BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

In the Matter of:

DOCKET NO. 20240012-EG

Commission review of numeric conservation goals (Florida Power & Light Company).
_____/

DOCKET NO. 20240013-EG

Commission review of numeric conservation goals (Duke Energy Florida, LLC).
_____/

DOCKET NO. 20240014-EG

Commission review of numeric conservation goals (Tampa Electric Company).
_____/

DOCKET NO. 20240015-EG

Commission review of numeric conservation goals (Florida Public Utilities Company).
_____/

DOCKET NO. 20240016-EG

Commission review of numeric conservation goals (JEA).
_____/

DOCKET NO. 20240017-EG

Commission review of numeric conservation goals (Orlando Utilities Commission).
_____/

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PROCEEDINGS: HEARING

COMMISSIONERS PARTICIPATING: CHAIRMAN MIKE LA ROSA
COMMISSIONER ART GRAHAM
COMMISSIONER GARY F. CLARK
COMMISSIONER ANDREW GILES FAY
COMMISSIONER GABRIELLA PASSIDOMO

DATE: Thursday, August 8, 2024

TIME: Commenced: 2:30 p.m.
Concluded: 2:50 p.m.

PLACE: Betty Easley Conference Center
Room 148
4075 Esplanade Way
Tallahassee, Florida

REPORTED BY: DEBRA R. KRICK
Court Reporter

PREMIER REPORTING
TALLAHASSEE, FLORIDA
(850) 894-0828

APPEARANCES:

WILLIAM P. COX and CHRISTOPHER T. WRIGHT, ESQUIRES, Florida Power & Light Company, 700 Universe Boulevard, Juno Beach, Florida 33408; appearing behalf of Florida Power & Light Company (FPL).

MATTHEW R. BERNIER and STEPHANIE A. CUELLO, ESQUIRES, 299 First Avenue North, St. Petersburg, Florida 33701; appearing on behalf of Duke Energy Florida, LLC (DEF).

J. JEFFRY WAHLEN, MALCOLM N. MEANS, and VIRGINIA PONDER, ESQUIRES, Ausley & McMullen, Post Office Box 391, Tallahassee, Florida 32302; appearing on behalf of Tampa Electric Company (TECO).

BETH KEATING, ESQUIRE, Gunster, Yoakley & Stewart, P.A., 215 South Monroe Street, Suite 601, Tallahassee, Florida 32301; appearing on behalf of Florida Public Utilities (FPUC).

GARY V. PERKO, ESQUIRE, Holtzman, Vogel, Baran, Torchinsky & Josefiak, PLLC, 119 South Monroe Street, Suite 500, Tallahassee, Florida 32301; appearing on behalf of JEA (JEA).

APPEARANCES CONTINUED:

ROBERT SCHEFFEL WRIGHT and JOHN T. LAVIA, III, ESQUIRES, Gardner, Bist, Bowden, Bush, Dee, LaVia & Wright, P.A., 1300 Thomaswood Drive, Tallahassee, Florida 32308; appearing on behalf of Orlando Utilities Commission (OUC).

SEAN T. GARNER, ERIK SAYLER and KELLY WRIGHT, ESQUIRES, Florida Department of Agriculture & Consumer Service, Office of General Counsel, The Mayo Building, 407 S. Calhoun Street, Suite 520, Tallahassee, Florida 32399-0800; appearing on behalf of Florida Department of Agriculture & Consumer Services (FDACS).

JON C. MOYLE and KAREN A. PUTNAL, ESQUIRES, Moyle Law Firm, 118 North Gadsden Street, Tallahassee, Florida 32301; appearing on behalf of Florida Industrial Power Users Group (FIPUG).

JAMES W. BREW, LAURA WYNN BAKER and SARAH B. NEWMAN, ESQUIRES, Stone, Mattheis, Xenopoulos & Brew, PC, 1025 Thomas Jefferson Street, NW, Eighth Floor, West Tower, Washington, DC 20007; appearing on behalf of White Springs Agricultural Chemicals, Inc. d/b/a PCS Phosphate – White Springs (PCS Phosphate).

APPEARANCES CONTINUED:

PETER J. MATTHEIS, MICHAEL K. LAVANGA and JOSEPH R. BRISCAR, ESQUIRES, Stone, Mattheis, Xenopoulos & Brew, PC, 1025 Thomas Jefferson Street, NW, Eighth Floor, West Tower, Washington, DC 20007; appearing on behalf of Nucor Steel Florida, Inc. (Nucor).

STEPHANIE U. EATON, ESQUIRE, Spilman Thomas & Battle, PLLC, 110 Oakwood Drive, Suite 500, Winston-Salem, North Carolina 27103; STEVEN W. LEE, ESQUIRE, Spilman, Thomas & Battle, PLLC, 1100 Bent Creek Boulevard, Suite 101, Mechanicsburg, Pennsylvania 17050; appearing on behalf of Walmart, Inc. (Walmart).

WILLIAM C. GARNER, ESQUIRE, Law Office of William C. Garner, PLLC, 3425 Bannerman Road, Unit 105, No. 414, Tallahassee, Florida 32312; appearing on behalf of Southern Alliance for Clean Energy (SACE).

BRADLEY MARSHALL and JORDAN LUEBKEMANN, ESQUIRES, Earthjustice, 111 S. Martin Luther King Jr. Boulevard, Tallahassee, FL 32301; appearing on behalf of Florida Rising (FL Rising) and League of United Latin Citizens of Florida (LULAC).

APPEARANCES CONTINUED:

JACOB IMIG, JON RUBOTTOM and ADRIA HARPER, ESQUIRES, FPSC General Counsel's Office, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850, appearing on behalf of the Florida Public Service Commission (Staff).

KEITH HETRICK, GENERAL COUNSEL; MARY ANNE HELTON, DEPUTY GENERAL COUNSEL, Florida Public Service Commission, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850, Advisor to the Florida Public Service Commission.

I N D E X

P R O C E E D I N G S

CHAIRMAN LA ROSA: All right. Excellent.

I think we've got a little bit of a full house. Welcome. It is -- today is August 8th, and this is the Commission's review of the numeric conservation goals.

I'm going to go ahead and ask staff to please read the notice.

MR. IMIG: By notice issued July 12th, 2024, this was the time and place that was set for a hearing in dockets -- Docket Nos. 20240012-EG, 20240013-EG, 20240014-EG, 20240015-EG, 20240016-EG and 20240017-EG. The purpose of the hearing is set out in the notice.

CHAIRMAN LA ROSA: Thank you, Mr. Imig.

Let's move to appearances. We have a lot of folks -- go ahead. Go ahead, staff.

MR. IMIG: There are six dockets to address today in this consolidated proceeding. Staff suggests that all appearances be taken at once. All parties should enter their appearances and declare the dockets that they are entering an appearance for. After the parties make their appearances, staff will need to make theirs.

CHAIRMAN LA ROSA: Excellent. so what I was

going to -- thank you.

So I what I was going to say was that we've got a lot of folks before us. I don't know that we are all sitting in the order, so I am going to go ahead and just call each party out, and then, of course, if I miss anybody, I will make sure to look up and we include them.

Let's start with FPL.

MR. COX: Good afternoon, Chairman La Rosa and Commissioners. William Cox appearing today on behalf of Florida Power & Light. I would also like to enter an appearance for Christopher Wright.

Thank you.

CHAIRMAN LA ROSA: Thank you.

Duke Energy.

MS. CUELLO: Good afternoon. Stephanie Cuello and Matt Bernier for Duke Energy, and it's go to be in the 13 docket.

CHAIRMAN LA ROSA: Thank you.

TECO.

MR. MEANS: Good afternoon, Commissioners. Malcolm Means with the Ausley Law Firm appearing on behalf of Tampa Electric. I would also like to enter appearances for Jeff Wahlen and Virginia Ponder. And we are in the 14 docket.

Thank you.

CHAIRMAN LA ROSA: Thank you.

FPUC.

MS. KEATING: Good afternoon, Mr. Chairman. Commissioners. Beth Keating with the Gunster Law Firm here this afternoon for FPUC in Docket 20240015.

CHAIRMAN LA ROSA: Excellent. Thank you.

JEA.

MR. PERKO: Good afternoon, Commissioners, Gary Perko of the Holtzman Vogel Law Firm on behalf of JEA in Docket No. 20240016.

CHAIRMAN LA ROSA: Thank you.

OUC.

MR. WRIGHT: Thank you, Mr. Chairman.

Robert Scheffel Wright and John T. Lavia, III from the Gardner Bist Law Firm. By agreement amongst all parties, we have entered appearances in all six of the dockets that had to do with specifically covering the representation of one of the witnesses, Mr. Herndon. So technically I am appearing in all the six dockets, but OUC is my main client.

Thank you.

CHAIRMAN LA ROSA: Thank you.

MS. WRIGHT: Hi, Commissioners. Good afternoon. Kelly Wright, Sean Garner and Erik Sayler for FDACS in all dockets.

CHAIRMAN LA ROSA: Thank you.

FIPUG.

MR. MOYLE: Thank you, Mr. Chairman. Jon Moyle with the Moyle Law Firm, appearing on behalf of Florida Industrial Power Users Group, FIPUG. I would also like to enter an appearance for Karen Putnal. And we are in the three dockets involving the investor-owned utilities, TECO, Duke and FPL.

CHAIRMAN LA ROSA: Thank you.

PCS Phosphate.

MR. BREW: Good afternoon, Mr. Chairman, Commissioners.

For White Springs Agricultural Chemicals, PCS Phosphate, I am James Brew. I would like to note an appearance for Laura Baker and Sarah Newman. And we are appearing in the 13 docket.

CHAIRMAN LA ROSA: Thank you.

Nucor.

MR. BRISCAR: Good afternoon, Commissioners, Mr. Chairman.

Joseph Briscar on behalf of Nucor Steel Florida. I would like to also enter an appearance

for Peter Mattheis and Michael Lavanga. And we are appearing in the 0013 docket.

Thank you.

CHAIRMAN LA ROSA: Thank you.

Walmart.

MS. EATON: Good afternoon. Stephanie Eaton here on behalf of Walmart, Inc. And also entering an appearance for Steven Lee.

Thank you.

CHAIRMAN LA ROSA: Thank you.

SACE.

MR. GARNER: William Garner on behalf of the Southern Alliance for Clean Energy. And we are intervening in Dockets 12, 13, 14, 16 and 17.

CHAIRMAN LA ROSA: Thank you.

Florida Rising, LULAC.

MR. MARSHALL: Thank you, Mr. Chairman.

Bradley Marshall and Jordan Luebkemann on behalf of Florida Rising, the League of United Latin American Citizens of Florida, better known as LULAC, and the Environmental Confederation of Southwest Florida, better known as ECOSWF, in the 20240012 docket. And on behalf of Florida Rising and LULAC in the 20240013 and 14 docket. And on behalf of Florida Rising in the 20240016 and 17

dockets.

Thank you.

CHAIRMAN LA ROSA: Thank you.

Staff.

MR. IMIG: Jacob Imig, Commission staff. I would also like to enter an appearance for Jon Rubottom and Adria Harper.

CHAIRMAN LA ROSA: Thank you.

MS. HELTON: And Mary Anne Helton is here as your Advisor, along with your General Counsel, Keith Hetrick.

CHAIRMAN LA ROSA: Thank you for -- we are almost in order --

MR. COX: Chairman La Rosa, my apologies. I realize I did not say my docket number for FPL at the beginning. So for FPL, it was William Cox and Christopher Wright in the 20240012 docket only.

Thank you.

CHAIRMAN LA ROSA: Thank you. So, you know, going first sometimes, you know, it happens. I should have -- I should have mentioned it, but thank you for clarifying.

Let's go ahead and move to preliminary matters.

MR. IMIG: Before addressing staff's

preliminary matters, Mr. Moyle with FIPUG, would like to address the Commission.

CHAIRMAN LA ROSA: Sure.

Mr. Moyle, you are recognized.

MR. MOYLE: Thank you, Mr. Chairman. And thank you and your staff for giving me just a brief opportunity to make a couple of points about what I view largely as a procedural issue, and wanted to bring this to the attention of the full Commission. We had a brief discussion about this with the Prehearing Officer, and it relates to Issue 8a, which was an issue that was put forward by staff.

As you know, demand-side management programs are important. There are a number of demand-side management programs like curtailable systems, and interruptible systems, and standby generator, where people that have grocery stores, and things like that, they have standby generators; or large power users, on a hot day they will get a call and say can you shut off? We need to -- we need to use your energy, don't -- don't take it, and they have agreed to be interrupted. The grocery store, the same thing. They can crank up their generators and have supply available. It's a good he -- it's a good program.

There has been an issue that was raised by staff about, well, we are -- these programs are part of the goals docket, demand-side management, these programs. I don't think anybody really debates whether they are good or not. But the question has become, where should the compensation, the rates for these programs be decided?

And this issue was phrased by staff, and there were two options. Should it be in the goals docket or should it be in a rate case docket? And that issue is still a live issue before you today.

And by me sharing some remarks, which I appreciate, I think -- I think we are going to be able to resolve that okay, but I did want to just make the Commission aware it's an outstanding issue. I believe it's created a lot of inefficiencies and uncertainties. And in FIPUG's case, we filed testimony in this docket. We filed testimony in the rate case, which is not efficient.

The parties have been kind of split on what's the right way to do it. And I don't really want to spend a lot of time arguing here's the right way to do it, because I understand that there are -- there are differing views on it. But I did want to just today indicate that I don't think that the way it's

working now should continue to persist, and that between now and the next goals docket, I would hope that there could be a collective effort, parties, Commission and others, to try to find a better way to handle this issue.

So I appreciate the chance to briefly bring it to your attention. It's caused a lot of -- a lot of discussions. There are stipulations that are pending before you that staff has spent a lot of time on, the parties have spent a lot of time on. And FIPUG has made a decision to not go ahead and present this as an issue for you to decide today. We are going to, in our individual capacity in each of the dockets, announce our position on it. But I did want to just have a brief chance to alert you to this as being an issue that's been one that we've wrestled with. I don't think we've come up with a good solution, but I sure hope the next time we are in a goals docket, we not having -- we are not having an issue potentially be alive in two places at the same time. It's been -- it's been -- it's been a challenge.

So thank you, Mr. Chair, for the opportunity to make those comments.

CHAIRMAN LA ROSA: No problem. Thank you, and

certainly heard.

Let's go back and then start with preliminary matters if we're ready to go.

MR. IMIG: All witness testimony and exhibits have been stipulated to in all dockets, and all witnesses have been excused from this proceeding. All parties have agreed to waive opening statements.

CHAIRMAN LA ROSA: All right. Thank you.

We'll go through each docket, and then take a vote, and we will start with -- with FPL.

Staff.

MR. MOYLE: As alluded to, we want to go ahead and join the stipulation on Issue 8a for FPL. So we have not done that. Just so the record is clear, we would -- we would do that with FPL, and want to make that comment, and also make it for TECO and also for Duke.

CHAIRMAN LA ROSA: Thank you.

MR. IMIG: The parties in the FPL docket have reached stipulations on all issues. Staff recommends that the Commission allow the parties to brief Issue 10.

Issues 1 through 9 and 11 through 14 are in a posture for a bench decision by the Commission.

CHAIRMAN LA ROSA: Okay. Commissioners, any questions or --

MR. COX: Chairman, La Rosa, may FPL be heard on this recommendation?

CHAIRMAN LA ROSA: Yes.

MR. COX: Thank you. I appreciate -- I appreciate the time.

FPL understands on this issue that, you know, staff is not willing to support the stipulation that we arrived at with all of the intervening parties that actually took positions on this issue in the case, and that they clearly oppose the program.

You know, this is, again, a program, as the stipulation reads, it would simply say, our new HVAC On-Bill option for the residential OnCall Load Management Program is to allow greater customer access to new energy saving HVAC equipment in a way that passes the RIM cost-effectiveness test, and should be included in our proposed goals.

We understand their opposition. We understand that's the case. We would appreciate the opportunity to file a legal brief on it and give that to you to consider. And we thank you for your consideration.

CHAIRMAN LA ROSA: Thank you.

Commissioners, are there any questions or thoughts on the issues before us, Issues 1 through 9 and Issues 11 through 14?

Seeing none, is there a motion? Motion --

COMMISSIONER PASSIDOMO: Can I just have one --

CHAIRMAN LA ROSA: Yeah. Absolutely.

COMMISSIONER PASSIDOMO: Thank you, Mr. Chair.

I appreciate FPL's comments here. I would welcome a brief from you. I don't want to stake up too much time here. I know we've gotten -- y'all did a lot of work to get these stipulations, and I want to hold you to them. Because, you know, we will come back to that issue, I do want to see if any of the customer facing, you know, representing parties here would like to briefly explain why they stipulated to -- agreed to the stipulation, what they see as a benefit for customers for this program. I am curious to get your thoughts, because we are only going to get a brief from the utility.

I am looking at you, Mr. Marshall.

CHAIRMAN LA ROSA: Yeah, you see you moved to your button. So you are recognized.

MR. MARSHALL: I would say that stipulation is part of a comprehensive agreement with Florida Power & Light what we believe moves us in the right direction, and that would be my -- my statement.

COMMISSIONER PASSIDOMO: Nothing specific just on the HVAC programs?

MR. MARSHALL: I don't have anything specific to add on Issue 10 beyond what is stated in the stipulation.

COMMISSIONER PASSIDOMO: All right. Well, with that, Mr. Chair, I motion to approve the -- all stip -- the stipulations for all issues in this docket.

CHAIRMAN LA ROSA: And just to clarify, Issues 1 through 9 and 11 through 14?

COMMISSIONER PASSIDOMO: Yeah. Yeah. Exactly.

CHAIRMAN LA ROSA: Okay. So a motion on the table for 1 through 9 and 11 through 14.

Is there a second?

COMMISSIONER GRAHAM: Second.

CHAIRMAN LA ROSA: All right. Hearing a second hearing.

All those in favor signify by saying yay.

(Chorus of yays.)

CHAIRMAN LA ROSA: Yay.

Opposed no --

MS. HARPER: Commissioners, I'm sorry to interrupt.

I just want to make sure that we're -- I know there was an amended stipulation, correct, on this docket. So we're -- I just want to make sure that we are voting on the amended stipulations?

MR. COX: Yes. There was an amended stipulation. Staff had asked us to make sure that the numbers matched up with the comprehensive exhibit list because we filed our stipulations before the comprehensive exhibit list was finalized.

There was also a minor wording change on Issue 9 that staff requested, which didn't affect the substance on our renter pilot program.

MS. HARPER: So we are voting today -- you guys are voting today, I am not. You guys are voting today on the August 5th revised stipulations that FPL filed. I just wanted to be clear on that for the record.

COMMISSIONER PASSIDOMO: And I am happy to make another.

CHAIRMAN LA ROSA: Yeah. Let's so I move that

we -- that the August 5th revised stipulations, including Issues 1 through nine and 11 through 14 --

COMMISSIONER PASSIDOMO: So I move that we -- that the August 5th revised stipulations, including Issues 1 through 9 and 11 through 14.

CHAIRMAN LA ROSA: Hearing a motion.

Is there a second?

COMMISSIONER CLARK: Second.

CHAIRMAN LA ROSA: Hearing a motion and a second.

All those in favor signify by saying yay.

(Chorus of yays.)

CHAIRMAN LA ROSA: Yay.

Opposed no.

(No. response.)

CHAIRMAN LA ROSA: Show that these stipulations as described are -- have passed.

Let's move on to Duke.

MR. IMIG: The parties in this docket have stipulated to all issues, and the docket is in the posture for a bench decision by the Commission.

I would note that the stipulations that you would be voting on were filed today, August 8th.

MR. MOYLE: FIPUG should be shown as

affirmatively agreeing to Issue 8 also, and taking no position on all the other issues.

CHAIRMAN LA ROSA: Okay. Commissioners, is there any questions or thoughts on these set of stipulations?

Seeing none, is there a motion?

COMMISSIONER CLARK: Move to approve the issues in the Duke docket.

COMMISSIONER GRAHAM: Second.

CHAIRMAN LA ROSA: Hearing a motion and hearing a second.

All those in favor signify by saying yay.

(Chorus of yays.)

CHAIRMAN LA ROSA: Yay.

Opposed no.

