105 VFD on Cooling Tower Fans
106 VFD on HVAC Fan
107 VFD on HVAC Pump
108 VFD on process pump
109 VSD Controlled Compressor
110 Water source heat pump
111 Waterside economizer
112 Window shade film

Demand Response

Residential - Demand Response

1 Central air conditioner - Load Shed
2 Central air conditioner - 50% cycling
3 Water heater switches
4 Pool pump switches
5 Room AC control
6 Smart thermostats - Utility Installation
7 Smart thermostats - BYOT
8 CPP + Tech
9 Central Heating - Load Shed
10 Central Heating - 50% cycling
11 Solar PV
12 Paired Battery Storage
13 EV Charging (telematics)
14 EV Charging (external switch)

Commercial - Demand Response

1 Central air conditioner - Load Shed
2 Central air conditioner - 50% cycling
3 Smart thermostats - Utility Installation
4 Smart thermostats - BYOT
5 CPP + Tech
6 Central Heating - Load Shed
7 Central Heating - 50% cycling
8 Solar PV
9 Paired Battery Storage
10 EV Charging (telematics)
11 EV Charging (external switch)

Large Commercial/Industrial - Demand Response

1 Auto DR
2 CPP
3 Firm Service Level
4 Guaranteed Load Drop

Distributed Energy Resources

Residential - Distributed Energy Resources

1 PV System
2 Paired Battery Storage

Commercial/Industrial - Distributed Energy Resources

1 PV System
2 Paired Battery Storage
3 5500 kW Steam Turbine-Biomass
4 3500 kW Steam Turbine-Biomass
5 3500 kW Gas Turbine
6 3000 kW Gas Turbine
7 2500 kW Gas Turbine
8 4500 kW Reciprocating Engine
9 1500 kW Steam Turbine-Biomass
10 3000 kW Reciprocating Engine
11 1125 kW Fuel Cell
12 800 kW Fuel Cell-Biogas
13 1250 kW Reciprocating Engine
14 1250 kW Reciprocating Engine-Biogas
15 500 kW Fuel Cell
16 350 kW Reciprocating Engine
17 175 kW Fuel Cell
18 200 kW Micro Turbine
19 150 kW Reciprocating Engine
20 100 kW Micro Turbine
21 100 kW Micro Turbine- Biogas
22 50 kW Micro Turbine

Total Measures Evaluated

395	Energy Efficiency
29	Demand Response
24	Distributed Energy Resources

Total Measure Permutations

7,916	Energy Efficiency
102	Demand Response
24	Distributed Energy Resources

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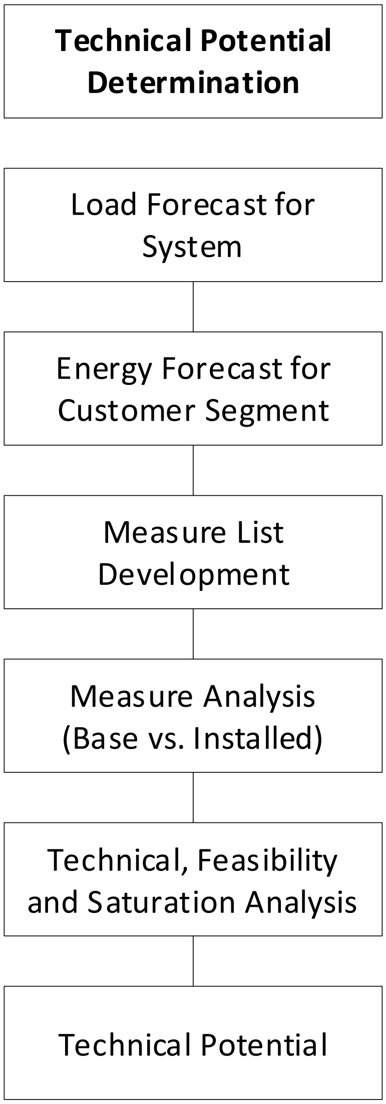

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Tampa Electric’s 2024 Technical Potential

1. Tampa Electric’s 2024 Technical Potential

Energy Efficiency:	SkW	1,390 MW
	WkW	779 MW
	AE	5,469 GWh
Demand Response:	SkW	3,112 MW
	WkW	3,130 MW
	AE	0 GWh
Distributed Energy Resources:	SkW	1,725 MW
	WkW	1,424 MW
	AE	12,004 GWh

2. Tampa Electric’s 2019 Technical Potential

Energy Efficiency:	SkW	1,138 MW
	WkW	583 MW
	AE	4,483 GWh
Demand Response:	SkW	2,399 MW
	WkW	2,318 MW
	AE	0 GWh
Distributed Energy Resources:	SkW	2,215 MW
	WkW	619 MW
	AE	12,266 GWh

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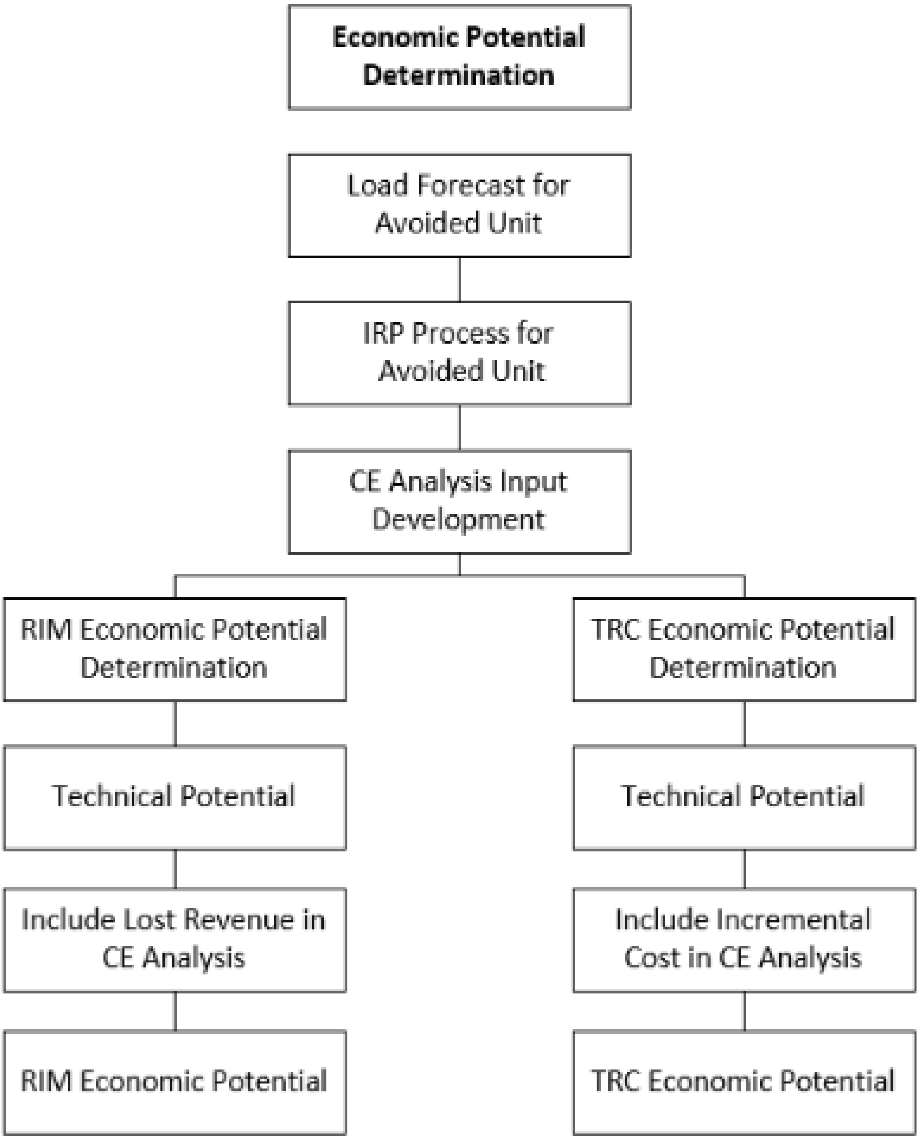

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Tampa Electric's Avoided Unit Data for 2025-2034 DSM Goals Setting

1. In-service Date:	January 1, 2030
2. Type of Unit:	Reciprocating Engine
3. Type of Fuel:	Natural Gas
4. Average Annual heat rate Average (Btu/kWh):	8,084
5. Cost of Fuel Natural Gas (2023 $/MMBtu):	5.99
6. Construction Cost (W/O AFUDC)	
a: 2023 $000	23,916
b: $/kW (based on winter rating)	1,278.92
7. Construction Escalation Rate 2023 & beyond:	2.0 percent
8. In-service Cost (W/AFUDC)	
a: 2023 $000	28,151
b: $/kW (based on average rating)	1,505.40
9. Incremental Capital Structure	
a: Debt	46.00 percent
c: Common Stock	54.00 percent
10. Cost of Capital	
a: Debt	4.73 percent
c: Common Stock	10.20 percent
11. Book Life	30 years
12. Tax Life	15 years
13. AFUDC Rate	5.89 percent
14. Effective Tax Rate	25.345 percent
15. Other Taxes (2023)	1.18 percent
16. Other Taxes Escalation Rate	0.00 percent
17. Discount Rate for Present Worth	7.132 percent
18. Fixed O&M Costs (2023 $/kW/yr)	29.37
19. Variable O&M Costs (2023 $/MWh)	2.41
20. O&M Escalation Rate 2023 & beyond	2.2 percent
21. Value of K-factor	1.344
22. Capacity (kW) Winter	18,700
23 Capacity (kW) Summer	18,700

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Tampa Electric's Cost-Effectiveness Inputs for 2025-2034 DSM Goals Setting

Line Losses and Outage Rate	**units**
Residential Line loss percentage	7.15 percent
Commercial/Industrial Line loss percentage	7.00 percent
Forced outage rate	3.4 percent

Life & k factors	**units**
Generator economic life	25 years
T&D economic life	25 years
k factor for generation	1.3443
k factor for T&D	1.3443

Utility & Customer costs	**units**
Utility cost escalation rate	2.2 percent
Customer equipment escalation rate	2.1 percent
Customer O&M escalation rate	2.2 percent
Utility discount rate	7.132 percent
Utility AFUDC rate	5.89 percent
Utility rebate/incentive escalation rate	0.0 percent

Avoided generator, trans., & dist. Costs	**units**
Base year	2025
In-service year for avoided generating unit	2030
In-service year for avoided T&D	2026
Base year avoided generating unit cost	$1,307.06/kW
Base year avoided transmission cost	$20.54/kW
Base year distribution cost	$179.45/kW
Gen., tran., & dist. cost escalation rate	2.2 percent
Generator fixed O&M cost	$30.02/kW-yr
Generator fixed O&M escalation rate	2.2 percent
Transmission fixed O&M cost	$3.29/kW-yr
Distribution fixed O&M cost	$10.52/kW-yr
T&D fixed O&M escalation rate	2.2 percent
Avoided gen unit variable O&M costs	0.241 cents/kWh
Generator variable O&M cost escalation rate	2.2 percent
Generator capacity factor	23.9 percent
Avoided generating unit fuel cost	5.27 cents/kWh
Avoided gen unit fuel escalation rate	2.61 percent
Avoided purchase capacity cost per kW	$0/kW-yr
Capacity cost escalation rate	0.0 percent

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Tampa Electric’s 2024 Economic Potential

1. **Tampa Electric’s 2024 Economic Potential**

RIM Based

Energy Efficiency:	SkW	1,201 MW
	WkW	686 MW
	AE	4,567 GWh
Demand Response:	SkW	3,112 MW
	WkW	3,131 MW
	AE	0 GWh
Distributed Energy Resources:	SkW	946 MW
	WkW	1,169 MW
	AE	4,004 GWh

TRC Based

Energy Efficiency:	SkW	214 MW
	WkW	283 MW
	AE	1,377 GWh
Demand Response:	SkW	3,112 MW
	WkW	3,131 MW
	AE	0 GWh
Distributed Energy Resources:	SkW	0 MW
	WkW	0 MW
	AE	0 GWh

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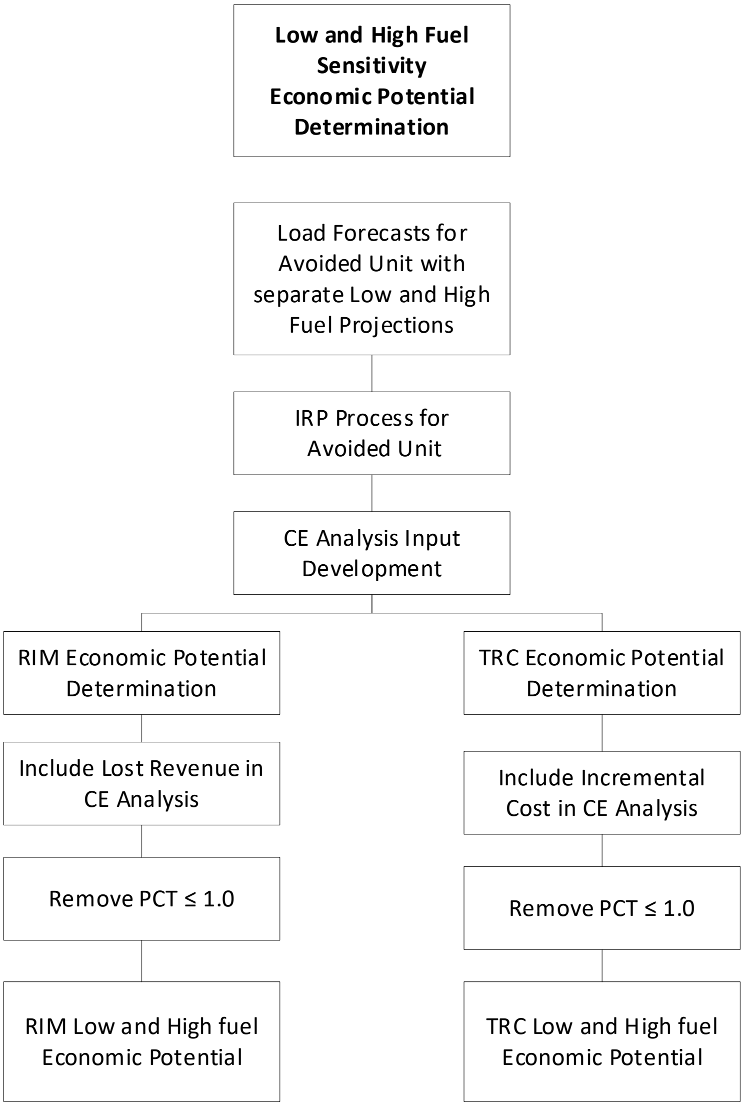

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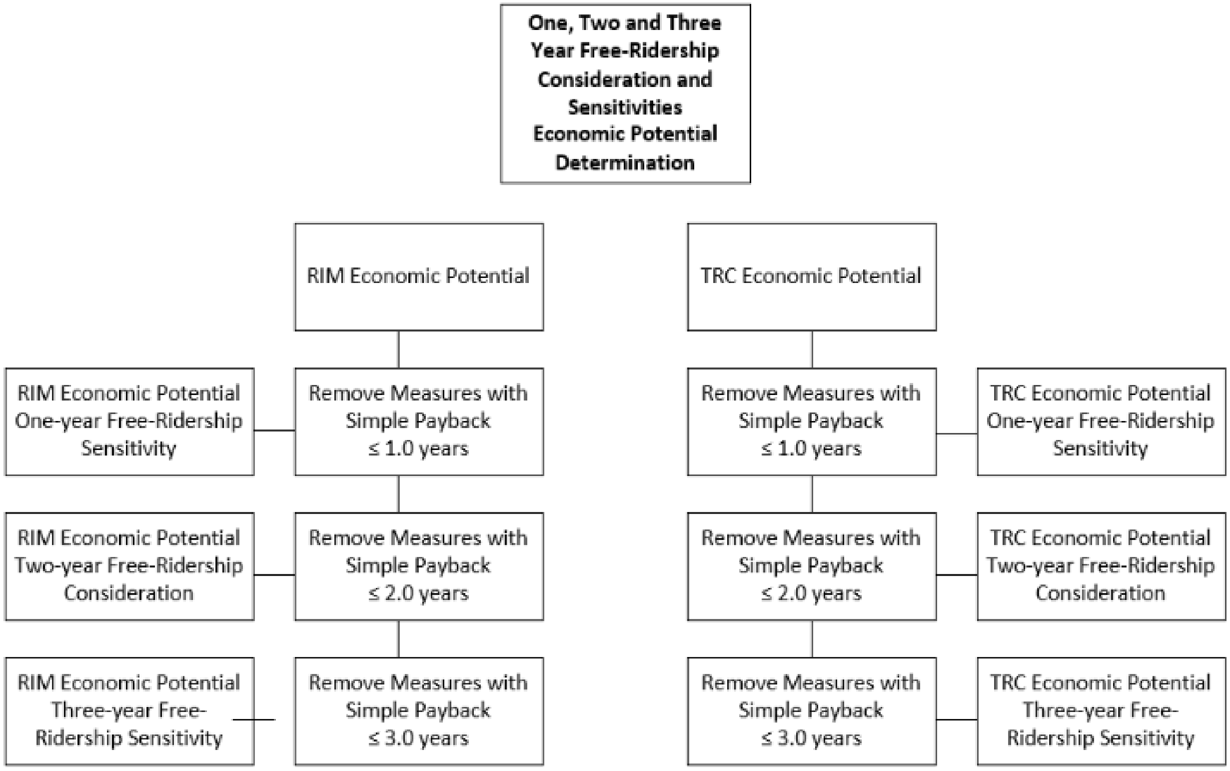

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Economic Potential Sensitivities

High and Low Fuel

RIM Based
Total Economic Potential

SkW: 5,259 MW
WkW: 4,986 MW
AE: 8,571 GWh
Passing Permutations: 7,506

RIM Based
Low-Fuel Sensitivity
SkW: 3,259 MW
WkW: 3,300 MW
AE: 963 GWh
Passing Permutations: 3,030

RIM Based
High-Fuel Sensitivity
SkW: 3,336 MW
WkW: 3,436 MW
AE: 1,675 GWh
Passing Permutations: 3,377

TRC Based
Total Economic Potential

SkW: 3,326 MW
WkW: 3,414 MW
AE: 1,377 GWh
Passing Permutations: 3,352

TRC Based
Low-Fuel Sensitivity
SkW: 3,312 MW
WkW: 3,328 MW
AE: 1,171 GWh
Passing Permutations: 3,181

TRC Based
High-Fuel Sensitivity
SkW: 3,331 MW
WkW: 3,341 MW
AE: 1,315 GWh
Passing Permutations: 3,439

1, 2, and 3-Year Simple Payback – Sensitivity

1-Year Simple Payback - Sensitivity

RIM				
	Residential	Commercial	Industrial	Total
Permutations	702	4,650	2,564	7,916
Removed due to RIM	-280	-230	-24	-534
Removed due to PCT	-310	-2,761	-1,268	-4,339
Before 1-year consideration	112	1,659	1,272	3,043
Removed due to 1-year Simple Payback	-12	-514	-651	-1,177
Remaining following 1-year consideration	100	1,145	621	1,866

TRC				
	Residential	Commercial	Industrial	Total
Permutations	702	4,650	2,564	7,916
Removed due to TRC	-480	-2,942	-1,242	-4,664
Removed due to PCT	-20	-52	-50	-122
Before 1-year consideration	202	1,656	1,272	3,130
Removed due to 1-year Simple Payback	-70	-504	-651	-1,225
Remaining following 1-year consideration	132	1,152	621	1,905

2-Year Simple Payback - Sensitivity

RIM				
	Residential	Commercial	Industrial	Total
Permutations	702	4,650	2,564	7,916
Removed due to RIM	-280	-230	-24	-534
Removed due to PCT	-310	-2,761	-1,268	-4,339
Before 2-year consideration	112	1,659	1,272	3,043
Removed due to 2-year Simple Payback	-24	-813	-842	-1,679
Remaining following 2-year consideration	88	846	430	1,364

TRC				
	Residential	Commercial	Industrial	Total
Permutations	702	4,650	2,564	7,916
Removed due to TRC	-480	-2,942	-1,242	-4,664
Removed due to PCT	-20	-52	-50	-122
Before 2-year consideration	202	1,656	1,272	3,130
Removed due to 2-year Simple Payback	-102	-822	-842	-1,766
Remaining following 2-year consideration	100	834	430	1,364

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3-Year Simple Payback – Sensitivity

	RIM			
	Residential	Commercial	Industrial	Total
Permutations	702	4,650	2,564	7,916
Removed due to RIM	-280	-230	-24	-534
Removed due to PCT	-310	-2,761	-1,268	-4,339
Before 3-year consideration	112	1,659	1,272	3,043
Removed due to 3-year Simple Payback	-40	-1,169	-1,050	-2,259
Remaining following 3-year consideration	72	490	222	784

	TRC			
	Residential	Commercial	Industrial	Total
Permutations	702	4,650	2,564	7,916
Removed due to TRC	-480	-2,942	-1,242	-4,664
Removed due to PCT	-20	-52	-50	-122
Before 3-year consideration	202	1,656	1,272	3,130
Removed due to 3-year Simple Payback	-124	-1,178	-1,050	-2,352
Remaining following 3-year consideration	78	478	222	778

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Free-Ridership Consideration

2-year Simple Payback Screen with

RIM/PCT and TRC/PCT following Economic Potential

	RIM			
	Residential	Commercial	Industrial	Total
Permutations	702	4,650	2,564	7,916
Removed due to RIM	-280	-230	-24	-534
Removed due to PCT	-310	-2,761	-1,268	-4,339
Before 2-year consideration	112	1,659	1,272	3,043
Removed due to 2-year Simple Payback	-24	-813	-842	-1,679
Remaining following 2-year consideration	88	846	430	1,364

	TRC			
	Residential	Commercial	Industrial	Total
Permutations	702	4,650	2,564	7,916
Removed due to TRC	-480	-2,942	-1,242	-4,664
Removed due to PCT	-20	-52	-50	-122
Before 2-year consideration	202	1,656	1,272	3,130
Removed due to 2-year Simple Payback	-102	-822	-842	-1,766
Remaining following 2-year consideration	100	834	430	1,364

Proposed DSM Program Portfolio

Program Level Detail

Residential Programs:

1. Residential Walk-Through Audit (Free Energy Check)

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	322	0.065	0.050	1.288	0.262	0.202
2026	322	0.065	0.050	2.577	0.524	0.403
2027	322	0.065	0.050	3.865	0.785	0.605
2028	322	0.065	0.050	5.153	1.047	0.807
2029	322	0.065	0.050	6.442	1.309	1.009
2030	322	0.065	0.050	8.052	1.636	1.261
2031	322	0.065	0.050	9.662	1.964	1.513
2032	322	0.065	0.050	11.273	2.291	1.765
2033	322	0.065	0.050	12.883	2.618	2.017
2034	322	0.065	0.050	14.494	2.945	2.269

	Free Audit	
Costs		
Admin	**$ 388.00**	
Recurring	**$ -**	
Incentive	**$ -**	
TOTAL COST	$ 388.00	
	Part.	*Costs*
2025	4,000	$ 388.00
2026	4,000	$ 388.00
2027	4,000	$ 388.00
2028	4,000	$ 388.00
2029	4,000	$ 388.00
2030	5,000	$ 388.00
2031	5,000	$ 388.00
2032	5,000	$ 388.00
2033	5,000	$ 388.00
2034	5,000	$ 388.00

Cost-Effectiveness not performed.

