BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

In the Matter of:

DOCKET NO. 20190015-EG

COMMISSION REVIEW OF NUMERIC CONSERVATION GOALS (FLORIDA POWER & LIGHT COMPANY).

DOCKET NO. 20190016-EG

COMMISSION REVIEW OF NUMERIC CONSERVATION GOALS (GULF POWER COMPANY).

DOCKET NO. 20190017-EG

COMMISSION REVIEW OF NUMERIC CONSERVATION GOALS (FLORIDA PUBLIC UTILITIES COMPANY).

DOCKET NO. 20190018-EG

COMMISSION REVIEW OF NUMERIC CONSERVATION GOALS (DUKE ENERGY FLORIDA, LLC).

DOCKET NO. 20190019-EG

COMMISSION REVIEW OF NUMERIC CONSERVATION GOALS (ORLANDO UTILITIES COMMISSION).

DOCKET NO. 20190020-EG

COMMISSION REVIEW OF NUMERIC CONSERVATION GOALS (JEA).

DOCKET NO. 20190021-EG

COMMISSION REVIEW OF NUMERIC CONSERVATION GOALS (TAMPA ELECTRIC COMPANY).

VOLUME 3
PAGES 422 through 637

PROCEEDINGS: HEARING
COMMISSIONERS PARTICIPATING: CHAIRMAN ART GRAHAM
COMMISSIONER JULIE I. BROWN
COMMISSIONER DONALD J. POLMANN
COMMISSIONER GARY F. CLARK
COMMISSIONER ANDREW GILES FAY

DATE: Tuesday, August 13, 2019

TIME: Commenced: 9:00 a.m.
Concluded: 11:45 a.m.

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

REPORTED BY: ANDREA KOMARIDIS
Court Reporter

APPEARANCES: (As heretofore noted.)

PREMIER REPORTING
114 W. 5TH AVENUE
TALLAHASSEE, FLORIDA
(850) 894-0828

I N D E X

WITNESSES

EXHIBITS

NUMBER:		ID	ADMITTED
308	Excerpt No. 22 from Gulf Response to SACE first set of ROGS, Nos. 1-65	476	533
309	Excerpt No. 8 from Gulf's Response to Staff's first set of ROGS, Nos. 1-14	477	533
310	Excerpt No. 11 from Gulf's Response to staff's first set of ROGS, Nos. 1-14	480	533
311	Excerpt No. 2 from Gulf's Response to staff's first set of ROGS, Nos. 1-14	481	533
312	Gulf Response to SACE 5th set of ROGS, Nos. 89-103	481	533
313	Bill impact Costs updated tab Res from Gulf Response to SACE POD 14 from SACE first POD, Nos. 1-16	485	533
314	Gulf Response to Staff ROGS 52 plus two attachments residential adm cost comparison and Staff Interrogatory 52	486	533
315	2019 Excerpt of GPC 10 YR Site Plan	490	533
35	(as identified on the comprehensive exhibit list)		533
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316	LC 5 Duke Energy's Summary of Historical Achievements	612	635
317	Excerpt 12 from DEF Response to SACE first set of ROGS, Nos. 1-65	613	635
318	Batch TMF 15 SEER Central AC from DEF response to SACE POD 16, from SACE first set of PODs 1-16	614	635
319	DEF Response to SACE POD No. 2, Count DEF Nexant, EE Summary, Base fuel 3.28.19 Res Tab	616	635
320	DEF Response to SACE POD No. 3 DEF Nexant EE Summary YR12020, with CC No. CO2, Base Fuel ACH Program costs 3.28.19 Res Tab	619	635
321	DEF Response to staff's second set of ROGS, No. 35	622	635
322	DEF Response to SACE third set of ROGS, No. 118	623	635
323	DEF Response to Staff's second set of ROGS, No. 40	625	635
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P R O C E E D I N G S

(Transcript follows in sequence from Volume 2.)

CHAIRMAN GRAHAM: Good morning.