(No. response.)

CHAIRMAN LA ROSA: Okay. So let's move now to the TECO docket.

MR. IMIG: The parties in this docket have stipulated to all issues, and the docket is in the posture for a bench decision by the Commission.

MR. MOYLE: Same comment from FIPUG. We are -- we are agreeing affirmatively to Issue 8, and taking no position on the remaining issues, so a Type 2 stipulation for us.

CHAIRMAN LA ROSA: Okay. Thank you.

Staff, is there any other alterations that need to be considered?

MS. HARPER: I'm just confirming, I might have gotten this mixed up, but did TECO file revised stipulations at some point too? No. Okay. So we are in the posture for the right one.

Thank you.

CHAIRMAN LA ROSA: Commissioners, any questions or thoughts on these set of stipulations? If not, then I am open for a motion.

COMMISSIONER CLARK: Mr. Chairman, I move to approve the stipulated items in the TECO settlement.

COMMISSIONER GRAHAM: Second.

CHAIRMAN LA ROSA: Hearing a motion and hearing a second hearing.

All those in favor signify by saying yay.

(Chorus of yays.)

CHAIRMAN LA ROSA: Yay.

Opposed no.

(No. response.)

CHAIRMAN LA ROSA: Show that the docket and the stipulation -- or those stipulations do pass.

Let's move to FPUC. Staff.

MR. IMIG: The parties in the FPUC docket have agreed to Type 2 stipulations that were listed in the Prehearing Order on all issues, and the docket is in a posture for a bench decision by the Commission.

CHAIRMAN LA ROSA: I am going to look to staff. So, okay, we are okay. We are in good shape, Commissioners.

Any questions or thoughts on these? Seeing none, open for a motion.

COMMISSIONER CLARK: Mr. Chairman, I would move to approve all the items in the 0015 docket.

COMMISSIONER GRAHAM: Second.

CHAIRMAN LA ROSA: Hearing a motion and hearing a second.

All those in favor signify by saying yay.

(Chorus of yays.)

CHAIRMAN LA ROSA: Yay.

Opposed no.

(No. response.)

CHAIRMAN LA ROSA: Show that the FPUC docket passes.

Let's move to JEA. Staff.

MR. IMIG: The parties in this docket filed stipulations on August 6th to all issues, and the

docket is in the posture for a bench decision by the Commission.

CHAIRMAN LA ROSA: Seeing no other alterations other than -- staff, is there any -- I mean, Commissioners, any questions or thoughts? Questions or thoughts?

The floor is open for a motion.

COMMISSIONER CLARK: I move to approve all stipulated items in the 0016 docket, Mr. Chairman.

COMMISSIONER GRAHAM: Second.

CHAIRMAN LA ROSA: Hearing a motion and hearing a second.

All those in favor signify by saying yay.

(Chorus of yays.)

CHAIRMAN LA ROSA: Yay.

Opposed no.

(No. response.)

CHAIRMAN LA ROSA: Show that the JEA docket and stipulations pass.

Let's move to OUC. Staff.

MR. IMIG: The parties in this docket filed stipulations on August 6th to all issues, and the docket is in the posture for a bench decision by the Commission.

CHAIRMAN LA ROSA: Seeing no alterations,

Commissioners, questions or thoughts on the OUC docket?

Seeing none, the floor is open for a motion.

COMMISSIONER CLARK: Mr. Chairman, move to approve stipulated issues in Docket No. 0017.

COMMISSIONER GRAHAM: Second.

CHAIRMAN LA ROSA: Hearing a motion and hearing a second hearing.

All those in favor signify by saying yay.

(Chorus of yays.)

CHAIRMAN LA ROSA: Yay.

Opposed no.

(No. response.)

CHAIRMAN LA ROSA: Show that the OUC docket and stipulations pass.

Okay. Staff, let's move, then, to prefiled testimony.

MR. IMIG: Staff asks that the prefiled testimony of all witnesses identified in Section VI of the Prehearing Order be entered into the record as though read.

CHAIRMAN LA ROSA: All right. So the prefiled testimony of all witnesses are entered into the record as read.

(Whereupon, prefiled direct testimony of Tim

Duff was inserted.)

DUKE ENERGY FLORIDA

DOCKET NO. 20240013-EG

UPDATED DIRECT TESTIMONY OF

TIM DUFF

INTRODUCTION AND QUALIFICATIONS

Q. Please state your name and business address.

A. My name is Timothy J. Duff. My business address is 525 South Tyron Street, Charlotte, NC 28201.

Q. By whom are you employed and in what capacity?

A. I am employed by Duke Energy Florida, LLC ("Duke Energy Florida," "DEF," "the Company," or "the utility") as General Manager, Grid Strategy Enablement, in the Pricing and Customer Solutions Department.

Q. Please describe the duties and responsibilities of your position with the Company.

A. I am responsible for the development of strategies, policies, regulatory planning, and compliance related to the implementation of Customer Solutions retail products and offerings that are designed to create customer and utility system value including Demand-Side Management ("DSM") programs. By DSM, I mean both dispatchable (demand response or direct load control) and

non-dispatchable (energy efficiency) types of programs. I also oversee the analytics functions associated with evaluating and tracking the performance of Customer's Solutions retail products and services. My responsibilities cover all of Duke Energy's utility operating companies, including DEF.

Q. Please summarize your educational background and professional experience.

A. I graduated from Michigan State University with a Bachelor of Arts in Political Economics and a Bachelor of Arts in Business Administration and received a Master of Business Administration degree from Stephen M. Ross School of Business at the University of Michigan.

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

A. Yes. I have provided both written and oral testimony to the Florida Public Service Commission ("FPSC" or the "Commission") on behalf of the Company on numerous occasions in support of the Company's DSM programs and Energy Conservation Cost Recovery clause filings.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to present an update to Duke Energy Florida's proposed numerical DSM goals ("Recommended goals") for 2025-2034 for

Commission review and approval. On July 15th, 2024, a Joint Motion for Approval of Settlement Agreement was filed in Docket No. 20240025, which contained changes to DSM program measures that necessitated an update to this petition, testimony, and exhibits in accordance with the Settlement Agreement. Those changes include updates to the non-residential credit levels, residential Neighborhood Energy Saver program participation levels and clear data representation on the Multi-Family New Builder Construction program. DEF's Updated proposed Recommended goals are based upon the analysis completed by the Company in accordance with the requirements set forth by Commission Staff in the Order Establishing Procedure (OEP) in this docket and Fla. Admin. Code Rule 25-17.0021 ("Rule 25-17.0021"). Additionally, the Updated proposed Recommended goals proposed in this proceeding are supported by the results of a new Technical Potential ("TP") study completed by Resource Innovations, Inc. ("RI") as outlined by Witness Jim Herndon's testimony in Exhibit JH-3.

Q. Please describe how the Company conducted the analysis on the cost-effectiveness of the portfolios responsive to the Rulemaking change effective June 6, 2023, for Rule 25-17.0021?

A. Rule 25-17.0021 was amended effective June 6, 2023. Rule 25-17.0021(3) states that "each utility must file its proposed demand-side management goals. Each utility must also file demand-side management goals developed under

two scenarios: one scenario that includes **potential demand-side management programs** that pass the Participant and Rate Impact Measure Tests, and one scenario that includes **potential demand-side management programs** that pass the Participant and Total Resource Costs Tests." (emphasis added). As such, in compliance with Rule 25-17.0021, the Company assessed the respective cost-effectiveness test of the portfolio at the program level and not at the measure level as done in prior goals setting proceedings. DEF also provides an Updated proposed Recommended Portfolio evaluation, Rate Impact Measure ("RIM") portfolio evaluation and a Total Resource Cost Test ("TRC") portfolio evaluation.

Q. Are you sponsoring any Exhibits to your testimony?

A. Yes, I have prepared or supervised the preparation of the following exhibits to my direct testimony:

1. Exhibit TD-1: Duke Energy Florida's Updated Residential and Non-Residential Annual Potential RIM Portfolio Evaluation for 2025-2034 at the generator.
2. Exhibit TD-2: Duke Energy Florida's Updated Residential and Non-Residential Annual Potential TRC Portfolio Evaluation for 2025-2034 at the generator.

3. Exhibit TD-3: Duke Energy Florida Updated Residential and Non-Residential Annual Potential Recommended Portfolio Evaluation for 2025-2034 at the generator.
4. Exhibit TD-4: Duke Energy Florida's Avoided Cost Assumptions.
5. Exhibit TD-5: Updated Projected Costs of implementing the RIM, TRC and Recommended Portfolio and the associated Projected Residential Customer Rate Impacts.
6. Exhibit TD-6: The Updated RIM, TRC and Participant Tests benefits and cost analysis for all programs for all Portfolios.
7. Exhibit TD-7: The Updated cost-effectiveness tests for all programs in the RIM Portfolio.
8. Exhibit TD-8: The Updated cost-effectiveness test for all programs in the TRC Portfolio.

These exhibits are true and accurate.

Q. Please summarize your testimony.

A. My testimony presents the Company's Updated proposed Recommended goals for the 2025-2034 period for Commission review. I describe the process that was used to develop the three potential portfolios for proposed DSM goals and provide a summary of those results. My testimony includes the estimated average residential customer bill impacts for the RIM Portfolio evaluation, the TRC Portfolio evaluation, and a Recommended Portfolio evaluation that

includes measures that passed RIM, TRC or both, as well as measures included in programs targeting low-income customers. I will also discuss the current DSM programs and provide an explanation for the differences in the Updated proposed Recommended goals and the current goals.

Q. Are the utility'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?

A. Yes, the TP, which is the basis for the Updated proposed Recommended goals, includes an evaluation of all potential demand-side conservation and efficiency measures and demand-side renewable energy systems available in the DEF Service territory. Demand-side renewable energy systems were evaluated based on the same cost-effectiveness standards that were used to evaluate other energy efficiency measures. No renewable measures were found to be cost-effective and therefore, none are included in the measure adoption forecasts results.

Q. Do the utility's proposed goals adequately reflect the costs and benefits to customers participating?

A. Yes. The Updated proposed Recommended goals are based on measures that pass the Participant Cost Test (PCT). The PCT compares the incremental cost

to participants to the participant benefits (bill savings). This ensures that the measures provide net benefits to participants.

Q. Do the utility's proposed 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 Updated proposed Recommended goals adequately reflect the total costs and benefits to the general body of ratepayers as a whole because the Recommended goals are based on measures that pass RIM, TRC and PCT, except for a few measures included in programs targeting low-income customers. The RIM, TRC and PCT tests, altogether, effectively ensure both participants and non-participants benefit.

Q. Do the utility'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?

A. Yes. DEF does not believe there is currently a need for incentives to promote demand-side renewable energy systems as the demand-side renewable market has continued to mature and there has been significant growth in customer sited demand-side renewable energy systems. DEF continues to see significant growth in the number of customers installing demand-side renewable systems on their own, without incentives from the utility.

Q. Do the utility's proposed goals adequately reflect the costs imposed by state and federal regulations on the emissions of greenhouse gases?

A. Yes. Given the uncertainty of future carbon regulation and the lack of any formally established cost of carbon emissions, it is reasonable to exclude any formal recognition of the cost of carbon emissions in this DSM goals setting process. Any state and federal mandates pertaining to equipment efficiency and availability in Florida related to the emissions of greenhouse gases have been appropriately recognized in the development of the TP evaluation. The Company believes that the utilization of a high fuel cost sensitivity in the economic modeling performed by RI serves as an appropriate proxy for any needed recognition of the cost of carbon emissions.

Q. Do the utility's proposed goals adequately reflect consideration of free riders?

A. Yes, the Updated proposed Recommended goals are based on measures that have greater than a two-year payback period. A two-year payback period is a reasonable time period in which to limit measures and assume that customers will adopt them absent a utility incentive. This time period has been recognized by the Commission in past proceedings as a reasonable proxy to eliminate free riders. Since 1991, a payback of two years or less has been recognized by the Commission as an appropriate threshold to reduce free ridership, limit

unnecessary program incentive costs ultimately borne by customers, and maximize cost-effectiveness.

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

A. DEF requests the Commission approve the Updated proposed Recommended cumulative numeric goals for 2025-2034 presented in Table 1 below. The annual goals that comprise the Updated proposed Recommended cumulative goals are provided on Exhibit TD-1. Exhibit TD-2 and Exhibit TD-3 provide a breakdown of the Updated proposed RIM and TRC annual goals, respectively, into the energy efficiency and demand response components that reconcile to the EE achievable potential and DR achievable potential presented in the TP. These Updated proposed Recommended goals, at the program level, have been developed in accordance with the requirements of Rule 25-17.0021(3), which directs utilities to propose goals "… based upon the utility's most recent planning process, and must reflect the annual (KW) and energy (KWH) savings, over a ten-year period". These Updated Recommended goals are based on programs that are cost-effective based on RIM, TRC, and PCT and exclude measures that have a payback period of less than 2 years. The conjunction of these tests captures all the relevant costs and benefits that should be evaluated when considering an efficiency or load reduction program. Evaluating

measures with RIM ensures that non-participating customers will not subsidize participating customers and reasonably limits overall rate impacts to customers. Evaluating measures using TRC accounts for the total benefits of the program including both the participants and the overall value to the utility system. The PCT ensures that the energy efficiency measures provide benefits to participants. Updated proposed Recommended Goals based on RIM, TRC, and PCT ensure that the benefits and costs are considered from the perspective of participants as well as ratepayers to ensure the rate impact for non-participants is appropriately considered.

Table 1

DUKE ENERGY FLORIDA - UPDATED RECOMMENDED GOALS 2025-2034 @generator			
	Winter Peak MWs	**Summer Peak MWs**	**GWH's**
Residential	331	215	527
Non-Residential	42	84	55
Total	**373**	**300**	**582**

Q. What goals, if any, should be established for increasing the development of demand-side renewable energy systems?

A. Given that renewable systems were not deemed cost-effective under the RIM test, it would not be appropriate to establish goals for demand-side renewable systems in this goals setting proceeding. Demand-side renewable systems were evaluated using the same criteria as were used for other energy efficiency measures. Programs that provide incentives to customers who install

renewable systems would result in cross subsidies between participants and non-participants and increase rates to all customers.

Q. 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. Specifically identify any changes associated with changes to building code or appliance efficiency standards.

A. DEF, along with the other FEECA utilities, contracted with RI to develop a new comprehensive TP study of all available demand-side conservation and energy efficiency measures, including renewable energy systems, to support this goals setting process. To maintain modeling consistency, DEF also contracted with RI to develop the economic analysis and measure adoption forecasts of these measures for the utility.

The FEECA utilities worked collaboratively with RI and interested parties to develop a list of measures and assumptions for potential demand and energy impacts for each of the measures included in the TP. The results of that effort and a discussion of that process are included in the TP presented in Exhibit JH-3 to Mr. Herndon's testimony. This report includes a summary of the measures eliminated or added compared to the 2019 TP study and discusses

changes associated with updated building codes and standards and are presented in Exhibit JH-9.

RI then developed the avoided cost assumptions for the base case (no carbon dioxide pricing) and the high and low fuel sensitivities and carbon sensitivity as identified in the OEP. The assumptions that support each of these cases are provided in Mr. Herndon's testimony.

RI collected the cost-effectiveness of each measure included in the TP study based on both a RIM and TRC evaluation. RI evaluated the cost-effectiveness for the base case, the fuel sensitivities, and the 1 and 3-year payback sensitivities for free ridership. The list of passing measures for the base case and each sensitivity for the RIM and TRC scenarios was developed by RI for the Economic ("EA") analysis. The list of passing measures for the base case and each sensitivity are provided in Exhibit JH-9.

RI then performed the economic screening and developed the EA for the base case and each of the sensitivities utilizing the results of the RIM and TRC scenarios. Next, RI developed the measure adoption forecasts for customer adoption and current known market conditions for the base case for both a RIM and TRC portfolio. A detailed discussion of the process to develop the

economic screening and measure adoption forecasts is included in RI's TP report.

DEF reviewed the results of the measure adoption forecasts for reasonableness by comparing the results to historical actual achievements and analyzing the potential impacts of changes in savings and incentive levels on future participation for similar measures. Consistent with the methodology used to develop the currently approved goals, DEF is proposing that Recommended goals are based on a portfolio of programs which include RIM measures, a modest number of TRC measures to enhance the comprehensiveness of the programs, and the Company's two existing programs that target low-income customers, which primarily include measures that are not cost-effective under RIM or TRC. It is important to note that the total costs and benefits associated with the portfolio of programs underlying the Recommended goals are cost-effective under both RIM and TRC.

Q. Please provide a description of how the utility's Base Case with no incremental demand-side management was developed. This should include forecasts for generation resources, customer winter and summer demand and annual energy for load, and fuel prices based on the utility's most recent planning process, as well as a discussion of the impacts related to changes in Federal and State efficiency standards.

A. The Base Case was developed using the same integrated resource planning model and assumptions for customer winter and summer demand, annual energy for load, and fuel prices that were the basis for the 2023 Ten Year Site Plan filing with two exceptions. The first exception is that the Base Case assumes no new DSM after 2023 and the second exception is that the Base Case also excludes any costs for carbon dioxide emissions. This process identified a portfolio of potential units required to meet future capacity requirements. The next combustion turbine unit in DEF's resource plan was identified as the avoided unit for purposes of evaluating the cost-effectiveness of potential DSM measures. Please see Exhibit TD-4 for a summary of the avoided cost assumptions resulting from this process. Resource planning and forecasting includes changes related to Federal and State efficiency standards. A discussion of the process and impacts is included in the 2023 Ten Year Site Plan.

Q. The Base Case should not include estimated costs associated with carbon dioxide emissions, but utilities may provide sensitivities including these costs. If included, provide a detailed description of how the sensitivity was developed and compares to the Base Case, including forecasts for fuel prices and emissions costs.

A. As mentioned previously, the Base Case excludes any costs for carbon dioxide emissions.

Q. Provide a description of the Base Case's next avoidable generating unit and describe the methodology used to determine it. Utilities may provide sensitivities with a different avoided unit, and if so, should describe it and methodology used to select it.

A. The next avoidable generating unit is a combustion turbine unit in the resource plan and was identified as the avoided unit for purposes of evaluating the cost-effectiveness of potential DSM measures. Please see Exhibit TD-4 for a summary of the assumptions resulting from this process.

Q. 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 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.

A. The residential bill impacts for the Updated proposed RIM programs, Updated TRC programs, and Updated Recommended programs portfolios are presented in Tables 2, 3, and 4 below. These impacts include the normal components that comprise a residential bill, namely, base rates, recovery clauses, customer charges, gross receipts taxes, and regulatory assessment fees. These costs also include the costs for maintaining the existing level of

load management on the system, as well as the costs of residential and commercial energy audits. The results of these analyses show an estimated total cost for a 1000 kWh/month residential bill for the ten-year period for the Updated RIM portfolio of $22,365, the Updated TRC portfolio of $22,415, and the Updated Recommended portfolio of $22,383. These differences are due entirely to the differences in incentives and program management costs for the energy efficiency programs. The assumptions for incentives and program management costs for the demand response programs are the same in the RIM, TRC, and the Recommended analyses. The Updated TRC portfolio cost is 11% higher on average on an annual basis than the Updated RIM portfolio cost. The Updated Recommended portfolio is 4% higher on average on an annual basis than the Updated RIM portfolio costs and the Updated TRC portfolio is 7% higher on average on an annual basis than the Recommended portfolio costs. The updated projected annual RIM, TRC, and Recommended portfolio costs along with the projected energy conservation clause recovery rate for a residential 1000 kwh bill are provided in Exhibit TD-5.

Additionally, a break down at the program level with demand and energy savings, program costs and benefits, and cost-effectiveness test results are also provided in Exhibit TD-6 for the Updated proposed Recommended Portfolio, Exhibit TD-7 for the Updated RIM Portfolio, and Exhibit TD-8 for the Updated TRC Portfolio.