2. Residential Customer Assisted Energy Audit (Online)

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	242	0.049	0.038	18.117	3.682	2.837
2026	242	0.049	0.038	36.234	7.363	5.673
2027	242	0.049	0.038	54.351	11.045	8.510
2028	242	0.049	0.038	72.468	14.727	11.347
2029	242	0.049	0.038	90.585	18.409	14.184
2030	242	0.049	0.038	108.702	22.090	17.020
2031	242	0.049	0.038	126.819	25.772	19.857
2032	242	0.049	0.038	144.936	29.454	22.694
2033	242	0.049	0.038	163.053	33.136	25.531
2034	242	0.049	0.038	181.170	36.817	28.367

	Customer Assisted Audit	
Costs		
Admin	**$ 4.50**	
Recurring	**$ -**	
Incentive	**$ -**	
TOTAL COST	$ 4.50	
	Part.	*Costs*
2025	75,000	$ 4.50
2026	75,000	$ 4.50
2027	75,000	$ 4.50
2028	75,000	$ 4.50
2029	75,000	$ 4.50
2030	75,000	$ 4.50
2031	75,000	$ 4.50
2032	75,000	$ 4.50
2033	75,000	$ 4.50
2034	75,000	$ 4.50

Cost-Effectiveness not performed.

3. Residential Computer Assisted Energy Audit (RCS)(Paid)

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	322	0.065	0.050	0.001	0.000	0.000
2026	322	0.065	0.050	0.003	0.001	0.000
2027	322	0.065	0.050	0.004	0.001	0.001
2028	322	0.065	0.050	0.005	0.001	0.001
2029	322	0.065	0.050	0.006	0.001	0.001
2030	322	0.065	0.050	0.008	0.002	0.001
2031	322	0.065	0.050	0.009	0.002	0.001
2032	322	0.065	0.050	0.010	0.002	0.002
2033	322	0.065	0.050	0.012	0.002	0.002
2034	322	0.065	0.050	0.013	0.003	0.002

	RCS Audit	
Costs		
Admin	**$ 425.00**	
Recurring	**$ -**	
Incentive	**$ -**	
TOTAL COST	$ 425.00	
	Part.	*Costs*
2025	4	$ 425.00
2026	4	$ 425.00
2027	4	$ 425.00
2028	4	$ 425.00
2029	4	$ 425.00
2030	4	$ 425.00
2031	4	$ 425.00
2032	4	$ 425.00
2033	4	$ 425.00
2034	4	$ 425.00

Cost-Effectiveness not performed.

4. Residential Ceiling Insulation

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	400	0.113	0.194	0.180	0.051	0.087
2026	400	0.113	0.194	0.360	0.101	0.175
2027	400	0.113	0.194	0.540	0.152	0.262
2028	400	0.113	0.194	0.720	0.203	0.350
2029	400	0.113	0.194	0.901	0.253	0.437
2030	400	0.113	0.194	1.081	0.304	0.524
2031	400	0.113	0.194	1.261	0.355	0.612
2032	400	0.113	0.194	1.441	0.406	0.699
2033	400	0.113	0.194	1.621	0.456	0.787
2034	400	0.113	0.194	1.801	0.507	0.874

	Ceiling Insulation			
Costs				
Admin	**$ 35.00**			
Recurring	**$ -**			
Incentive	**$ 224.00**	**$0.16 per square foot**		
TOTAL COST	$ 259.00			
	Part.	*Rebate*	*Admin*	*Admin + Rebate*
2025	450	$ 224.00	$ 35.00	$ 259.00
2026	450	$ 224.00	$ 35.00	$ 259.00
2027	450	$ 224.00	$ 35.00	$ 259.00
2028	450	$ 224.00	$ 35.00	$ 259.00
2029	450	$ 224.00	$ 35.00	$ 259.00
2030	450	$ 224.00	$ 35.00	$ 259.00
2031	450	$ 224.00	$ 35.00	$ 259.00
2032	450	$ 224.00	$ 35.00	$ 259.00
2033	450	$ 224.00	$ 35.00	$ 259.00
2034	450	$ 224.00	$ 35.00	$ 259.00

Cost-Effectiveness Results:

TRC: 1.12 PCT: 356 RIM: 1.05

5. Residential Duct Repair

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	957	0.175	0.438	0.431	0.079	0.197
2026	957	0.175	0.438	0.861	0.157	0.394
2027	957	0.175	0.438	1.292	0.236	0.591
2028	957	0.175	0.438	1.722	0.315	0.788
2029	957	0.175	0.438	2.153	0.394	0.985
2030	957	0.175	0.438	2.583	0.472	1.182
2031	957	0.175	0.438	3.014	0.551	1.379
2032	957	0.175	0.438	3.444	0.630	1.576
2033	957	0.175	0.438	3.875	0.708	1.773
2034	957	0.175	0.438	4.305	0.787	1.970

	Duct Repair			
Costs				
Admin	**$ 35.00**			
Recurring	**$ -**			
Incentive	**$ 270.00**			
TOTAL COST	$ 305.00			
	Part.	*Rebate*	*Admin*	*Admin + Rebate*
2025	450	$ 270.00	$ 35.00	$ 305.00
2026	450	$ 270.00	$ 35.00	$ 305.00
2027	450	$ 270.00	$ 35.00	$ 305.00
2028	450	$ 270.00	$ 35.00	$ 305.00
2029	450	$ 270.00	$ 35.00	$ 305.00
2030	450	$ 270.00	$ 35.00	$ 305.00
2031	450	$ 270.00	$ 35.00	$ 305.00
2032	450	$ 270.00	$ 35.00	$ 305.00
2033	450	$ 270.00	$ 35.00	$ 305.00
2034	450	$ 270.00	$ 35.00	$ 305.00

Cost-Effectiveness Results:

TRC: 1.60 PCT: 1,281 RIM: 1.08

6. Energy and Renewable Education, Awareness and Agency Outreach

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	352	0.107	0.015	0.615	0.188	0.026
2026	352	0.107	0.015	1.231	0.376	0.053
2027	352	0.107	0.015	1.846	0.563	0.079
2028	352	0.107	0.015	2.462	0.751	0.105
2029	352	0.107	0.015	3.077	0.939	0.131
2030	352	0.107	0.015	3.692	1.127	0.158
2031	352	0.107	0.015	4.308	1.314	0.184
2032	352	0.107	0.015	4.923	1.502	0.210
2033	352	0.107	0.015	5.538	1.690	0.237
2034	352	0.107	0.015	6.154	1.878	0.263

	Educ. & Agency Outreach	
Costs		
Admin	**$ 47.10**	
Recurring	**$ -**	
Incentive	**$ -**	
TOTAL COST	$ 47.10	
	Part.	*Costs*
2025	1,750	$ 47.10
2026	1,750	$ 47.10
2027	1,750	$ 47.10
2028	1,750	$ 47.10
2029	1,750	$ 47.10
2030	1,750	$ 47.10
2031	1,750	$ 47.10
2032	1,750	$ 47.10
2033	1,750	$ 47.10
2034	1,750	$ 47.10

Cost-Effectiveness Results:

TRC: 5.51 PCT: 2,462 RIM: 0.94

7. **ENERGY STAR for New Multi-Family Residences**

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	1,812	0.220	0.549	0.000	0.000	0.000
2026	1,812	0.220	0.549	0.000	0.000	0.000
2027	1,812	0.220	0.549	0.544	0.066	0.165
2028	1,812	0.220	0.549	0.544	0.066	0.165
2029	1,812	0.220	0.549	0.544	0.066	0.165
2030	1,812	0.220	0.549	1.087	0.132	0.330
2031	1,812	0.220	0.549	1.087	0.132	0.330
2032	1,812	0.220	0.549	1.087	0.132	0.330
2033	1,812	0.220	0.549	1.631	0.198	0.494
2034	1,812	0.220	0.549	1.631	0.198	0.494

	ENERGY STAR Multi Family			
Costs				
Admin	**$ 25.00**			
Recurring	**$ -**			
Incentive	**$ 345.00**			
TOTAL COST	$ 370.00			
	Part.	*Rebate*	*Admin*	*Admin + Rebate*
2025	0	$ 345.00	$ 25.00	$ 370.00
2026	0	$ 345.00	$ 25.00	$ 370.00
2027	300	$ 345.00	$ 25.00	$ 370.00
2028	0	$ 345.00	$ 25.00	$ 370.00
2029	0	$ 345.00	$ 25.00	$ 370.00
2030	300	$ 345.00	$ 25.00	$ 370.00
2031	0	$ 345.00	$ 25.00	$ 370.00
2032	0	$ 345.00	$ 25.00	$ 370.00
2033	300	$ 345.00	$ 25.00	$ 370.00
2034	0	$ 345.00	$ 25.00	$ 370.00

Cost-Effectiveness Results:

TRC: 1.31 PCT: 1,484 RIM: 1.01

8. ENERGY STAR for New Homes

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	4,694	0.702	1.202	1.878	0.281	0.481
2026	4,694	0.702	1.202	3.755	0.561	0.961
2027	4,694	0.702	1.202	5.633	0.842	1.442
2028	4,694	0.702	1.202	7.510	1.123	1.923
2029	4,694	0.702	1.202	9.388	1.403	2.404
2030	4,694	0.702	1.202	11.735	1.754	3.004
2031	4,694	0.702	1.202	14.082	2.105	3.605
2032	4,694	0.702	1.202	16.429	2.456	4.206
2033	4,694	0.702	1.202	18.776	2.807	4.807
2034	4,694	0.702	1.202	21.123	3.158	5.408

	ENERGY STAR New Homes			
Costs				
Admin	**$ 25.00**			
Recurring	**$ -**			
Incentive	**$ 425.00**			
TOTAL COST	$ 450.00			
	Part.	*Rebate*	*Admin*	*Admin + Rebate*
2025	400	$ 425.00	$ 25.00	$ 450.00
2026	400	$ 425.00	$ 25.00	$ 450.00
2027	400	$ 425.00	$ 25.00	$ 450.00
2028	400	$ 425.00	$ 25.00	$ 450.00
2029	400	$ 425.00	$ 25.00	$ 450.00
2030	500	$ 425.00	$ 25.00	$ 450.00
2031	500	$ 425.00	$ 25.00	$ 450.00
2032	500	$ 425.00	$ 25.00	$ 450.00
2033	500	$ 425.00	$ 25.00	$ 450.00
2034	500	$ 425.00	$ 25.00	$ 450.00

Cost-Effectiveness Results:

TRC: 3.35 PCT: 8,772 RIM: 1.10

9. ENERGY STAR Thermostats

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	558	0.102	0.254	0.390	0.071	0.178
2026	558	0.102	0.254	0.781	0.143	0.356
2027	558	0.102	0.254	1.171	0.214	0.534
2028	558	0.102	0.254	1.561	0.285	0.712
2029	558	0.102	0.254	1.951	0.357	0.890
2030	558	0.102	0.254	2.342	0.428	1.068
2031	558	0.102	0.254	2.732	0.499	1.246
2032	558	0.102	0.254	3.122	0.571	1.424
2033	558	0.102	0.254	3.513	0.642	1.602
2034	558	0.102	0.254	3.903	1.738	1.780

	ENERGY STAR T-Stat			
Costs				
Admin	*$ 25.00*			
Recurring	*$ -*			
Incentive	*$ 22.00*			
TOTAL COST	*$ 47.00*			
	Part.	*Rebate*	*Admin*	*Admin + Rebate*
2025	700	$ 22.00	$ 25.00	$ 47.00
2026	700	$ 22.00	$ 25.00	$ 47.00
2027	700	$ 22.00	$ 25.00	$ 47.00
2028	700	$ 22.00	$ 25.00	$ 47.00
2029	700	$ 22.00	$ 25.00	$ 47.00
2030	700	$ 22.00	$ 25.00	$ 47.00
2031	700	$ 22.00	$ 25.00	$ 47.00
2032	700	$ 22.00	$ 25.00	$ 47.00
2033	700	$ 22.00	$ 25.00	$ 47.00
2034	700	$ 22.00	$ 25.00	$ 47.00

Cost-Effectiveness Results:

TRC: 2.25 PCT: 831 RIM: 1.07

10. Residential Heating and Cooling

Tier 1:

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	6,392	4.210	0.138	3.196	2.105	0.069
2026	6,392	4.210	0.138	6.392	4.210	0.138
2027	6,392	4.210	0.138	9.588	6.316	0.208
2028	6,392	4.210	0.138	12.784	8.421	0.277
2029	6,392	4.210	0.138	15.980	10.526	0.346
2030	6,392	4.210	0.138	19.176	12.631	0.415
2031	6,392	4.210	0.138	22.372	14.737	0.484
2032	6,392	4.210	0.138	25.568	16.842	0.554
2033	6,392	4.210	0.138	28.764	18.947	0.623
2034	6,392	4.210	0.138	31.960	21.052	0.692

	Heating and Cooling - Tier 1			
Costs				
Admin	*$ 35.00*			
Recurring	*$ -*			
Incentive	*$ 40.00*			
TOTAL COST	*$ 75.00*			
	Part.	*Rebate*	*Admin*	*Admin + Rebate*
2025	500	$ 40.00	$ 35.00	$ 75.00
2026	500	$ 40.00	$ 35.00	$ 75.00
2027	500	$ 40.00	$ 35.00	$ 75.00
2028	500	$ 40.00	$ 35.00	$ 75.00
2029	500	$ 40.00	$ 35.00	$ 75.00
2030	500	$ 40.00	$ 35.00	$ 75.00
2031	500	$ 40.00	$ 35.00	$ 75.00
2032	500	$ 40.00	$ 35.00	$ 75.00
2033	500	$ 40.00	$ 35.00	$ 75.00
2034	500	$ 40.00	$ 35.00	$ 75.00

Cost-Effectiveness Results:

TRC: 8.42 PCT: 13,177 RIM: 1.87

Tier 2:

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	6674	4.262	0.259	6.674	4.262	0.259
2026	6674	4.262	0.259	13.348	8.524	0.517
2027	6674	4.262	0.259	20.022	12.786	0.776
2028	6674	4.262	0.259	26.696	17.048	1.034
2029	6674	4.262	0.259	33.370	21.310	1.293
2030	6674	4.262	0.259	40.044	25.572	1.552
2031	6674	4.262	0.259	46.717	29.834	1.810
2032	6674	4.262	0.259	53.391	34.096	2.069
2033	6674	4.262	0.259	60.065	38.358	2.327
2034	6674	4.262	0.259	66.739	42.620	2.586

	Heating and Cooling - Tier 2			
Costs				
Admin	**$ 35.00**			
Recurring	**$ -**			
Incentive	**$ 550.00**			
TOTAL COST	$ 585.00			
	Part.	*Rebate*	*Admin*	*Admin + Rebate*
2025	1,000	$ 550.00	$ 35.00	$ 585.00
2026	1,000	$ 550.00	$ 35.00	$ 585.00
2027	1,000	$ 550.00	$ 35.00	$ 585.00
2028	1,000	$ 550.00	$ 35.00	$ 585.00
2029	1,000	$ 550.00	$ 35.00	$ 585.00
2030	1,000	$ 550.00	$ 35.00	$ 585.00
2031	1,000	$ 550.00	$ 35.00	$ 585.00
2032	1,000	$ 550.00	$ 35.00	$ 585.00
2033	1,000	$ 550.00	$ 35.00	$ 585.00
2034	1,000	$ 550.00	$ 35.00	$ 585.00

Cost-Effectiveness Results:

TRC: 4.16   PCT: 26,086   RIM: 1.68

11. Neighborhood Weatherization

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	1,364	0.355	0.242	10.233	2.664	1.819
2026	1,364	0.355	0.242	20.465	5.327	3.637
2027	1,364	0.355	0.242	30.698	7.991	5.456
2028	1,364	0.355	0.242	40.931	10.655	7.275
2029	1,364	0.355	0.242	51.163	13.319	9.094
2030	1,364	0.355	0.242	61.396	15.982	10.912
2031	1,364	0.355	0.242	71.628	18.646	12.731
2032	1,364	0.355	0.242	81.861	21.310	14.550
2033	1,364	0.355	0.242	92.094	23.974	16.369
2034	1,364	0.355	0.242	102.326	26.637	18.187

	Weatherization	
Costs		
Admin	**$ 950.00**	
Recurring	**$ -**	
Incentive	**$ -**	
TOTAL COST	$ 950.00	
	Part.	*Admin*
2025	7,500	$ 950.00
2026	7,500	$ 950.00
2027	7,500	$ 950.00
2028	7,500	$ 950.00
2029	7,500	$ 950.00
2030	7,500	$ 950.00
2031	7,500	$ 950.00
2032	7,500	$ 950.00
2033	7,500	$ 950.00
2034	7,500	$ 950.00

Cost-Effectiveness Results:

TRC: 0.56 PCT: 40,938 RIM: 1.09

12. Residential Price Responsive Load Management (Energy Planner)

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	1,134	2.787	2.116	0.624	1.533	1.164
2026	1,134	2.787	2.116	1.248	3.065	2.328
2027	1,134	2.787	2.116	1.871	4.598	3.491
2028	1,134	2.787	2.116	2.495	6.130	4.655
2029	1,134	2.787	2.116	3.119	7.663	5.819
2030	1,134	2.787	2.116	3.743	9.196	6.983
2031	1,134	2.787	2.116	4.366	10.728	8.146
2032	1,134	2.787	2.116	4.990	12.261	9.310
2033	1,134	2.787	2.116	5.614	13.794	10.474
2034	1,134	2.787	2.116	6.238	15.357	11.638

	Energy Planner				
Costs					
Admin	**$ 781.94**				
Recurring	**$ 15.83**				
Incentive	**$ -**				
TOTAL COST	$ 797.77				
	Part.	*Rebate*	*Admin*	*Recurring*	*Rebate + Admin + Recuring*
2025	550	$ -	$ 781.94	$ 15.83	$ 797.77
2026	550	$ -	$ 781.94	$ 15.83	$ 797.77
2027	550	$ -	$ 781.94	$ 15.83	$ 797.77
2028	550	$ -	$ 781.94	$ 15.83	$ 797.77
2029	550	$ -	$ 781.94	$ 15.83	$ 797.77
2030	550	$ -	$ 781.94	$ 15.83	$ 797.77
2031	550	$ -	$ 781.94	$ 15.83	$ 797.77
2032	550	$ -	$ 781.94	$ 15.83	$ 797.77
2033	550	$ -	$ 781.94	$ 15.83	$ 797.77
2034	550	$ -	$ 781.94	$ 15.83	$ 797.77

Cost-Effectiveness Results:

TRC: 8.15 PCT: 3,600 RIM: 3.99

13. Residential Prime Time Plus

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	0	2.068	2.837	0.000	2.585	3.546
2026	0	2.068	2.837	0.000	5.169	7.093
2027	0	2.068	2.837	0.000	8.271	11.348
2028	0	2.068	2.837	0.000	11.372	15.604
2029	0	2.068	2.837	0.000	14.474	19.859
2030	0	2.068	2.837	0.000	18.092	24.824
2031	0	2.068	2.837	0.000	21.711	29.789
2032	0	2.068	2.837	0.000	25.329	34.753
2033	0	2.068	2.837	0.000	28.947	39.718
2034	0	2.068	2.837	0.000	32.566	44.683

	Primetime Plus				
Costs					
Admin	**$ 848.32**				
Recurring	**$ 3.06**				
Incentive	**$ 207.36**				
TOTAL COST	$ 1,058.74				
	Part.	*Rebate*	*Admin*	*Recurring*	*Rebate + Admin + Recuring*
2025	1,250	$ 207.36	$ 848.32	$ 10.00	$ 1,065.68
2026	1,250	$ 207.36	$ 848.32	$ 10.00	$ 1,065.68
2027	1,500	$ 207.36	$ 848.32	$ 10.00	$ 1,065.68
2028	1,500	$ 207.36	$ 848.32	$ 10.00	$ 1,065.68
2029	1,500	$ 207.36	$ 848.32	$ 10.00	$ 1,065.68
2030	1,750	$ 207.36	$ 848.32	$ 10.00	$ 1,065.68
2031	1,750	$ 207.36	$ 848.32	$ 10.00	$ 1,065.68
2032	1,750	$ 207.36	$ 848.32	$ 10.00	$ 1,065.68
2033	1,750	$ 207.36	$ 848.32	$ 10.00	$ 1,065.68
2034	1,750	$ 207.36	$ 848.32	$ 10.00	$ 1,065.68

Cost-Effectiveness Results:

TRC: 7.97 PCT: 1,261 RIM: 6.51

14. Renewable Energy Program (Sun-To-Go)

Cost-effectiveness not performed; stand-alone Commission approved program.