THE AUDIENCE: Good morning.

CHAIRMAN GRAHAM: My cell phone says 9:00, and all my colleagues are circled around me. So, I think it's time to start the meeting.

We just finished with Witness Herndon yesterday. So, first witness today will be Gulf's witness.

MR. GRIFFIN: Thank you, Mr. Chairman. And we would call Mr. John Floyd.

EXAMINATION

BY MR. GRIFFIN:

Q Morning, Mr. Floyd.

A Good morning.

Q You were sworn yesterday; is that right?

A Yes, that's correct.

Q Okay. Would you please state your name and business address.

A Yes, my name is John Floyd. My business address is Gulf Power Company, 1 Energy Place, Pensacola, Florida 32520.

Q And by whom are you employed and in what

capacity?

A I'm employed by Gulf Power as the manager of strategy and market intelligence.

Q And did you prepare and cause to be filed 30 pages of prefiled direct testimony in this proceeding?

A Yes, I did.

Q Do you have any changes or corrections to that testimony?

A No, I do not.

Q And if I were to ask you the same questions contained in your prefiled direct testimony here today, would your answers be the same?

A Yes, they would.

MR. GRIFFIN: And Mr. Chair, his prefiled testimony -- we would ask that it be inserted into the record as though read, please.

CHAIRMAN GRAHAM: We will insert Mr. Floyd's prefiled direct testimony into the record as though read.

(Whereupon, Witness Floyd's prefiled direct testimony was inserted into the record as though read.)

Gulf Power Company

Before the Florida Public Service Commission
Prepared Direct Testimony of
John N. Floyd
Docket No. 20190016-EG
Commission Review of Numeric Conservation Goals
Date of Filing: April 12, 2019

Q. Will you please state your name, business address, employer and position?

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

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

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

Q. Have you previously testified before this Commission?

A. Yes.

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

A. The purpose of my testimony is to propose seasonal peak demand and annual energy conservation goals for Gulf Power for the period 2020 through 2029.

Q. Please describe how your testimony is organized.

A. My testimony is organized as follows:

Section 1: Proposed Goals and Accomplishments

Section 2: Overall Process to Develop Goals

Section 3: Statutory Adherence

Section 4: Sensitivities

Section 5: Additional Supporting Information

Section 6: Conclusions

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

A. Yes, I have. I am sponsoring Exhibit JNF-1, which includes the following schedules:

Schedule 1 Table of Proposed Goals for 2020-2029

Schedule 2 Current DSM Program Details

Schedule 3 Technical Potential Results

Schedule 4 Economic Potential Results

Schedule 5 Achievable Potential Results

Schedule 6 Economic Potential Fuel Sensitivity

Schedule 7 Economic Potential Payback Sensitivity

Schedule 8 Annual Bill Impact for 1,200 kWh/Month Residential Customer

Section 1: Proposed Goals and Accomplishments

Q. What residential and commercial/industrial goals are appropriate and reasonably achievable for Gulf Power Company for seasonal peak demand and annual energy conservation for the period 2020 through 2029?

A. The Company's proposed seasonal peak demand and annual energy conservation goals for the period 2020 through 2029 are contained in Schedule 1 of my Exhibit (JNF-1). In total, Gulf is proposing a summer peak demand goal of 15 megawatts (MW), winter peak demand goal of 11 MW, and cumulative annual energy conservation goal of 0 gigawatt-hours (GWh). These goals are based upon Gulf's planning process and the results of technical, economic and achievable potential studies conducted by Nexant, Inc. (Nexant). The goals represent the total cost-effective winter and summer peak MW demand reductions and the annual GWh savings at the generator which are reasonably achievable through implementation of DSM programs in Gulf Power's service area for the residential and commercial/industrial customer classes. The primary basis for the goals are the MW and GWh associated with estimated maximum adoption of measures that passed both the Rate Impact Measure (RIM) and the Participant's Test (PT) as reflected in the achievable potential results prepared by Nexant for Gulf Power.