TABLE 2
UPDATED RIM PORTFOLIO
PROJECTED ANNUAL RESIDENTIAL BILL - MONTHLY USAGE OF 1000 KWH

Total	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
$ 22,365	$ 2,126	$ 2,151	$ 2,152	$ 2,199	$ 2,217	$ 2,235	$ 2,262	$ 2,303	$ 2,346	$ 2,374

TABLE 3
UPDATED TRC PORTFOLIO
PROJECTED ANNUAL RESIDENTIAL BILL - MONTHLY USAGE OF 1000 KWH

Total	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
$ 22,415	$ 2,129	$ 2,154	$ 2,156	$ 2,203	$ 2,222	$ 2,240	$ 2,268	$ 2,309	$ 2,353	$ 2,380

TABLE 4
UPDATED RECOMMENDED PORTFOLIO
PROJECTED ANNUAL RESIDENTIAL BILL - MONTHLY USAGE OF 1000 KWH

Total	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
$ 22,383	$ 2,128	$ 2,152	$ 2,153	$ 2,201	$ 2,219	$ 2,237	$ 2,264	$ 2,304	$ 2,348	$ 2,376

Q. Provide a description of the program development process and identify measures excluded during each stage of the process and why. As part of this description, identify restrictions, if any, on program design due to current settlements, such as rebate amounts.

A. The program development process and identification of measures excluded during each stage are provided in the TP presented in Exhibit JH-10 to Mr. Herndon's testimony.

Q. 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. If the utility elects to use a payback period for free-ridership screening, provide sensitivities on the payback period.

A. The Updated proposed Recommended portfolio, as well as the RIM and TRC portfolios, are based on measures that have greater than a two-year payback period. A two-year payback period is a reasonable time period in which to limit measures and assume that customers will adopt them absent a utility incentive. As explained above, RI completed 1 and 3-year payback sensitivities for free ridership.

Q. Please provide a description on how supply-side efficiencies are incorporated in the utility's most recent planning process and how supply-side efficiencies impact demand-side management programs.

A. DEF evaluates supply-side alternatives and develops the optimal plan as an integral part of its Integrated Resource Planning ("IRP") process. DEF employs the IRP process to determine the most cost-effective mix of supply and demand-side alternatives that will reliably satisfy customers' future demand and energy needs. DEF's IRP process evaluates a wide range of future generation alternatives and cost-effective conservation and dispatchable demand-side management programs on a consistent and integrated basis. DEF develops projects that will contribute to the overall fleet efficiency and screens these projects in the IRP process. DEF's IRP process includes

modeling for both capital optimization and production cost impacts. The selected plans are identified based on the lowest overall life cycle costs including operational efficiencies. The cost of demand-side projects is measured against the avoided supply-side costs in determining program measures that will achieve the most cost-effective integrated demand and supply-side portfolio.

Q. 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.

A. Customers who rent are eligible to participate in all existing residential energy efficiency programs and demand response programs offered by DEF.

The following is a list of DEF's Residential DSM programs that customers who rent are eligible to participate in:

Home Energy Check - This residential energy audit program provides customers with an analysis of their energy consumption as well as educational information on how to save money by reducing energy usage. The program offers a variety of options to customers for home energy audits including walk-through, phone assisted, and online audits. At the completion of the audit, DEF

provides kits that contain energy saving measures that can be easily installed by the customer.

Residential Incentive Program - This program provides incentives on a variety of cost-effective measures designed to provide energy savings across different housing types. It also provides customers with energy savings and demand reduction through installation of energy efficient equipment.

Multi-Family New Builder Construction - DEF is proposing a new builder construction bundle offering that would allow bundling of multi-family measures through this program. This additional offering will allow builders to install energy efficiency measures and provide them an opportunity to participate in incentives.

Residential Load Management - This program is a direct load control program that is designed to reduce DEF's demand during peak or emergency conditions by temporarily interrupting service to selected customer electrical equipment.

Additionally, low-income/income qualified customers who rent are eligible to participate in our Neighborhood Energy Saver and Low-Income Weatherization Assistance Program programs.

In 2021, the Commission approved program modifications, and DEF increased targeted low-income residential customers through its Neighborhood Energy Saver (NES) program by 5% above the 2020 DSM Plan levels for calendar years 2022-2024 (or an additional 250 customers). Also in 2021, DEF began to provide Assistance Kits to low-income customers through its Home Energy Check program. The Assistance Kits are available for up to 20,000 qualifying low-income customers for calendar years 2022-2025. The kits contain a number of measures that fail the two-year payback screen but provide energy efficiency savings to low-income customers. These changes increased the savings opportunity for low-income customers at no cost to program participants.

Additionally, DEF's Updated Recommend Goals reflect a 10% increase in the forecasted participation for the NES program and reflect an increase in the forecasted installation rate of smart thermostats for NES participants from 10% to 40%.

Q. Provide a comparison of the programs used to determine the utility's proposed Recommended goals to its current demand-side management program offerings.

A. The comparison of programs included in the utility's updated proposed Recommended goals to its current demand-side management program

offerings is provided in the table below. As shown, DEF has dropped measures that no longer meet efficiency standards or have not been successful in the market, added measures that were needed and created a new bundling of measures targeting the multi-family sector to increase participation and the focus on efficiency opportunities available to tenants/landlords. The Multi Family New Builder Construction program seeks to avoid the split incentive barrier that has traditionally negatively impacted efforts to reach renters in multi-family properties by providing incentives to property managers and landlords to install efficiency on the front-end that will allow the energy savings to be realized by the renter population over time.

PROGRAMS	MEASURE COUNT		
EXISTING	EXISTING/KEEP	NEW	DROP
Business Energy Check	3		
Home Energy Check	13	1	
Low Income Weatherization	15	1	4
Neighborhood Energy Saver	18	3	3
Residential Incentive Program	14	3	3
Residential Load Management	3	2	
Smart $aver Business	13	17	9
Smart $aver Custom	2		
	81	27	19
ADDITIONAL	EXISTING/KEEP	NEW	DROP
New Builder Construction-MF	2	2	0
TOTAL	**83**	**29**	**19**

Additionally, DEF is proposing changes to the Interruptible General Service (IS) credit rate for IS-2 and IST-2 rate schedules, the Curtailable General Service (CS) credit rate for the CS-2, CS-3, CST-2, and CST-3 rate schedules, and the Standby Generation General Service (SBG) credit rate for the GSLM-2 rate schedule. These changes shall be in effect beginning with the first billing cycle of 2025 and will allow DEF to cost-effectively offer these important programs.

Customer Type	Credit Level
IS	$8.00/kw-month
CS	$8.00/kw-month
GSLM-2	$8.11 x C + $0.10 x kwh monthly

CONCLUSION

Q. What are the proposed Updated Recommended DSM goals that are reasonably achievable during the 2025-2034 period?

DUKE ENERGY FLORIDA - UPDATED RECOMMENDED GOALS 2025-2034 @generator			
	Winter Peak MWs	**Summer Peak MWs**	**GWH's**
Residential	331	215	527
Non-Residential	42	84	55
Total	**373**	**300**	**582**

Q. Have these goals been determined through a sound and reasonable process?

A. Yes. These Updated proposed Recommended goals were determined after a comprehensive analysis of the TP of all available demand-side and supply-side conservation and efficiency measures, including demand-side renewable energy systems, pursuant to Section 366.82.

Q. Should Duke Energy Florida's proposed goals for 2025-2034 be approved?

A. Yes. Duke Energy Florida's Updated proposed Recommended goals were developed consistent with the requirements of both the rules and the statute, are cost-effective, and are reasonably achievable.

Q. Does this conclude your testimony?

A. Yes, this concludes my testimony.

(Whereupon, prefiled direct testimony of Jim Herndon was inserted.)

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

IN RE: COMMISSION REVIEW OF NUMERIC CONSERVATION GOALS

DIRECT TESTIMONY OF JIM HERNDON

DOCKET NO. 20240012-EG (Florida Power & Light Company)

DOCKET NO. 20240013-EG (Duke Energy Florida, LLC)

DOCKET NO. 20240014-EG (Tampa Electric Company)

DOCKET NO. 20240015-EG (Florida Public Utilities Company)

DOCKET NO. 20240016-EG (JEA)

DOCKET NO. 20240017-EG (Orlando Utilities Commission)

APRIL 2, 2024

TABLE OF CONTENTS

I. INTRODUCTION

Q. Please state your name, position of employment, and business address.

A. My name is Jim Herndon. I am Vice President in the Advisory Services Practice within the Utility Services business unit of Resource Innovations, Inc. (RI). My business address is 2500 Regency Parkway, Suite 220, Cary, North Carolina 27518. A statement of my background and qualifications is attached as Exhibit No. JH-1.

Q. Please discuss your areas of responsibility.

A. I am responsible for providing consulting services for RI clients in the field of Demand-Side Management (DSM) initiatives, which include energy efficiency (EE), demand response (DR), and demand-side renewable energy (DSRE). In this capacity, I primarily focus on DSM planning, including analysis of DSM market impacts, and assisting utilities in the identification of DSM opportunities and the development and design of DSM program initiatives. This includes the development of market baseline and potential studies, cost-benefit analyses, and design of comprehensive DSM programs and portfolios.

Q. Please describe RI including its history, organization, and services provided.

A. RI was founded in 2016, and is a globally recognized consulting, software, and services firm that provides innovative DSM solutions to utilities, energy enterprises, and government entities worldwide. RI merged with Nexant, Inc., in 2021, which provided similar DSM consulting services since its founding in 2000. RI's Utility Services business unit provides DSM engineering and

consulting services to government agencies and utilities, and helps residential, commercial, and industrial facility owners manage energy consumption and reduce costs in their facilities. RI also conducts development and implementation services of DSM programs for public and investor-owned utilities, governments, and end-use customers. Our range of experience in the field of EE includes, but is not limited to:

- Market potential studies
- Program design
- Program implementation
- Marketing
- Vendor outreach, education, and training
- Incentive processing and fulfillment
- Turnkey customer service
- Online program tracking and reporting
- Evaluation, measurement and verification (EM&V)

Q. What specific projects or studies has RI done to assess DSM potential?

A. RI has conducted over 50 Market Potential Studies (MPS) to identify opportunities for DSM in the United States and Canada. Examples of recent clients include New York Power Authority (NYPA), Duke Energy (Indiana, North Carolina, and South Carolina), Santee Cooper, El Paso Electric, the Independent Electricity System Operator (IESO) of Ontario, Canada, and Sacramento Municipal Utility District (SMUD). In addition, Nexant performed the market potential study for the Florida Energy Efficiency and Conservation

Act (FEECA) utilities in the DSM goals proceeding conducted in 2019 before this Commission.

Q. Please summarize your experience with studies assessing DSM potential.

A. I have been involved in conducting or managing over 30 DSM potential studies over the past 17 years. In addition to these studies, I have led the development of numerous DSM programs and portfolios, managed implementation of residential, commercial, and industrial DSM programs, and conducted third-party evaluations of utility DSM programs, providing extensive experience and expertise regarding market analyses, DSM measures and technologies, and utility program structures and best practices that inform the assessment of DSM potential.

Q. Have you previously testified before the Florida Public Service Commission or in other state regulatory proceedings?

A. Yes, I provided testimony in the 2019 DSM goals proceeding before this Commission in support of our market potential studies for each FEECA utility in that case. I have also submitted testimony before the Virginia State Corporation Commission, the North Carolina Utilities Commission, the South Carolina Public Service Commission, the Public Utilities Commission of Ohio, and the New Jersey Board of Public Utilities.

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

A. The purpose of my testimony is to introduce and summarize the methodology and findings of the Technical Potential Study (TPS) we conducted for each of the six utilities subject to the requirements of FEECA, collectively the FEECA

Utilities, as well as the additional DSM planning support we provided for a subset of the FEECA Utilities.

Q. Please describe your role and responsibilities with respect to RI's work for this proceeding.

A. I served as the project manager for RI's work, directly overseeing all phases of our analysis.

Q. Are you sponsoring any exhibits in this case?

A. Yes. I am sponsoring Exhibits No. JH-1 through No. JH-16, which are attached to my testimony:

- Exhibit No. JH-1 – Herndon Background and Qualifications
- Exhibit No. JH-2 – TPS for Florida Power & Light
- Exhibit No. JH-3 – TPS for Duke Energy Florida
- Exhibit No. JH-4 – TPS for Tampa Electric Company
- Exhibit No. JH-5 – TPS for Florida Public Utilities Company
- Exhibit No. JH-6 – TPS for JEA
- Exhibit No. JH-7 – TPS for Orlando Utilities Commission
- Exhibit No. JH-8 – 2024 Measure Lists
- Exhibit No. JH-9 – Comparison of Comprehensive 2019 Measure Lists to the 2024 Comprehensive Measure Lists
- Exhibit No. JH-10 – DEF Measure Screening and Economic Sensitivities
- Exhibit No. JH-11 – FPUC Measure Screening and Economic Sensitivities

- Exhibit No. JH-12 – JEA Measure Screening and Economic Sensitivities
- Exhibit No. JH-13 – OUC Measure Screening and Economic Sensitivities
- Exhibit No. JH-14 – FPUC Program Development Summary
- Exhibit No. JH-15 – JEA Program Development Summary
- Exhibit No. JH-16 – OUC Program Development Summary

Q. What was the scope of work for which RI was retained?

A. As described in Section 2 of RI's TPS report for each utility, RI was retained by the FEECA Utilities to independently analyze the Technical Potential (TP) for EE, DR, and DSRE across their residential, commercial, and industrial retail customer classes. This work included disaggregation of the current utility load forecasts into their constituent customer-class and end-use components, development of a comprehensive set of DSM measures and quantification of the measures' impacts, and calculation of potential energy and demand savings at the technology, end-use, customer class, and system levels.

In addition, RI was retained by four of the six utilities to conduct an economic analysis of EE, DR, and DSRE measures, designed to determine which measures are cost-effective from different test perspectives and to develop estimates of potential impacts if these measures were adopted in each of these four utility service areas. RI also supported three of the six utilities in developing DSM proposed goals through bundling individual DSM measures

into preliminary program concepts and estimating the impacts, including participation, savings, and utility budgets, for these programs.

Q. How, if at all, did the work performed by RI differ across the six FEECA Utilities?

A. The assessment of TP, including the utility forecast disaggregation and customer segmentation, and development of a DSM measure list, was the same for all six FEECA Utilities. The subsequent economic analysis, measure adoption forecasts and development of proposed DSM goals varied in the work RI conducted for individual FEECA Utilities, as follows:

- Tampa Electric Company (TECO) conducted their own economic analysis and DSM goal development.
- Florida Power & Light (FPL) conducted their own economic analysis and provided RI with the results. RI then developed measure adoption estimates, and FPL conducted their own DSM goal development.
- Duke Energy Florida (DEF) contracted with RI to conduct the economic analysis and measure adoption forecast, and DEF conducted its own DSM goal development.
- JEA, Orlando Utilities Commission (OUC), and Florida Public Utilities Company (FPUC) contracted with RI to conduct the economic analysis and measure adoption forecast, and RI worked collaboratively with each utility to develop the proposed DSM goals.

Q. What reports have been produced in the scope of RI's work?

A. RI has produced six separate TPS reports, one for each FEECA Utility under this scope of work.

Q. What were the major steps in the analytical work RI performed?

A. The two major steps in RI's scope of work included development of technical potential and, for applicable utilities, creation of proposed DSM goals that aligned with utility program concepts. These steps included the following tasks:

Step 1: Technical Potential. The TP analysis established the basis for the development of proposed DSM goals. As summarized in Section 2 of each utility's TPS report, and illustrated in Figure 1 of each report, the key tasks in assessing the technical potential consisted of the following:

- *Load Forecast Disaggregation*. To disaggregate the load forecast, RI collected utility load forecast data, relevant customer segmentation and end-use consumption data, and supplemented this with existing secondary data to create a disaggregated utility load forecast broken out by customer sector and segment as well as by end-use and equipment type, and calibrated to the overall utility forecast.
- *Comprehensive Measure Development*. RI worked collaboratively with the FEECA Utilities, who also sought input from various external stakeholders, to develop a comprehensive list of DSM technologies that are currently commercially available in Florida.

For all measures included in the study, RI developed estimates of energy and demand savings, useful life, and incremental cost.

- *TP Analysis*. Using the disaggregated utility load forecast and the DSM measure impacts, RI analyzed the TP for the application of all measures to each utility's retail customers.

Step 2: Development of Proposed DSM Goals. The development of proposed goals built on the TP analysis, and included several interim steps, as follows:

- *Economic Analysis*. For a subset of the FEECA Utilities, RI conducted an economic analysis to determine which measures and technologies were preliminarily cost-effective under a Rate Impact Measure (RIM) test scenario or the Total Resource Cost (TRC) test scenario. This step produced a set of measures, and associated energy and demand savings, for each scenario before applying program costs and adoption rates. Key tasks included the following:
    - Collect utility economic forecast data: RI received current and forecasted avoided energy and avoided capacity costs from each utility.
    - Apply measure impacts: including energy savings, summer and winter demand savings, incremental cost, and measure useful life to determine total avoided cost benefits, measure costs, and lost revenues.

- Determine measures passing RIM test scenario and TRC test scenario: measures with a benefit/cost ratio of less than 1.0 were screened from the economic analysis.
- RI also performed this economic screening analysis using a set of economic sensitivities.

- *Measure adoption forecasts*. For a subset of the FEECA Utilities, RI updated the economic analysis and developed market adoption estimates for passing measures under each cost-effectiveness test scenario. This step produced an updated "RIM Scenario" and a "TRC Scenario" of passing measures and associated energy and demand savings. Key tasks included:
  - Applying estimated representative program costs, based on current FEECA program data and other secondary sources, and rerunning the economic analysis for both the TRC and RIM scenarios, including screening these passing measures from the Participant Cost Test (PCT) perspective for each scenario.
  - Incorporating free ridership screening based on payback analysis, removing measures with a payback of less than two years.
  - Applying estimated market adoption rates for passing measures for each scenario, based on economic and market

parameters, including payback acceptance, maturity of DSM technology, and current utility offerings.

- *Measure bundling and program development*. For a subset of utilities, RI supported the development of program concepts that formed the basis for proposed DSM goals. Key tasks included:
  - Measure bundling: RI worked collaboratively with the FEECA Utilities to identify measures that aligned with current programs or logically made sense to offer as a program.
  - Estimating program metrics, including annual participation, savings, and utility budgets.

II. MEASURE IDENTIFICATION AND SELECTION

Q. Please explain the process by which DSM measures were identified.

A. The starting point for measure identification was the list of measures included in the 2019 Florida TP Studies. Using this set of measures, the FEECA Utilities initially reviewed and added proposed measures, and provided the combined list to RI. RI compared the preliminary list to its DSM measure library, compiled from similar studies conducted in recent years, as well as from other utility DSM programs that RI has designed, implemented, or evaluated. 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, as detailed in Appendix D of each TPS report.

Through months of rigorous discussion with the FEECA Utilities, the parameters for measures to be considered were established. The evaluation of measures to include examined whether the measure was technically feasible and currently commercially available in Florida; additionally, behavioral measures without accompanying physical changes or utility-provided products and tools were excluded, as were fuel-switching measures, other than in the context of DSRE measures. The process to identify DSM measures is more fully described in Section 4 of each TPS report.

Q. Was the process of measure identification and selection appropriate for the objectives of the study?

A. Yes. The measure identification process was robust, comprehensive, and appropriate for the objectives of the study. The final measure list was developed to account for DSM measures that had been considered in prior Florida studies and took full account of current Florida Building Code and federal equipment standards, current FEECA Utilities' program offerings, and the incorporation of DSM measures considered in other potential study reports and other utility DSM program offerings around the country.

Q. Did the process allow for the assessment of the full TP for FEECA Utilities?

A. Yes. The thorough process for developing the list resulted in a comprehensive set of over 400 unique EE, DR, and DSRE measures that fully addressed DSM opportunities across all electric energy-consuming end-uses at residential,

commercial, and industrial facilities in the FEECA Utilities' service areas. The final measure list is provided in Exhibit No. JH-8.

Q. How does the final DSM measure list compare with the measures included in the 2019 TP Study?

A. Exhibit No. JH-9 compares the comprehensive measure list for 2024 to the measure list for the Florida Public Service Commission (Commission) 2019 Goals Dockets (Docket Nos. 20190015-EG – 20190021-EG). Compared to the 2019 TP, the 2024 TP update added 191 unique measures and eliminated 24 unique measures.