Commercial/Industrial Programs:

1. Commercial/Industrial Audit (Free)

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	859	0.101	0.100	0.688	0.080	0.080
2026	859	0.101	0.100	1.375	0.161	0.159
2027	859	0.101	0.100	2.063	0.241	0.239
2028	859	0.101	0.100	2.750	0.322	0.318
2029	859	0.101	0.100	3.438	0.402	0.398
2030	859	0.101	0.100	4.126	0.483	0.478
2031	859	0.101	0.100	4.813	0.563	0.557
2032	859	0.101	0.100	5.501	0.644	0.637
2033	859	0.101	0.100	6.188	0.724	0.716
2034	859	0.101	0.100	6.876	0.805	0.796

	Free Audit	
Costs		
Admin	**$ 381.00**	
Recurring	**$ -**	
Incentive	**$ -**	
TOTAL COST	**$ 381.00**	
	Part.	*Costs*
2025	800	$ 381.00
2026	800	$ 381.00
2027	800	$ 381.00
2028	800	$ 381.00
2029	800	$ 381.00
2030	800	$ 381.00
2031	800	$ 381.00
2032	800	$ 381.00
2033	800	$ 381.00
2034	800	$ 381.00

Cost-effectiveness not performed.

2. Comprehensive Commercial/Industrial Audit (Paid)

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	859	0.101	0.100	0.003	0.000	0.000
2026	859	0.101	0.100	0.007	0.001	0.001
2027	859	0.101	0.100	0.010	0.001	0.001
2028	859	0.101	0.100	0.014	0.002	0.002
2029	859	0.101	0.100	0.017	0.002	0.002
2030	859	0.101	0.100	0.021	0.002	0.002
2031	859	0.101	0.100	0.024	0.003	0.003
2032	859	0.101	0.100	0.028	0.003	0.003
2033	859	0.101	0.100	0.031	0.004	0.004
2034	859	0.101	0.100	0.034	0.004	0.004

	Paid Audit	
Costs		
Admin	**$ 913.00**	
Recurring	**$ -**	
Incentive	**$ -**	
TOTAL COST	**$ 913.00**	
	Part.	*Costs*
2025	4	$ 913.00
2026	4	$ 913.00
2027	4	$ 913.00
2028	4	$ 913.00
2029	4	$ 913.00
2030	4	$ 913.00
2031	4	$ 913.00
2032	4	$ 913.00
2033	4	$ 913.00
2034	4	$ 913.00

Cost-effectiveness not performed.

3. Cogeneration

Cost-effectiveness not performed; stand-alone Commission approved program.

4. Commercial/Industrial Custom Energy Efficiency

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	12,925	1.137	2.562	0.065	0.006	0.013
2026	12,925	1.137	2.562	0.129	0.011	0.026
2027	12,925	1.137	2.562	0.258	0.023	0.051
2028	12,925	1.137	2.562	0.388	0.034	0.077
2029	12,925	1.137	2.562	0.517	0.045	0.102
2030	12,925	1.137	2.562	0.646	0.057	0.128
2031	12,925	1.137	2.562	0.775	0.068	0.154
2032	12,925	1.137	2.562	0.905	0.080	0.179
2033	12,925	1.137	2.562	1.034	0.091	0.205
2034	12,925	1.137	2.562	1.163	0.102	0.231

	Custom Energy Efficiency			
Costs				
Admin	**$ 550.00**			
Recurring	**$ -**			
Incentive	**$ 973.39**			
TOTAL COST	**$ 1,523.39**			
	Part.	*Rebate*	*Admin*	*Admin + Rebate*
2025	5	$ 973.39	$ 550.00	$ 1,523.39
2026	5	$ 973.39	$ 550.00	$ 1,523.39
2027	10	$ 973.39	$ 550.00	$ 1,523.39
2028	10	$ 973.39	$ 550.00	$ 1,523.39
2029	10	$ 973.39	$ 550.00	$ 1,523.39
2030	10	$ 973.39	$ 550.00	$ 1,523.39
2031	10	$ 973.39	$ 550.00	$ 1,523.39
2032	10	$ 973.39	$ 550.00	$ 1,523.39
2033	10	$ 973.39	$ 550.00	$ 1,523.39
2034	10	$ 973.39	$ 550.00	$ 1,523.39

Cost-Effectiveness Results:

TRC: 1.44 PCT: 1,724 RIM: 1.23

5. Demand Response

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	32,204	436.734	436.734	0.000	0.000	0.000
2026	32,204	436.734	436.734	0.000	0.000	0.000
2027	32,204	436.734	436.734	0.032	0.437	0.437
2028	32,204	436.734	436.734	0.032	0.437	0.437
2029	32,204	436.734	436.734	0.032	0.437	0.437
2030	32,204	436.734	436.734	0.064	0.873	0.873
2031	32,204	436.734	436.734	0.064	0.873	0.873
2032	32,204	436.734	436.734	0.064	0.873	0.873
2033	32,204	436.734	436.734	0.097	1.310	1.310
2034	32,204	436.734	436.734	0.097	1.310	1.310

	Demand Response				
Costs					
Admin	**$ 2,500.00**				
Recurring	**$ 5,436.73**				
Incentive	**$ 31,122.43**				
TOTAL COST	**$ 39,059.16**				
	Part.	*Rebate*	*Recurring*	*Admin*	Admin + Recurring + Rebate
2025	0	$ 31,122.43	$ 5,436.73	$ 2,500.00	$ 39,059.16
2026	0	$ 31,122.43	$ 5,436.73	$ 2,500.00	$ 39,059.16
2027	1	$ 31,122.43	$ 5,436.73	$ 2,500.00	$ 39,059.16
2028	0	$ 31,122.43	$ 5,436.73	$ 2,500.00	$ 39,059.16
2029	0	$ 31,122.43	$ 5,436.73	$ 2,500.00	$ 39,059.16
2030	1	$ 31,122.43	$ 5,436.73	$ 2,500.00	$ 39,059.16
2031	0	$ 31,122.43	$ 5,436.73	$ 2,500.00	$ 39,059.16
2032	0	$ 31,122.43	$ 5,436.73	$ 2,500.00	$ 39,059.16
2033	1	$ 31,122.43	$ 5,436.73	$ 2,500.00	$ 39,059.16
2034	0	$ 31,122.43	$ 5,436.73	$ 2,500.00	$ 39,059.16

Cost-Effectiveness Results:

TRC: 16.85 PCT: 19,696 RIM: 11.91

6. Industrial Load Management (GSLM 2&3)

Cost-effectiveness not performed; credit stipulated in settlement agreement. If credit was not stipulated, contracted credit value ("CCV") would be calculated via RIM on an annual basis.

7. Lighting Conditioned Space

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	89,849	20.173	25.907	13.477	3.026	3.886
2026	89,849	20.173	25.907	26.955	6.052	7.772
2027	89,849	20.173	25.907	40.432	9.078	11.658
2028	89,849	20.173	25.907	53.910	12.104	15.544
2029	89,849	20.173	25.907	67.387	15.130	19.430
2030	89,849	20.173	25.907	78.618	17.651	22.668
2031	89,849	20.173	25.907	89.849	20.173	25.907
2032	89,849	20.173	25.907	101.080	22.694	29.145
2033	89,849	20.173	25.907	112.312	25.216	32.384
2034	89,849	20.173	25.907	123.543	27.737	35.622

	Lighting - Conditioned			
Costs				
Admin	**$ 350.00**			
Recurring	**$ -**			
Incentive	**$ 8,791.50**	**$0.40 per watt**		
TOTAL COST	**$ 9,141.50**			
	Part.	*Rebate*	*Admin*	*Admin + Rebate*
2025	150	$ 8,791.50	$ 350.00	$ 9,141.50
2026	150	$ 8,791.50	$ 350.00	$ 9,141.50
2027	150	$ 8,791.50	$ 350.00	$ 9,141.50
2028	150	$ 8,791.50	$ 350.00	$ 9,141.50
2029	150	$ 8,791.50	$ 350.00	$ 9,141.50
2030	125	$ 8,791.50	$ 350.00	$ 9,141.50
2031	125	$ 8,791.50	$ 350.00	$ 9,141.50
2032	125	$ 8,791.50	$ 350.00	$ 9,141.50
2033	125	$ 8,791.50	$ 350.00	$ 9,141.50
2034	125	$ 8,791.50	$ 350.00	$ 9,141.50

Cost-Effectiveness Results:

TRC: 1.19 PCT: 8,695 RIM: 1.36

8. Lighting Non-Conditioned Space

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	59,009	12.342	12.342	7.376	1.543	1.543
2026	59,009	12.342	12.342	14.752	3.086	3.086
2027	59,009	12.342	12.342	22.128	4.628	4.628
2028	59,009	12.342	12.342	29.504	6.171	6.171
2029	59,009	12.342	12.342	36.880	7.714	7.714
2030	59,009	12.342	12.342	42.781	8.948	8.948
2031	59,009	12.342	12.342	48.682	10.183	10.183
2032	59,009	12.342	12.342	54.583	11.417	11.417
2033	59,009	12.342	12.342	60.484	12.651	12.651
2034	59,009	12.342	12.342	66.385	13.885	13.885

	Lighting - Non-conditioned			
Costs				
Admin	**$ 350.00**			
Recurring	**$ -**			
Incentive	**$ 4,037.25**	**$0.35 per watt**		
TOTAL COST	**$ 4,387.25**			
	Part.	*Rebate*	*Admin*	*Admin + Rebate*
2025	125	$ 4,037.25	$ 350.00	$ 4,387.25
2026	125	$ 4,037.25	$ 350.00	$ 4,387.25
2027	125	$ 4,037.25	$ 350.00	$ 4,387.25
2028	125	$ 4,037.25	$ 350.00	$ 4,387.25
2029	125	$ 4,037.25	$ 350.00	$ 4,387.25
2030	100	$ 4,037.25	$ 350.00	$ 4,387.25
2031	100	$ 4,037.25	$ 350.00	$ 4,387.25
2032	100	$ 4,037.25	$ 350.00	$ 4,387.25
2033	100	$ 4,037.25	$ 350.00	$ 4,387.25
2034	100	$ 4,037.25	$ 350.00	$ 4,387.25

Cost-Effectiveness Results:

TRC: 2.30 PCT: 12,022 RIM: 1.60

9. Lighting Occupancy Sensors

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	95,224	32.098	40.120	0.476	0.160	0.201
2026	95,224	32.098	40.120	0.952	0.321	0.401
2027	95,224	32.098	40.120	1.428	0.481	0.602
2028	95,224	32.098	40.120	1.904	0.642	0.802
2029	95,224	32.098	40.120	2.381	0.802	1.003
2030	95,224	32.098	40.120	2.857	0.963	1.204
2031	95,224	32.098	40.120	3.333	1.123	1.404
2032	95,224	32.098	40.120	3.809	1.284	1.605
2033	95,224	32.098	40.120	4.285	1.444	1.805
2034	95,224	32.098	40.120	4.761	1.605	2.006

	Occupancy Sensors			
Costs				
Admin	**$ 350.00**			
Recurring	**$ -**			
Incentive	**$ 893.65**	**$26.00 per kW controlled**		
TOTAL COST	**$ 1,243.65**			
	Part.	*Rebate*	*Admin*	*Admin + Rebate*
2025	5	$ 893.65	$ 350.00	$ 1,243.65
2026	5	$ 893.65	$ 350.00	$ 1,243.65
2027	5	$ 893.65	$ 350.00	$ 1,243.65
2028	5	$ 893.65	$ 350.00	$ 1,243.65
2029	5	$ 893.65	$ 350.00	$ 1,243.65
2030	5	$ 893.65	$ 350.00	$ 1,243.65
2031	5	$ 893.65	$ 350.00	$ 1,243.65
2032	5	$ 893.65	$ 350.00	$ 1,243.65
2033	5	$ 893.65	$ 350.00	$ 1,243.65
2034	5	$ 893.65	$ 350.00	$ 1,243.65

Cost-Effectiveness Results:

TRC: 10.62 PCT: 3,567 RIM: 1.48

10. Commercial Load Management (GSLM 1)

Cyclic:

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	0	0.000	14.124	0.000	0.000	0.014
2026	0	0.000	14.124	0.000	0.000	0.014
2027	0	0.000	14.124	0.000	0.000	0.028
2028	0	0.000	14.124	0.000	0.000	0.028
2029	0	0.000	14.124	0.000	0.000	0.042
2030	0	0.000	14.124	0.000	0.000	0.042
2031	0	0.000	14.124	0.000	0.000	0.056
2032	0	0.000	14.124	0.000	0.000	0.056
2033	0	0.000	14.124	0.000	0.000	0.071
2034	0	0.000	14.124	0.000	0.000	0.071

	CILMC				
Costs					
Admin	**$ 781.94**				
Recurring	**$ 103.00**				
Incentive	**$ 462.00**	**$5.00 per kW based upon summer**			
TOTAL COST	**$ 1,346.94**				
	Part.	*Rebate*	*Recurring*	*Admin*	*Rebate + Admin + Recuring*
2025	1	$ 462.00	$ 103.00	$ 781.94	$ 1,346.94
2026	0	$ 462.00	$ 103.00	$ 781.94	$ 1,346.94
2027	1	$ 462.00	$ 103.00	$ 781.94	$ 1,346.94
2028	0	$ 462.00	$ 103.00	$ 781.94	$ 1,346.94
2029	1	$ 462.00	$ 103.00	$ 781.94	$ 1,346.94
2030	0	$ 462.00	$ 103.00	$ 781.94	$ 1,346.94
2031	1	$ 462.00	$ 103.00	$ 781.94	$ 1,346.94
2032	0	$ 462.00	$ 103.00	$ 781.94	$ 1,346.94
2033	1	$ 462.00	$ 103.00	$ 781.94	$ 1,346.94
2034	0	$ 462.00	$ 103.00	$ 781.94	$ 1,346.94

Cost-Effectiveness Results:

TRC: 8.14 PCT: 232 RIM: 2.47

Extended:

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	0	64.200	98.440	0.000	0.000	0.000
2026	0	64.200	98.440	0.000	0.000	0.000
2027	0	64.200	98.440	0.000	0.064	0.098
2028	0	64.200	98.440	0.000	0.064	0.098
2029	0	64.200	98.440	0.000	0.064	0.098
2030	0	64.200	98.440	0.000	0.128	0.197
2031	0	64.200	98.440	0.000	0.128	0.197
2032	0	64.200	98.440	0.000	0.128	0.197
2033	0	64.200	98.440	0.000	0.193	0.295
2034	0	64.200	98.440	0.000	0.193	0.295

	CILME				
Costs					
Admin	**$ 781.94**				
Recurring	**$ 103.00**				
Incentive	**$ 5,192.00**	**$5.50 per KW based upon winter and summer**			
TOTAL COST	**$ 6,076.94**				
	Part.	*Rebate*	*Recurring*	*Admin*	*Rebate + Admin + Recuring*
2025	0	$ 5,192.00	$ 103.00	$ 781.94	$ 6,076.94
2026	0	$ 5,192.00	$ 103.00	$ 781.94	$ 6,076.94
2027	1	$ 5,192.00	$ 103.00	$ 781.94	$ 6,076.94
2028	0	$ 5,192.00	$ 103.00	$ 781.94	$ 6,076.94
2029	0	$ 5,192.00	$ 103.00	$ 781.94	$ 6,076.94
2030	1	$ 5,192.00	$ 103.00	$ 781.94	$ 6,076.94
2031	0	$ 5,192.00	$ 103.00	$ 781.94	$ 6,076.94
2032	0	$ 5,192.00	$ 103.00	$ 781.94	$ 6,076.94
2033	1	$ 5,192.00	$ 103.00	$ 781.94	$ 6,076.94
2034	0	$ 5,192.00	$ 103.00	$ 781.94	$ 6,076.94

Cost-Effectiveness Results:

TRC: 105.17 PCT: 2,603 RIM: 3.92

11. Standby Generator

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	55,748	567.009	567.009	0.056	0.567	0.567
2026	55,748	567.009	567.009	0.111	1.134	1.134
2027	55,748	567.009	567.009	0.167	1.701	1.701
2028	55,748	567.009	567.009	0.223	2.268	2.268
2029	55,748	567.009	567.009	0.279	2.835	2.835
2030	55,748	567.009	567.009	0.334	3.402	3.402
2031	55,748	567.009	567.009	0.390	3.969	3.969
2032	55,748	567.009	567.009	0.446	4.536	4.536
2033	55,748	567.009	567.009	0.502	5.103	5.103
2034	55,748	567.009	567.009	0.557	5.670	5.670

	SBG				
Costs					
Admin	**$ 4,000.00**				
Recurring	**$ 1,333.48**				
Incentive	**$ 39,107.73**	**$6.15 per kW**			
TOTAL COST	**$ 44,441.21**				
	Part.	*Rebate*	*Recurring*	*Admin*	*Admin + Recurring + Rebate*
2025	1	$ 39,107.73	$ 1,333.48	$ 4,000.00	$ 44,441.21
2026	1	$ 39,107.73	$ 1,333.48	$ 4,000.00	$ 44,441.21
2027	1	$ 39,107.73	$ 1,333.48	$ 4,000.00	$ 44,441.21
2028	1	$ 39,107.73	$ 1,333.48	$ 4,000.00	$ 44,441.21
2029	1	$ 39,107.73	$ 1,333.48	$ 4,000.00	$ 44,441.21
2030	1	$ 39,107.73	$ 1,333.48	$ 4,000.00	$ 44,441.21
2031	1	$ 39,107.73	$ 1,333.48	$ 4,000.00	$ 44,441.21
2032	1	$ 39,107.73	$ 1,333.48	$ 4,000.00	$ 44,441.21
2033	1	$ 39,107.73	$ 1,333.48	$ 4,000.00	$ 44,441.21
2034	1	$ 39,107.73	$ 1,333.48	$ 4,000.00	$ 44,441.21

Cost-Effectiveness Results:

TRC: 75.48 PCT: 28,390 RIM: 25.96

12. VFD and Motor Controls

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	30,232	4.530	5.492	0.756	0.113	0.137
2026	30,232	4.530	5.492	1.512	0.227	0.275
2027	30,232	4.530	5.492	2.267	0.340	0.412
2028	30,232	4.530	5.492	3.023	0.453	0.549
2029	30,232	4.530	5.492	3.779	0.566	0.687
2030	30,232	4.530	5.492	4.535	0.680	0.824
2031	30,232	4.530	5.492	5.291	0.793	0.961
2032	30,232	4.530	5.492	6.046	0.906	1.098
2033	30,232	4.530	5.492	6.802	1.019	1.236
2034	30,232	4.530	5.492	7.558	1.133	1.373

	VFD			
Costs				
Admin	*$ 350.00*			
Recurring	*$ -*			
Incentive	*$ 574.04*	***$75 per HP of Motor Controlled***		
TOTAL COST	**$ 924.04**			
	Part.	*Rebate*	*Admin*	*Admin + Rebate*
2025	*25*	*$ 574.04*	*$ 350.00*	*$ 924.04*
2026	*25*	*$ 574.04*	*$ 350.00*	*$ 924.04*
2027	*25*	*$ 574.04*	*$ 350.00*	*$ 924.04*
2028	*25*	*$ 574.04*	*$ 350.00*	*$ 924.04*
2029	*25*	*$ 574.04*	*$ 350.00*	*$ 924.04*
2030	*25*	*$ 574.04*	*$ 350.00*	*$ 924.04*
2031	*25*	*$ 574.04*	*$ 350.00*	*$ 924.04*
2032	*25*	*$ 574.04*	*$ 350.00*	*$ 924.04*
2033	*25*	*$ 574.04*	*$ 350.00*	*$ 924.04*
2034	*25*	*$ 574.04*	*$ 350.00*	*$ 924.04*

Cost-Effectiveness Results:

TRC: 6.66 PCT: 1,860 RIM: 1.82

13. Commercial Heat Pump Water Heater and Drain Water Heat Recovery

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	28,831	5.341	1.005	0.029	0.005	0.001
2026	28,831	5.341	1.005	0.058	0.011	0.002
2027	28,831	5.341	1.005	0.086	0.016	0.003
2028	28,831	5.341	1.005	0.115	0.021	0.004
2029	28,831	5.341	1.005	0.144	0.027	0.005
2030	28,831	5.341	1.005	0.173	0.032	0.006
2031	28,831	5.341	1.005	0.202	0.037	0.007
2032	28,831	5.341	1.005	0.231	0.043	0.008
2033	28,831	5.341	1.005	0.259	0.048	0.009
2034	28,831	5.341	1.005	0.288	0.053	0.010

	Water Heating			
Costs				
Admin	**$ 350.00**			
Recurring	**$ -**			
Incentive	**$ 2,137.92**	**$0.10 per Btu**		
TOTAL COST	**$ 2,487.92**			
	Part.	*Rebate*	*Admin*	*Admin + Rebate*
2025	1	$ 2,137.92	$ 350.00	$ 2,487.92
2026	1	$ 2,137.92	$ 350.00	$ 2,487.92
2027	1	$ 2,137.92	$ 350.00	$ 2,487.92
2028	1	$ 2,137.92	$ 350.00	$ 2,487.92
2029	1	$ 2,137.92	$ 350.00	$ 2,487.92
2030	1	$ 2,137.92	$ 350.00	$ 2,487.92
2031	1	$ 2,137.92	$ 350.00	$ 2,487.92
2032	1	$ 2,137.92	$ 350.00	$ 2,487.92
2033	1	$ 2,137.92	$ 350.00	$ 2,487.92
2034	1	$ 2,137.92	$ 350.00	$ 2,487.92

Cost-Effectiveness Results:

TRC: 1.61 PCT: 375 RIM: 1.37

14. Conservation Research and Development ("R&D")

Cost-effectiveness not performed.

15. Renewable Energy Program (Sun-To-Go)

Cost-effectiveness not performed; stand-alone Commission approved program.

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RIM Based DSM Program Portfolio

Program Level Detail

Residential Programs:

1. Residential Walk-Through Audit (Free Energy Check)

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	322	0.065	0.050	1.288	0.262	0.202
2026	322	0.065	0.050	2.577	0.524	0.403
2027	322	0.065	0.050	3.865	0.785	0.605
2028	322	0.065	0.050	5.153	1.047	0.807
2029	322	0.065	0.050	6.442	1.309	1.009
2030	322	0.065	0.050	8.052	1.636	1.261
2031	322	0.065	0.050	9.662	1.964	1.513
2032	322	0.065	0.050	11.273	2.291	1.765
2033	322	0.065	0.050	12.883	2.618	2.017
2034	322	0.065	0.050	14.494	2.945	2.269

	Free Audit	
Costs		
Admin	**$ 388.00**	
Recurring	**$ -**	
Incentive	**$ -**	
TOTAL COST	$ 388.00	
	Part.	*Costs*
2025	4,000	$ 388.00
2026	4,000	$ 388.00
2027	4,000	$ 388.00
2028	4,000	$ 388.00
2029	4,000	$ 388.00
2030	5,000	$ 388.00
2031	5,000	$ 388.00
2032	5,000	$ 388.00
2033	5,000	$ 388.00
2034	5,000	$ 388.00

Cost-Effectiveness not performed.

2. Residential Customer Assisted Energy Audit (Online)

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	242	0.049	0.038	18.117	3.682	2.837
2026	242	0.049	0.038	36.234	7.363	5.673
2027	242	0.049	0.038	54.351	11.045	8.510
2028	242	0.049	0.038	72.468	14.727	11.347
2029	242	0.049	0.038	90.585	18.409	14.184
2030	242	0.049	0.038	108.702	22.090	17.020
2031	242	0.049	0.038	126.819	25.772	19.857
2032	242	0.049	0.038	144.936	29.454	22.694
2033	242	0.049	0.038	163.053	33.136	25.531
2034	242	0.049	0.038	181.170	36.817	28.367

	Customer Assisted Audit	
Costs		
Admin	**$ 4.50**	
Recurring	**$ -**	
Incentive	**$ -**	
TOTAL COST	$ 4.50	
	Part.	*Costs*
2025	75,000	$ 4.50
2026	75,000	$ 4.50
2027	75,000	$ 4.50
2028	75,000	$ 4.50
2029	75,000	$ 4.50
2030	75,000	$ 4.50
2031	75,000	$ 4.50
2032	75,000	$ 4.50
2033	75,000	$ 4.50
2034	75,000	$ 4.50

Cost-Effectiveness not performed.

3. Residential Computer Assisted Energy Audit (RCS)(Paid)

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	322	0.065	0.050	0.001	0.000	0.000
2026	322	0.065	0.050	0.003	0.001	0.000
2027	322	0.065	0.050	0.004	0.001	0.001
2028	322	0.065	0.050	0.005	0.001	0.001
2029	322	0.065	0.050	0.006	0.001	0.001
2030	322	0.065	0.050	0.008	0.002	0.001
2031	322	0.065	0.050	0.009	0.002	0.001
2032	322	0.065	0.050	0.010	0.002	0.002
2033	322	0.065	0.050	0.012	0.002	0.002
2034	322	0.065	0.050	0.013	0.003	0.002

	RCS Audit	
Costs		
Admin	**$ 425.00**	
Recurring	**$ -**	
Incentive	**$ -**	
TOTAL COST	$ 425.00	
	Part.	*Costs*
2025	4	$ 425.00
2026	4	$ 425.00
2027	4	$ 425.00
2028	4	$ 425.00
2029	4	$ 425.00
2030	4	$ 425.00
2031	4	$ 425.00
2032	4	$ 425.00
2033	4	$ 425.00
2034	4	$ 425.00

Cost-Effectiveness not performed.

4. Residential Ceiling Insulation

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	400	0.113	0.194	0.180	0.051	0.087
2026	400	0.113	0.194	0.360	0.101	0.175
2027	400	0.113	0.194	0.540	0.152	0.262
2028	400	0.113	0.194	0.720	0.203	0.350
2029	400	0.113	0.194	0.901	0.253	0.437
2030	400	0.113	0.194	1.081	0.304	0.524
2031	400	0.113	0.194	1.261	0.355	0.612
2032	400	0.113	0.194	1.441	0.406	0.699
2033	400	0.113	0.194	1.621	0.456	0.787
2034	400	0.113	0.194	1.801	0.507	0.874

	Ceiling Insulation			
Costs				
Admin	**$ 35.00**			
Recurring	**$ -**			
Incentive	**$ 224.00**	**$0.16 per square foot**		
TOTAL COST	$ 259.00			
	Part.	*Rebate*	*Admin*	*Admin + Rebate*
2025	450	$ 224.00	$ 35.00	$ 259.00
2026	450	$ 224.00	$ 35.00	$ 259.00
2027	450	$ 224.00	$ 35.00	$ 259.00
2028	450	$ 224.00	$ 35.00	$ 259.00
2029	450	$ 224.00	$ 35.00	$ 259.00
2030	450	$ 224.00	$ 35.00	$ 259.00
2031	450	$ 224.00	$ 35.00	$ 259.00
2032	450	$ 224.00	$ 35.00	$ 259.00
2033	450	$ 224.00	$ 35.00	$ 259.00
2034	450	$ 224.00	$ 35.00	$ 259.00

Cost-Effectiveness Results:

TRC: 1.12 PCT: 356 RIM: 1.05

5. Residential Duct Repair

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	957	0.175	0.438	0.431	0.079	0.197
2026	957	0.175	0.438	0.861	0.157	0.394
2027	957	0.175	0.438	1.292	0.236	0.591
2028	957	0.175	0.438	1.722	0.315	0.788
2029	957	0.175	0.438	2.153	0.394	0.985
2030	957	0.175	0.438	2.583	0.472	1.182
2031	957	0.175	0.438	3.014	0.551	1.379
2032	957	0.175	0.438	3.444	0.630	1.576
2033	957	0.175	0.438	3.875	0.708	1.773
2034	957	0.175	0.438	4.305	0.787	1.970

	Duct Repair			
Costs				
Admin	**$ 35.00**			
Recurring	**$ -**			
Incentive	**$ 270.00**			
TOTAL COST	$ 305.00			
	Part.	*Rebate*	*Admin*	*Admin + Rebate*
2025	450	$ 270.00	$ 35.00	$ 305.00
2026	450	$ 270.00	$ 35.00	$ 305.00
2027	450	$ 270.00	$ 35.00	$ 305.00
2028	450	$ 270.00	$ 35.00	$ 305.00
2029	450	$ 270.00	$ 35.00	$ 305.00
2030	450	$ 270.00	$ 35.00	$ 305.00
2031	450	$ 270.00	$ 35.00	$ 305.00
2032	450	$ 270.00	$ 35.00	$ 305.00
2033	450	$ 270.00	$ 35.00	$ 305.00
2034	450	$ 270.00	$ 35.00	$ 305.00

Cost-Effectiveness Results:

TRC: 1.60 PCT: 1,281 RIM: 1.08

6. Energy and Renewable Education, Awareness and Agency Outreach

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	352	0.107	0.015	0.615	0.188	0.026
2026	352	0.107	0.015	1.231	0.376	0.053
2027	352	0.107	0.015	1.846	0.563	0.079
2028	352	0.107	0.015	2.462	0.751	0.105
2029	352	0.107	0.015	3.077	0.939	0.131
2030	352	0.107	0.015	3.692	1.127	0.158
2031	352	0.107	0.015	4.308	1.314	0.184
2032	352	0.107	0.015	4.923	1.502	0.210
2033	352	0.107	0.015	5.538	1.690	0.237
2034	352	0.107	0.015	6.154	1.878	0.263

	Educ. & Agency Outreach	
Costs		
Admin	**$ 47.10**	
Recurring	**$ -**	
Incentive	**$ -**	
TOTAL COST	$ 47.10	
	Part.	*Costs*
2025	1,750	$ 47.10
2026	1,750	$ 47.10
2027	1,750	$ 47.10
2028	1,750	$ 47.10
2029	1,750	$ 47.10
2030	1,750	$ 47.10
2031	1,750	$ 47.10
2032	1,750	$ 47.10
2033	1,750	$ 47.10
2034	1,750	$ 47.10

Cost-Effectiveness Results:

TRC: 5.51 PCT: 2,462 RIM: 0.94

7. ENERGY STAR for New Multi-Family Residences

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	1,812	0.220	0.549	0.000	0.000	0.000
2026	1,812	0.220	0.549	0.000	0.000	0.000
2027	1,812	0.220	0.549	0.544	0.066	0.165
2028	1,812	0.220	0.549	0.544	0.066	0.165
2029	1,812	0.220	0.549	0.544	0.066	0.165
2030	1,812	0.220	0.549	1.087	0.132	0.330
2031	1,812	0.220	0.549	1.087	0.132	0.330
2032	1,812	0.220	0.549	1.087	0.132	0.330
2033	1,812	0.220	0.549	1.631	0.198	0.494
2034	1,812	0.220	0.549	1.631	0.198	0.494

	ENERGY STAR Multi Family			
Costs				
Admin	**$ 25.00**			
Recurring	**$ -**			
Incentive	**$ 345.00**			
TOTAL COST	$ 370.00			
	Part.	*Rebate*	*Admin*	*Admin + Rebate*
2025	0	$ 345.00	$ 25.00	$ 370.00
2026	0	$ 345.00	$ 25.00	$ 370.00
2027	300	$ 345.00	$ 25.00	$ 370.00
2028	0	$ 345.00	$ 25.00	$ 370.00
2029	0	$ 345.00	$ 25.00	$ 370.00
2030	300	$ 345.00	$ 25.00	$ 370.00
2031	0	$ 345.00	$ 25.00	$ 370.00
2032	0	$ 345.00	$ 25.00	$ 370.00
2033	300	$ 345.00	$ 25.00	$ 370.00
2034	0	$ 345.00	$ 25.00	$ 370.00

Cost-Effectiveness Results:

TRC: 1.31 PCT: 1,484 RIM: 1.01

8. ENERGY STAR for New Homes

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	4,694	0.702	1.202	1.878	0.281	0.481
2026	4,694	0.702	1.202	3.755	0.561	0.961
2027	4,694	0.702	1.202	5.633	0.842	1.442
2028	4,694	0.702	1.202	7.510	1.123	1.923
2029	4,694	0.702	1.202	9.388	1.403	2.404
2030	4,694	0.702	1.202	11.735	1.754	3.004
2031	4,694	0.702	1.202	14.082	2.105	3.605
2032	4,694	0.702	1.202	16.429	2.456	4.206
2033	4,694	0.702	1.202	18.776	2.807	4.807
2034	4,694	0.702	1.202	21.123	3.158	5.408

	ENERGY STAR New Homes			
Costs				
Admin	**$ 25.00**			
Recurring	**$ -**			
Incentive	**$ 425.00**			
TOTAL COST	$ 450.00			
	Part.	*Rebate*	*Admin*	*Admin + Rebate*
2025	400	$ 425.00	$ 25.00	$ 450.00
2026	400	$ 425.00	$ 25.00	$ 450.00
2027	400	$ 425.00	$ 25.00	$ 450.00
2028	400	$ 425.00	$ 25.00	$ 450.00
2029	400	$ 425.00	$ 25.00	$ 450.00
2030	500	$ 425.00	$ 25.00	$ 450.00
2031	500	$ 425.00	$ 25.00	$ 450.00
2032	500	$ 425.00	$ 25.00	$ 450.00
2033	500	$ 425.00	$ 25.00	$ 450.00
2034	500	$ 425.00	$ 25.00	$ 450.00

Cost-Effectiveness Results:

TRC: 3.35 PCT: 8,772 RIM: 1.10

9. ENERGY STAR Thermostats

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	558	0.102	0.254	0.390	0.071	0.178
2026	558	0.102	0.254	0.781	0.143	0.356
2027	558	0.102	0.254	1.171	0.214	0.534
2028	558	0.102	0.254	1.561	0.285	0.712
2029	558	0.102	0.254	1.951	0.357	0.890
2030	558	0.102	0.254	2.342	0.428	1.068
2031	558	0.102	0.254	2.732	0.499	1.246
2032	558	0.102	0.254	3.122	0.571	1.424
2033	558	0.102	0.254	3.513	0.642	1.602
2034	558	0.102	0.254	3.903	1.738	1.780

	ENERGY STAR T-Stat			
Costs				
Admin	*$ 25.00*			
Recurring	*$ -*			
Incentive	*$ 22.00*			
TOTAL COST	*$ 47.00*			
	Part.	*Rebate*	*Admin*	*Admin + Rebate*
2025	700	$ 22.00	$ 25.00	$ 47.00
2026	700	$ 22.00	$ 25.00	$ 47.00
2027	700	$ 22.00	$ 25.00	$ 47.00
2028	700	$ 22.00	$ 25.00	$ 47.00
2029	700	$ 22.00	$ 25.00	$ 47.00
2030	700	$ 22.00	$ 25.00	$ 47.00
2031	700	$ 22.00	$ 25.00	$ 47.00
2032	700	$ 22.00	$ 25.00	$ 47.00
2033	700	$ 22.00	$ 25.00	$ 47.00
2034	700	$ 22.00	$ 25.00	$ 47.00

Cost-Effectiveness Results:

TRC: 2.25 PCT: 831 RIM: 1.07

10. Residential Heating and Cooling

Tier 1:

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	6,392	4.210	0.138	3.196	2.105	0.069
2026	6,392	4.210	0.138	6.392	4.210	0.138
2027	6,392	4.210	0.138	9.588	6.316	0.208
2028	6,392	4.210	0.138	12.784	8.421	0.277
2029	6,392	4.210	0.138	15.980	10.526	0.346
2030	6,392	4.210	0.138	19.176	12.631	0.415
2031	6,392	4.210	0.138	22.372	14.737	0.484
2032	6,392	4.210	0.138	25.568	16.842	0.554
2033	6,392	4.210	0.138	28.764	18.947	0.623
2034	6,392	4.210	0.138	31.960	21.052	0.692

	Heating and Cooling - Tier 1			
Costs				
Admin	*$ 35.00*			
Recurring	*$ -*			
Incentive	*$ 40.00*			
TOTAL COST	*$ 75.00*			
	Part.	*Rebate*	*Admin*	*Admin + Rebate*
2025	500	$ 40.00	$ 35.00	$ 75.00
2026	500	$ 40.00	$ 35.00	$ 75.00
2027	500	$ 40.00	$ 35.00	$ 75.00
2028	500	$ 40.00	$ 35.00	$ 75.00
2029	500	$ 40.00	$ 35.00	$ 75.00
2030	500	$ 40.00	$ 35.00	$ 75.00
2031	500	$ 40.00	$ 35.00	$ 75.00
2032	500	$ 40.00	$ 35.00	$ 75.00
2033	500	$ 40.00	$ 35.00	$ 75.00
2034	500	$ 40.00	$ 35.00	$ 75.00

Cost-Effectiveness Results:

TRC: 8.42 PCT: 13,177 RIM: 1.87

Tier 2:

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	6674	4.262	0.259	6.674	4.262	0.259
2026	6674	4.262	0.259	13.348	8.524	0.517
2027	6674	4.262	0.259	20.022	12.786	0.776
2028	6674	4.262	0.259	26.696	17.048	1.034
2029	6674	4.262	0.259	33.370	21.310	1.293
2030	6674	4.262	0.259	40.044	25.572	1.552
2031	6674	4.262	0.259	46.717	29.834	1.810
2032	6674	4.262	0.259	53.391	34.096	2.069
2033	6674	4.262	0.259	60.065	38.358	2.327
2034	6674	4.262	0.259	66.739	42.620	2.586

	Heating and Cooling - Tier 2			
Costs				
Admin	**$ 35.00**			
Recurring	**$ -**			
Incentive	**$ 550.00**			
TOTAL COST	$ 585.00			
	Part.	*Rebate*	*Admin*	*Admin + Rebate*
2025	1,000	$ 550.00	$ 35.00	$ 585.00
2026	1,000	$ 550.00	$ 35.00	$ 585.00
2027	1,000	$ 550.00	$ 35.00	$ 585.00
2028	1,000	$ 550.00	$ 35.00	$ 585.00
2029	1,000	$ 550.00	$ 35.00	$ 585.00
2030	1,000	$ 550.00	$ 35.00	$ 585.00
2031	1,000	$ 550.00	$ 35.00	$ 585.00
2032	1,000	$ 550.00	$ 35.00	$ 585.00
2033	1,000	$ 550.00	$ 35.00	$ 585.00
2034	1,000	$ 550.00	$ 35.00	$ 585.00

Cost-Effectiveness Results:

TRC: 4.16 PCT: 26,086 RIM: 1.68

11. Neighborhood Weatherization

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	1,364	0.355	0.242	10.233	2.664	1.819
2026	1,364	0.355	0.242	20.465	5.327	3.637
2027	1,364	0.355	0.242	30.698	7.991	5.456
2028	1,364	0.355	0.242	40.931	10.655	7.275
2029	1,364	0.355	0.242	51.163	13.319	9.094
2030	1,364	0.355	0.242	61.396	15.982	10.912
2031	1,364	0.355	0.242	71.628	18.646	12.731
2032	1,364	0.355	0.242	81.861	21.310	14.550
2033	1,364	0.355	0.242	92.094	23.974	16.369
2034	1,364	0.355	0.242	102.326	26.637	18.187

	Weatherization	
Costs		
Admin	**$ 950.00**	
Recurring	**$ -**	
Incentive	**$ -**	
TOTAL COST	$ 950.00	
	Part.	*Admin*
2025	7,500	$ 950.00
2026	7,500	$ 950.00
2027	7,500	$ 950.00
2028	7,500	$ 950.00
2029	7,500	$ 950.00
2030	7,500	$ 950.00
2031	7,500	$ 950.00
2032	7,500	$ 950.00
2033	7,500	$ 950.00
2034	7,500	$ 950.00

Cost-Effectiveness Results:

TRC: 0.56 PCT: 40,938 RIM: 1.09

12. Residential Price Responsive Load Management (Energy Planner)

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	1,134	2.787	2.116	0.624	1.533	1.164
2026	1,134	2.787	2.116	1.248	3.065	2.328
2027	1,134	2.787	2.116	1.871	4.598	3.491
2028	1,134	2.787	2.116	2.495	6.130	4.655
2029	1,134	2.787	2.116	3.119	7.663	5.819
2030	1,134	2.787	2.116	3.743	9.196	6.983
2031	1,134	2.787	2.116	4.366	10.728	8.146
2032	1,134	2.787	2.116	4.990	12.261	9.310
2033	1,134	2.787	2.116	5.614	13.794	10.474
2034	1,134	2.787	2.116	6.238	15.357	11.638

	Energy Planner				
Costs					
Admin	**$ 781.94**				
Recurring	**$ 15.83**				
Incentive	**$ -**				
TOTAL COST	$ 797.77				
	Part.	*Rebate*	*Admin*	*Recurring*	*Rebate + Admin + Recuring*
2025	550	$ -	$ 781.94	$ 15.83	$ 797.77
2026	550	$ -	$ 781.94	$ 15.83	$ 797.77
2027	550	$ -	$ 781.94	$ 15.83	$ 797.77
2028	550	$ -	$ 781.94	$ 15.83	$ 797.77
2029	550	$ -	$ 781.94	$ 15.83	$ 797.77
2030	550	$ -	$ 781.94	$ 15.83	$ 797.77
2031	550	$ -	$ 781.94	$ 15.83	$ 797.77
2032	550	$ -	$ 781.94	$ 15.83	$ 797.77
2033	550	$ -	$ 781.94	$ 15.83	$ 797.77
2034	550	$ -	$ 781.94	$ 15.83	$ 797.77

Cost-Effectiveness Results:

TRC: 8.15 PCT: 3,600 RIM: 3.99

13. Residential Prime Time Plus

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	0	2.068	2.837	0.000	2.585	3.546
2026	0	2.068	2.837	0.000	5.169	7.093
2027	0	2.068	2.837	0.000	8.271	11.348
2028	0	2.068	2.837	0.000	11.372	15.604
2029	0	2.068	2.837	0.000	14.474	19.859
2030	0	2.068	2.837	0.000	18.092	24.824
2031	0	2.068	2.837	0.000	21.711	29.789
2032	0	2.068	2.837	0.000	25.329	34.753
2033	0	2.068	2.837	0.000	28.947	39.718
2034	0	2.068	2.837	0.000	32.566	44.683

	Primetime Plus				
Costs					
Admin	**$ 848.32**				
Recurring	**$ 3.06**				
Incentive	**$ 207.36**				
TOTAL COST	$ 1,058.74				
	Part.	*Rebate*	*Admin*	*Recurring*	*Rebate + Admin + Recuring*
2025	1,250	$ 207.36	$ 848.32	$ 10.00	$ 1,065.68
2026	1,250	$ 207.36	$ 848.32	$ 10.00	$ 1,065.68
2027	1,500	$ 207.36	$ 848.32	$ 10.00	$ 1,065.68
2028	1,500	$ 207.36	$ 848.32	$ 10.00	$ 1,065.68
2029	1,500	$ 207.36	$ 848.32	$ 10.00	$ 1,065.68
2030	1,750	$ 207.36	$ 848.32	$ 10.00	$ 1,065.68
2031	1,750	$ 207.36	$ 848.32	$ 10.00	$ 1,065.68
2032	1,750	$ 207.36	$ 848.32	$ 10.00	$ 1,065.68
2033	1,750	$ 207.36	$ 848.32	$ 10.00	$ 1,065.68
2034	1,750	$ 207.36	$ 848.32	$ 10.00	$ 1,065.68

Cost-Effectiveness Results:

TRC: 7.97 PCT: 1,261 RIM: 6.51

14. Renewable Energy Program (Sun-To-Go)

Cost-effectiveness not performed; stand-alone Commission approved program.

Commercial/Industrial Programs:

1. Commercial/Industrial Audit (Free)

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	859	0.101	0.100	0.688	0.080	0.080
2026	859	0.101	0.100	1.375	0.161	0.159
2027	859	0.101	0.100	2.063	0.241	0.239
2028	859	0.101	0.100	2.750	0.322	0.318
2029	859	0.101	0.100	3.438	0.402	0.398
2030	859	0.101	0.100	4.126	0.483	0.478
2031	859	0.101	0.100	4.813	0.563	0.557
2032	859	0.101	0.100	5.501	0.644	0.637
2033	859	0.101	0.100	6.188	0.724	0.716
2034	859	0.101	0.100	6.876	0.805	0.796

	Free Audit	
Costs		
Admin	**$ 381.00**	
Recurring	**$ -**	
Incentive	**$ -**	
TOTAL COST	**$ 381.00**	
	Part.	*Costs*
2025	800	$ 381.00
2026	800	$ 381.00
2027	800	$ 381.00
2028	800	$ 381.00
2029	800	$ 381.00
2030	800	$ 381.00
2031	800	$ 381.00
2032	800	$ 381.00
2033	800	$ 381.00
2034	800	$ 381.00

Cost-effectiveness not performed.

2. Comprehensive Commercial/Industrial Audit (Paid)

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	859	0.101	0.100	0.003	0.000	0.000
2026	859	0.101	0.100	0.007	0.001	0.001
2027	859	0.101	0.100	0.010	0.001	0.001
2028	859	0.101	0.100	0.014	0.002	0.002
2029	859	0.101	0.100	0.017	0.002	0.002
2030	859	0.101	0.100	0.021	0.002	0.002
2031	859	0.101	0.100	0.024	0.003	0.003
2032	859	0.101	0.100	0.028	0.003	0.003
2033	859	0.101	0.100	0.031	0.004	0.004
2034	859	0.101	0.100	0.034	0.004	0.004

	Paid Audit	
Costs		
Admin	**$ 913.00**	
Recurring	**$ -**	
Incentive	**$ -**	
TOTAL COST	**$ 913.00**	
	Part.	*Costs*
2025	4	$ 913.00
2026	4	$ 913.00
2027	4	$ 913.00
2028	4	$ 913.00
2029	4	$ 913.00
2030	4	$ 913.00
2031	4	$ 913.00
2032	4	$ 913.00
2033	4	$ 913.00
2034	4	$ 913.00

Cost-effectiveness not performed.

3. Cogeneration

Cost-effectiveness not performed; stand-alone Commission approved program.

4. Commercial/Industrial Custom Energy Efficiency

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	12,925	1.137	2.562	0.065	0.006	0.013
2026	12,925	1.137	2.562	0.129	0.011	0.026
2027	12,925	1.137	2.562	0.258	0.023	0.051
2028	12,925	1.137	2.562	0.388	0.034	0.077
2029	12,925	1.137	2.562	0.517	0.045	0.102
2030	12,925	1.137	2.562	0.646	0.057	0.128
2031	12,925	1.137	2.562	0.775	0.068	0.154
2032	12,925	1.137	2.562	0.905	0.080	0.179
2033	12,925	1.137	2.562	1.034	0.091	0.205
2034	12,925	1.137	2.562	1.163	0.102	0.231

	Custom Energy Efficiency			
Costs				
Admin	**$ 550.00**			
Recurring	**$ -**			
Incentive	**$ 973.39**			
TOTAL COST	**$ 1,523.39**			
	Part.	*Rebate*	*Admin*	*Admin + Rebate*
2025	5	$ 973.39	$ 550.00	$ 1,523.39
2026	5	$ 973.39	$ 550.00	$ 1,523.39
2027	10	$ 973.39	$ 550.00	$ 1,523.39
2028	10	$ 973.39	$ 550.00	$ 1,523.39
2029	10	$ 973.39	$ 550.00	$ 1,523.39
2030	10	$ 973.39	$ 550.00	$ 1,523.39
2031	10	$ 973.39	$ 550.00	$ 1,523.39
2032	10	$ 973.39	$ 550.00	$ 1,523.39
2033	10	$ 973.39	$ 550.00	$ 1,523.39
2034	10	$ 973.39	$ 550.00	$ 1,523.39

Cost-Effectiveness Results:

TRC: 1.44   PCT: 1,724   RIM: 1.23

5. Demand Response

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	32,204	436.734	436.734	0.000	0.000	0.000
2026	32,204	436.734	436.734	0.000	0.000	0.000
2027	32,204	436.734	436.734	0.032	0.437	0.437
2028	32,204	436.734	436.734	0.032	0.437	0.437
2029	32,204	436.734	436.734	0.032	0.437	0.437
2030	32,204	436.734	436.734	0.064	0.873	0.873
2031	32,204	436.734	436.734	0.064	0.873	0.873
2032	32,204	436.734	436.734	0.064	0.873	0.873
2033	32,204	436.734	436.734	0.097	1.310	1.310
2034	32,204	436.734	436.734	0.097	1.310	1.310

	Demand Response				
Costs					
Admin	**$ 2,500.00**				
Recurring	**$ 5,436.73**				
Incentive	**$ 31,122.43**				
TOTAL COST	**$ 39,059.16**				
	Part.	*Rebate*	*Recurring*	*Admin*	Admin + Recurring + Rebate
2025	0	$ 31,122.43	$ 5,436.73	$ 2,500.00	$ 39,059.16
2026	0	$ 31,122.43	$ 5,436.73	$ 2,500.00	$ 39,059.16
2027	1	$ 31,122.43	$ 5,436.73	$ 2,500.00	$ 39,059.16
2028	0	$ 31,122.43	$ 5,436.73	$ 2,500.00	$ 39,059.16
2029	0	$ 31,122.43	$ 5,436.73	$ 2,500.00	$ 39,059.16
2030	1	$ 31,122.43	$ 5,436.73	$ 2,500.00	$ 39,059.16
2031	0	$ 31,122.43	$ 5,436.73	$ 2,500.00	$ 39,059.16
2032	0	$ 31,122.43	$ 5,436.73	$ 2,500.00	$ 39,059.16
2033	1	$ 31,122.43	$ 5,436.73	$ 2,500.00	$ 39,059.16
2034	0	$ 31,122.43	$ 5,436.73	$ 2,500.00	$ 39,059.16

Cost-Effectiveness Results:

TRC: 16.85 PCT: 19,696 RIM: 11.91

6. Industrial Load Management (GSLM 2&3)

Cost-effectiveness not performed; credit stipulated in settlement agreement. If credit was not stipulated, contracted credit value ("CCV") would be calculated via RIM on an annual basis.

7. Lighting Conditioned Space

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	89,849	20.173	25.907	13.477	3.026	3.886
2026	89,849	20.173	25.907	26.955	6.052	7.772
2027	89,849	20.173	25.907	40.432	9.078	11.658
2028	89,849	20.173	25.907	53.910	12.104	15.544
2029	89,849	20.173	25.907	67.387	15.130	19.430
2030	89,849	20.173	25.907	78.618	17.651	22.668
2031	89,849	20.173	25.907	89.849	20.173	25.907
2032	89,849	20.173	25.907	101.080	22.694	29.145
2033	89,849	20.173	25.907	112.312	25.216	32.384
2034	89,849	20.173	25.907	123.543	27.737	35.622

	Lighting - Conditioned			
Costs				
Admin	**$ 350.00**			
Recurring	**$ -**			
Incentive	**$ 8,791.50**	**$0.40 per watt**		
TOTAL COST	**$ 9,141.50**			
	Part.	*Rebate*	*Admin*	*Admin + Rebate*
2025	150	$ 8,791.50	$ 350.00	$ 9,141.50
2026	150	$ 8,791.50	$ 350.00	$ 9,141.50
2027	150	$ 8,791.50	$ 350.00	$ 9,141.50
2028	150	$ 8,791.50	$ 350.00	$ 9,141.50
2029	150	$ 8,791.50	$ 350.00	$ 9,141.50
2030	125	$ 8,791.50	$ 350.00	$ 9,141.50
2031	125	$ 8,791.50	$ 350.00	$ 9,141.50
2032	125	$ 8,791.50	$ 350.00	$ 9,141.50
2033	125	$ 8,791.50	$ 350.00	$ 9,141.50
2034	125	$ 8,791.50	$ 350.00	$ 9,141.50

Cost-Effectiveness Results:

TRC: 1.19 PCT: 8,695 RIM: 1.36

8. Lighting Non-Conditioned Space

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	59,009	12.342	12.342	7.376	1.543	1.543
2026	59,009	12.342	12.342	14.752	3.086	3.086
2027	59,009	12.342	12.342	22.128	4.628	4.628
2028	59,009	12.342	12.342	29.504	6.171	6.171
2029	59,009	12.342	12.342	36.880	7.714	7.714
2030	59,009	12.342	12.342	42.781	8.948	8.948
2031	59,009	12.342	12.342	48.682	10.183	10.183
2032	59,009	12.342	12.342	54.583	11.417	11.417
2033	59,009	12.342	12.342	60.484	12.651	12.651
2034	59,009	12.342	12.342	66.385	13.885	13.885

	Lighting - Non-conditioned			
Costs				
Admin	**$ 350.00**			
Recurring	**$ -**			
Incentive	**$ 4,037.25**	**$0.35 per watt**		
TOTAL COST	**$ 4,387.25**			
	Part.	*Rebate*	*Admin*	*Admin + Rebate*
2025	125	$ 4,037.25	$ 350.00	$ 4,387.25
2026	125	$ 4,037.25	$ 350.00	$ 4,387.25
2027	125	$ 4,037.25	$ 350.00	$ 4,387.25
2028	125	$ 4,037.25	$ 350.00	$ 4,387.25
2029	125	$ 4,037.25	$ 350.00	$ 4,387.25
2030	100	$ 4,037.25	$ 350.00	$ 4,387.25
2031	100	$ 4,037.25	$ 350.00	$ 4,387.25
2032	100	$ 4,037.25	$ 350.00	$ 4,387.25
2033	100	$ 4,037.25	$ 350.00	$ 4,387.25
2034	100	$ 4,037.25	$ 350.00	$ 4,387.25

Cost-Effectiveness Results:

TRC: 2.30 PCT: 12,022 RIM: 1.60

9. Lighting Occupancy Sensors

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	95,224	32.098	40.120	0.476	0.160	0.201
2026	95,224	32.098	40.120	0.952	0.321	0.401
2027	95,224	32.098	40.120	1.428	0.481	0.602
2028	95,224	32.098	40.120	1.904	0.642	0.802
2029	95,224	32.098	40.120	2.381	0.802	1.003
2030	95,224	32.098	40.120	2.857	0.963	1.204
2031	95,224	32.098	40.120	3.333	1.123	1.404
2032	95,224	32.098	40.120	3.809	1.284	1.605
2033	95,224	32.098	40.120	4.285	1.444	1.805
2034	95,224	32.098	40.120	4.761	1.605	2.006

	Occupancy Sensors	
Costs		
Admin	**$ 350.00**	
Recurring	**$ -**	
Incentive	**$ 893.65**	**$26.00 per kW controlled**
TOTAL COST	**$ 1,243.65**	

	Part.	*Rebate*	*Admin*	*Admin + Rebate*
2025	5	$ 893.65	$ 350.00	$ 1,243.65
2026	5	$ 893.65	$ 350.00	$ 1,243.65
2027	5	$ 893.65	$ 350.00	$ 1,243.65
2028	5	$ 893.65	$ 350.00	$ 1,243.65
2029	5	$ 893.65	$ 350.00	$ 1,243.65
2030	5	$ 893.65	$ 350.00	$ 1,243.65
2031	5	$ 893.65	$ 350.00	$ 1,243.65
2032	5	$ 893.65	$ 350.00	$ 1,243.65
2033	5	$ 893.65	$ 350.00	$ 1,243.65
2034	5	$ 893.65	$ 350.00	$ 1,243.65

Cost-Effectiveness Results:

TRC: 10.62   PCT: 3,567   RIM: 1.48

10. Commercial Load Management (GSLM 1)

Cyclic:

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	0	0.000	14.124	0.000	0.000	0.014
2026	0	0.000	14.124	0.000	0.000	0.014
2027	0	0.000	14.124	0.000	0.000	0.028
2028	0	0.000	14.124	0.000	0.000	0.028
2029	0	0.000	14.124	0.000	0.000	0.042
2030	0	0.000	14.124	0.000	0.000	0.042
2031	0	0.000	14.124	0.000	0.000	0.056
2032	0	0.000	14.124	0.000	0.000	0.056
2033	0	0.000	14.124	0.000	0.000	0.071
2034	0	0.000	14.124	0.000	0.000	0.071

	CILMC				
Costs					
Admin	**$ 781.94**				
Recurring	**$ 103.00**				
Incentive	**$ 462.00**	**$5.00 per kW based upon summer**			
TOTAL COST	**$ 1,346.94**				
	Part.	*Rebate*	*Recurring*	*Admin*	*Rebate + Admin + Recuring*
2025	1	$ 462.00	$ 103.00	$ 781.94	$ 1,346.94
2026	0	$ 462.00	$ 103.00	$ 781.94	$ 1,346.94
2027	1	$ 462.00	$ 103.00	$ 781.94	$ 1,346.94
2028	0	$ 462.00	$ 103.00	$ 781.94	$ 1,346.94
2029	1	$ 462.00	$ 103.00	$ 781.94	$ 1,346.94
2030	0	$ 462.00	$ 103.00	$ 781.94	$ 1,346.94
2031	1	$ 462.00	$ 103.00	$ 781.94	$ 1,346.94
2032	0	$ 462.00	$ 103.00	$ 781.94	$ 1,346.94
2033	1	$ 462.00	$ 103.00	$ 781.94	$ 1,346.94
2034	0	$ 462.00	$ 103.00	$ 781.94	$ 1,346.94

Cost-Effectiveness Results:

TRC: 8.14 PCT: 232 RIM: 2.47

Extended:

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	0	64.200	98.440	0.000	0.000	0.000
2026	0	64.200	98.440	0.000	0.000	0.000
2027	0	64.200	98.440	0.000	0.064	0.098
2028	0	64.200	98.440	0.000	0.064	0.098
2029	0	64.200	98.440	0.000	0.064	0.098
2030	0	64.200	98.440	0.000	0.128	0.197
2031	0	64.200	98.440	0.000	0.128	0.197
2032	0	64.200	98.440	0.000	0.128	0.197
2033	0	64.200	98.440	0.000	0.193	0.295
2034	0	64.200	98.440	0.000	0.193	0.295

	CILME				
Costs					
Admin	**$ 781.94**				
Recurring	**$ 103.00**				
Incentive	**$ 5,192.00**	**$5.50 per KW based upon winter and summer**			
TOTAL COST	**$ 6,076.94**				
	Part.	*Rebate*	*Recurring*	*Admin*	*Rebate + Admin + Recuring*
2025	0	$ 5,192.00	$ 103.00	$ 781.94	$ 6,076.94
2026	0	$ 5,192.00	$ 103.00	$ 781.94	$ 6,076.94
2027	1	$ 5,192.00	$ 103.00	$ 781.94	$ 6,076.94
2028	0	$ 5,192.00	$ 103.00	$ 781.94	$ 6,076.94
2029	0	$ 5,192.00	$ 103.00	$ 781.94	$ 6,076.94
2030	1	$ 5,192.00	$ 103.00	$ 781.94	$ 6,076.94
2031	0	$ 5,192.00	$ 103.00	$ 781.94	$ 6,076.94
2032	0	$ 5,192.00	$ 103.00	$ 781.94	$ 6,076.94
2033	1	$ 5,192.00	$ 103.00	$ 781.94	$ 6,076.94
2034	0	$ 5,192.00	$ 103.00	$ 781.94	$ 6,076.94