Q. What is the primary driver behind the decrease in Gulf Power's proposed goals relative to its current DSM goals?

A. The primary driver is reduced cost-effectiveness of energy efficiency (EE) potential. In total, the avoided cost benefits associated with EE measures have decreased since 2014. The largest change is in avoided fuel benefit, with decreases in transmission and distribution benefits as well. These factors, when incorporated into the cost-effectiveness calculations for EE measures, result in lower overall cost-effectiveness for EE as a resource in meeting the Company's loads over the 2020-2029 period.

Q. Please elaborate regarding the relationship between the level of avoided cost benefits and DSM goals.

A. Avoided costs are the benefits of DSM initiatives. These benefits are in the form of capital and O&M costs that are avoided by implementation of DSM initiatives. These benefits are quantified based on both the demand and energy savings of a DSM measure, as well as the timing and cost of the capacity and O&M costs being avoided. The avoided cost benefits relate to the level of DSM goals through the cost-effectiveness evaluation process. That process is essentially comparing the benefit of avoiding supply costs with the cost of implementation of a DSM initiative. So, higher avoided cost savings translate to more potential DSM initiatives and correspondingly higher goals. Likewise, lower avoided cost savings translate to less potential to offset with DSM initiatives and correspondingly lower goals.

Q. Does a reduction in DSM goals indicate that the objectives of the Florida Energy Efficiency and Conservation Act (FEECA) are not being met?

A. No. The objectives of FEECA are being accomplished not only by demand and energy reduction goals for subject utilities, but also through building codes, appliance efficiency standards, and an overall increase in the availability of energy conserving products in the marketplace.

Q. How are building codes accomplishing the objectives of FEECA?

A. Building codes establish minimum construction standards for new homes and businesses. These construction standards include energy standards that ensure newly constructed facilities meet minimum energy efficiency performance requirements. For homes, these standards generally relate to thermal performance which impacts heating and air conditioning energy consumption. This is particularly important in Florida, as the state has one of the highest number of cooling degree days of any state in the country. These standards currently specify minimum insulation and window thermal performance requirements and other requirements, including air duct performance testing, to ensure these aspects of home construction are contributing to improved energy use in the state.

Q. Similarly, how do appliance efficiency standards accomplish the objectives of FEECA?

A. Appliance efficiency standards are federal manufacturing standards for energy consuming appliances including lighting, refrigeration, heating and cooling, water heating and other devices. These standards drive

development of new technologies and manufacturing processes that result in improved efficiency of appliances. These standards complement building codes to improve energy efficiency in homes and businesses, benefiting consumers through reduced energy consumption. Appliance efficiency standards are extremely effective in achieving energy savings. Through 2028, appliance efficiency standards are projected to reduce Gulf's expected energy sales in the residential and commercial sectors by 892 GWh below what they would have been absent these standards. Nationally, the collective impact of building codes and appliance efficiency standards is projected to reduce energy consumption in the residential, commercial, and industrial sectors by 8.6% by 2025, as compared to projected baseline electricity consumption.

Q. How do utility programs and initiatives complement these codes and standards?

A. Utilities play two key roles in improving the overall efficiency of energy utilization. The first role is through education. Gulf Power provides information to customers about ways to save energy through our energy audit programs, on the Company website, through our call center, through community events and presentations, and through various other media channels. Since 2010, the Company has completed over 124,000 energy audits, providing education and information about specific ways customers can reduce energy consumption. Second, utilities offer specific programs that are designed to encourage adoption of technology that is above these minimum codes and standards to the extent the benefits in avoided or

deferred generation, transmission, and distribution investment costs exceed the cost of implementing the program. Since participation in these programs is voluntary, it is important to avoid subsidization of these costs by customers who cannot or elect not to participate.