Q. What changes to the measure list were associated with changes to building code or appliance standards?

A. The following measures changes were included in the 2024 TP study based on Florida Building Code and federal equipment standards updates:

- Residential central air conditioner and heat pump baseline efficiency was updated based on current U.S. Department of Energy, Energy Conservation Standards for Residential Central Air Conditioners and Heat Pumps
- Residential room air conditioner baseline efficiency was updated based on current U.S. Department of Energy, Energy Conservation Standards for Room Air Conditioners
- Two speed pool pump and variable speed pool pump measures were eliminated based on current Florida Building Code and U.S. Department

of Energy, Energy Conservation Standards for Dedicated-Purpose Pool Pump Motors.

Q. Once measures were selected, what was the next step in RI's analysis?

A. Once measures were selected, the next step in RI's analysis was to develop individual impacts for each measure. These impacts included quantifying summer demand (kW), winter demand (kW), and energy savings (kWh), equipment useful life, and incremental costs of the measure. The measure impacts were subsequently applied to the disaggregated utility load forecasts to estimate TP in each utility service area.

III. TECHNICAL POTENTIAL

Q. Please define Technical Potential.

A. Section 366.82(3) of FEECA requires the Commission to "…evaluate the full technical potential of all available demand-side and supply-side conservation and efficiency measures, including demand-side renewable energy systems." Therefore, a TP analysis is the first in a series of steps in the DSM Goals development process. Its purpose is to identify the theoretical limit to reducing summer and winter electric peak demand and energy. The TP assumes every identified potential end-use measure is installed everywhere it is "technically" feasible to do so from an engineering standpoint, regardless of cost, customer acceptance, or any other real-world constraints (such as product availability,

contractor/vendor capacity, cost-effectiveness, normal equipment replacement rates, or customer preferences).

Therefore, the TP does not reflect the MW and GWh savings that may be potentially achievable through real-world voluntary utility programs, but rather it establishes the theoretical upper bound for DSM potential.

Q. Do RI's TPS reports provide a detailed description of RI's methodology, data, and assumptions for estimating TP?

A. Yes. As stated earlier, RI developed individual TPS reports for each of the six FEECA Utilities. The reports described RI's overall methodology, data, and assumptions for disaggregating each utility's baseline load forecast, development of DSM measures, and determination of TP.

Q. Do these TPS reports identify the full TP for the FEECA Utilities?

A. Yes. Each utility report identifies the full TP for the DSM measures analyzed against the utility's baseline load forecast.

Q. Please summarize the methodology, source of data, and assumptions used to develop the TP for EE measures for the FEECA Utilities.

A. As stated above, TP ignores all non-technical constraints on electricity savings, such as cost-effectiveness and customer willingness to adopt EE. RI's methodology for estimating EE TP begins with the disaggregated utility load forecast. For the current analysis, RI used the 2023 load forecast from each FEECA Utility, which, for all except FPUC, was based on the most recent Ten-Year Site Plan available at the time the MPS was initiated, which were the 2023 Ten-Year Site Plans.

Next, all technically feasible measures are assigned to the appropriate customer segments and end-uses. The measure kW and kWh impact data collected during DSM measure development are then applied to the baseline forecast, as illustrated in the following equation for the residential sector:

The savings factor, or percentage reduction in electricity consumption resulting from application of the efficient technology, is applied to the baseline energy use intensity to determine the per-home impact, and the other factors listed in the equation above inform the total number of households where the measure is applicable, technically feasible, and has not already been installed. The result of this equation is the total TP for an EE measure or technology.

The final component of estimating overall TP is to account for the interaction between measures. In some situations, measures compete with each other, such as a 16 SEER air source heat pump and an 18 SEER air source heat pump. For TP, the measure with the highest savings factor is prioritized. The other interaction is measure overlap, where the impacts of one measure may affect the savings for a subsequent measure. An example of measure overlap would be the installation of an 18 SEER air source heat pump as well as a smart thermostat that optimizes the operation of the heat pump. To account for overlapping impacts, RI's model ranks measures that interact with one another and reduces the baseline consumption for the subsequent measure based on

savings achieved by the preceding measure. For TP, interactive measures are ranked based on the total end-use energy savings percentage, with the measures having a greater savings treated as being implemented first.

Q. Please summarize the methodology, source of data, and assumptions used to develop TP for DR measures for the FEECA Utilities.

A. TP for DR is effectively the total of customer loads that could be curtailed during conditions when utilities need capacity reductions. Therefore, RI's approach to estimating DR TP focuses on the curtailable load available within the time period of interest. In particular, the analysis focuses on end-uses available for curtailment during peak periods and the magnitude of load within each of these end-uses, beyond that of existing DR enrollment for each utility.

Similar to the estimation of EE TP, the DR analysis begins with a disaggregation of the utility load forecast. RI's approach for load disaggregation to identify DR opportunities is more advanced than that used for most potential studies. Instead of disaggregating annual consumption or peak demand, RI produced end-use load disaggregation for all 8,760 hours of the year. This was needed because customer loads available at times when utility system needs arise can vary substantially. For this study, curtailable load opportunities, coincident with both the summer system peak and winter system peak, were analyzed. Additionally, instead of producing disaggregated loads for the average customer, the study produced loads for several customer segments. RI examined three residential segments based on customer housing type, four

different small commercial and industrial (C&I) segments, and four different large C&I customer segments, for a total of 11 different customer segments. Next, RI identified the available load for the appropriate end-uses that can be curtailed. RI's approach assumed that large C&I customers would forego virtually all electric demand temporarily if the financial incentive was large enough. For residential and small C&I customers, TP for DR is limited by loads that can be controlled remotely at scale. For this study, it was assumed that summer DR capacity for residential customers was comprised of air conditioning (A/C), pool pumps, water heaters, and electric vehicle charging. For small C&I customers, summer capacity was based on A/C load and electric vehicle charging.

For winter capacity, residential DR capacity was based on electric heating loads, pool pumps, water heaters, and electric vehicle charging. For small C&I customers, winter capacity was based on heating load and electric vehicle charging. For eligible loads within these end-uses, the TP was defined as the amount coincident with system peak hours for each season. System peak hours were identified using 2023 system load data. For DR TP, no measure breakout was necessary because all measures targeted the end-uses estimated for TP.

Finally, RI accounted for existing DR by assuming that all customers currently enrolled in a DR program did not have additional load that could be curtailed. As a result, all currently-enrolled DR customers were excluded from the analysis.

Q. Please summarize the methodology, source of data, and assumptions used to develop TP for DSRE measures for the FEECA Utilities.

A. TP for DSRE measures was developed using three separate models for each category of DSRE: rooftop photovoltaic (PV); battery storage systems charged from PV systems; and combined heat and power (CHP).

For PV systems, RI's approach estimated the square footage of residential and commercial rooftops in the FEECA Utilities' service areas suitable for hosting PV technology, and applied the following formula to estimate overall TP:

The analysis was conducted in five steps, as follows:

Step 1: Building stock characterization: Output of data from the forecast disaggregation conducted for the EE and DR TP analysis were used to characterize residential, commercial, and industrial building stocks.

Step 2: Estimate of feasible roof area: Total available roof area feasible for installing PV systems was calculated using relevant parameters, such as unusable area due to other rooftop equipment and setback requirements, shading from trees, and limitations of roof orientation.

Step 3: Expected power density: A power density of 200 watts per square meter (W/m^2) was assumed for estimating technical potential, which corresponds to a panel with roughly 20 percent conversion efficiency, a typical value for current PV installations.

Step 4: Hourly PV generation profile: Hourly generation profiles were estimated using the U.S. Department of Energy National Renewal Energy Laboratory's solar estimation calculator, PVWatts©.

Step 5: Calculate total energy and coincident peak demand potential: RI's Spatial Penetration and Integration of Distributed Energy Resources (SPIDER) Model was used to estimate total annual energy and summer and winter peak demand potential by sector.

For battery storage systems, the TP analysis considered the fact that battery systems on their own do not generate power or create efficiency improvements; they simply store energy for use at different times. Therefore, battery systems energized directly from the grid do not produce additional energy savings, but may be used to shift or curtail load from one period for use in another. Because the DR potential analysis focused on curtailable load opportunities, RI concluded that no additional TP should be claimed. Similarly, battery systems connected to rooftop PV systems do not produce additional energy savings; they do, however, create the opportunity to store excess PV-generated energy during hours where the PV system generates more than the home or business consumes, then uses the stored power during peak periods.

Therefore, to determine additional peak demand reduction available from PV-connected battery storage systems, RI used the following methodology:

- Assumed that every PV system included in the PV TP analysis was installed with a paired storage system.

- Sized the storage system to peak PV generation and assumed energy storage duration of three hours.
- Applied RI's hourly dispatch optimization model in SPIDER to create an hourly storage dispatch profile that flattened the individual customer's load profile to the greatest extent possible, accounting for (a) a customer's hourly load profile; (b) hourly PV generation profile; and (c) battery peak demand, energy capacity, and roundtrip charge/discharge efficiency.
- Calculated 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).

TP for CHP systems was based on identifying non-residential customer segments with thermal load profiles that allow for the application of CHP, where the waste heat generated can be fully utilized. First, minimum size thresholds were determined for each non-residential segment using a segment-specific thermal factor that considered the power-to-heat ratio of a typical facility in each segment. Next, utility customers were segmented into industry classifications and screened against the size thresholds. Premises with annual kWh consumption that met or exceeded the thresholds were retained in the analysis. Finally, facilities of sufficient size were matched with the appropriately sized CHP technology. RI assigned CHP technologies to customers in a top-down fashion, starting with the largest CHP generators, which yielded the estimated quantity of CHP TP in each utility's service area.

Q. Did your TP analysis account for interaction among EE, DR, and DSRE technologies?

A. Yes. While TP was estimated using separate models for EE, DR, and DSRE, RI did recognize that interaction occurs among the TP for each, similar to the interactions between EE measures applied to the same end-use. For example, the installation of more efficient A/C would reduce the peak consumption available for DR curtailment. Therefore, to account for this interaction, RI incorporated the following assumptions and adjustments to the identified TP:

- EE TP was assumed to be implemented first, and therefore was not adjusted for interaction with DR and DSRE.
- DR TP was applied next, and to account for the impact of EE TP, the baseline load forecast for applicable end-uses was adjusted by the EE TP, reducing the available load for curtailment.
- DSRE technologies were applied last and incorporated EE TP and DR TP. For PV systems, the EE potential and DR potential did not impact the amount of PV TP. However, for PV-connected battery systems, the reduced baseline due to EE TP resulted in more PV-generated power available from storage and usable during peak periods. For CHP systems, the reduced baseline, as a result of EE, resulted in a reduction in the number of facilities that met the annual energy threshold for CHP. Installed DR capacity was assumed to not impact CHP potential as CHP system feasibility was determined based on the energy consumption and thermal parameters at the facility.

Q. Once TP estimates were developed, what was the next step in your analysis?

A. Upon completion of the TP estimates, the next analysis step for a subset of the utilities was to apply the measure economics (incremental cost) and utility system economics (avoided supply cost, utility electric revenues, and customer bill impacts) to conduct the economic analysis.

IV. ECONOMIC ANALYSIS

Q. For which FEECA Utilities did RI conduct economic analyses?

A. RI worked collaboratively with DEF, OUC, JEA, and FPUC on the economic analysis, as follows:

Each utility provided RI with utility-specific economic forecast data, including avoided supply costs and retail rate forecasts. RI incorporated these data into our economic screening module to analyze the cost-effectiveness for individual measures under the cost-effectiveness tests required by the Commission's Order Consolidating Dockets and Establishing Procedure (Order No. PSC-2024-0022-PCO-EG).

Q. What cost-effectiveness tests were included in the economic analysis?

A. When analyzing DSM measures, different cost-effectiveness tests are considered to reflect the perspectives of different stakeholders. The Ratepayer Impact Measure (RIM) test addresses an electric utility customer perspective, which considers the net impact on electric utility rates associated with a

measure or program. The Total Resource Cost (TRC) test addresses a societal perspective, which considers costs of a DSM measure or program relative to the benefits of avoided utility supply costs. The Participant Cost Test (PCT) addresses a participant perspective, which considers net benefits to those participating in a DSM program.

The calculations were conducted consistent with the Cost Effectiveness Manual for Demand Side Management and Self Service Wheeling Proposals; Florida Public Service Commission, Tallahassee, FL; adopted June 11, 1991. Specific costs and benefits allocated within each cost-effectiveness test (RIM, TRC, and PCT), include the following:

Ratepayer Impact Measure (RIM) Test	
Component	**Definition**
Benefit	Increase in utility electric revenues Decrease in avoided electric utility supply costs
Cost	Decrease in utility electric revenues Increase in avoided electric utility supply costs Utility program costs, if applicable Utility incentives, if applicable

Total Resource Cost (TRC) Test	
Component	**Definition**
Benefit	Decrease in avoided electric utility supply costs
Cost	Increase in avoided electric utility supply costs Customer incremental costs (less any tax incentives) Utility program costs, if applicable

Participant Cost Test (PCT)	
Component	**Definition**
Benefit	Decrease in electric bill Utility incentives, if applicable
Cost	Increase in electric bill Customer incremental costs (less any tax incentives)

Q. What economic screening criteria were applied for this study?

A. For this study, economic screening was conducted for two Base Case scenarios: the RIM Scenario and TRC Scenario. In both scenarios, all measures that achieved a cost-effectiveness ratio of 1.0 or higher were considered cost-effective from that test's perspective.

For RI's cost-effectiveness screening for DEF, JEA, OUC, and FPUC, additional considerations included the following:

- Individual measures did not include any utility program costs (program administrative or incentive costs), and therefore were evaluated on the basis of measure cost-effectiveness without any utility intervention.

- Both scenarios required the measures to pass the PCT. Similar to the TRC and RIM perspectives, the PCT screening was conducted without any utility's incentive costs applied to the measure.

Q. What was the next step in the economic analysis?

A. Once the list of passing measures was identified under each Base Case scenario, the measures were reanalyzed in RI's TEA-POT model to estimate demand and energy savings for each utility. The updated modeling included updated measure rankings to account for changes in measure interaction and overlap. For the economic analysis, the ranking was based on the applicable test perspective in each scenario (RIM or TRC), with the more cost-effective measures being ranked first.

Q. Were any additional economic sensitivities considered?

A. Yes. As specified in Appendix B of the Order Consolidating Dockets and Establishing Procedure (Order No. PSC-2024-0022-PCO-EG) in this docket, economic sensitivities were performed as follows:

- Avoided fuel cost sensitivity, analyzing the number of measures passing the economic screening based on higher and lower fuel prices.
- Payback period sensitivity, analyzing the number of measures passing the economic screening based on shorter (one year) and longer (three year) free ridership exclusion periods.
- For OUC, RI performed an additional sensitivity that reflected the number of measures passing the economic screening when including costs associated with carbon dioxide emissions.

The methodology for each sensitivity was consistent with the analysis of the Base Case scenarios. DEF, JEA, OUC, and FPUC provided RI with avoided supply cost forecasts for the higher and lower fuel price scenarios. The results of these sensitivities are provided in Exhibits No. JH-10 through No. JH-13.

Q. After these additional screenings were performed, what was the next major activity?

A. After the economic screening was conducted for the Base Case scenarios and the sensitivities for each utility, the next step in the study was to develop measure adoption estimates for a subset of the utilities.

V. MEASURE ADOPTION FORECASTS

Q. Were any additional economic screening criteria applied for estimating measure adoption forecasts?

A. Yes. The associated program costs, including program administrative costs and customer incentives, were included in the economic analysis used for estimating measure adoption forecasts. Because this step occurred prior to each utility developing specific programs aligned with their proposed goals, representative administrative costs were developed using average FEECA Utility program cost data, where available from current programs, and supplemented with other utility program cost data where needed. In order to evenly apply these representative costs to measures with a variety of savings impacts, typical costs were estimated on a variable basis per kWh saved.

In addition, consistent with prior DSM analyses in Florida, free ridership was addressed by applying a two-year payback criterion, which eliminated measures having a simple payback of less than two years.

All measures were rescreened for the RIM Scenario and TRC Scenario with the inclusion of these parameters.

Q. How were measure incentives determined for this study?

A. Measure incentives were developed for both the RIM Scenario and TRC Scenario. Under each of these scenarios, the maximum incentive that could be applied while remaining cost-effective was calculated for each measure.

- For the RIM Scenario, the RIM net benefit for each measure was calculated based on total RIM benefits minus total RIM costs. Next, the amount required to result in a simple payback period of two years for each measure was calculated. The maximum incentive was based on the lower of these two values.
- For the TRC Scenario, since the TRC test does not include utility incentives as a cost or benefit, the maximum incentive was based on the amount required to result in a simple payback period of two years for each measure.

Q. Please explain the methodology used by RI to develop measure adoption forecast estimates for the cost-effective EE measures.

A. RI's methodology consisted of applying estimates of market adoption, based on utility-sponsored program incentives for all cost-effective EE measures in each Base Case scenario. RI's market adoption estimates used a payback acceptance

criterion to estimate long-run market shares for measures as a function of measure incremental costs and expected bill savings over the measures' effective useful life (inclusive of utility incentives). Incremental adoption estimates were based on the Bass Diffusion Model, which is a mathematical description of how the rate of new product diffusion changes over time. For this study, adoption curve input parameters were developed for each measure based on specific criteria, including measure maturity in the market, overall measure cost, and whether the measure was currently offered through a utility program. RI's TEA-POT model then calculated demand and energy savings by applying these adoption curves to each cost-effective measure.

Q. Please explain the methodology used by RI to develop adoption forecast estimates for the cost-effective DR measures.

A. Similar to EE measures, RI's methodology for DR included calculating market adoption as a function of the incentives offered to each customer group. For DR measures currently offered by each utility, RI used the current incentive level offered to estimate market adoption. For measures not currently offered by a utility, RI used representative incentive levels offered for similar measures in other markets to estimate market adoption. The utility-specific incentive rates for each DR measure, along with participation rates collected by RI for DR programs around the country, were used to calibrate DR market adoption curves for each technology and customer segment. The calibrated adoption rates were applied to the baseline load forecast to estimate the forecasted adoption estimates for cost-effective DR technologies.

Q. Please explain the methodology used by RI to develop adoption forecast estimates for the cost-effective DSRE measures.

A. RI did not produce estimates of adoption forecasts for DSRE measures as none of the measures passed the cost-effectiveness screening for either the RIM or TRC scenarios.

Q. After estimating measure adoption forecasts, what was the next major activity?

A. The next step in the study was to develop proposed DSM goals for a subset of the utilities.

VI. DSM GOAL DEVELOPMENT

Q. What additional support did RI provide in development of proposed DSM goals?

A. For JEA, OUC, and FPUC, RI assisted with the development of three scenarios: 1) potential DSM programs that contribute to proposed DSM goals (Proposed Goals Scenario), 2) potential DSM programs that pass the Participant and Rate Impact Measure Tests (RIM Scenario), and 3) potential DSM programs that pass the Participant and Total Resource Cost Tests (TRC Scenario). The proposed DSM goal development process and results for each scenario is described in more detail in Exhibit No. JH-14, No. JH-15, and No. JH-16, and consisted of the following steps:

Step 1: Program Review and Measure Bundling. For each scenario, Resource Innovations identified cost-effective measures from the economic analysis described above and reviewed existing utility program offerings to identify and align measures included in the TP study analysis with current programs. Measures included in existing programs but not part of the TRC Scenario or RIM Scenario determined in the economic analysis were identified. In addition, measures that were cost-effective for the TRC Scenario or RIM Scenario but were not currently offered in a utility program were also identified. Based on the program review and measure alignment, measures in each scenario were bundled into preliminary program concepts that might align with current programs or become new program offerings for the utility.

Step 2: Program Refinement and Modeling. Preliminary program concepts and measure bundles were refined into proposed program offerings and incentive and non-incentive budgets, participation estimates, and impacts were developed using RI's TEA-POT model. The modeling results were exported into RI's Program Planner workbook that aggregated the program and portfolio impacts for each scenario. For the TRC Scenario and RIM Scenario no further refinements to the programs were made. For the Proposed Goals scenario, RI continued to work collaboratively with each utility to identify the measures and program concepts that comprise the proposed DSM goals.