Cost-Effectiveness Results:

TRC: 105.17 PCT: 2,603 RIM: 3.92

11. Standby Generator

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	55,748	567.009	567.009	0.056	0.567	0.567
2026	55,748	567.009	567.009	0.111	1.134	1.134
2027	55,748	567.009	567.009	0.167	1.701	1.701
2028	55,748	567.009	567.009	0.223	2.268	2.268
2029	55,748	567.009	567.009	0.279	2.835	2.835
2030	55,748	567.009	567.009	0.334	3.402	3.402
2031	55,748	567.009	567.009	0.390	3.969	3.969
2032	55,748	567.009	567.009	0.446	4.536	4.536
2033	55,748	567.009	567.009	0.502	5.103	5.103
2034	55,748	567.009	567.009	0.557	5.670	5.670

	SBG				
Costs					
Admin	**$ 4,000.00**				
Recurring	**$ 1,333.48**				
Incentive	**$ 39,107.73**	**$6.15 per kW**			
TOTAL COST	**$ 44,441.21**				
	Part.	*Rebate*	*Recurring*	*Admin*	*Admin + Recurring + Rebate*
2025	1	$ 39,107.73	$ 1,333.48	$ 4,000.00	$ 44,441.21
2026	1	$ 39,107.73	$ 1,333.48	$ 4,000.00	$ 44,441.21
2027	1	$ 39,107.73	$ 1,333.48	$ 4,000.00	$ 44,441.21
2028	1	$ 39,107.73	$ 1,333.48	$ 4,000.00	$ 44,441.21
2029	1	$ 39,107.73	$ 1,333.48	$ 4,000.00	$ 44,441.21
2030	1	$ 39,107.73	$ 1,333.48	$ 4,000.00	$ 44,441.21
2031	1	$ 39,107.73	$ 1,333.48	$ 4,000.00	$ 44,441.21
2032	1	$ 39,107.73	$ 1,333.48	$ 4,000.00	$ 44,441.21
2033	1	$ 39,107.73	$ 1,333.48	$ 4,000.00	$ 44,441.21
2034	1	$ 39,107.73	$ 1,333.48	$ 4,000.00	$ 44,441.21

Cost-Effectiveness Results:

TRC: 75.48 PCT: 28,390 RIM: 25.96

12. VFD and Motor Controls

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	30,232	4.530	5.492	0.756	0.113	0.137
2026	30,232	4.530	5.492	1.512	0.227	0.275
2027	30,232	4.530	5.492	2.267	0.340	0.412
2028	30,232	4.530	5.492	3.023	0.453	0.549
2029	30,232	4.530	5.492	3.779	0.566	0.687
2030	30,232	4.530	5.492	4.535	0.680	0.824
2031	30,232	4.530	5.492	5.291	0.793	0.961
2032	30,232	4.530	5.492	6.046	0.906	1.098
2033	30,232	4.530	5.492	6.802	1.019	1.236
2034	30,232	4.530	5.492	7.558	1.133	1.373

	VFD			
Costs				
Admin	*$ 350.00*			
Recurring	*$ -*			
Incentive	*$ 574.04*	***$75 per HP of Motor Controlled***		
TOTAL COST	**$ 924.04**			
	Part.	*Rebate*	*Admin*	*Admin + Rebate*
2025	*25*	*$ 574.04*	*$ 350.00*	*$ 924.04*
2026	*25*	*$ 574.04*	*$ 350.00*	*$ 924.04*
2027	*25*	*$ 574.04*	*$ 350.00*	*$ 924.04*
2028	*25*	*$ 574.04*	*$ 350.00*	*$ 924.04*
2029	*25*	*$ 574.04*	*$ 350.00*	*$ 924.04*
2030	*25*	*$ 574.04*	*$ 350.00*	*$ 924.04*
2031	*25*	*$ 574.04*	*$ 350.00*	*$ 924.04*
2032	*25*	*$ 574.04*	*$ 350.00*	*$ 924.04*
2033	*25*	*$ 574.04*	*$ 350.00*	*$ 924.04*
2034	*25*	*$ 574.04*	*$ 350.00*	*$ 924.04*

Cost-Effectiveness Results:

TRC: 6.66 PCT: 1,860 RIM: 1.82

13. Commercial Heat Pump Water Heater and Drain Water Heat Recovery

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	28,831	5.341	1.005	0.029	0.005	0.001
2026	28,831	5.341	1.005	0.058	0.011	0.002
2027	28,831	5.341	1.005	0.086	0.016	0.003
2028	28,831	5.341	1.005	0.115	0.021	0.004
2029	28,831	5.341	1.005	0.144	0.027	0.005
2030	28,831	5.341	1.005	0.173	0.032	0.006
2031	28,831	5.341	1.005	0.202	0.037	0.007
2032	28,831	5.341	1.005	0.231	0.043	0.008
2033	28,831	5.341	1.005	0.259	0.048	0.009
2034	28,831	5.341	1.005	0.288	0.053	0.010

	Water Heating			
Costs				
Admin	**$ 350.00**			
Recurring	**$ -**			
Incentive	**$ 2,137.92**	**$0.10 per Btu**		
TOTAL COST	**$ 2,487.92**			
	Part.	*Rebate*	*Admin*	*Admin + Rebate*
2025	1	$ 2,137.92	$ 350.00	$ 2,487.92
2026	1	$ 2,137.92	$ 350.00	$ 2,487.92
2027	1	$ 2,137.92	$ 350.00	$ 2,487.92
2028	1	$ 2,137.92	$ 350.00	$ 2,487.92
2029	1	$ 2,137.92	$ 350.00	$ 2,487.92
2030	1	$ 2,137.92	$ 350.00	$ 2,487.92
2031	1	$ 2,137.92	$ 350.00	$ 2,487.92
2032	1	$ 2,137.92	$ 350.00	$ 2,487.92
2033	1	$ 2,137.92	$ 350.00	$ 2,487.92
2034	1	$ 2,137.92	$ 350.00	$ 2,487.92

Cost-Effectiveness Results:

TRC: 1.61 PCT: 375 RIM: 1.37

14. Conservation Research and Development (“R&D”)

Cost-effectiveness not performed.

15. Renewable Energy Program (Sun-To-Go)

Cost-effectiveness not performed; stand-alone Commission approved program.

TRC Based DSM Program Portfolio

Program Level Detail

Residential Programs:

1. Residential Walk-Through Audit (Free Energy Check)

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	322	0.065	0.050	1.288	0.262	0.202
2026	322	0.065	0.050	2.577	0.524	0.403
2027	322	0.065	0.050	3.865	0.785	0.605
2028	322	0.065	0.050	5.153	1.047	0.807
2029	322	0.065	0.050	6.442	1.309	1.009
2030	322	0.065	0.050	8.052	1.636	1.261
2031	322	0.065	0.050	9.662	1.964	1.513
2032	322	0.065	0.050	11.273	2.291	1.765
2033	322	0.065	0.050	12.883	2.618	2.017
2034	322	0.065	0.050	14.494	2.945	2.269

	Free Audit	
Costs		
Admin	**$ 388.00**	
Recurring	**$ -**	
Incentive	**$ -**	
TOTAL COST	$ 388.00	
	Part.	*Costs*
2025	4,000	$ 388.00
2026	4,000	$ 388.00
2027	4,000	$ 388.00
2028	4,000	$ 388.00
2029	4,000	$ 388.00
2030	5,000	$ 388.00
2031	5,000	$ 388.00
2032	5,000	$ 388.00
2033	5,000	$ 388.00
2034	5,000	$ 388.00

Cost-Effectiveness not performed.

2. Residential Customer Assisted Energy Audit (Online)

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	242	0.049	0.038	18.117	3.682	2.837
2026	242	0.049	0.038	36.234	7.363	5.673
2027	242	0.049	0.038	54.351	11.045	8.510
2028	242	0.049	0.038	72.468	14.727	11.347
2029	242	0.049	0.038	90.585	18.409	14.184
2030	242	0.049	0.038	108.702	22.090	17.020
2031	242	0.049	0.038	126.819	25.772	19.857
2032	242	0.049	0.038	144.936	29.454	22.694
2033	242	0.049	0.038	163.053	33.136	25.531
2034	242	0.049	0.038	181.170	36.817	28.367

	Customer Assisted Audit	
Costs		
Admin	**$ 4.50**	
Recurring	**$ -**	
Incentive	**$ -**	
TOTAL COST	$ 4.50	
	Part.	*Costs*
2025	75,000	$ 4.50
2026	75,000	$ 4.50
2027	75,000	$ 4.50
2028	75,000	$ 4.50
2029	75,000	$ 4.50
2030	75,000	$ 4.50
2031	75,000	$ 4.50
2032	75,000	$ 4.50
2033	75,000	$ 4.50
2034	75,000	$ 4.50

Cost-Effectiveness not performed.

3. Residential Computer Assisted Energy Audit (RCS)(Paid)

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	322	0.065	0.050	0.001	0.000	0.000
2026	322	0.065	0.050	0.003	0.001	0.000
2027	322	0.065	0.050	0.004	0.001	0.001
2028	322	0.065	0.050	0.005	0.001	0.001
2029	322	0.065	0.050	0.006	0.001	0.001
2030	322	0.065	0.050	0.008	0.002	0.001
2031	322	0.065	0.050	0.009	0.002	0.001
2032	322	0.065	0.050	0.010	0.002	0.002
2033	322	0.065	0.050	0.012	0.002	0.002
2034	322	0.065	0.050	0.013	0.003	0.002

	RCS Audit	
Costs		
Admin	**$ 425.00**	
Recurring	**$ -**	
Incentive	**$ -**	
TOTAL COST	$ 425.00	
	Part.	*Costs*
2025	4	$ 425.00
2026	4	$ 425.00
2027	4	$ 425.00
2028	4	$ 425.00
2029	4	$ 425.00
2030	4	$ 425.00
2031	4	$ 425.00
2032	4	$ 425.00
2033	4	$ 425.00
2034	4	$ 425.00

Cost-Effectiveness not performed.

4. Residential Ceiling Insulation

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	400	0.113	0.194	0.180	0.051	0.087
2026	400	0.113	0.194	0.360	0.101	0.175
2027	400	0.113	0.194	0.540	0.152	0.262
2028	400	0.113	0.194	0.720	0.203	0.350
2029	400	0.113	0.194	0.901	0.253	0.437
2030	400	0.113	0.194	1.081	0.304	0.524
2031	400	0.113	0.194	1.261	0.355	0.612
2032	400	0.113	0.194	1.441	0.406	0.699
2033	400	0.113	0.194	1.621	0.456	0.787
2034	400	0.113	0.194	1.801	0.507	0.874

	Ceiling Insulation			
Costs				
Admin	**$ 35.00**			
Recurring	**$ -**			
Incentive	**$ 224.00**	**$0.16 per square foot**		
TOTAL COST	$ 259.00			
	Part.	*Rebate*	*Admin*	*Admin + Rebate*
2025	450	$ 224.00	$ 35.00	$ 259.00
2026	450	$ 224.00	$ 35.00	$ 259.00
2027	450	$ 224.00	$ 35.00	$ 259.00
2028	450	$ 224.00	$ 35.00	$ 259.00
2029	450	$ 224.00	$ 35.00	$ 259.00
2030	450	$ 224.00	$ 35.00	$ 259.00
2031	450	$ 224.00	$ 35.00	$ 259.00
2032	450	$ 224.00	$ 35.00	$ 259.00
2033	450	$ 224.00	$ 35.00	$ 259.00
2034	450	$ 224.00	$ 35.00	$ 259.00

Cost-Effectiveness Results:

TRC: 1.12 PCT: 356 RIM: 1.05

5. Residential Duct Repair

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	957	0.175	0.438	0.431	0.079	0.197
2026	957	0.175	0.438	0.861	0.157	0.394
2027	957	0.175	0.438	1.292	0.236	0.591
2028	957	0.175	0.438	1.722	0.315	0.788
2029	957	0.175	0.438	2.153	0.394	0.985
2030	957	0.175	0.438	2.583	0.472	1.182
2031	957	0.175	0.438	3.014	0.551	1.379
2032	957	0.175	0.438	3.444	0.630	1.576
2033	957	0.175	0.438	3.875	0.708	1.773
2034	957	0.175	0.438	4.305	0.787	1.970

	Duct Repair			
Costs				
Admin	**$ 35.00**			
Recurring	**$ -**			
Incentive	**$ 270.00**			
TOTAL COST	$ 305.00			
	Part.	*Rebate*	*Admin*	*Admin + Rebate*
2025	450	$ 270.00	$ 35.00	$ 305.00
2026	450	$ 270.00	$ 35.00	$ 305.00
2027	450	$ 270.00	$ 35.00	$ 305.00
2028	450	$ 270.00	$ 35.00	$ 305.00
2029	450	$ 270.00	$ 35.00	$ 305.00
2030	450	$ 270.00	$ 35.00	$ 305.00
2031	450	$ 270.00	$ 35.00	$ 305.00
2032	450	$ 270.00	$ 35.00	$ 305.00
2033	450	$ 270.00	$ 35.00	$ 305.00
2034	450	$ 270.00	$ 35.00	$ 305.00

Cost-Effectiveness Results:

TRC: 1.60 PCT: 1,281 RIM: 1.08

6. Energy and Renewable Education, Awareness and Agency Outreach

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	352	0.107	0.015	0.615	0.188	0.026
2026	352	0.107	0.015	1.231	0.376	0.053
2027	352	0.107	0.015	1.846	0.563	0.079
2028	352	0.107	0.015	2.462	0.751	0.105
2029	352	0.107	0.015	3.077	0.939	0.131
2030	352	0.107	0.015	3.692	1.127	0.158
2031	352	0.107	0.015	4.308	1.314	0.184
2032	352	0.107	0.015	4.923	1.502	0.210
2033	352	0.107	0.015	5.538	1.690	0.237
2034	352	0.107	0.015	6.154	1.878	0.263

	Educ. & Agency Outreach	
Costs		
Admin	**$ 47.10**	
Recurring	**$ -**	
Incentive	**$ -**	
TOTAL COST	$ 47.10	
	Part.	*Costs*
2025	1,750	$ 47.10
2026	1,750	$ 47.10
2027	1,750	$ 47.10
2028	1,750	$ 47.10
2029	1,750	$ 47.10
2030	1,750	$ 47.10
2031	1,750	$ 47.10
2032	1,750	$ 47.10
2033	1,750	$ 47.10
2034	1,750	$ 47.10

Cost-Effectiveness Results:

TRC: 5.51 PCT: 2,462 RIM: 0.94

7. ENERGY STAR for New Multi-Family Residences

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	1,812	0.220	0.549	0.000	0.000	0.000
2026	1,812	0.220	0.549	0.000	0.000	0.000
2027	1,812	0.220	0.549	0.544	0.066	0.165
2028	1,812	0.220	0.549	0.544	0.066	0.165
2029	1,812	0.220	0.549	0.544	0.066	0.165
2030	1,812	0.220	0.549	1.087	0.132	0.330
2031	1,812	0.220	0.549	1.087	0.132	0.330
2032	1,812	0.220	0.549	1.087	0.132	0.330
2033	1,812	0.220	0.549	1.631	0.198	0.494
2034	1,812	0.220	0.549	1.631	0.198	0.494

	ENERGY STAR Multi Family			
Costs				
Admin	**$ 25.00**			
Recurring	**$ -**			
Incentive	**$ 345.00**			
TOTAL COST	$ 370.00			
	Part.	*Rebate*	*Admin*	*Admin + Rebate*
2025	0	$ 345.00	$ 25.00	$ 370.00
2026	0	$ 345.00	$ 25.00	$ 370.00
2027	300	$ 345.00	$ 25.00	$ 370.00
2028	0	$ 345.00	$ 25.00	$ 370.00
2029	0	$ 345.00	$ 25.00	$ 370.00
2030	300	$ 345.00	$ 25.00	$ 370.00
2031	0	$ 345.00	$ 25.00	$ 370.00
2032	0	$ 345.00	$ 25.00	$ 370.00
2033	300	$ 345.00	$ 25.00	$ 370.00
2034	0	$ 345.00	$ 25.00	$ 370.00

Cost-Effectiveness Results:

TRC: 1.31 PCT: 1,484 RIM: 1.01

8. ENERGY STAR for New Homes

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	4,694	0.702	1.202	1.878	0.281	0.481
2026	4,694	0.702	1.202	3.755	0.561	0.961
2027	4,694	0.702	1.202	5.633	0.842	1.442
2028	4,694	0.702	1.202	7.510	1.123	1.923
2029	4,694	0.702	1.202	9.388	1.403	2.404
2030	4,694	0.702	1.202	11.735	1.754	3.004
2031	4,694	0.702	1.202	14.082	2.105	3.605
2032	4,694	0.702	1.202	16.429	2.456	4.206
2033	4,694	0.702	1.202	18.776	2.807	4.807
2034	4,694	0.702	1.202	21.123	3.158	5.408

	ENERGY STAR New Homes			
Costs				
Admin	**$ 25.00**			
Recurring	**$ -**			
Incentive	**$ 425.00**			
TOTAL COST	$ 450.00			
	Part.	*Rebate*	*Admin*	*Admin + Rebate*
2025	400	$ 425.00	$ 25.00	$ 450.00
2026	400	$ 425.00	$ 25.00	$ 450.00
2027	400	$ 425.00	$ 25.00	$ 450.00
2028	400	$ 425.00	$ 25.00	$ 450.00
2029	400	$ 425.00	$ 25.00	$ 450.00
2030	500	$ 425.00	$ 25.00	$ 450.00
2031	500	$ 425.00	$ 25.00	$ 450.00
2032	500	$ 425.00	$ 25.00	$ 450.00
2033	500	$ 425.00	$ 25.00	$ 450.00
2034	500	$ 425.00	$ 25.00	$ 450.00

Cost-Effectiveness Results:

TRC: 3.35 PCT: 8,772 RIM: 1.10

9. ENERGY STAR Thermostats

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	558	0.102	0.254	0.390	0.071	0.178
2026	558	0.102	0.254	0.781	0.143	0.356
2027	558	0.102	0.254	1.171	0.214	0.534
2028	558	0.102	0.254	1.561	0.285	0.712
2029	558	0.102	0.254	1.951	0.357	0.890
2030	558	0.102	0.254	2.342	0.428	1.068
2031	558	0.102	0.254	2.732	0.499	1.246
2032	558	0.102	0.254	3.122	0.571	1.424
2033	558	0.102	0.254	3.513	0.642	1.602
2034	558	0.102	0.254	3.903	1.738	1.780

	ENERGY STAR T-Stat			
Costs				
Admin	*$ 25.00*			
Recurring	*$ -*			
Incentive	*$ 22.00*			
TOTAL COST	*$ 47.00*			
	Part.	*Rebate*	*Admin*	*Admin + Rebate*
2025	700	$ 22.00	$ 25.00	$ 47.00
2026	700	$ 22.00	$ 25.00	$ 47.00
2027	700	$ 22.00	$ 25.00	$ 47.00
2028	700	$ 22.00	$ 25.00	$ 47.00
2029	700	$ 22.00	$ 25.00	$ 47.00
2030	700	$ 22.00	$ 25.00	$ 47.00
2031	700	$ 22.00	$ 25.00	$ 47.00
2032	700	$ 22.00	$ 25.00	$ 47.00
2033	700	$ 22.00	$ 25.00	$ 47.00
2034	700	$ 22.00	$ 25.00	$ 47.00

Cost-Effectiveness Results:

TRC: 2.25 PCT: 831 RIM: 1.07

10. Residential Heating and Cooling

Tier 1:

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	6,392	4.210	0.138	3.196	2.105	0.069
2026	6,392	4.210	0.138	6.392	4.210	0.138
2027	6,392	4.210	0.138	9.588	6.316	0.208
2028	6,392	4.210	0.138	12.784	8.421	0.277
2029	6,392	4.210	0.138	15.980	10.526	0.346
2030	6,392	4.210	0.138	19.176	12.631	0.415
2031	6,392	4.210	0.138	22.372	14.737	0.484
2032	6,392	4.210	0.138	25.568	16.842	0.554
2033	6,392	4.210	0.138	28.764	18.947	0.623
2034	6,392	4.210	0.138	31.960	21.052	0.692