Q. Are there other ways customers learn about energy efficient products or ways to save?

A. Yes. Beyond the educational initiatives of utilities, consumers are exposed to a wide array of educational resources and products that can help them save. These include governmental resources, product manufacturers and retailers. For example, many lighting manufacturers include energy saving information on product packaging to assist a consumer in evaluating the benefit of purchasing one product over another. Ultimately the consumer chooses the product that best fits their judgement of cost and benefit.

Q. Please discuss the Company's current DSM program offerings, including the measures included in each program, participation rates, cumulative savings, and program impacts relating to building code and appliance efficiency standards.

A. Gulf Power's current DSM program offerings are included in the DSM Plan approved by the Commission via Order No. PSC-15-0330-PAA-EG. Program details can be found in Schedule 2 of my Exhibit.

Section 2: Process to Develop Goals

Q. Please provide an overview of the process used to determine the proposed goal levels.

A. Gulf Power developed proposed goals based on a progressive process of:

- Determining the full technical potential for energy and demand savings (technical potential).
- Determining the subset of that potential that is cost-effective under both the RIM and Total Resource Cost (TRC) cost-effectiveness screens as compared to Gulf's resource needs from the most recent integrated resource plan (economic potential).
- Determining the reasonably achievable potential of energy and demand savings over the next ten years considering the circumstances of the company's service area, existing programmatic activity, and historical experience (achievable potential). Gulf Power also reflected consideration of the Participant cost-effectiveness test and the two-year payback screen during the Achievable Potential.
- Nexant assisted all or some of these analyses for the seven Florida utilities subject to requirements of FEECA (FEECA Utilities)

Q. Why did the FEECA Utilities engage a consultant to assist in this process?

A. The last full Technical Potential Study for each utility was conducted in the 2009 Goals docket. Since that time, there have been changes in the available technical potential due to baseline technology changes, market saturation of technologies, and utility program adoption. The utilities

collectively agreed to seek the expertise of an industry expert consultant to evaluate the current technical potential for each utility's area. An industry expert consultant brings independence to this process, as well as a broad base of experience to ensure a thorough, comprehensive study is completed.

Q. Why did the utilities work together in this process?

A. The approach used in this goal setting process had several benefits. It offered an opportunity for consistency across the utilities in development of the Technical Potential Study. The FEECA Utilities successfully developed a common scope for the study and jointly selected Nexant to conduct portions of the study specific to their needs. This approach also provided an opportunity for each of the participating utilities to gain insight from experiences of the others, which has led to more robust results along each phase of the study.

Q. In general, what was the scope of Nexant's work in preparation of goals for this filing?

A. Nexant completed the Technical Potential Study for each of the FEECA Utilities. This study includes an assessment of technical potential for demand and energy savings from EE, Demand Response (DR) and Distributed Energy Resources (DER). Nexant Witness Herndon describes in his direct testimony the particular steps Nexant performed for each of the FEECA Utilities.

Q. Is Gulf utilizing Nexant to assist with any other steps in the process of developing the proposed goals?

A. Yes, as discussed later in my testimony, Nexant quantified the economic potential (MW and GWh) associated with the measures that were determined by Gulf to pass the RIM and TRC tests. Nexant also performed the achievable potential analysis associated with the proposed goals for Gulf.

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

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

Q. How was the comprehensive DSM measure list developed for the Technical Potential Study?

A. The starting point for the current measure list was the measures analyzed in the 2014 FEECA Technical Potential Studies. These lists were independently reviewed by each FEECA Utility and suggestions for modifications to the list were aggregated into the list of measures provided to Nexant.

In addition, Nexant worked with the FEECA Utilities to review the initial measure list to determine applicability for the 2020 to 2029 period based on current technologies and codes and standards. Nexant also incorporated measures from other recent potential studies conducted around the country, as well as their experience designing, implementing, and evaluating DSM programs throughout the U.S.

Additionally, the Southern Alliance for Clean Energy (SACE) reviewed the measure list and provided comments on measures included in the residential, commercial and industrial lists, as well as other non-measure specific comments which the FEECA Utilities considered.