Q. Was the DSM program development process limited to measures passing the economic screening?

A. No. In addition to measures that passed the TRC Scenario or RIM Scenario screening, the measure bundling and program development process for the Proposed Goals Scenario included additional measures, such as measures that may be included in current programs or could be complementary additions to current programs.

Q. For measures currently offered by each utility, was the analysis limited to the continuation of current programs?

A. No. While continuity in program offerings is typically beneficial for customer and contractor awareness and education, RI and each utility (JEA, OUC, and FPUC) worked collaboratively to identify programs that are of interest to continue and those that may need refinement. RI also provided our expertise in utility program design from around the country to help guide the program development process.

VII. REASONABLENESS OF RI'S ANALYSES

Q. Are the methodology and models RI employed to develop TP estimates, economic analysis, measure adoption forecasts, and proposed DSM goals for the FEECA Utilities analytically sound?

A. Yes. RI's approach is aligned with industry-standard methods and has been applied and externally reviewed in numerous regulated jurisdictions. RI's

TEA-POT and SPIDER modeling tools have been specifically developed to accommodate and calibrate to individual utility load forecast data, and they enable the application of individual DSM measures and analysis of market potential at a high resolution—by segment, end-use, equipment type, measure, vintage, and year for each scenario analyzed.

The methodology and rigor of the measure development, technical potential, and economic analysis is also consistent with the analysis conducted for the 2019 energy conservation goals proceedings before this Commission.

Q. Have these methodologies and models been relied upon by other commissions or governmental agencies?

A. Yes. RI's methodology and the TEA-POT and SPIDER modeling tools have been used in numerous studies in the United States and Canada. RI's tools and results have undergone extensive regulatory review and have been used for the establishment of utility DSM targets in multiple jurisdictions, including North Carolina, South Carolina, Georgia, California, Pennsylvania, Texas, and Ontario.

Q. Are the estimates of the TP developed by RI analytically sound and reasonable?

A. Yes. The TP was performed under my direction and resulted in a thorough and wide-ranging analysis of DSM opportunities technically feasible in the FEECA Utilities' service areas. The TP process aligned with industry standards and included a greater level of analytic detail than that of comparable models and methodologies.

The process included extensive iterative analytical work and continuous collaboration with the FEECA Utilities to ensure that it was comprehensive and aligned with the characteristics of their service areas and forecasted loads.

Q. Is the economic analysis conducted by RI analytically sound and reasonable?

A. Yes. The economic analysis was based on applying defined economic screening metrics to each TP measure to determine cost-effectiveness. The analysis included utility-provided economic forecasts to ensure alignment with other aspects of utility resource planning and to determine an accurate assessment of cost-effective DSM measures for each utility.

Q. Are the proposed DSM goals that RI helped develop based on reasonable and appropriate analysis of DSM measures and programs?

A. Yes. RI's estimated measure adoption forecasts identified cost-effective DSM opportunities for FEECA Utilities, based on the test perspectives included in each scenario analyzed. These forecasts provided the foundation of the DSM planning process that included a robust analysis of current utility programs, bundling, and alignment of measures analyzed in the potential study as well as the development of cost-effective programs. These programs collectively sum to the sector-level and overall proposed DSM goals for each utility. This process represents a reasonable and appropriate approach to the development of utility DSM goals.

Q. Does this conclude your direct testimony?

A. Yes.

(Whereupon, prefiled direct testimony of John F. Floyd was inserted.)

ATTACHMENT 1

Florida Power & Light Company
Docket No. 20240012-EG

Corrected Direct Testimony of John N. Floyd
Corrected by Errata Filed July 12, 2024

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

FLORIDA POWER & LIGHT COMPANY

CORRECTED DIRECT TESTIMONY OF JOHN N. FLOYD

DOCKET NO. 20240012-EG

APRIL 2, 2024

TABLE OF CONTENTS

I. INTRODUCTION

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

A. My name is John N. Floyd. My business address is One Energy Place, Pensacola, Florida 32520. I am employed by Florida Power & Light Company (FPL or the Company) as Director, Demand-Side Management Strategy.

Q. Please describe your duties and responsibilities in that position.

A. I am responsible for development of strategy, program implementation, regulatory filings, reporting, and cost management for FPL's Demand-Side Management (DSM)-related activities.

Q. Please describe your educational background and professional experience.

A. I have a Bachelor of Electrical Engineering from Auburn University. After completing a commission in the United States Air Force, I began my career in the electric utility industry at Gulf Power Company, a former Southern Company operating subsidiary. During my 29-year tenure, I held various positions with the company in Power Generation, Metering, Power Delivery, and Customer Service. In 2019, I joined FPL as the DSM Regulatory Support Manager and was promoted to my current position as Director of DSM Strategy in 2023.

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

A. Yes. I have testified in multiple DSM goals proceedings and other DSM-related dockets on behalf of Gulf Power and FPL.

Q. Are you sponsoring any exhibits in this case?

A. Yes. I am sponsoring Exhibits JNF-1 through JNF-5, which are attached to my testimony:

- JNF-1 – Historical DSM Participation and Achievements
- JNF-2 – Current DSM Programs and Associated Measures
- JNF-3 – List of Measures Evaluated for Technical Potential
- JNF-4 – 2025-2034 Goals Scenarios and Potential Programs
- JNF-5 – Comparison of Current Programs to Proposed Programs

Q. Please summarize your testimony.

A. The Florida Energy Efficiency and Conservation Act (FEECA) and Commission rules require that utilities develop and offer DSM programs to cost-effectively reduce weather-sensitive peak-demand and the overall growth rate of electricity consumption in the state. FPL has successfully implemented this policy by providing impactful DSM programs that keep rates low and meet customer needs.

FPL followed the process prescribed by the FEECA statute and Commission rules in developing the goals scenarios described throughout my testimony. In general, the process included development of a Technical Potential (TP) Study,

measure-screening utilizing Commission-prescribed cost-effectiveness tests, and goal development based on the reasonably achievable demand and energy savings of potential DSM programs. Witness Jim Herndon with Resource Innovations discusses the TP study, FPL witness Andrew Whitley discusses measure screening and FPL's resource planning process, and I address the goal and program development process.

FPL is committed to continuing to provide DSM programs that keep rates low and meet customers' needs. For more than four decades, FPL has accomplished this through utilization of the Rate Impact Measure (RIM) test. Goals based on RIM ensure all customers benefit – both those who voluntarily participate in DSM programs and those who cannot or elect not to participate. Based on FPL's avoided cost profile and the available energy-efficiency measures to consider for programs, however, a RIM-only DSM proposal would result in a zero goal for efficiency savings.

While FPL supports the use of the RIM test as the primary cost-effectiveness standard to set DSM goals, the Company also recognizes that appropriately tailored DSM programs and goals are consistent with the objective of FEECA to reduce the growth rate of electricity consumption. FPL explored various options to maintain cost-effective DSM initiatives that ensure affordable rates, while also providing valuable programs to help customers reduce their energy usage.

After careful analysis, FPL recommends goals for the period 2025-2034 that reflect continuation of its current portfolio of energy-efficiency and load-management programs, expansion of the existing low-income weatherization program, and introduction of a new low-income Renter Pilot. FPL's proposal also includes expansion of our industry-leading On Call® load-management program with a new HVAC on-bill option. This new option expands the On Call® load-management program to allow greater customer access to new energy-saving HVAC equipment in a way that also passes the RIM cost-effectiveness test. Under this program, a customer will receive a new efficient HVAC unit that FPL will have the ability to control in peak demand situations.

Collectively, FPL's proposed DSM programs focus on the highest priorities of weather-sensitive peak demand, continue to provide customer incentives for making energy-efficient investments, and can be delivered with little to no incremental bill impact to customers. In total, FPL proposes goals with a ten-year impact of 419 Summer MW, 326 Winter MW, and 931 GWh energy reduction to be achieved through 10 energy-efficiency and load-management programs as further described later in my testimony. FPL's proposal will establish DSM goals at a reasonable and appropriate level given current projections of FPL system costs while continuing to maintain low electric rates for all FPL customers.

II. FPL'S HISTORICAL DSM ACHIEVEMENTS

Q. Please provide an overview of FPL's history and results in implementing DSM.

A. FPL began offering DSM programs in the late 1970s prior to the Florida Legislature's adoption of FEECA in 1980. Since then, FPL has maintained a continuous commitment to cost-effective DSM as a complement to evolving Florida Building Code and federal appliance efficiency standards (collectively, Codes and Standards). As described in greater detail by FPL witness Whitley, FPL has made DSM an integral part of its resource planning process and has consistently evaluated DSM in accordance with the Commission's long-standing goal-setting policies. Through this process, FPL has developed a wide array of cost-effective load-management and energy-efficiency programs for both residential and business customers, which have achieved significant reductions in energy consumption and peak demand. As shown on Exhibit JNF-1, there have been approximately 10.5 million participants in these programs (some customers have participated in multiple programs) since inception.

Through 2023, FPL's highly effective DSM efforts have resulted in a cumulative summer peak demand reduction of 5,579 MW. After accounting for the 20% total reserve margin requirement, this equates to eliminating the need to construct the equivalent of approximately 66 new 100-MW generating units. Cumulative energy consumption savings are 100,422 GWh at the

generator, equal to approximately 73% of the consumption of all FPL customers for one year. At the same time, the discipline of working within the traditional Commission goal-setting policies and requirements has helped ensure FPL's electric rates remain low. As of the time of this filing, FPL's typical residential bill is approximately 32% lower than the national average.

Q. Please describe FPL's currently offered DSM programs and their achievements.

A. FPL's current programs are focused on helping customers save with financial incentives to install energy-efficient appliances and building-envelope improvements (energy efficiency), as well as bill credits for allowing FPL to control large appliances or facility loads during peak conditions (load management). FPL's current programs and included measures are shown on Exhibit JNF-2.

Load Management – FPL operates one of the largest load-management programs in the nation. As of year-end 2023, FPL's Residential On Call® program, established in 1986, was the largest residential program in the United States with about 653,000 participants. Along with FPL's more than 17,000 business load-management participants, FPL currently has more than 1,700 MW of Summer load-management demand reduction available for use by FPL system operators.

Energy Efficiency – FPL has also offered large energy-efficiency programs for

decades. More than two million customers have participated in FPL's residential HVAC energy-efficiency program, making their homes' largest sources of energy consumption more efficient than required by the Codes and Standards that were applicable at the time of installation. Likewise, more than 24,000 business customers have participated in FPL's HVAC program, installing efficient direct expansion and chiller units as well as Thermal Energy Storage systems. In addition, more than 21,400 business customers have participated in FPL's Business Lighting program, which encourages customers to replace existing lights with light-emitting diodes (LED). Since 2019, FPL has served 33,947 low-income customers with direct installation of weatherization and energy savings measures.

Customer Education (Surveys) – Since 1981, FPL has emphasized energy-efficiency education for customers regardless of whether they own or rent their home or business. FPL uses residential Home Energy Surveys (HES) and Business Energy Evaluations (BEE) as foundational components of the DSM portfolio. The surveys and evaluations are used for customer education on conservation measures that make economic sense for customers, whether offered as a part of FPL's DSM programs or not. FPL has performed close to 4.5 million HESs and almost 275,000 BEEs via online, phone, and on-site delivery channels. Since 2019, more than 300 residential customers per day had a HES, and 20 business customers per workday had FPL conduct a BEE. In addition to the utility-provided educational resources, customers also have

access to many other public sources of information (including the U.S. Department of Energy's ENERGY STAR® program and website, in addition to contractors, appliance retailers, and manufacturers) to help them decide on what actions they wish to implement to use energy more efficiently.

Q. How is FPL continuing to explore innovative approaches to DSM?

A. FPL has a long history of evaluating new technologies to meet customer needs and provide cost-effective demand-side solutions. For example, in Docket No. 20210015-EI, the Commission approved a limited pilot for FPL to evaluate smart electrical panels as a next-generation DSM solution that could benefit customers through increased visibility and control of their energy usage and provide FPL capabilities to manage certain large appliance loads during peak times. To date, 100 smart panels have been installed in customer homes. FPL has gained valuable insights on customer interest in the technology, installation and commissioning of the panels, appliance usage profiles, and load-management functionality. Although these smart panels deliver on providing visibility and control of major circuits, their high cost remains a barrier to large-scale use for utility DSM in the near-term. As part of its culture of continuous improvement, FPL will continue to evaluate new and alternative technologies that can be cost-effectively deployed for control of behind-the-meter appliances.

III. FACTORS IMPACTING DSM GOALS

Q. What are the main factors that impact potential DSM goals and how?

A. There are two main factors that impact the level of goals for DSM. The first factor in determining the appropriate level of DSM goals is the potential demand and energy savings in the marketplace. To determine the potential savings for utility DSM programs, all commercially available options for reducing demand and energy are evaluated. As outlined in Commission Rule 25-17.0021, Florida Administrative Code (F.A.C.), these options are in the form of demand-side conservation and efficiency "measures," including demand-side renewable energy systems that can be implemented by customers. The determination of the potential savings begins with a Technical Potential Study, which quantifies the theoretical maximum savings opportunity for these measures. As discussed in more detail in later sections of my testimony, the study for the 2024 DSM goals process included 436 energy-efficiency, demand-response and demand-side renewable energy measures – significantly more than were evaluated in 2019. An important aspect of this evaluation is that it only includes potential savings above current and known future Codes and Standards. Codes and Standards establish the baseline from which utility DSM opportunities exist. While customers benefit from increasing Codes and Standards absent any utility DSM, the result of increasing Codes and Standards is a reduction in the incremental benefits of DSM to the utility system and to customers.

The second factor is cost-effectiveness. Cost-effectiveness, in general terms, is a comparison of the benefits and costs of DSM options. The Commission has recognized three industry standard tests as described in Rule 25-17.008(3), "Florida Public Service Commission Cost Effectiveness Manual for Demand Side Management Programs and Self-Service Wheeling Proposals" (7-7-91) for the purposes of evaluating cost-effectiveness since the earliest goal-setting docket in 1993. These tests are the RIM test, the Total Resource Cost (TRC) test, and the Participant test.

Q. Please explain the cost-effectiveness tests and how they impact potential DSM goals.

A. The RIM, TRC and Participant tests measure cost-effectiveness from different perspectives and thus consider different costs and benefits. First, I will discuss the RIM and TRC tests as they measure cost-effectiveness from the utility system perspective.

The RIM test measures the impact on rates resulting from a DSM program and represents the perspective of non-participants. The TRC test measures the impact on total costs to the utility and customer base. The RIM and TRC tests both consider the same benefits of DSM, that is the utility system savings, or avoided cost, of reducing peak demand and energy requirements to be met. These benefits are in the form of avoided generation, transmission, and distribution capital and O&M costs as well as net fuel impacts.

The difference in the RIM and TRC tests is which costs are included. The RIM test includes consideration of the cost of incentives paid to participating customers, the revenue impact resulting from the DSM program, and the cost of implementing the program itself (administrative cost). Consideration of these costs is consistent with Section 366.82(3), Florida Statutes, which is part of the FEECA Statute.

As mentioned earlier, the TRC test considers the same benefits as RIM, but different costs. Specifically, the TRC test only considers the incremental cost of the measure (equipment) and the administrative cost of implementing the program. Notably, the TRC test does not address one of the required costs identified in Section 366.82(3)(b), Florida Statutes, the cost of utility incentives. The TRC test also does not measure impact on electricity rates for customers, both participants and non-participants.

The Commission has long recognized the benefit of utilizing the RIM test as it serves the interest of both customers who participate in utility DSM programs as well as customers who cannot, or elect not to, participate in these programs. In short, the RIM test ensures that even non-participants benefit from utility DSM through downward pressure on electric rates. So, by utilizing the RIM test to establish DSM goals, the Commission can be assured that all customers will benefit through electric rates that are lower than they would otherwise be

without implementation of the program. The cost of RIM-passing programs is justified on this basis. Utilizing the TRC test to measure the cost-effectiveness of DSM, however, can expose all utility customers, whether they participate in a DSM program or not, to higher electric rates resulting from unrecovered revenue requirements. For these reasons, use of the TRC test without appropriate guardrails and limits on cost would be inconsistent with the Commission's statutory obligations to avoid undue rate impact.

Given that RIM-passing programs result in the lowest rate impact, benefit all customers, and avoid cross-subsidization of participants by non-participants, FPL supports utilizing the RIM test as a primary means of evaluating cost-effectiveness and establishing goals.

The third cost-effectiveness test used by the Commission to evaluate DSM goals is the Participant test. This test measures cost-effectiveness from the perspective of the customer participating in the DSM program or measure. It is a simple test that evaluates the economic payback to a potential participant in a DSM program. The benefits considered in the Participant test are the bill savings and incentives received associated with a particular measure, while the costs are the incremental equipment costs borne by the customer. The incentives include both upfront contributions by the utility and tax credits. For example, by considering both the costs of adopting a higher-efficiency HVAC system and the resulting bill savings, the Participant test measures whether the

investment pays for itself over time. From a practical and logical standpoint, this is the primary evaluation a customer considers for making an energy-efficiency investment, and therefore, a utility DSM program should pass this test. This concept of economic payback is also useful in limiting incentive costs so as not to unnecessarily incent a customer to make an investment that otherwise already has a very strong value proposition.

Q. Please elaborate on the impacts Codes and Standards have on potential for cost-effective DSM.

A. Increased Codes and Standards impact all residents and businesses by mandating higher energy-efficiency minimums for prospective end-use equipment installations and/or building design improvements. The impact of Codes and Standards for FPL is two-fold: a reduction in the forecast of energy and peak demand; and a reduction in the incremental savings potential for utility DSM. FPL witness Whitley discusses the impact of Codes and Standards on FPL's load forecast for energy and peak demand.

In addition to the impact on FPL's load forecast, Codes and Standards also reduce the savings potential for utility DSM. First, any utility-offered measures that are no longer above Codes and Standards are rendered obsolete. The previously achieved utility participation and energy and demand savings are now attained by the Codes and Standards instead, thereby replacing efficiency savings that had been obtained from DSM programs.

Second, the "baseline" efficiency level also increases, reducing the incremental savings that remaining DSM measures could achieve. For example, in 2023, the U.S. Department of Energy (DOE) increased the minimum efficiency standard for residential air conditioning from 14 Seasonal Energy Efficiency Rating (SEER) to 15 SEER.[1] This increase in minimum required efficiency resulted in a loss of 0.145 Summer kW and 350 annual kWh incremental savings for all higher SEER units. For a customer installing a new HVAC system beginning in January 2023, that customer automatically realizes this amount of efficiency savings compared to the previous minimum standard. For a utility DSM program, however, the result of this change reduces savings from incrementally higher efficiency units, which impacts opportunity for DSM program savings and cost-effectiveness.

Q. How do utility programs and initiatives complement these Codes and Standards to reduce overall energy use?

A. Utilities play two key roles in improving the overall efficiency of energy utilization by customers. The first role is through education. FPL provides information to customers about ways to save energy through our energy survey programs, on FPL.com, through FPL's Customer Care Centers, through community events and presentations, and through various other media channels. To date, FPL has performed close to 4.5 million residential energy surveys, providing education and information about specific ways customers

[1] The DOE also introduced a new SEER2 unit of measure to reflect changes in the test procedure to measure HVAC system efficiency. For simplicity, FPL will continue to reference SEER ratings unless otherwise indicated.

can reduce energy consumption. Second, utilities offer cost-effective programs that are designed to encourage adoption of technology that is above these minimum Codes and Standards as part of approved DSM programs. These programs help customers save energy and help the utility system operate more efficiently for the benefit of all customers.

IV. DSM GOALS AND PROGRAMS PROCESS

Q. Please provide an overview of the process and main analyses performed to develop FPL's proposed DSM goals and potential programs for the period 2025-2034?

A. The process for developing DSM goals and programs is outlined in the FEECA Statute, Section 366.82(3) and (7), F.S., and Commission Rule 25-17.0021, F.A.C. Specifically, DSM goals development involves three primary interrelated analyses as part of FPL's resource planning process:

(1) Technical Potential (TP) – determines the breadth of measures to be considered and their maximum hypothetical demand and energy savings;

(2) Measure Screening – economic screening of the DSM measures based on Commission-approved cost effectiveness tests and an assessment of free-ridership; and

(3) Program Development and Goals Scenarios – projection of the ten-year (2025-2034) program potential and development of the RIM and TRC goals scenarios.