	Heating and Cooling - Tier 1			
Costs				
Admin	*$ 35.00*			
Recurring	*$ -*			
Incentive	*$ 40.00*			
TOTAL COST	*$ 75.00*			
	Part.	*Rebate*	*Admin*	*Admin + Rebate*
2025	500	$ 40.00	$ 35.00	$ 75.00
2026	500	$ 40.00	$ 35.00	$ 75.00
2027	500	$ 40.00	$ 35.00	$ 75.00
2028	500	$ 40.00	$ 35.00	$ 75.00
2029	500	$ 40.00	$ 35.00	$ 75.00
2030	500	$ 40.00	$ 35.00	$ 75.00
2031	500	$ 40.00	$ 35.00	$ 75.00
2032	500	$ 40.00	$ 35.00	$ 75.00
2033	500	$ 40.00	$ 35.00	$ 75.00
2034	500	$ 40.00	$ 35.00	$ 75.00

Cost-Effectiveness Results:

TRC: 8.42 PCT: 13,177 RIM: 1.87

Tier 2:

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	6674	4.262	0.259	6.674	4.262	0.259
2026	6674	4.262	0.259	13.348	8.524	0.517
2027	6674	4.262	0.259	20.022	12.786	0.776
2028	6674	4.262	0.259	26.696	17.048	1.034
2029	6674	4.262	0.259	33.370	21.310	1.293
2030	6674	4.262	0.259	40.044	25.572	1.552
2031	6674	4.262	0.259	46.717	29.834	1.810
2032	6674	4.262	0.259	53.391	34.096	2.069
2033	6674	4.262	0.259	60.065	38.358	2.327
2034	6674	4.262	0.259	66.739	42.620	2.586

	Heating and Cooling - Tier 2			
Costs				
Admin	**$ 35.00**			
Recurring	**$ -**			
Incentive	**$ 550.00**			
TOTAL COST	$ 585.00			
	Part.	*Rebate*	*Admin*	*Admin + Rebate*
2025	1,000	$ 550.00	$ 35.00	$ 585.00
2026	1,000	$ 550.00	$ 35.00	$ 585.00
2027	1,000	$ 550.00	$ 35.00	$ 585.00
2028	1,000	$ 550.00	$ 35.00	$ 585.00
2029	1,000	$ 550.00	$ 35.00	$ 585.00
2030	1,000	$ 550.00	$ 35.00	$ 585.00
2031	1,000	$ 550.00	$ 35.00	$ 585.00
2032	1,000	$ 550.00	$ 35.00	$ 585.00
2033	1,000	$ 550.00	$ 35.00	$ 585.00
2034	1,000	$ 550.00	$ 35.00	$ 585.00

Cost-Effectiveness Results:

TRC: 4.16 PCT: 26,086 RIM: 1.68

11. Neighborhood Weatherization

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	1,364	0.355	0.242	10.233	2.664	1.819
2026	1,364	0.355	0.242	20.465	5.327	3.637
2027	1,364	0.355	0.242	30.698	7.991	5.456
2028	1,364	0.355	0.242	40.931	10.655	7.275
2029	1,364	0.355	0.242	51.163	13.319	9.094
2030	1,364	0.355	0.242	61.396	15.982	10.912
2031	1,364	0.355	0.242	71.628	18.646	12.731
2032	1,364	0.355	0.242	81.861	21.310	14.550
2033	1,364	0.355	0.242	92.094	23.974	16.369
2034	1,364	0.355	0.242	102.326	26.637	18.187

	Weatherization	
Costs		
Admin	**$ 950.00**	
Recurring	**$ -**	
Incentive	**$ -**	
TOTAL COST	$ 950.00	
	Part.	*Admin*
2025	7,500	$ 950.00
2026	7,500	$ 950.00
2027	7,500	$ 950.00
2028	7,500	$ 950.00
2029	7,500	$ 950.00
2030	7,500	$ 950.00
2031	7,500	$ 950.00
2032	7,500	$ 950.00
2033	7,500	$ 950.00
2034	7,500	$ 950.00

Cost-Effectiveness Results:

TRC: 0.56 PCT: 40,938 RIM: 1.09

12. Residential Price Responsive Load Management (Energy Planner)

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	1,134	2.787	2.116	0.624	1.533	1.164
2026	1,134	2.787	2.116	1.248	3.065	2.328
2027	1,134	2.787	2.116	1.871	4.598	3.491
2028	1,134	2.787	2.116	2.495	6.130	4.655
2029	1,134	2.787	2.116	3.119	7.663	5.819
2030	1,134	2.787	2.116	3.743	9.196	6.983
2031	1,134	2.787	2.116	4.366	10.728	8.146
2032	1,134	2.787	2.116	4.990	12.261	9.310
2033	1,134	2.787	2.116	5.614	13.794	10.474
2034	1,134	2.787	2.116	6.238	15.357	11.638

	Energy Planner				
Costs					
Admin	**$ 781.94**				
Recurring	**$ 15.83**				
Incentive	**$ -**				
TOTAL COST	$ 797.77				
	Part.	*Rebate*	*Admin*	*Recurring*	*Rebate + Admin + Recuring*
2025	550	$ -	$ 781.94	$ 15.83	$ 797.77
2026	550	$ -	$ 781.94	$ 15.83	$ 797.77
2027	550	$ -	$ 781.94	$ 15.83	$ 797.77
2028	550	$ -	$ 781.94	$ 15.83	$ 797.77
2029	550	$ -	$ 781.94	$ 15.83	$ 797.77
2030	550	$ -	$ 781.94	$ 15.83	$ 797.77
2031	550	$ -	$ 781.94	$ 15.83	$ 797.77
2032	550	$ -	$ 781.94	$ 15.83	$ 797.77
2033	550	$ -	$ 781.94	$ 15.83	$ 797.77
2034	550	$ -	$ 781.94	$ 15.83	$ 797.77

Cost-Effectiveness Results:

TRC: 8.15 PCT: 3,600 RIM: 3.99

13. Residential Prime Time Plus

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	0	2.068	2.837	0.000	2.585	3.546
2026	0	2.068	2.837	0.000	5.169	7.093
2027	0	2.068	2.837	0.000	8.271	11.348
2028	0	2.068	2.837	0.000	11.372	15.604
2029	0	2.068	2.837	0.000	14.474	19.859
2030	0	2.068	2.837	0.000	18.092	24.824
2031	0	2.068	2.837	0.000	21.711	29.789
2032	0	2.068	2.837	0.000	25.329	34.753
2033	0	2.068	2.837	0.000	28.947	39.718
2034	0	2.068	2.837	0.000	32.566	44.683

	Primetime Plus				
Costs					
Admin	**$ 848.32**				
Recurring	**$ 3.06**				
Incentive	**$ 207.36**				
TOTAL COST	$ 1,058.74				
	Part.	*Rebate*	*Admin*	*Recurring*	*Rebate + Admin + Recuring*
2025	1,250	$ 207.36	$ 848.32	$ 10.00	$ 1,065.68
2026	1,250	$ 207.36	$ 848.32	$ 10.00	$ 1,065.68
2027	1,500	$ 207.36	$ 848.32	$ 10.00	$ 1,065.68
2028	1,500	$ 207.36	$ 848.32	$ 10.00	$ 1,065.68
2029	1,500	$ 207.36	$ 848.32	$ 10.00	$ 1,065.68
2030	1,750	$ 207.36	$ 848.32	$ 10.00	$ 1,065.68
2031	1,750	$ 207.36	$ 848.32	$ 10.00	$ 1,065.68
2032	1,750	$ 207.36	$ 848.32	$ 10.00	$ 1,065.68
2033	1,750	$ 207.36	$ 848.32	$ 10.00	$ 1,065.68
2034	1,750	$ 207.36	$ 848.32	$ 10.00	$ 1,065.68

Cost-Effectiveness Results:

TRC: 7.97 PCT: 1,261 RIM: 6.51

14. Renewable Energy Program (Sun-To-Go)

Cost-effectiveness not performed; stand-alone Commission approved program.

Commercial/Industrial Programs:

1. Commercial/Industrial Audit (Free)

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	859	0.101	0.100	0.688	0.080	0.080
2026	859	0.101	0.100	1.375	0.161	0.159
2027	859	0.101	0.100	2.063	0.241	0.239
2028	859	0.101	0.100	2.750	0.322	0.318
2029	859	0.101	0.100	3.438	0.402	0.398
2030	859	0.101	0.100	4.126	0.483	0.478
2031	859	0.101	0.100	4.813	0.563	0.557
2032	859	0.101	0.100	5.501	0.644	0.637
2033	859	0.101	0.100	6.188	0.724	0.716
2034	859	0.101	0.100	6.876	0.805	0.796

	Free Audit	
Costs		
Admin	**$ 381.00**	
Recurring	**$ -**	
Incentive	**$ -**	
TOTAL COST	**$ 381.00**	
	Part.	*Costs*
2025	800	$ 381.00
2026	800	$ 381.00
2027	800	$ 381.00
2028	800	$ 381.00
2029	800	$ 381.00
2030	800	$ 381.00
2031	800	$ 381.00
2032	800	$ 381.00
2033	800	$ 381.00
2034	800	$ 381.00

Cost-effectiveness not performed.

2. Comprehensive Commercial/Industrial Audit (Paid)

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	859	0.101	0.100	0.003	0.000	0.000
2026	859	0.101	0.100	0.007	0.001	0.001
2027	859	0.101	0.100	0.010	0.001	0.001
2028	859	0.101	0.100	0.014	0.002	0.002
2029	859	0.101	0.100	0.017	0.002	0.002
2030	859	0.101	0.100	0.021	0.002	0.002
2031	859	0.101	0.100	0.024	0.003	0.003
2032	859	0.101	0.100	0.028	0.003	0.003
2033	859	0.101	0.100	0.031	0.004	0.004
2034	859	0.101	0.100	0.034	0.004	0.004

	Paid Audit	
Costs		
Admin	**$ 913.00**	
Recurring	**$ -**	
Incentive	**$ -**	
TOTAL COST	**$ 913.00**	
	Part.	*Costs*
2025	4	$ 913.00
2026	4	$ 913.00
2027	4	$ 913.00
2028	4	$ 913.00
2029	4	$ 913.00
2030	4	$ 913.00
2031	4	$ 913.00
2032	4	$ 913.00
2033	4	$ 913.00
2034	4	$ 913.00

Cost-effectiveness not performed.

TAMPA ELECTRIC COMPANY
DOCKET NO. 20240014-EG
EXHIBIT NO. MRR-1
WITNESS: ROCHE
DOCUMENT NO. 18

FILED: APRIL 2, 2024

3. Cogeneration

Cost-effectiveness not performed; stand-alone Commission approved program.

4. Commercial/Industrial Custom Energy Efficiency

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	12,925	1.137	2.562	0.065	0.006	0.013
2026	12,925	1.137	2.562	0.129	0.011	0.026
2027	12,925	1.137	2.562	0.258	0.023	0.051
2028	12,925	1.137	2.562	0.388	0.034	0.077
2029	12,925	1.137	2.562	0.517	0.045	0.102
2030	12,925	1.137	2.562	0.646	0.057	0.128
2031	12,925	1.137	2.562	0.775	0.068	0.154
2032	12,925	1.137	2.562	0.905	0.080	0.179
2033	12,925	1.137	2.562	1.034	0.091	0.205
2034	12,925	1.137	2.562	1.163	0.102	0.231

	Custom Energy Efficiency			
Costs				
Admin	**$ 550.00**			
Recurring	**$ -**			
Incentive	**$ 973.39**			
TOTAL COST	**$ 1,523.39**			
	Part.	*Rebate*	*Admin*	*Admin + Rebate*
2025	5	$ 973.39	$ 550.00	$ 1,523.39
2026	5	$ 973.39	$ 550.00	$ 1,523.39
2027	10	$ 973.39	$ 550.00	$ 1,523.39
2028	10	$ 973.39	$ 550.00	$ 1,523.39
2029	10	$ 973.39	$ 550.00	$ 1,523.39
2030	10	$ 973.39	$ 550.00	$ 1,523.39
2031	10	$ 973.39	$ 550.00	$ 1,523.39
2032	10	$ 973.39	$ 550.00	$ 1,523.39
2033	10	$ 973.39	$ 550.00	$ 1,523.39
2034	10	$ 973.39	$ 550.00	$ 1,523.39

Cost-Effectiveness Results:

TRC: 1.44 PCT: 1,724 RIM: 1.23

5. Demand Response

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	32,204	436.734	436.734	0.000	0.000	0.000
2026	32,204	436.734	436.734	0.000	0.000	0.000
2027	32,204	436.734	436.734	0.032	0.437	0.437
2028	32,204	436.734	436.734	0.032	0.437	0.437
2029	32,204	436.734	436.734	0.032	0.437	0.437
2030	32,204	436.734	436.734	0.064	0.873	0.873
2031	32,204	436.734	436.734	0.064	0.873	0.873
2032	32,204	436.734	436.734	0.064	0.873	0.873
2033	32,204	436.734	436.734	0.097	1.310	1.310
2034	32,204	436.734	436.734	0.097	1.310	1.310

	Demand Response				
Costs					
Admin	**$ 2,500.00**				
Recurring	**$ 5,436.73**				
Incentive	**$ 31,122.43**				
TOTAL COST	**$ 39,059.16**				
	Part.	*Rebate*	*Recurring*	*Admin*	Admin + Recurring + Rebate
2025	0	$ 31,122.43	$ 5,436.73	$ 2,500.00	$ 39,059.16
2026	0	$ 31,122.43	$ 5,436.73	$ 2,500.00	$ 39,059.16
2027	1	$ 31,122.43	$ 5,436.73	$ 2,500.00	$ 39,059.16
2028	0	$ 31,122.43	$ 5,436.73	$ 2,500.00	$ 39,059.16
2029	0	$ 31,122.43	$ 5,436.73	$ 2,500.00	$ 39,059.16
2030	1	$ 31,122.43	$ 5,436.73	$ 2,500.00	$ 39,059.16
2031	0	$ 31,122.43	$ 5,436.73	$ 2,500.00	$ 39,059.16
2032	0	$ 31,122.43	$ 5,436.73	$ 2,500.00	$ 39,059.16
2033	1	$ 31,122.43	$ 5,436.73	$ 2,500.00	$ 39,059.16
2034	0	$ 31,122.43	$ 5,436.73	$ 2,500.00	$ 39,059.16

Cost-Effectiveness Results:

TRC: 16.85 PCT: 19,696 RIM: 11.91

6. Destratification Fans

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	10,089	8.207	0.000	0.030	0.025	0.000
2026	10,089	8.207	0.000	0.061	0.049	0.000
2027	10,089	8.207	0.000	0.091	0.074	0.000
2028	10,089	8.207	0.000	0.121	0.098	0.000
2029	10,089	8.207	0.000	0.151	0.123	0.000
2030	10,089	8.207	0.000	0.182	0.148	0.000
2031	10,089	8.207	0.000	0.212	0.172	0.000
2032	10,089	8.207	0.000	0.242	0.197	0.000
2033	10,089	8.207	0.000	0.272	0.222	0.000
2034	10,089	8.207	0.000	0.303	0.246	0.000

	Destratification Fans			
Costs				
Admin	*$ 350.00*			
Recurring	*$ -*			
Incentive	*$ 1,500.00*			
TOTAL COST	**$ 1,850.00**			
	Part.	*Rebate*	*Admin*	*Admin + Rebate*
2025	*3*	*$ 1,500.00*	*$ 350.00*	*$ 1,850.00*
2026	*3*	*$ 1,500.00*	*$ 350.00*	*$ 1,850.00*
2027	*3*	*$ 1,500.00*	*$ 350.00*	*$ 1,850.00*
2028	*3*	*$ 1,500.00*	*$ 350.00*	*$ 1,850.00*
2029	*3*	*$ 1,500.00*	*$ 350.00*	*$ 1,850.00*
2030	*3*	*$ 1,500.00*	*$ 350.00*	*$ 1,850.00*
2031	*3*	*$ 1,500.00*	*$ 350.00*	*$ 1,850.00*
2032	*3*	*$ 1,500.00*	*$ 350.00*	*$ 1,850.00*
2033	*3*	*$ 1,500.00*	*$ 350.00*	*$ 1,850.00*
2034	*3*	*$ 1,500.00*	*$ 350.00*	*$ 1,850.00*

Cost-Effectiveness Results:

TRC: 1.15 PCT: 64 RIM: 0.80

7. Industrial Load Management (GSLM 2&3)

Cost-effectiveness not performed; credit stipulated in settlement agreement. If credit was not stipulated, contracted credit value ("CCV") would be calculated via RIM on an annual basis.

8. Lighting Conditioned Space

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	89,849	20.173	25.907	13.477	3.026	3.886
2026	89,849	20.173	25.907	26.955	6.052	7.772
2027	89,849	20.173	25.907	40.432	9.078	11.658
2028	89,849	20.173	25.907	53.910	12.104	15.544
2029	89,849	20.173	25.907	67.387	15.130	19.430
2030	89,849	20.173	25.907	78.618	17.651	22.668
2031	89,849	20.173	25.907	89.849	20.173	25.907
2032	89,849	20.173	25.907	101.080	22.694	29.145
2033	89,849	20.173	25.907	112.312	25.216	32.384
2034	89,849	20.173	25.907	123.543	27.737	35.622

	Lighting - Conditioned			
Costs				
Admin	**$ 350.00**			
Recurring	**$ -**			
Incentive	**$ 8,791.50**		**$0.40 per watt**	
TOTAL COST	**$ 9,141.50**			
	Part.	*Rebate*	*Admin*	*Admin + Rebate*
2025	150	$ 8,791.50	$ 350.00	$ 9,141.50
2026	150	$ 8,791.50	$ 350.00	$ 9,141.50
2027	150	$ 8,791.50	$ 350.00	$ 9,141.50
2028	150	$ 8,791.50	$ 350.00	$ 9,141.50
2029	150	$ 8,791.50	$ 350.00	$ 9,141.50
2030	125	$ 8,791.50	$ 350.00	$ 9,141.50
2031	125	$ 8,791.50	$ 350.00	$ 9,141.50
2032	125	$ 8,791.50	$ 350.00	$ 9,141.50
2033	125	$ 8,791.50	$ 350.00	$ 9,141.50
2034	125	$ 8,791.50	$ 350.00	$ 9,141.50

Cost-Effectiveness Results:

TRC: 1.19 PCT: 8,695 RIM: 1.36

9. Lighting Non-Conditioned Space

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	59,009	12.342	12.342	7.376	1.543	1.543
2026	59,009	12.342	12.342	14.752	3.086	3.086
2027	59,009	12.342	12.342	22.128	4.628	4.628
2028	59,009	12.342	12.342	29.504	6.171	6.171
2029	59,009	12.342	12.342	36.880	7.714	7.714
2030	59,009	12.342	12.342	42.781	8.948	8.948
2031	59,009	12.342	12.342	48.682	10.183	10.183
2032	59,009	12.342	12.342	54.583	11.417	11.417
2033	59,009	12.342	12.342	60.484	12.651	12.651
2034	59,009	12.342	12.342	66.385	13.885	13.885

	Lighting - Non-conditioned			
Costs				
Admin	**$ 350.00**			
Recurring	**$ -**			
Incentive	**$ 4,037.25**	**$0.35 per watt**		
TOTAL COST	**$ 4,387.25**			
	Part.	*Rebate*	*Admin*	*Admin + Rebate*
2025	125	$ 4,037.25	$ 350.00	$ 4,387.25
2026	125	$ 4,037.25	$ 350.00	$ 4,387.25
2027	125	$ 4,037.25	$ 350.00	$ 4,387.25
2028	125	$ 4,037.25	$ 350.00	$ 4,387.25
2029	125	$ 4,037.25	$ 350.00	$ 4,387.25
2030	100	$ 4,037.25	$ 350.00	$ 4,387.25
2031	100	$ 4,037.25	$ 350.00	$ 4,387.25
2032	100	$ 4,037.25	$ 350.00	$ 4,387.25
2033	100	$ 4,037.25	$ 350.00	$ 4,387.25
2034	100	$ 4,037.25	$ 350.00	$ 4,387.25

Cost-Effectiveness Results:

TRC: 2.30 PCT: 12,022 RIM: 1.60

10. Lighting Occupancy Sensors

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	95,224	32.098	40.120	0.476	0.160	0.201
2026	95,224	32.098	40.120	0.952	0.321	0.401
2027	95,224	32.098	40.120	1.428	0.481	0.602
2028	95,224	32.098	40.120	1.904	0.642	0.802
2029	95,224	32.098	40.120	2.381	0.802	1.003
2030	95,224	32.098	40.120	2.857	0.963	1.204
2031	95,224	32.098	40.120	3.333	1.123	1.404
2032	95,224	32.098	40.120	3.809	1.284	1.605
2033	95,224	32.098	40.120	4.285	1.444	1.805
2034	95,224	32.098	40.120	4.761	1.605	2.006