Ultimately, the study included 278 unique EE, DR, and DER measures in the development of Gulf's proposed goals. A full listing of these measures can be found in the Appendix of Nexant's Market Potential Study (MPS) reports. Each measure was evaluated in multiple building-types and

against multiple base cases resulting in over 4,000 individual measure permutations.

Q. How were the measure savings impacts and costs for the participant developed?

A. A description of the process used to develop measure savings impacts and costs for the participant is included in Section 4.2 of the MPS of Demand Side Management for Gulf Power and Nexant Witness Herndon's testimony.

Q. How were DR measure savings impacts identified for technical potential?

A. A description of the process used to develop DR measure savings impacts is included in Section 4.3 of the MPS of Demand Side Management for Gulf Power and Nexant Witness Herndon's testimony.

Q. How were renewable technologies' savings impacts identified and evaluated?

A. A description of the process used to develop renewable technologies savings impacts is included in Section 4.4 of the MPS of Demand Side Management for Gulf Power and Nexant Witness Herndon's testimony.

Q. Did Nexant consider the interactions between EE, DR and DER in their assessment of technical potential?

A. Yes. Nexant interactively analyzed the impacts of EE, DR, and DER in order to avoid overstating the potential. This analysis is described in

Section 5.1.4 of the MPS of Demand Side Management for Gulf Power and Nexant Witness Herndon's testimony.

Q. What are the results of the Technical Potential Study for Gulf?

A. The Technical Potential Study projects a total savings potential for EE measures of 621 MW Summer demand, 328 MW Winter demand, and 2,568 GWh annual energy. The technical potential for DR measures is 958 MW summer demand and 1,098 MW winter demand. The technical potential for DER measures is 452 MW summer demand, 472 MW winter demand, and 4,267 GWh annual energy. A breakdown of these results can be found in Schedule 3 of my Exhibit.

Q. What is the next step in the process?

A. The next step is to determine preliminarily the amount of the technical potential that may be cost-effective to pursue. This is called the economic potential.

Q. Please describe what is meant by economic potential.

A. Economic potential is the amount of technical potential determined preliminarily to be cost-effective by applying Commission-approved cost-effectiveness tests to the measures in the technical potential. These are the RIM, TRC, and PT. The Commission has requested two sets of economic potential, one based on a set of measures that pass the RIM and the PT test and another based on a set of measures that pass the TRC and the PT test.

Q. Please describe the three cost-effectiveness tests in more detail.

A. The PT, as the name implies, measures cost-effectiveness from the perspective of the participating customer. This test considers bill savings and incentives as benefits and the participant's out-of-pocket expenses as costs. It is important that any measure included in any final DSM Plan is cost-effective to the participant.

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

The TRC test looks at cost-effectiveness of an efficiency measure from the joint perspective of the utility and customer base as a whole. In this way, TRC measures only whether aggregate total costs are increased or decreased. The TRC test considers the same benefits as the RIM test

while including just program implementation (not including customer incentives) and incremental equipment expenses as costs. Importantly, the TRC test does not provide any measure of rate pressure or cross-subsidy. For this reason, the TRC test should never be used without simultaneous consideration of the RIM test results to ensure non-participating customers are not subsidizing customers who are voluntarily participating in an efficiency program.

Q. How was the economic potential for the measures determined?

A. Utilizing the list of measures and their associated energy and demand savings benefits as well as measure costs, Gulf began assessing the cost-effectiveness of these measures. Gulf used the avoided cost data associated with its most current integrated resource plan as the basis for these evaluations.

Q, What avoided unit did Gulf use in its evaluations?

A. Consistent with Gulf's April 2019 Ten Year Site Plan filing, a 595 MW combined cycle unit with an in-service date of 2024 was used for the cost-effectiveness evaluations.