FPL and the other five utilities subject to FEECA (FEECA Utilities) worked jointly on certain aspects of the analyses and engaged a nationally recognized DSM consultant, Resource Innovations, which has performed many of these types of studies, to assist with portions of the work. Resource Innovations conducted the TP analysis for FPL and the other FEECA Utilities. Resource Innovations also assisted FPL with adoption modeling as part of developing the goals scenarios.

Q. Please briefly describe the Technical Potential (TP) Analysis.

A. Rule 25-17.0021(2) requires utilities to "… assess the full technical potential of all available demand-side conservation and efficiency measures, including demand-side renewable energy systems…." The purpose of the TP Analysis is to identify the theoretical maximum limit for reducing Summer and Winter electric peak demand and energy. The TP assumes every identified potential end-use measure (or measures) is installed everywhere it is "technically" feasible to do so from an engineering standpoint. The TP does not consider cost, customer acceptance, or any other real-world constraints (such as product availability, contractor/vendor capacity, cost-effectiveness, or customer preferences). Therefore, the TP is purely hypothetical and in no way reflects the MW and MWh savings that could potentially be achieved through real-world voluntary utility DSM programs.

Resource Innovations performed the TP analysis for each of the FEECA Utilities. This included coordinating development of the DSM measure list and collecting all data necessary to perform the analysis. The analysis required extensive iterative analytical work and continuous collaboration among the FEECA Utilities to ensure that it was comprehensive. Witness Herndon's testimony provides the analysis details and results. During the development of the measure list for the TP analysis, the FEECA Utilities requested input from various stakeholders in previous DSM dockets. Multiple stakeholders provided recommendations on additional measures that should be included for this study. The FEECA Utilities reviewed each recommendation and incorporated all qualifying recommendations received from these stakeholders. In total, there were 436 unique energy-efficiency, demand-response, and demand-side renewable measures evaluated for Technical Potential. When considering the unique measure impacts across multiple customer segments, building types and rates, these 436 measures represent over 20,000 calculations for each step of the Technical Potential and measure screening process. A full list of measures evaluated in the Technical Potential Study is provided in Exhibit JNF-3, pages 1-14.

Q. Please briefly describe the measure-screening process.

A. The measure-screening process is a multi-step economic analysis that includes calculation of cost-effectiveness and payback for each of the DSM measures identified in the Technical Potential Study. This process narrows the list of measures to be considered for potential programs. As prescribed by Rule 25-

17.0021 and described in the testimony of FPL witness Whitley, FPL used the RIM test for the RIM goals scenario and the TRC test for the TRC goals scenario, as well as the Participant test for both scenarios, to screen these measures for cost-effectiveness. The initial measure screening only considered the measure peak demand and energy savings and measure cost to ensure the maximum number of measures were screened for further consideration. Measure screening also included eliminating measures with a payback period less than two years as a means of addressing free ridership in the goals development process. Subsequent cost-effectiveness analysis added assumptions for administrative cost to further refine the potential measures to be considered for programs. The analytical tools utilized to conduct measure screening were also used to calculate sensitivities of the results based on differing payback periods, higher and lower fuel cost projections, and inclusion of potential CO_2 costs as DSM benefits.

Q. Please briefly describe the program development and goals scenario analysis.

A. Developing the proposed goals involved a multi-step, iterative process that began with compiling all the measures that survived the measure-screening process for each of the cost-effectiveness scenarios (RIM and TRC). These measures represent components of potential programs that can be offered to customers. Experienced FPL DSM program managers crafted potential programs using the passing measures, based on common measure types and program delivery channels. Then, adoption projections were developed

utilizing measure-level adoption modeling and historical FPL program participation to produce program-level participation projections. Finally, the programs were re-evaluated for cost-effectiveness using the program-level participation projections and more specific administrative and incentive cost assumptions. The programs for each of the goals scenarios are described in Section V of my testimony.

Q. Please explain the process FPL used to develop its goals scenarios.

A. The process used to develop the two goals scenarios is the same basic approach used by FPL and relied upon by the Commission in the 2019 DSM goals docket. For each measure that passed the cost-effectiveness and payback screening under either RIM/Participant test or TRC/Participant test, FPL used a combination of quantitative information, qualitative information, and FPL's market experience to develop projections for each of the goals scenarios.

Voluntary DSM programs attract participants through marketing, education, training, and by providing financial incentives. A customer's decision whether to participate in a DSM program is the result of many interrelated factors. These factors are reflected in FPL's program adoption projection. FPL calculated the estimated ten-year adoption of each potential program in the goals scenarios by relying on a number of elements that reflect FPL's and Resource Innovations' customer and market experience:

- **Historical FPL Adoption Rates** – provided "baseline" market experience reflecting both the empirical and the non-quantifiable factors (such as customer awareness);
- **Projected Changes in Market Conditions** – used to adjust historic adoption for changes, such as saturation of a program or changes to incentives;
- **Payback Acceptance Curves** – provided the percent of expected market adoption based on years-to-payback. Multiple curves are used to account for differences in adoption of new technologies/programs, existing programs, and level of maturity of programs.

FPL's proposed goals build on historic achievements of existing programs, with adjustments for market changes and program modifications. For programs with measures that are not a part of FPL's current portfolio, FPL relied on Resource Innovations' measure adoption models to forecast ramp rate and overall projections for the ten-year period. For new programs, FPL considered start-up processes, including system modifications and third-party agreements, as applicable, in estimating the ramp up of projected adoption.

For residential program participation projections, each customer residence represents one participant. For business programs, the qualification of a "participant" was standardized to one Summer kW, since projects widely vary

across the multiple business types. The projected adoption values were then translated into their respective kW and kWh amounts and summed to create the residential and business sector goals for each of the goals scenarios.

Q. How did FPL address free ridership in developing the proposed goals?

A. FPL and all FEECA utilities utilized the two-year payback screening criterion to minimize the impact of "free riders." The term "free riders" refers to the fact that many cost-effective conservation measures will be undertaken on a customer's own volition, without the need for a promotion or incentive provided by the customer's utility company and paid for by the general body of customers of the utility. It simply recognizes that "rational" customers will act in their own economic self-interest and take measures to reduce energy consumption if it is sufficiently attractive economically for them to do so without a utility incentive payment. It is an example of a free-market economy working as it should – rational economic decisions being made in one's best interest without government intervention through mandates or provision of incentives.

A good example would be a customer deciding to install a programmable thermostat. Customers make the economic decision to invest in such measures because it quickly benefits them economically. However, if such a customer also receives a utility incentive, then they become a free rider. If costs are incurred to incentivize such free riders, rates for the general body of customers will be higher than necessary to achieve the same level of conservation.

It should be emphasized that the ultimate goal is to achieve the maximum amount of cost-effective conservation by the most efficient means. The objective is not to set DSM goals at any cost or higher than they should be simply for the sake of having higher goals. Indeed, doing so would be inconsistent with the requirement of Rules 25-17.008 and 25-17.021 that the DSM goals are to be cost-effective. As such, a proper recognition of free riders is necessary to achieve the appropriate goals.

The Commission has used a two-year payback criterion for decades as the threshold below which a customer would be a free rider and, therefore, should not be considered eligible for an additional utility-provided incentive. This policy has been litigated in multiple previous DSM goals proceedings wherein the Commission has determined it was an appropriate metric for determining free riders. In fact, the Commission reaffirmed their position in the 2014 DSM goals docket, Order No. PSC-14-0696-FOF-EU, stating, "[w]e approved goals based on a two-year payback criterion to identify free riders since 1994 and we find it appropriate to continue this policy."

FPL submits that the two-year payback screening criterion remains an effective common-sense approach that is both reasonable and administratively efficient for meeting the requirement in Rule 25-17.0021 that goals reflect consideration

of free riders. It avoids unnecessary incentives (and their associated impacts on the rates of non-participants).

Q. Did FPL conduct any sensitivities on the free ridership period?

A. Yes. FPL analyzed the impact of applying one- and three-year payback period screens as part of the measure-screening process. A summary of measures removed and added, at the building-type level, for each of the evaluation sensitivities is shown in FPL witness Whitley's Exhibit AWW-3.

V. FPL PROPOSED GOALS AND PROGRAMS

Q. Did FPL develop proposed goals for each of the two goals scenarios described in the DSM Goals Rule?

A. Yes. FPL developed goals for each of the two goals scenarios following the same process described earlier. For the RIM and Participant test scenario, RIM-passing programs are projected to achieve 198 Summer MW, 173 Winter MW, and 1 GWh annual energy reduction over the period 2025-2034. For the TRC and Participant test scenario, all potential TRC-passing programs are projected to achieve 522 Summer MW, 518 Winter MW, and 1,555 GWh annual energy reduction over the period 2025-2034. The annual goals for each scenario are shown in Exhibit JNF-4, page 1.

Q. What are the programs for the RIM and TRC goals scenarios?

A. For the RIM and Participant test scenario, the programs are:

Residential Sector:

1. Residential Load Management (On Call®) with new HVAC on-bill option

Commercial/Industrial Sector:

1. Business On Call®
2. Commercial/Industrial Demand Reduction (CDR)
3. Business Custom Incentive

For the TRC and Participant test scenario, the programs are:

Residential Sector:

1. Residential HVAC Plus
2. Residential Building Envelope
3. Residential Low Income
4. Whole Home Plus
5. Retail Products
6. Residential Load Management (On Call®) with new HVAC on-bill option

Commercial/Industrial Sector:

1. Business HVAC Plus
2. Business Lighting Plus
3. Business Water Heating
4. Business Refrigeration
5. Business Motors and Drives

6. Business Cooking
7. Commercial/Industrial Demand Reduction (CDR)
8. Business On Call®
9. Business Custom Incentive

The goals scenarios also include FPL's foundational Residential and Business Survey programs and the Conservation Research and Development (CRD) program. These programs will be included in all scenarios. The full list of potential programs, savings, annual participation projections and annual costs are included in Exhibit JNF-4, pages 2-34.

Q. What are the projected costs and rate impacts of these scenarios?

A. The total cost of the RIM and Participant test scenario is estimated to be $385 million over the ten-year goal period. The estimated residential rate impact[2] of the RIM and Participant test scenario begins at $0.35 and declines to $0.27 over the ten-year goals period for a customer using 1,000 kWh per month.

For the scenario that includes all TRC and Participant test passing programs, the total cost is estimated to be $626 million over the ten-year goals period. The estimated residential rate impact of the TRC and Participant test scenario begins at $0.51 and slightly decreases to $0.45 over the ten-year goals period for a customer using 1,000 kWh per month.

[2] Energy Conservation Cost Recovery Clause.

Projections of costs and rate impacts for all scenarios do not include Energy Survey programs, FPL's Commercial Load Control programs – Commercial Industrial Load Control (CILC) and Commercial/Industrial Demand Reduction (CDR) programs and FPL's CRD program. Costs for these programs are assumed to be the same for all goals scenarios.

Q. What goals and programs are FPL proposing for the period 2025-2034?

A. FPL is proposing goals of 419 Summer MW, 326 Winter MW, and 931 Annual GWh reductions over the period 2025-2034. The proposed DSM goals include FPL's load-management programs, which all pass the RIM test with the exception of the CDR program, which only passes the TRC test. These proposed goals also include the continuation and enhancement of FPL's current energy-efficiency programs, all of which pass the TRC test but do not pass the RIM test. The five Residential and five Commercial/Industrial programs associated with these proposed goals are summarized below:

Residential Sector:

1. Residential HVAC
2. Residential Ceiling Insulation
3. Residential Low Income
    a. Renter Pilot
4. Residential New Construction (BuildSmart®)
5. Residential Load Management (On Call®) with new HVAC on-bill option

Commercial/Industrial Sector:

1. Business HVAC
2. Business Lighting
3. Commercial/Industrial Demand Reduction
4. Business Custom Incentive
5. Business On Call®

This proposal of RIM- and TRC-passing programs will allow FPL to continue delivering meaningful energy-efficiency savings options to all customers including owners, renters, and low-income customers. The proposed goals factor in adjustments in participation levels to reflect market conditions and adjustments in projections based on the 2024 TP Study measure impacts. FPL has successfully built awareness of these programs with customers and contractors alike such that they can continue without any new start-up costs or ramp-up and be delivered with little or no incremental bill impact. Projections associated with the HVAC on-bill option ramp up, as this is a new program option that is planned to be delivered through a network of HVAC contractors. Additionally, the Low-Income program will add ceiling insulation for qualifying homes to increase the energy savings for these customers and the Renter Pilot is expected to bring additional benefits to low-income renters. The complete list of proposed programs and goals is shown on Exhibit JNF-4, page 1 and pages 23-34.

Q. What are the projected costs and rate impacts of FPL's proposed goals?

A. The total cost of FPL's proposed goals and programs is estimated to be $525 million over the ten-year goal period. The estimated residential rate impact of FPL's proposed goals and programs begins at $0.46 and decreases to $0.37 over the ten-year goals period for a customer using 1,000 kWh per month. FPL's proposed goals and programs, including the enhancements, are estimated to have lower costs compared to FPL's projected program costs in 2024.

Q. How does the cost of FPL's proposed goals and programs compare to the projected costs for the TRC scenario?

A. The TRC scenario has much higher costs than the FPL proposed goals and programs. The cost of additional energy-efficiency programs in the TRC scenario is about 50% higher in 2025 and increases to almost double the cost of FPL's proposed energy-efficiency programs over the ten-year goals period. The TRC scenario is expected to cost customers about $100 million more than FPL's proposed goals and programs over the ten-year goals period. A comparison of the ECCR rate impacts for each of the scenarios can be found in Exhibit JNF-4, page 1.

Q. Please describe the proposed HVAC on-bill tariff option for On Call®.

A. The foundation of FPL's overall DSM program is On Call®. On Call® is the largest residential demand-response program in the country and a key component of FPL's success in implementing cost-effective DSM for almost 40 years. Currently, On Call® provides bill credits to customers for allowing FPL to control customer-owned HVAC, water heating, and pool pump

appliances. FPL is proposing to expand the program in an innovative way by offering an on-bill payment option for efficient HVAC equipment. Through a voluntary tariff, this HVAC on-bill option would provide interested customers an opportunity to acquire a new, more energy-efficient HVAC unit for a fixed monthly charge. FPL would own and maintain the HVAC unit and the monthly charge would cover the capital cost of the HVAC equipment plus all maintenance and repairs of the unit for the ten-year duration of the tariffed agreement. In exchange for the right to control the unit during peak periods (load management), FPL would reduce the total cost to be collected over the term of the agreement and provide that savings to participating customers. Assuming the unit being replaced by the customer is less efficient than the current minimum standard, the customer would further benefit from the efficiency savings of the unit towards their energy consumption and monthly bill. The customer would also receive an upfront rebate from FPL's Residential HVAC program if selecting a qualifying high-efficiency unit. Since each HVAC installation is unique in terms of size and scope, the monthly charge would be structured as a formula based on the installed capital cost and expenses for each specific unit.

Q. Is this HVAC on-bill option cost-effective for FPL customers?

A. Yes. The program would be designed for the participants to pay all of the equipment and expenses of the program, while the general body of customers benefit from the avoided capacity savings related to FPL retaining control of the HVAC equipment. Notably, the program passes the RIM test and benefits

participants with reduced monthly equipment charges similar to how other On Call® customers benefit with monthly bill credits.

Q. How does the HVAC on-bill program impact the ECCR rate for FPL's customers?

A. Like other DSM programs, all costs associated with the HVAC on-bill tariff would be recovered through the ECCR mechanism. All of the monthly program revenues would also flow through the ECCR clause to offset program expenses. Since this program passes RIM, the general body of customers is assured the overall benefits of the program exceed costs, net of program revenues, over the term of the HVAC on-bill service agreement.

Q. How do FPL's proposed programs benefit customers who rent?

A. All of FPL's proposed DSM programs are inclusive of renter participation. FPL's energy survey programs provide renters with free energy assessments and recommendations for low- and no-cost actions that can be taken to reduce energy consumption. With landlord approval, renters can participate in FPL's load-management programs and benefit from other DSM programs that encourage energy efficiency. However, FPL recognizes that renters face a unique obstacle when it comes to making investments in energy-efficiency measures. Sometimes referred to as a the "landlord renter split incentive," the traditional value proposition for making an energy-efficiency investment does not hold true when the party paying the utility bill is not the same as the party making the capital investment. Landlords are typically responsible for equipment installations, replacements, and maintenance, while renters are

typically responsible for paying the utility bill for the unit they are renting. This creates a split in the traditional economic value proposition for making energy-efficiency investments. Since landlords do not pay the utility bill, there is no economic incentive to them for making incremental investments in more efficient appliances or building improvements. Renters, on the other hand, typically pay the utility bill yet do not have the opportunity to make capital investments that can produce energy-efficiency savings. This results in renters having less options to manage their utility expenses and increase their energy efficiency. FPL has historically addressed this situation first by offering energy surveys to all customers, whether they rent or own. An energy survey identifies not only investment opportunities to improve energy efficiency, but also many behavioral and no/low-cost actions renters can take to save energy. Examples include recommendations for thermostat settings, utilization of LED light bulbs, proper use of ceiling fans, and keeping windows and blinds closed. FPL also allows participation in other programs, including On Call®, with landlord agreement. Yet these options still do not overcome the landlord-renter split incentive.

FPL is proposing a new approach to overcoming this split incentive in a manner that allows low-income renters to receive the energy-saving benefit of more efficient HVAC equipment while keeping the landlord whole from a capital investment perspective. Proposed as a limited pilot to evaluate the effectiveness of this approach, FPL will pay the incremental cost of a more efficient HVAC

unit, up to $1,000, such that the landlord will only cover the cost of installing code-compliant equipment when replacing an HVAC unit for a tenant property. This will eliminate the disincentive the landlord has to make an incremental investment in energy-efficient equipment while allowing the low-income renter to receive the benefit of the more efficient HVAC equipment on their energy consumption and electric bill. FPL is proposing to operate this pilot for three years with an annual cap of 500 participants.

Q. In development of the proposed programs, did FPL include any measures that were eliminated during the screening process?

A. Yes. FPL's proposed Low Income program includes six measures that were eliminated in the measure screening due to the free-ridership screen. While the savings of these measures provide a reasonable economic value proposition for adoption, FPL recognizes that low-income customers may not have the financial resources or awareness to adopt such measures. Therefore, FPL believes a modest inclusion of appropriately tailored measures specifically for low-income customers is reasonable and does not unduly burden the general body of customers with their limited cost.

FPL also leveraged the benefits of certain heat pump measures, when combined with Air Conditioning measures, to ensure continuation of existing Residential HVAC program has broad applicability across FPL's customer base.

Q. Do FPL's proposed programs include any modifications or enhancements to increase participation?

A. Yes. FPL is proposing to continue each of its long-standing DSM programs with adjustments and enhancements intended to simplify program offerings, improve participation and results, and to reflect current market conditions. In the residential sector, FPL is proposing to increase the Residential HVAC program incentive to increase participating independent contractor (PIC) engagement and resulting program participation. FPL has experienced a decline in PIC participation in recent years which has negatively impacted program enrollments. By increasing the customer incentive, FPL expects more PICs will voluntarily participate in the program, leading to increased overall customer participation.

For the Residential On Call® program, FPL is adding a new HVAC on-bill option to increase participation. Since 2020, participation in the On Call® program has been significantly below the projections in the 2020 DSM Plan. The HVAC on-bill option is expected to increase overall participation in the program in a manner that keeps the program cost-effective.

In the commercial/industrial sector, FPL proposes to enhance the design of the Business HVAC program. FPL's current program design has been less effective in reaching the small and medium business sector. The enhancements include adding PICs as a delivery channel for small and medium business

HVAC systems and simplifying the incentive structure to foster greater participation by these customers. Many small business HVAC systems are installed and serviced by HVAC contractors who serve the residential market and are already PICs for FPL's residential program. By enhancing the Business HVAC program to include these PICs, FPL expects to increase participation by small and medium business customers. Larger systems will continue to be enrolled through FPL customer advisors and other independent engineering and construction contractors. A comparison of the proposed and current programs, including added and removed measures, is shown in Exhibit JNF-5.