	Occupancy Sensors	
Costs		
Admin	**$ 350.00**	
Recurring	**$ -**	
Incentive	**$ 893.65**	**$26.00 per kW controlled**
TOTAL COST	**$ 1,243.65**	

	Part.	*Rebate*	*Admin*	*Admin + Rebate*
2025	5	$ 893.65	$ 350.00	$ 1,243.65
2026	5	$ 893.65	$ 350.00	$ 1,243.65
2027	5	$ 893.65	$ 350.00	$ 1,243.65
2028	5	$ 893.65	$ 350.00	$ 1,243.65
2029	5	$ 893.65	$ 350.00	$ 1,243.65
2030	5	$ 893.65	$ 350.00	$ 1,243.65
2031	5	$ 893.65	$ 350.00	$ 1,243.65
2032	5	$ 893.65	$ 350.00	$ 1,243.65
2033	5	$ 893.65	$ 350.00	$ 1,243.65
2034	5	$ 893.65	$ 350.00	$ 1,243.65

Cost-Effectiveness Results:

TRC: 10.62 PCT: 3,567 RIM: 1.48

11. Commercial Load Management (GSLM 1)

Cyclic:

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	0	0.000	14.124	0.000	0.000	0.014
2026	0	0.000	14.124	0.000	0.000	0.014
2027	0	0.000	14.124	0.000	0.000	0.028
2028	0	0.000	14.124	0.000	0.000	0.028
2029	0	0.000	14.124	0.000	0.000	0.042
2030	0	0.000	14.124	0.000	0.000	0.042
2031	0	0.000	14.124	0.000	0.000	0.056
2032	0	0.000	14.124	0.000	0.000	0.056
2033	0	0.000	14.124	0.000	0.000	0.071
2034	0	0.000	14.124	0.000	0.000	0.071

	CILMC				
Costs					
Admin	**$ 781.94**				
Recurring	**$ 103.00**				
Incentive	**$ 462.00**	**$5.00 per kW based upon summer**			
TOTAL COST	**$ 1,346.94**				
	Part.	*Rebate*	*Recurring*	*Admin*	*Rebate + Admin + Recuring*
2025	1	$ 462.00	$ 103.00	$ 781.94	$ 1,346.94
2026	0	$ 462.00	$ 103.00	$ 781.94	$ 1,346.94
2027	1	$ 462.00	$ 103.00	$ 781.94	$ 1,346.94
2028	0	$ 462.00	$ 103.00	$ 781.94	$ 1,346.94
2029	1	$ 462.00	$ 103.00	$ 781.94	$ 1,346.94
2030	0	$ 462.00	$ 103.00	$ 781.94	$ 1,346.94
2031	1	$ 462.00	$ 103.00	$ 781.94	$ 1,346.94
2032	0	$ 462.00	$ 103.00	$ 781.94	$ 1,346.94
2033	1	$ 462.00	$ 103.00	$ 781.94	$ 1,346.94
2034	0	$ 462.00	$ 103.00	$ 781.94	$ 1,346.94

Cost-Effectiveness Results:

TRC: 8.14 PCT: 232 RIM: 2.47

Extended:

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	0	64.200	98.440	0.000	0.000	0.000
2026	0	64.200	98.440	0.000	0.000	0.000
2027	0	64.200	98.440	0.000	0.064	0.098
2028	0	64.200	98.440	0.000	0.064	0.098
2029	0	64.200	98.440	0.000	0.064	0.098
2030	0	64.200	98.440	0.000	0.128	0.197
2031	0	64.200	98.440	0.000	0.128	0.197
2032	0	64.200	98.440	0.000	0.128	0.197
2033	0	64.200	98.440	0.000	0.193	0.295
2034	0	64.200	98.440	0.000	0.193	0.295

	CILME				
Costs					
Admin	**$ 781.94**				
Recurring	**$ 103.00**				
Incentive	**$ 5,192.00**	**$5.50 per KW based upon winter and summer**			
TOTAL COST	**$ 6,076.94**				
	Part.	*Rebate*	*Recurring*	*Admin*	*Rebate + Admin + Recuring*
2025	0	$ 5,192.00	$ 103.00	$ 781.94	$ 6,076.94
2026	0	$ 5,192.00	$ 103.00	$ 781.94	$ 6,076.94
2027	1	$ 5,192.00	$ 103.00	$ 781.94	$ 6,076.94
2028	0	$ 5,192.00	$ 103.00	$ 781.94	$ 6,076.94
2029	0	$ 5,192.00	$ 103.00	$ 781.94	$ 6,076.94
2030	1	$ 5,192.00	$ 103.00	$ 781.94	$ 6,076.94
2031	0	$ 5,192.00	$ 103.00	$ 781.94	$ 6,076.94
2032	0	$ 5,192.00	$ 103.00	$ 781.94	$ 6,076.94
2033	1	$ 5,192.00	$ 103.00	$ 781.94	$ 6,076.94
2034	0	$ 5,192.00	$ 103.00	$ 781.94	$ 6,076.94

Cost-Effectiveness Results:

TRC: 105.17   PCT: 2,603   RIM: 3.92

12. Standby Generator

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	55,748	567.009	567.009	0.056	0.567	0.567
2026	55,748	567.009	567.009	0.111	1.134	1.134
2027	55,748	567.009	567.009	0.167	1.701	1.701
2028	55,748	567.009	567.009	0.223	2.268	2.268
2029	55,748	567.009	567.009	0.279	2.835	2.835
2030	55,748	567.009	567.009	0.334	3.402	3.402
2031	55,748	567.009	567.009	0.390	3.969	3.969
2032	55,748	567.009	567.009	0.446	4.536	4.536
2033	55,748	567.009	567.009	0.502	5.103	5.103
2034	55,748	567.009	567.009	0.557	5.670	5.670

	SBG				
Costs					
Admin	**$ 4,000.00**				
Recurring	**$ 1,333.48**				
Incentive	**$ 39,107.73**	**$6.15 per kW**			
TOTAL COST	**$ 44,441.21**				
	Part.	*Rebate*	*Recurring*	*Admin*	*Admin + Recurring + Rebate*
2025	1	$ 39,107.73	$ 1,333.48	$ 4,000.00	$ 44,441.21
2026	1	$ 39,107.73	$ 1,333.48	$ 4,000.00	$ 44,441.21
2027	1	$ 39,107.73	$ 1,333.48	$ 4,000.00	$ 44,441.21
2028	1	$ 39,107.73	$ 1,333.48	$ 4,000.00	$ 44,441.21
2029	1	$ 39,107.73	$ 1,333.48	$ 4,000.00	$ 44,441.21
2030	1	$ 39,107.73	$ 1,333.48	$ 4,000.00	$ 44,441.21
2031	1	$ 39,107.73	$ 1,333.48	$ 4,000.00	$ 44,441.21
2032	1	$ 39,107.73	$ 1,333.48	$ 4,000.00	$ 44,441.21
2033	1	$ 39,107.73	$ 1,333.48	$ 4,000.00	$ 44,441.21
2034	1	$ 39,107.73	$ 1,333.48	$ 4,000.00	$ 44,441.21

Cost-Effectiveness Results:

TRC: 75.48 PCT: 28,390 RIM: 25.96

13. VFD and Motor Controls

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	30,232	4.530	5.492	0.756	0.113	0.137
2026	30,232	4.530	5.492	1.512	0.227	0.275
2027	30,232	4.530	5.492	2.267	0.340	0.412
2028	30,232	4.530	5.492	3.023	0.453	0.549
2029	30,232	4.530	5.492	3.779	0.566	0.687
2030	30,232	4.530	5.492	4.535	0.680	0.824
2031	30,232	4.530	5.492	5.291	0.793	0.961
2032	30,232	4.530	5.492	6.046	0.906	1.098
2033	30,232	4.530	5.492	6.802	1.019	1.236
2034	30,232	4.530	5.492	7.558	1.133	1.373

	VFD			
Costs				
Admin	*$ 350.00*			
Recurring	*$ -*			
Incentive	*$ 574.04*	***$75 per HP of Motor Controlled***		
TOTAL COST	**$ 924.04**			
	Part.	*Rebate*	*Admin*	*Admin + Rebate*
2025	*25*	*$ 574.04*	*$ 350.00*	*$ 924.04*
2026	*25*	*$ 574.04*	*$ 350.00*	*$ 924.04*
2027	*25*	*$ 574.04*	*$ 350.00*	*$ 924.04*
2028	*25*	*$ 574.04*	*$ 350.00*	*$ 924.04*
2029	*25*	*$ 574.04*	*$ 350.00*	*$ 924.04*
2030	*25*	*$ 574.04*	*$ 350.00*	*$ 924.04*
2031	*25*	*$ 574.04*	*$ 350.00*	*$ 924.04*
2032	*25*	*$ 574.04*	*$ 350.00*	*$ 924.04*
2033	*25*	*$ 574.04*	*$ 350.00*	*$ 924.04*
2034	*25*	*$ 574.04*	*$ 350.00*	*$ 924.04*

Cost-Effectiveness Results:

TRC: 6.66 PCT: 1,860 RIM: 1.82

14. Commercial Heat Pump Water Heater and Drain Water Heat Recovery

AT THE GENERATOR						
Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2025	28,831	5.341	1.005	0.029	0.005	0.001
2026	28,831	5.341	1.005	0.058	0.011	0.002
2027	28,831	5.341	1.005	0.086	0.016	0.003
2028	28,831	5.341	1.005	0.115	0.021	0.004
2029	28,831	5.341	1.005	0.144	0.027	0.005
2030	28,831	5.341	1.005	0.173	0.032	0.006
2031	28,831	5.341	1.005	0.202	0.037	0.007
2032	28,831	5.341	1.005	0.231	0.043	0.008
2033	28,831	5.341	1.005	0.259	0.048	0.009
2034	28,831	5.341	1.005	0.288	0.053	0.010

	Water Heating			
Costs				
Admin	**$ 350.00**			
Recurring	**$ -**			
Incentive	**$ 2,137.92**	**$0.10 per Btu**		
TOTAL COST	**$ 2,487.92**			
	Part.	*Rebate*	*Admin*	*Admin + Rebate*
2025	1	$ 2,137.92	$ 350.00	$ 2,487.92
2026	1	$ 2,137.92	$ 350.00	$ 2,487.92
2027	1	$ 2,137.92	$ 350.00	$ 2,487.92
2028	1	$ 2,137.92	$ 350.00	$ 2,487.92
2029	1	$ 2,137.92	$ 350.00	$ 2,487.92
2030	1	$ 2,137.92	$ 350.00	$ 2,487.92
2031	1	$ 2,137.92	$ 350.00	$ 2,487.92
2032	1	$ 2,137.92	$ 350.00	$ 2,487.92
2033	1	$ 2,137.92	$ 350.00	$ 2,487.92
2034	1	$ 2,137.92	$ 350.00	$ 2,487.92

Cost-Effectiveness Results:

TRC: 1.61 PCT: 375 RIM: 1.37

15. Conservation Research and Development ("R&D")

Cost-effectiveness not performed.

16. Renewable Energy Program (Sun-To-Go)

Cost-effectiveness not performed; stand-alone Commission approved program.

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Tampa Electric's Current DSM programs and Achievements through 2023

Residential

1. Residential Walk-Through Energy Audit (Free Energy Check)
2. Residential Customer Assisted Energy Audit (Online)
3. Residential Computer Assisted Energy Audits (RCS-Paid Audit)
4. Residential Ceiling Insulation
5. Residential Duct Repair
6. Energy and Renewable Education, Awareness and Agency Outreach
7. ENERGY STAR for New Multi-Family Residences
8. ENERGY STAR for New Homes
9. ENERGY STAR Pool Pumps
10. ENERGY STAR Thermostats
11. Residential Heating and Cooling
12. Neighborhood Weatherization
13. Residential Price Responsive Load Management (Energy Planner)
14. Residential Prime Time Plus
15. Residential Window Replacement
16. Renewable Energy Program (Sun-To-Go)

Commercial

1. Commercial/Industrial Audit (Free)
2. Comprehensive Commercial/Industrial Audit (Paid)
3. Commercial Chiller
4. Cogeneration
5. Conservation Value
6. Commercial Cooling
7. Demand Response
8. Facility Energy Management System
9. Industrial Load Management (GSLM 2&3)
10. Street and Outdoor Lighting Conversion
11. Lighting Conditioned Space
12. Lighting Non-Conditioned Space
13. Lighting Occupancy Sensors
14. Commercial Load Management (GSLM 1)
15. Commercial Smart Thermostats
16. Standby Generator
17. Variable Frequency Drive Control for Compressors
18. Commercial Water Heating
19. Integrated Renewable Energy System (Pilot)
20. Conservation Research and Development (R&D)
21. Renewable Energy Program (Sun-To-Go)

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Comparison of Achieved MW and GWh Reductions With Florida Public Service Commission Goals

Savings at the Generator

Residential

	Winter Peak MW Reduction			Summer Peak MW Reduction			GWh Energy Reduction		
Year	Total Achieved	Commission Approved Goal	% Variance	Total Achieved	Commission Approved Goal	% Variance	Total Achieved	Commission Approved Goal	% Variance
2015	12.3	2.6	473.1%	10.8	1.1	981.8%	21.2	1.8	1,177.8%
2016	7.7	4.1	187.8%	5.1	1.6	318.8%	13.2	3.5	377.1%
2017	6.9	5.2	132.7%	4.7	2.2	213.6%	14.9	4.8	310.4%
2018	8.0	6.5	123.0%	5.6	2.7	205.7%	17.1	6.1	280.3%
2019	8.3	7.6	108.8%	5.7	3.1	184.5%	16.8	6.9	243.2%
2020	3.5	7.6	45.5%	2.6	3.3	78.2%	8.9	7.4	120.3%
2021	4.5	8.0	55.8%	6.4	3.3	194.2%	16.4	7.7	213.1%
2022	9.5	7.4	127.8%	11.1	3.0	369.8%	30.4	6.9	441.0%
2023	10.3	6.8	151.2%	12.5	2.9	429.5%	29.6	6.3	469.9%
2024		6.1			2.5			5.5	

Commercial/Industrial

	Winter Peak MW Reduction			Summer Peak MW Reduction			GWh Energy Reduction		
Year	Total Achieved	Commission Approved Goal	% Variance	Total Achieved	Commission Approved Goal	% Variance	Total Achieved	Commission Approved Goal	% Variance
2015	8.1	1.2	675.0%	11.7	1.7	688.2%	12.5	3.9	320.5%
2016	2.9	1.3	223.1%	4.4	2.5	176.0%	17.8	6.0	296.7%
2017	9.2	1.6	575.0%	10.4	2.7	385.2%	30.2	8.0	377.5%
2018	13.0	1.7	767.1%	15.0	3.3	453.6%	33.7	9.2	365.9%
2019	22.4	1.6	1401.9%	29.2	3.3	885.9%	74.6	9.9	753.4%
2020	10.4	1.7	612.5%	11.8	3.5	336.0%	26.1	10.3	253.3%
2021	4.7	1.9	246.2%	5.6	3.6	156.8%	20.4	10.4	196.1%
2022	7.1	1.9	376.0%	12.3	3.3	372.2%	26.6	10.2	261.2%
2023	7.2	1.8	398.1%	8.1	3.5	232.1%	30.3	9.9	305.6%
2024		1.7			3.2			9.6	

Combined Total

	Winter Peak MW Reduction			Summer Peak MW Reduction			GWh Energy Reduction		
Year	Total Achieved	Commission Approved Goal	% Variance	Total Achieved	Commission Approved Goal	% Variance	Total Achieved	Commission Approved Goal	% Variance
2015	20.4	3.8	536.8%	22.5	2.8	803.6%	33.7	5.7	591.2%
2016	10.6	5.4	196.3%	9.5	4.1	231.7%	31.0	9.5	326.3%
2017	16.1	6.8	236.8%	15.1	4.9	308.2%	45.1	12.8	352.3%
2018	21.0	8.2	256.5%	20.5	6.0	342.1%	50.8	15.3	331.8%
2019	30.7	9.2	333.7%	35.0	6.4	546.2%	91.4	16.8	543.9%
2020	13.9	9.3	149.1%	14.3	6.8	210.9%	35.0	17.7	197.7%
2021	9.1	9.9	92.3%	12.1	6.9	174.7%	36.8	18.1	203.3%
2022	16.6	9.3	178.5%	23.4	6.3	371.0%	57.1	17.1	333.8%
2023	17.4	8.6	202.9%	20.6	6.4	321.6%	59.9	16.2	369.5%
2024		7.8			5.7			15.1	

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Tampa Electric's 2025 – 2034
Proposed Goals

Tampa Electric's
2025-2034 Proposed DSM Goals

Proposed Residential DSM Goals at the Generator

	Summer Demand (MW)		Winter Demand (MW)		Annual Energy (GWh)	
Year	Incremental	Cumulative	Incremental	Cumulative	Incremental	Cumulative
2025	7.8	7.8	13.8	13.8	24.2	24.2
2026	7.8	15.7	13.8	27.6	24.2	48.4
2027	8.7	24.4	14.4	42.0	24.8	73.2
2028	8.5	32.9	14.3	56.4	24.2	97.4
2029	8.5	41.4	14.3	70.7	24.2	121.6
2030	9.5	51.0	15.0	85.7	25.2	146.9
2031	9.4	60.3	14.9	100.6	24.7	171.6
2032	9.4	69.7	14.9	115.5	24.7	196.3
2033	9.5	79.2	15.0	130.5	25.2	221.5
2034	9.4	88.6	14.9	145.4	24.7	246.2

Proposed Commercial/Industrial DSM Goals at the Generator

	Summer Demand (MW)		Winter Demand (MW)		Annual Energy (GWh)	
Year	Incremental	Cumulative	Incremental	Cumulative	Incremental	Cumulative
2025	6.4	6.4	5.4	5.4	22.2	22.2
2026	6.3	12.7	5.4	10.8	22.2	44.5
2027	6.9	19.6	5.9	16.8	22.3	66.8
2028	6.4	26.0	5.4	22.2	22.3	89.1
2029	6.4	32.4	5.4	27.6	22.3	111.4
2030	5.9	38.3	5.1	32.7	18.6	130.0
2031	5.4	43.7	4.6	37.3	18.6	148.6
2032	5.4	49.1	4.6	42.0	18.6	167.2
2033	6.0	55.1	5.1	47.1	18.6	185.8
2034	5.4	60.5	4.6	51.7	18.6	204.4

Proposed Combined DSM Goals at the Generator

	Summer Demand (MW)		Winter Demand (MW)		Annual Energy (GWh)	
Year	Incremental	Cumulative	Incremental	Cumulative	Incremental	Cumulative
2025	14.2	14.2	19.2	19.2	46.5	46.5
2026	14.2	28.4	19.2	38.5	46.5	92.9
2027	15.6	44.0	20.3	58.8	47.1	140.0
2028	14.9	58.9	19.8	78.6	46.5	186.5
2029	14.9	73.8	19.8	98.3	46.5	233.0
2030	15.5	89.2	20.1	118.4	43.8	276.9
2031	14.8	104.0	19.5	138.0	43.3	320.2
2032	14.8	118.8	19.5	157.5	43.3	363.4
2033	15.5	134.3	20.1	177.6	43.8	407.3
2034	14.8	149.0	19.5	197.1	43.3	450.5

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Tampa Electric's 2025 – 2034 Proposed Programs

Residential Programs:

1. Residential Walk-Through Audit (Free Energy Check)
2. Residential Customer Assisted Energy Audit (Online)
3. Residential Computer Assisted Energy Audit (RCS)(Paid)
4. Residential Ceiling Insulation
5. Residential Duct Repair
6. Energy and Renewable Education, Awareness and Agency Outreach
7. ENERGY STAR for New Multi-Family Residences
8. ENERGY STAR for New Homes
9. ENERGY STAR Thermostats
10. Residential Heating and Cooling
11. Neighborhood Weatherization
12. Residential Price Responsive Load Management (Energy Planner)
13. Residential Prime Time Plus
14. Renewable Energy Program (Sun-To-Go)

Commercial/Industrial Programs:

1. Commercial/Industrial Audit (Free)
2. Comprehensive Commercial/Industrial Audit (Paid)
3. Cogeneration
4. Commercial/Industrial Custom Energy Efficiency
5. Demand Response
6. Industrial Load Management (GSLM 2&3)
7. Lighting Conditioned Space
8. Lighting Non-Conditioned Space
9. Lighting Occupancy Sensors
10. Commercial Load Management (GSLM 1)
11. Standby Generator
12. VFD and Motor Controls
13. Commercial Heat Pump Water Heater and Drain Water Heat Recovery
14. Conservation Research and Development ("R&D")
15. Renewable Energy Program (Sun-To-Go)