Q. Please describe the other "base case" assumptions used in this analysis.

A. The base case analysis for evaluating the cost-effectiveness of measures in this study includes projections of fuel costs, load and energy sales, and generation costs over the planning period. The fuel cost projections used for this evaluation were updated consistent with Gulf's 2019 Ten Year Site

Plan and are associated with the technology of the next avoided unit. The load and energy forecast was developed based on a number of inputs, including projections of economic growth, customer growth, and energy savings. The energy savings incorporated resulted from both market-driven forces, such as codes and standards, as well as Gulf's DSM programs. Generation costs were based on current projections of capital, operating, and environmental compliance expenses associated with the next planned generation unit needed to satisfy the load requirements. No carbon costs were assumed in the development of Gulf's resource plan; therefore, no such costs were included in evaluation of the DSM measures. These cost inputs were used to develop the avoided cost values used in evaluation of the measures included in the Technical Potential Study.

Q. How were the measure costs and savings evaluated in Gulf's analysis?

A. Utilizing a spreadsheet-based model, Gulf Power compared the measure savings impacts and costs against a series of avoided cost projections in accordance with the formulas for the RIM and TRC tests. In developing the list of measures comprising the economic potential, no administrative costs, incentives, or free-ridership assumptions were included. This was done in order to provide the largest set of measures for further consideration.

Two lists of measures were developed: a set that passed RIM and a set that passed TRC. These lists were then provided to Nexant in order to

enable Nexant to calculate the economic potential MW and GWh associated with each measure. Since the lists only included measures that passed RIM or TRC, the resulting MW and GWh potential is considered the economic potential.

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

A. In this context, a free-rider is a customer whose adoption of a DSM measure would have occurred even in the absence of any utility program or incentive. As required by Commission rule, the goals set for energy and demand reductions must account for the effects of free-ridership. Measures that have a customer payback of less than two years without any utility incentive are considered to already present the customer with a reasonable economic proposition and, therefore, are not included in the proposed goal. If included as part of a utility's goal, the expense associated with promotion of these measures would be an unnecessary cost burden on the non-participating utility customers because an economically rational participant would adopt these measures even without a utility program.

The Commission has consistently endorsed the two-year payback screening mechanism as an appropriate means of addressing the free ridership regulatory requirement. Most recently, in its 2014 Goals docket order, the Commission stated the following: "We have consistently approved goals based on this methodology in our previous DSM goals

setting proceedings. While the selection of the most appropriate approach to account for free riders as required by Rule 25-17.002(3), F.A.C., is discretionary, the overwhelming evidence in this case suggests that the discretionary balance point continues to be a two-year payback period." See Order No. PSC-14-0696-FOF-EU at page 25.

Q. What is the economic potential associated with the RIM and TRC passing measures?

A. Nexant calculated the economic potential for EE to be 75 MW Summer demand, 39 MW Winter demand, and 114 GWh annual energy for the measures passing RIM. The economic potential for EE measures passing TRC is 348 MW Summer demand, 297 Winter demand, and 1,762 GWh annual energy. For DR, the economic potential is 958 MW Summer demand, 1,098 Winter MW demand for both RIM and TRC. For DER, the economic potential for the measures passing RIM is 65 MW Summer demand and 222 MW Winter demand. The economic potential of DER for TRC is zero, as no measures pass. Again, this represents the subset of technical potential that is cost-effective considering only the measure impacts and some of the costs associated with a measure, and it does not represent the amount of energy and demand savings achievable in the market over the next ten-year period. A breakdown of these savings is shown in Schedule 4 of my Exhibit.

Q. Was there additional screening performed on the measure list?

A. Yes. Gulf performed additional screening which included consideration of typical administrative costs in order to ensure any measures passing through for achievable potential modeling would be cost-effective in each of the RIM and TRC portfolios. In addition, measures that had cost/savings combinations that resulted in customer payback of less than two years without any incentives were removed by Gulf at this stage of the analysis.