Q. Are there any restrictions to FPL's proposed program designs from current settlement agreements?

A. No. FPL's proposed program designs are not impacted by the Company's 2021 base rate case settlement agreement. FPL's settlement agreement as approved by the Commission only limits modifications to the CDR and CILC bill credits, and FPL is not proposing any such modifications to those programs in this proceeding.[3]

[3] See Docket No. 20210015-EI, *In re: Petition by FPL for Base Rate Increase and Rate Unification*, Joint Motion for Approval of Settlement on behalf of FPL, OPC, FRF, FIPUG, and SACE, filed Aug. 10, 2021, Attachment A, Stipulation and Settlement Agreement at p.6; Final Order Approving 2021 Stipulation and Settlement Agreement, Order No. PSC-2021-0446-S-EI (Dec. 2, 2021); Supplemental Final Order, Order No. PSC-2024-0078-FOF-EI (March 25, 2024).

Q. How does FPL propose to ensure continuation of these programs does not cause increased costs generally associated with non-RIM passing programs?

A. FPL proposes to limit costs of non-RIM passing programs by capping participation once sector-level goals are met. This limitation on participation would only apply to energy-efficiency programs and provides a way to limit overall portfolio costs while still making valuable energy savings programs available to FPL customers. The Commission has previously approved such an approach with FPL's current DSM Plan.

Q. Does this conclude your direct testimony?

A. Yes.

(Whereupon, prefiled direct testimony of Andrew W. Whitley was inserted.)

ATTACHMENT 1

Florida Power & Light Company
Docket No. 20240012-EG

Corrected Direct Testimony of Andrew W. Whitley
Corrected by Errata Filed July 12, 2024

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

FLORIDA POWER & LIGHT COMPANY

CORRECTED DIRECT TESTIMONY OF ANDREW W. WHITLEY

DOCKET NO. 20240012-EG

APRIL 2, 2024

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I. INTRODUCTION

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

A. My name is Andrew W. Whitley. My business address is 700 Universe Blvd., Juno Beach, Florida 33408. I am employed by Florida Power & Light Company (FPL) as Engineering Manager in the Integrated Resource Planning department of FPL's Finance Business Unit.

Q. Please describe your duties and responsibilities in that position.

A. In my current position as Engineering Manager of Integrated Resource Planning, I am responsible for the management and coordination of economic analyses of alternatives to meet FPL's resource needs and maintain system reliability. These analyses are designed to determine the magnitude and timing of resource needs for the FPL system and then develop the integrated resource plan with which those resource needs will be met. The analyses are also designed to identify potential opportunities to improve system economics and/or enhance system reliability for customers.

Q. Please describe your educational background and professional experience.

A. I graduated from Lehigh University in 2004 with a Bachelor of Science in Mechanical Engineering. I joined FPL in 2004 as part of FPL's Distribution Business Unit (now part of the Power Delivery business unit) and performed various engineering tasks related to providing new service as well as maintaining the reliability of existing services to FPL's customers. In 2007, I joined the team now known as the Integrated Resource Planning (IRP) group. Since that time, I have been involved in and supported a variety of resource

planning projects for FPL, including FPL's Ten Year Site Plans (TYSP), Solar Base Rate Adjustments (SoBRA), need determination proceedings for new power plants under the Florida Power Plant Siting Act, (including the Okeechobee Clean Energy Center in 2015 and the Dania Beach Clean Energy Center in 2018), Base Rate proceedings, and the Demand-Side Management (DSM) goals proceedings. I became the Manager of the IRP group in 2022 and have served as the project leader for FPL's TYSPs since 2022.

Q. Have you previously testified on resource planning issues before the Florida Public Service Commission (FPSC or the Commission)?

A. Yes. I testified in FPL's 2019 DSM goals proceeding (Docket No. 20190015-EG). My testimony in that docket focused on FPL's resource planning process and how it related to the development of demand-side management portfolios. I also provided testimony on resource planning topics in FPL's 2024 Fuel and Purchased Power Cost-Recovery Clause Docket (Docket No. 20230001-EI). In addition, I appeared before the Commission at its 2022 and 2023 workshops on the Florida utilities' TYSPs.

Q. Are you sponsoring any exhibits in this case?

A. Yes. I am sponsoring Exhibits AWW-1 through AWW-17, which are attached to my testimony:

- Exhibit AWW-1 – Economic Elements Accounted for in DSM Preliminary Screening Tests: Benefits & Costs
- Exhibit AWW-2 – Summary Results of Preliminary Economic Screening of Individual DSM Measures

- Exhibit AWW-3 – Summary Results of Preliminary Economic Screening of Individual DSM Measures: Sensitivity Cases
- Exhibit AWW-4 – Forecasted Fuel and Environmental Compliance Costs
- Exhibit AWW-5 – Projection of FPL's Resource Needs for 2024 - 2035 with No Incremental DSM Signups After 2024
- Exhibit AWW-6 – Comparison of DSM Reasonably Achievable Summer MW Values with FPL's Projected Summer Resource Needs
- Exhibit AWW-7 – Overview of Supply Only and With DSM Resource Plans
- Exhibit AWW-8 – Levelized System Average Electric Rate Calculation for the Supply Only Resource Plan
- Exhibit AWW-9 – Levelized System Average Electric Rate Calculation for the RIM Resource Plan
- Exhibit AWW-10 – Levelized System Average Electric Rate Calculation for the FPL Proposed Resource Plan
- Exhibit AWW-11 – Levelized System Average Electric Rate Calculation for the TRC Resource Plan
- Exhibit AWW-12 – Comparison of the Resource Plans: Economic Analyses Results
- Exhibit AWW-13 – Additional Cost Needed to be Added to the RIM Plan to Increase its Levelized System Average Electric Rate to That of the TRC Plan

- Exhibit AWW-14 – Additional Cost Needed to be Added to the FPL Proposed Plan to Increase its Levelized System Average Electric Rate to That of the TRC Plan
- Exhibit AWW-15 – Comparison of the Resource Plans: Projection of System Average Electric Rates and Customer Bills (Assuming 1,000 kWh Usage)
- Exhibit AWW-16 – Comparison of the Resource Plans: Projection of System Emissions
- Exhibit AWW-17 – Comparison of the Resource Plans: Projection of System Oil and Natural Gas Usage

Q. Please summarize your testimony.

A. Using FPL's resource planning process and the latest forecasts, assumptions, and cost estimates, FPL's proposed DSM goals are 419 megawatts (MW) Summer demand, 326 MW Winter demand, and 931 gigawatt-hours (GWh) energy reduction for the period 2025 through 2034. In my testimony, I explain:

- FPL's resource planning process, how it applies to DSM options, and how it treats DSM and supply options equally;
- A review of the relevant assumptions used in FPL's resource planning process;
- The various tests used in the preliminary cost-effectiveness screening and the results of this screening of DSM measures;

- How the projected portfolios of DSM compare to FPL's resource needs in the 2025-2034 timeframe;
- The Supply Only Resource Plan, With DSM Resource Plans, and how all of these plans compare on both economic and non-economic bases; and
- How the final resource plan based on FPL's proposed DSM goals will continue to provide reliable electric service for FPL's customers at low electric rates.

II. FPL'S RESOURCE PLANNING PROCESS

Q. Are FPL's proposed DSM goals based on FPL's most recent resource planning process?

A. Yes. Beginning in 2023, and continuing into the first quarter of 2024, FPL undertook a months-long process to determine its resource plan for use in the 2024 DSM goals filing, as well as all other 2024 analyses, including the 2024 TYSP. The assumptions used in FPL's planning process were developed in late 2023 and early 2024 and accurately represent a current projection of FPL's system for the ten-year planning period of 2025 through 2034.

Q. Why did FPL develop its proposed DSM goals based upon its most recent planning process?

A. There are two important reasons FPL used its most recent planning process to develop its DSM goals. First, it is required by the Commission's DSM Goals Rule 25-17.0021(3), Florida Administrative Code. Second, it is important for a utility to use its own resource planning process while setting DSM goals, or performing the analysis of any resource option, because each utility's system has its own specific characteristics that can alter the timing and magnitude of its resource needs and influence the cost-effectiveness of resource options.

Q. What are the objectives of FPL's integrated resource planning process?

A. There are three main goals of FPL's resource planning process:

1. Identify the timing of FPL's resource needs. The timing of future resource needs is largely determined by reliability standards (such as reserve margins and loss-of-load probability requirements).
2. Identify the magnitude of these resource needs, *i.e.*, how many MW of capacity are needed to satisfy reliability criteria.
3. Identify the type of resources, either supply-side or demand-side, that can meet these capacity needs. On an economic basis, this selection is determined by the option that is projected to result in the lowest electric rates for FPL's customers.

Q. Please provide an overview of FPL's IRP process.

A. An overview of FPL's IRP process is presented annually in FPL's TYSP. FPL's IRP process can be summarized by the following four tasks:

- Task 1: Determine the magnitude and timing of FPL's new resource needs.
- Task 2: Identify the resource options and resource plans that are available to meet the determined magnitude and timing of FPL's resource needs (*i.e.*, identify the available competing options and resource plans).
- Task 3: Evaluate the competing resource options and resource plans based on system economics and non-economic factors.
- Task 4: Select a resource plan, as needed, to meet nearer-term options.

Q. How does FPL apply its IRP process to the specific analyses that are needed to develop DSM goals?

A. To develop proposed DSM goals for the Commission's review, FPL freezes DSM additions in its assumptions before the start of the next DSM goals period. FPL assumes no incremental DSM and, "starting from scratch," projects how much DSM should be implemented for the next ten years. FPL approaches that task by applying its IRP process through a well-established six-step analysis. This same basic process has been used by FPL in prior DSM goals dockets.

Q. When evaluating the economics of supply-side or demand-side resource options to meet its reliability criteria, does FPL select these resources on the basis of lowest cumulative present value of revenue requirements (CPVRR)?

A. No. When evaluating the economics among supply-side and demand-side resource alternatives, FPL bases its evaluation on the system average electric rates. If, for example, two resource plans satisfy all of FPL's reliability requirements, the more economic plan for all of FPL's customers is the plan that results in the lowest Levelized System Average Electric Rate. This calculation is performed by dividing a utility's annual revenue requirements for that year by the utility's Net Electric Load (NEL) for that year. This same calculation is performed for each year of the analysis, then the results for all years are summed on a present value basis. This cumulative present value is then converted into a Levelized System Average Electric Rate for the period of the analysis.

Note that if one were comparing two resource plans that have the same level of DSM, the two plans will have the same NEL. Therefore, the plan with the lower CPVRR in that scenario also would have the lower Levelized System Average Electric Rate. However, when comparing plans with different DSM portfolios, those plans will have different NELs and cannot be evaluated on CPVRR alone. Therefore, in order to compare plans with different DSM

portfolios on an economic basis, it is appropriate to analyze each plan based on the Levelized System Average Electric Rate.

Q. Please summarize the six-step resource planning process for developing DSM goals.

A. The process can be summarized as follows:

Step 1: The Technical Potential for DSM is determined in which practical considerations of cost, market forces, the utility's resource needs, and other factors are all ignored. The end result of this step is a list of individual DSM measures that are theoretically available in a utility's service territory. Witness Herndon with Resource Innovations describes in his direct testimony the development of the projected Technical Potential values for FPL that were used in the rest of FPL's analyses.

Step 2: Assuming no incremental DSM signups occur after December 31, 2024, FPL's projected resource needs for 2025 through 2034 were determined. Two determinations of resource needs are made: one if the resource needs are theoretically met solely by Supply options; and one if the resource needs are theoretically met solely by DSM options. These two projections are different because of FPL's 20% total reserve margin criterion. For example, if the resource need to be met solely by DSM options for a given year is 100 MW, the resource need to be met solely by Supply options for the same year is 100 MW x (1 + 0.2) = 120 MW.

The results of these determinations are used in two ways. First, using the projected resource needs, if the needs are met solely by Supply options, a generation addition is selected for use in the preliminary economic screening of DSM measures, which occurs in Step 3. Second, these determinations are used later in Step 5 to create a "Supply Only" Resource Plan and "With DSM" Resource Plans, which are then used for the detailed system economic and non-economic analyses that occur in Step 6.

Step 3: In this step, each individual DSM measure identified in the Step 1 Technical Potential work is analyzed using a series of preliminary economic screening evaluations against a single Supply option that DSM could potentially avoid or defer. The screening evaluations divide into two separate paths depending on the primary cost-effectiveness test used in the analysis. Consistent with the Commission's DSM Goals Rule 25-17.0021, one path utilizes both the Rate Impact Measure (RIM) test and the Participant test, while the other path utilizes the Total Resource Cost (TRC) test and the Participant test. At the end of the screening for both of these paths, two more steps are conducted on both of the screening paths. First, the remaining measures are screened for free riders based on a "years-to-payback" test. Second, the maximum incentive the utility can offer and preserve cost-effectiveness for each remaining DSM measure is calculated.

Step 4: The remaining DSM measures that pass the respective economic screening tests in Step 3, together with their accompanying maximum incentive levels, are then analyzed to develop potential DSM programs and portfolios over the 2025 through 2034 DSM goals period. Again, this step is divided into two separate paths of analysis depending on the cost-effectiveness screening tests that are being applied. The resulting projection for each DSM program represents the projected maximum annual signups for each year of the ten-year DSM goals period. Cumulatively, the sum of these projected maximum annual signups for each DSM program identifies how many MW of DSM resources are projected to be available each year to potentially meet FPL's projected annual resource needs. FPL witness Floyd addresses the process of evaluating the DSM program portfolios from the remaining DSM measures, using program-specific administrative costs, incentives, and adoption projections to determine the reasonably achievable DSM program potential over the period 2025-2034 in his direct testimony.

Step 5: In this step, the projections of resource needs developed previously in Step 2 are used again in several ways. First, FPL uses the projection of resource needs, if the needs are met solely by Supply options, to develop a resource plan in which only Supply options are added. This resource plan is referred to as the "Supply Only"

Resource Plan. Next, FPL compares the projected maximum annual DSM MW signups identified in Step 4 to the projected annual resource needs if those needs are met solely by DSM options. From this comparison, the "With DSM" Resource Plans are developed. These resource plans may consist solely of DSM measures, or a combination of DSM and Supply options, for the ten-year period. At the conclusion of Step 5, the Supply Only and the With DSM Resource Plans have been developed for more detailed system analyses in Step 6.

Step 6: The resource plans from Step 5 are analyzed from both economic and non-economic perspectives. The recommended resource plan based on these perspectives is identified, and the amount of incremental DSM included in that plan is selected as FPL's proposed DSM goals for the 2025 - 2034 time period.

Q. Does FPL's six-step analytical resource planning process outlined above result in Supply and DSM resource options being evaluated on a level playing field?

A. Yes. FPL's analyses evaluate both Supply and DSM resource options in terms of each resource option's ability to meet FPL's resource needs. In addition, these analyses allow the resources to be fully evaluated from both economic and non-economic perspectives, using an identical set of evaluation metrics. For the economic analyses, all projected cost impacts on the electric rate levels of FPL's customers are accounted for in these analyses.

Q. Which of the six steps outlined above will you be addressing in your testimony?

A. My testimony addresses Steps 2, 3, 5, and 6 of this process, along with other topics. Witness Herndon addresses Step 1, and witness Floyd addresses Step 4 and portions of Step 5 along with other topics.

III. STEP 2 OF FPL'S PLANNING PROCESS: METHODS AND ASSUMPTIONS USED TO PROJECT FPL'S RESOURCE NEEDS

Q. How does FPL determine its projected future resource needs?

A. FPL uses three reliability criteria in projecting its future resource needs. One criterion is a minimum total reserve margin of 20% for both Summer and Winter peak hours. The 20% total reserve margin criterion was approved by the FPSC in Order No. PSC-99-2507-S-EU issued in Docket No. 981890-EU.

The second reliability criterion used by FPL is a Loss-of-Load-Probability (LOLP) criterion. LOLP is a projection of how well an electric utility system may be able to meet its firm demand (*i.e.*, a measure of how often firm load may exceed available resources). In contrast to a reserve margin approach that looks at the one Summer peak hour and the one Winter peak hour, the LOLP approach looks at the peak hourly demand for each day of the year. The LOLP approach takes into consideration the probability of individual generators being out-of-service due to scheduled maintenance or forced

outages. LOLP is typically expressed in terms of "numbers of times per year" that the system firm demand could not be served. FPL's LOLP criterion is a maximum of 0.1 days per year. This LOLP criterion is commonly used throughout the electric utility industry.

The third reliability criterion used by FPL is a minimum generation-only reserve margin (GRM) of 10%. The issue of having a sufficient generation component of the projected total reserve margin has been discussed annually in FPL's TYSP beginning in 2011, and the GRM was adopted by FPL as a reliability criterion beginning in 2014. The GRM must be applied only after evaluating the amount of DSM in a resource plan to determine whether the resource plan is too dependent upon DSM.

Q. What forecasts and assumptions did FPL use in its 2024 planning process?

A. Every year, FPL updates its forecasts as part of its IRP process and in support of filing its yearly TYSP, including considerations of supply-side efficiencies. In its 2024 resource planning work, including the DSM portfolio analyses for this docket, FPL is using the following forecasts:

1. A forecast of fuel prices (natural gas, coal, and oil), dated September 1, 2023;
2. A forecast of projected hourly load, dated November 1, 2023; and

3. A forecast of carbon dioxide (CO_2) compliance costs, dated September 28, 2022.[1]

As discussed in FPL's 2024 TYSP, FPL made a number of actions regarding its resource mix that affected its projected resource needs in the 2024 planning process. These actions include:

- The retirement of Plant Daniel Units 1 & 2 in 2024;
- The transition of Gulf Clean Energy Center Units 4 and 5 to "extreme weather reserve" status by the end of 2024 and 2026, respectively;
- The retirement of FPL's ownership portion of Scherer Unit 3 by the end of 2028;
- The cumulative addition of approximately 21,000 MW (nameplate) of solar by the end of 2033, which is the last year addressed in the 2024 TYSP; and
- The cumulative addition of approximately 4,000 MW (nameplate) of battery storage by the end of 2033.

Q. Does the load forecast used in the analysis account for the projected energy-efficiency impacts of Florida Building Code and federal equipment manufacturing standards (collectively, Codes and Standards)?

A. Yes. FPL's current projection of the impact of Codes and Standards on the 2034 Net Energy for Load (NEL) is 11,438,429 megawatt-hours (MWh). This means that very significant amounts of energy efficiency will still be delivered to FPL's customers by Codes and Standards alone. To provide

[1] Use of this forecast in one of the sensitivity analyses is explained later in my testimony.

context, FPL's 2024 NEL forecast for the year 2034 is 155,677,526 MWh, which means that the energy reduction delivered through Codes and Standards represents more than 7% of the total of FPL's projected NEL.

Q. From a resource planning perspective, does the energy-efficiency impact of Codes and Standards differ at all from energy efficiency resulting from utility DSM programs?

A. No. Both types of energy efficiency act to reduce FPL's peak demand and energy on the customer side of the meter. One kW of peak demand reduction will avoid or defer new generation whether it comes from Codes and Standards or from a utility-sponsored DSM program. Likewise, the associated fuel and emission impacts from one kWh of energy reduction will be realized regardless of the impetus for that energy reduction.

Q. Once all of these forecasts and assumptions were developed, how did FPL develop the resource plans you discuss in this docket?

A. FPL developed these resource plans using the AURORA planning model. The AURORA model utilizes dynamic programming to conduct an extensive evaluation of all possible resource plans that can meet a utility's reliability requirements. FPL and the Commission have relied upon this model in numerous prior proceedings, and it was used to develop FPL's 2024 TYSP. AURORA incorporated a number of FPL forecasts and assumptions into its analysis including the following:

- The 20% total Reserve Margin reliability criterion described earlier;

- Forecasts for peak load, energy, fuel prices, and environmental compliance costs;
- The existing capabilities of the units on FPL's systems, and any planned changes to those units; and
- Projections of fixed and variable costs, and the operating characteristics, of a variety of generation options to meet FPL's resource needs in the future.

After incorporating all of these parameters, AURORA evaluated hundreds of possible resource plans that met FPL's future resource needs using only generation or supply options. At the end of this evaluation, the resource plan with the lowest projected electric rate and best reliability for FPL's customers was identified as FPL's Supply Only Plan.

Q. What Supply option was selected for use in the preliminary cost-effectiveness screening?

A. A 1,991 MW (Summer) combined-cycle (CC) unit with a projected in-service year of 2033 was selected as the unit to be considered potentially avoidable for the preliminary screening work. As much of the screening work was conducted in 2023 (before the 2024 TYSP was finalized), the screening analysis was based on the 2033 CC unit that was in FPL's resource plan from the 2023 TYSP.

Q. Why did FPL select the 2033 CC unit as its avoided unit?

A. This unit was selected based on several factors. First, as part of the 2023 TYSP, it was one of the most economic generation additions available.

Second, it was located far enough in the future to allow DSM additions a meaningful chance to potentially avoid or defer it. Finally, selection of a fossil unit conforms to the legislative policy in Section 366.82(2), Florida Statutes, to design DSM goals that increase the conservation of expensive resources, such as petroleum fuels, as well as the legislative policy in Section 366.92, Florida Statutes, to promote the development of renewable energy and lessen Florida's dependence on natural gas and fuel oil for the production of electricity.[2]

IV. STEP 3 OF FPL'S PLANNING PROCESS: OVERVIEW OF PRELIMINARY ECONOMIC SCREENING TESTS FOR DSM

Q. Which preliminary screening tests for DSM were used in this step of FPL's DSM goals development analyses?

A. FPL used four DSM screening tests in these analyses. Three of these screening tests address cost-effectiveness: the Participant screening test, the RIM preliminary screening test, and the TRC preliminary screening test. The fourth screening test addresses an evaluation of free ridership, the years-to-payback screening test using a two-year criterion. All four tests are designed

[2] *See also In re: Commission review of numeric conservation goals (Florida Power & Light Company)*, Docket Nos. 130199-EI *et al*., Order No. PSC-14-0696-FOF-EU, p. 14 (FPSC Dec. 16, 2014) ("Demand-side management is an alternate resource to generation driven by economic and reliability considerations for Florida's electric utilities. The economics of demand-side management are similar to generation, with a focus on fixed capacity and avoidable fossil fuel cost. The reliability considerations of demand-side management are significantly different, however, as measures tend to be implemented in small increments over time, rely upon voluntary participation of customers, and are typically not dispatchable by the utility.")

to provide preliminary economic screening information regarding the individual DSM measures being evaluated. The intent of the Participant test is to determine if it makes economic sense for an individual customer to participate in a specific DSM measure. The intent of the RIM test is to measure the effect of a DSM measure on FPL's electric rates, which impact both participants and non-participants. The intent of the TRC test is to measure the cost of a DSM measure to both the utility and its customers, without consideration of the impact to rates. The intent of the years-to-payback test is to address the "free rider" issue so the utility and all of its customers are not making incentive payments and incurring administrative costs for DSM measures that customers likely would install even without an incentive payment.

Q. Is FPL accounting for any projected environmental compliance costs in the screening tests in the current analyses?

A. Yes, but only for two types of emissions. FPL is accounting for projected compliance costs for sulfur dioxide (SO_2) and nitrogen oxides (NO_x) in both the RIM and TRC preliminary screening tests. However, consistent with the direction provided in the Order Establishing Procedure for this docket (Order No. PSC-2024-0022-PCO-EG), FPL is not accounting for projected CO_2 compliance costs in these screening tests. Rather, because FPL considers CO_2 compliance costs in all of its other resource planning analyses, FPL analyzed the impact of projected CO_2 compliance costs in a sensitivity screening analysis. In order to indicate whether CO_2 costs are included in the screening

analyses, I will use the terminology of "w/ CO_2" and "w/o CO_2" for the different analyses.

Q. Have the four preliminary screening tests been used by FPL in prior DSM goals filings?

A. Yes, all four tests have been used in prior filings. However, the goals proposed in FPL's prior DSM goals dockets have been based on the RIM and Participant tests and a years-to-payback screen of two years.

Q. Please discuss the primary differences between the Participant, RIM, and TRC preliminary screening tests.

A. A summary of the costs and benefits considered by each test during the cost-effectiveness screening is provided in Exhibit AWW-1. As shown in Exhibit AWW-1, the primary differences between these three tests result from the perspective that each test attempts to capture. FPL witness Floyd provides a more detailed description of the different cost-effectiveness tests and what each one does and does not account for.

Q. What is the objective of the preliminary economic screening of individual DSM measures with the Commission's DSM cost-effectiveness tests that is carried out in Step 3 of FPL's resource planning process?

A. The objective of the economic screening of DSM measures with the Commission's cost-effectiveness tests (Participant, TRC, and RIM tests) is to identify all of the measures that are potentially cost-effective (in that their benefits are higher than their associated costs). These measures that are potentially cost-effective can be combined first into DSM programs and then

into one or more DSM portfolios that meet some or all FPL's projected resource needs. The resource plans can then be compared on an economic basis to the Supply Only Plan established earlier.

Q. Please provide an overview of how the preliminary economic screening of individual DSM measures was conducted.

A. The economic screening process begins when the Technical Potential study is complete. That study describes all the prospective individual DSM measures and their associated characteristics, such as life of measure, kW reduction, and kWh savings. These measures are then screened to develop two DSM portfolios: (1) a RIM portfolio that is comprised of all measures that pass the RIM and Participant cost-effectiveness tests and the years-to-payback screen; and (2) a TRC portfolio that passes the TRC test, the Participant test and the years-to-payback screen. Based on the results of these screens, the passing measures have their maximum incentives determined.

Q. Why does the screening process differ depending on the tests used for cost-effectiveness?

A. The paths of the cost-effectiveness screening diverge depending on if the RIM or the TRC test is used as the primary determinant of cost-effectiveness. In both cases, there are four overall steps in the screening process. The details of these steps and how they differ from test to test are provided below:

Step 1: For the RIM path, the benefits of the measure are compared to the unrecovered revenue requirements. For the TRC path, the benefits of the measure are compared to the participants' incremental cost.

Step 2: For both the RIM and TRC paths, the benefits of the measure are compared to the administrative costs being added to the costs already accounted for in Step 1.

Step 3: For the RIM path only, the incentive payments needed for the measure to pass the Participant test are now accounted for.

Step 4: For both the RIM and TRC paths, any measures that do not pass the years-to-payback test for free riders are screened out.

Q. How does a years-to-payback screening test account for free riders?

A. A years-to-payback screening with a two-year criterion assumes that a customer would adopt an energy-efficiency measure with no additional incentive if the economic payback for that measure was less than two years. This screening test recognizes that "rational" customers will act in their own economic interest and engage in energy efficiency measures that reduce their energy consumption, if it is economic to do so even without incentives. This ensures that incentives (and their associated impact to the electric rates of both participants and non-participants) will not be provided unnecessarily. FPL witness Floyd provides further details on the use of the two-year payback screening to account for free ridership.

Q. What were the results of the preliminary economic screening?

A. The results of the economic screening are provided in Exhibit AWW-2. In summary, of the 20,068 measure permutations that came out of the Technical Potential study, 20 passed the RIM and Participant tests and the two years-to-payback screen path, and 3,433 measures passed the TRC test, the Participant

test, and the two years-to-payback screening path. The difference in the number of measures that pass under the RIM path versus the TRC path is a result of the different costs that are included in each cost-effectiveness screening test as explained above and in the testimony of FPL witness Floyd.

Q. Did FPL perform any additional sensitivity case screening analyses of the DSM measures?

A. Yes. Sensitivities were developed for High and Low forecasts of fuel prices, longer and shorter years-to-payback criteria, and inclusion of compliance costs for CO_2. The results of these sensitivities can be seen in Exhibit AWW-3 (and the results with CO_2 are also presented in Exhibit AWW-2).

Q. How were the various fuel cost sensitivity forecasts and years-to-payback sensitivity periods developed?

A. FPL followed its usual practice in the development of the High and Low fuel cost forecasts. A Medium fuel cost forecast was first developed. Then FPL adjusted the Medium fuel cost forecast upwards (for the High fuel cost forecast sensitivity) and downwards (for the Low fuel cost forecast sensitivity), by multiplying the annual cost values from the Medium fuel cost forecast by a factor of (1 plus the historical volatility in the 12-month forward price, one year ahead) for the High fuel cost forecast sensitivity, and by a factor of (1 minus the historical volatility of the 12-month forward price, one year ahead) for the Low fuel cost forecast sensitivity.

For the development of years-to-payback criterion sensitivity values, FPL added or subtracted one year to or from its base case two years-to-payback criterion, resulting in three years-to-payback, and one year-to-payback, sensitivity case criteria. FPL believes that this variation is sufficient to illustrate the sensitivity of the screening process to differences in the years-to-payback criterion.

Q. What fuel cost forecast is FPL basing its proposed DSM goals on and why?

A. FPL is basing its proposed 2025-2034 DSM goals on its Medium fuel forecast that is presented in Exhibit AWW-4. The Medium fuel forecast represents a middle ground of fuel scenarios and is consistent with the methodology used in all of FPL's recent filings before the Commission.

Q. Please discuss the CO_2 compliance cost forecast values in Column (8) of Exhibit AWW-4.

A. Since 2007, FPL has evaluated potential CO_2 regulation and/or legislation and has used projected compliance costs for CO_2 emissions from the consultant ICF in its resource planning work. The values for CO_2 compliance costs in Exhibit AWW-4 represent the latest forecast FPL received from ICF in October of 2022.

Q. Does FPL use a CO_2 compliance cost forecast in all of its other resource planning analyses?

A. Yes, FPL has consistently used a forecast of CO_2 compliance in all of its resource plan analyses for more than fifteen years.

Q. Earlier you stated that, at the conclusion of the cost-effectiveness screening, maximum incentives were calculated for each passing measure. How were these maximum incentives calculated?

A. For the RIM path of cost-effectiveness testing, the maximum incentives for measures that pass all four steps were calculated based on two parameters:

1. How much incentive can be offered and still allow the measure to pass the RIM and Participant tests?
2. How much incentive can be offered and still allow the measure to pass the years-to-payback test?

The smaller of these two incentives is the maximum incentive that could be offered for measures that pass the RIM path of cost-effectiveness testing. For example, assume that a measure passes all four screening steps in the RIM path. The one-time payment that can be offered for this measure that still allows a RIM test result greater than 1.005 is $1,000. The one-time payment that can be offered for this measure while still allowing it to pass the years-to-payback test is $500. Based on these two values, the maximum incentive that could be offered is $500 – offering a larger incentive would cause the measure to fail the years-to-payback test.

For the TRC path of cost-effectiveness testing, only the years-to-payback criterion was used to determine the maximum incentive, as the TRC test does not include the consideration of incentive payments as a cost. For example, a particular measure could pass the TRC test and have a one-time payment of

$500 that still passes the two-year payback screen. Lowering this one-time payment below $500 would have no effect on the outcome of the TRC test.

Q. How were these maximum incentives used in the overall DSM analysis?

A. The two sets (RIM path and TRC path) of passing measures and their associated maximum incentives developed in Step 3 are used in Step 4 to develop the programs for each of the goals scenarios required by the rule. This process is described in detail by FPL witness Floyd. The goals and programs developed in Step 4 for FPL's recommended portfolio and for each of the cost-effectiveness scenarios are used in Step 5 to develop the associated resource plans, which I describe next, to accurately compare all of the impacts of the DSM goals in Step 6.

V. STEP 5 OF FPL'S PLANNING PROCESS: DEVELOPMENT OF THE RESOURCE PLANS

Q. What are FPL's resource needs during the 2025-2034 DSM goals timeframe?

A. Exhibit AWW-5 details FPL's resource needs for this timeframe and two additional years using the resource planning process I previously described.

Q. What were the reasonably achievable DSM program values and how does this DSM program potential match up with FPL's projected resource needs?

A. The results of the evaluation of reasonably achievable DSM, which are discussed in detail in FPL witness Floyd's direct testimony, were used as inputs for the resource planning process. Exhibit AWW-6 presents the projected total annual Summer MW for DSM programs identified in each of FPL's goals scenarios in Columns 1 through 3. These annual DSM Summer MW values are also compared to the annual resource need projections in Exhibit AWW-5 and presented in Column 4 of Exhibit AWW-6.

Q. Please describe the "Supply Only" Resource Plan and the "With DSM" Resource Plans that were developed for further analyses.

A. A summary of these four plans is presented in Exhibit AWW-7. For the "Supply Only" plan, DSM additions were assumed to be "frozen" after 2024. All of the resource needs identified in Exhibit AWW-6 were met with future supply-side resource options, including battery storage units.

A total of three "With DSM" resource plans were developed for further analysis. The first "With DSM" plan is the RIM Resource Plan. This plan is based on the measures that passed both the RIM and Participant tests, as well as passing the two-year payback screening for free riders. The second "With DSM" plan is the TRC Resource Plan. This plan is based on measures that passed the TRC test and Participant test for cost-effectiveness and the two-

year payback screening for free riders. The final "With DSM" plan is the FPL Proposed Resource Plan. This plan was developed based on FPL's recommended DSM portfolio that largely continues the currently offered DSM programs with notable enhancements as further described by FPL witness Floyd. The DSM additions in the FPL Proposed Resource Plan are essentially an approach that results in DSM goals that have demand and energy impacts in between those under the RIM Resource Plan and the TRC Resource Plan. The economic and non-economic impacts of each of these plans are analyzed in Step 6, which I describe next.

VI. STEP 6 OF FPL'S PLANNING PROCESS: ANALYSES OF THE RESOURCE PLANS

Q. Please describe how the economic analysis of the Supply Only and "With DSM" Resource Plans is conducted.

A. The economic analysis of the resource plans compares the Levelized System Average Electric Rate for each plan. Exhibits AWW-8 through AWW-11 present the calculations of the Levelized System Average Electric Rate and the fixed and variable costs that comprise the projected annual revenue requirements from which the rate is derived for each resource plan evaluated. The calculation consists of three basic steps. First, the projected annual revenue requirements and annual GWh served are used to calculate a projected system average electric rate for each year as shown in Column 9 of

Exhibits AWW-8 through AWW-11. Second, each of these projected annual electric rates is converted to a present value, and these present values are summed in Column 10. Third, an annual electric rate value is developed in Column 11 that, when held constant in each year, with these values converted to a present value and summed, has an identical net present value sum in Column 12 to that of the present value sum in Column 10. This constant electric rate value is the Levelized System Average Electric Rate for this resource plan.

Q. What were the results of the economic analysis of the resource plans?

A. The results of the economic analysis of the resource plans are presented in Exhibit AWW-12, which provides the projected Levelized System Average Electric Rate for each resource plan. As shown on Exhibit AWW-12, the RIM Resource Plan provides the lowest Levelized System Average Electric Rate for FPL's customers, while the TRC Resource Plan provides the highest Levelized System Average Electric Rate for FPL's customers. The Levelized System Average Electric Rate for the FPL Proposed Resource Plan is between those of the RIM and TRC Resource Plans.

Q. Are the differences in the Levelized System Average Electric Rates between the three resource plans presented in Exhibit AWW-12 meaningful?

A. Yes. This is demonstrated in Exhibit AWW-13. This exhibit compares the levelized rates for the RIM Resource Plan, the TRC Resource Plan, and the FPL Proposed Resource Plan. As shown in the exhibit, the seemingly modest

differential in levelized rates between the RIM-based and TRC-based plans equates to a very large one-time cost of approximately $2.5 billion in year 2034 being added to the RIM-based DSM plan. Exhibit AWW-14 shows a similar comparison between the FPL Proposed Plan and the TRC Plan.

Q. Were electric rates and customer bills projected and compared for the ten-year goal-setting period for each resource plan?

A. Yes. Exhibit AWW-15 provides a comparison of electric rates and customer bills for the "Supply Only Resource Plan and the three "With DSM" Resource Plans. In comparing the three "With DSM" Resource Plans during 2025-2034, the RIM Resource Plan is projected to result in the lowest electric rates and average customer bills in each year. The TRC Resource Plan is projected to result in the highest electric rates and the highest average customer bills in each year. The FPL Proposed Resource Plan falls in between the RIM and TRC Resource Plans.

Q. How would you summarize the economic analyses results?

A. Two results from the economic analyses are noteworthy. First, the RIM Resource Plan helps meet FPL's resource needs through 2034 while providing the lowest Levelized System Average Electric Rates over the analysis period and the lowest electric rates of the "With DSM" Resource Plans for each year in the 2025-2034 time period. The FPL Proposed Resource plan also meets all of FPL's resource needs through 2034, and while the FPL Proposed Resource Plan raises customer electric rates relative to the RIM Resource Plan, it results in minimal incremental rate impact beyond what customers are

incurring under FPL's current approved DSM goals. The TRC Resource Plan meets FPL's resource needs through 2034 and increases customer electric rates relative to both the RIM Resource Plan and FPL Proposed Resource Plan.

Q. What different perspectives of the FPL system were considered in the non-economic analyses?

A. The non-economic analyses focused on two perspectives that address the years 2025-2034. The first perspective is a direct comparison of projected annual SO_2, NO_x, and CO_2 emissions for the FPL system for each of the resource plans. The second perspective is a direct comparison of projected annual FPL system oil and natural gas usage for the resource plans.

Q. Would you please present the results of the non-economic analyses?

A. Yes. The results of the non-economic analyses are presented in Exhibits AWW-16 and AWW-17. There is very little difference among the four resource plans for these non-economic factors.

Q. Does FPL's 10% GRM requirement impact FPL's proposed DSM goals?

A. No. The GRM criterion does not impact FPL's proposed DSM goals.

Q. What are the proposed DSM goals under the FPL Proposed Resource Plan?

A. The proposed DSM goals based on the FPL Proposed Resource Plan are 419 MW Summer demand, 326 MW Winter demand, and 931 GWh energy reduction for the period 2025 through 2034, which are further explained by FPL witness Floyd.

Q. From a resource planning perspective, are the DSM goals based on the FPL Proposed Resource Plan reasonable?

A. Yes. The resource plan associated with FPL's proposed DSM goals fulfills the primary drivers of FPL's resource planning process:

- The timing and magnitude of resource needs: via a combination of DSM and supply resources, the FPL Proposed Resource Plan ensures that all of FPL's resources needs are met throughout the time period of the analysis and all of FPL's reliability criteria are satisfied.
- The FPL Proposed Resource Plan is consistent with the Commission's DSM Goals Rule 25-17.0021, which was recently amended to require utilities to submit DSM goals based on programs developed under both the RIM and TRC cost-effectiveness tests.
- The rate impact to FPL's customers: the FPL Proposed Resource Plan has minimal incremental rate impact to customers beyond what they are currently paying under the existing DSM goals, which have been in place for the last ten years.

FPL witness Floyd further explains why FPL believes the proposed DSM goals are reasonable and appropriate.

Q. Does this conclude your direct testimony?

A. Yes.

(Whereupon, prefiled direct testimony of Mark R. Roche was inserted.)

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

C7-2239

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

PREPARED DIRECT TESTIMONY

OF

MARK R. ROCHE

ON BEHALF OF TAMPA ELECTRIC COMPANY

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C7-2240

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:

2025-2034 Proposed DSM Goals

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 ≥ 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.

C7-2364

(Transcript continues in sequence in Volume 2.)

CERTIFICATE OF REPORTER

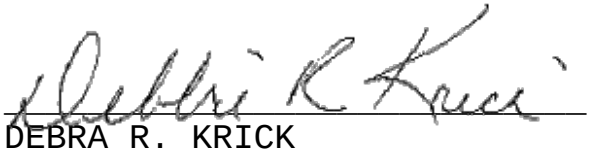
STATE OF FLORIDA)
COUNTY OF LEON)

I, DEBRA KRICK, Court Reporter, do hereby certify that the foregoing proceeding was heard at the time and place herein stated.

IT IS FURTHER CERTIFIED that I stenographically reported the said proceedings; that the same has been transcribed under my direct supervision; and that this transcript constitutes a true transcription of my notes of said proceedings.

I FURTHER CERTIFY that I am not a relative, employee, attorney or counsel of any of the parties, nor am I a relative or employee of any of the parties' attorney or counsel connected with the action, nor am I financially interested in the action.

DATED this 21st day of August, 2024.



DEBRA R. KRICK
NOTARY PUBLIC
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