Gulf then conducted further screening of the measures to determine which measures also passed the PT. For measures not initially passing the PT in the RIM portfolio, incentive dollars were applied to increase the PT score to the point the RIM score fell to 1.0. Measures that still did not pass the PT with these maximum incentives were eliminated from further consideration. For the TRC screen, the incentive is not considered in the test, so Gulf increased the incentive level to a maximum amount that brought the customer payback to two years. If this incentive level did not bring the PT score to at least 1.0, the measure was eliminated from further consideration.

Upon completion of this screening process, Gulf Power provided Nexant with the remaining RIM and TRC-passing measures, along with each measure’s maximum incentive level, to be modeled for achievable potential.

Q. What was the next step in the process of determining Gulf Power's proposed DSM goals?

A. The next step was to determine the achievable potential. This step involved projecting likely customer adoption of the remaining DSM measures in order to establish a cost-effective goal for demand and energy savings.

Q. How was the achievable potential estimated in this study?

A. Utilizing the incentive levels developed by Gulf in the process previously described, Nexant estimated the achievable potential for Gulf using their adoption modeling tools. Historical Gulf program participation was utilized to form a baseline of potential adoption of similar programs and measures. Nexant also considered adoption of similar programs and measures in other utility areas as an input to what could be feasible for Gulf. More details about this process are described in Section 7 of the MPS report for Gulf included with Nexant Witness Herndon's testimony.

Q. What are the results of the achievable potential analysis performed by Nexant?

A. Nexant's achievable potential analysis estimates the achievable potential over the period 2020-2029 in the RIM portfolio is 5 MW Summer demand, 2 MW Winter demand, and 6 GWh annual energy for EE measures; 15 MW Summer demand and 11 MW Winter demand for DR measures; and zero for DER measures. The potential in the TRC portfolio is 40 MW Summer demand, 29 MW Winter demand, and 222 GWh annual energy

for EE measures; 15 MW Summer demand and 11 MW Winter demand for DR measures; and zero for DER measures. The sum of the achievable potential for EE and DR is shown on Schedule 5 of my Exhibit.

Q. Do the Company's proposed goals reflect the full achievable potential as estimated by Nexant?

A. No. Gulf Power's proposed goals for residential energy and demand reduction and commercial/industrial demand response match the results contained in Nexant's Achievable Potential Study. As noted previously, Nexant's projection of achievable potential for EE measures in the commercial/industrial sector totaled 5 MW Summer demand, 2 MW Winter demand, and 6 GWh energy over the ten-year scope of the study.

Q. Why is Gulf proposing a commercial/industrial goal that does not include the 7 MW of demand savings and 6 GWh of energy savings associated with the EE measures reflected in Nexant's Achievable Potential Study?

A. The Achievable Potential Study projects adoption of each specific measure for any and all building types for which the measure is cost-effective. In this case, the small handful of EE measures that comprise the achievable potential in the commercial/industrial sector are only cost effective in very limited building types and have very low adoption projections. For example, the Energy Recovery Ventilation System measure is cost-effective in only 2 of 13 building types and has annual adoption projections ranging from 0 to 31 participants over a ten-year period. For the industrial measures, no individual measure has an

adoption projection greater than 1 participant per year. If Gulf Power's commercial/industrial goal was set at the level reflected in the Achievable Potential Study, Gulf would ultimately need to design a DSM program which was comprised of the handful of EE measures identified in the Achievable Potential Study. Developing and implementing a DSM program centered upon such a small number of measures which are, in turn, limited in application to a very few uniquely situated commercial customers would be highly impractical from a cost, administrative and customer adoption perspective.

Section 3: Statutory Adherence

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

A. Yes. Through the utility-sponsored study performed by Nexant, a robust and comprehensive assessment of the full technical potential of all available demand-side conservation and energy efficiency measures, including demand-side renewables has been completed. This assessment included the evaluation of 278 individual EE, DR and DER measures.

Q. Does Gulf Power's Technical Potential Study evaluate supply-side conservation and efficiency measures?

A. No. Consistent with past DSM Goals proceedings, Gulf Power's technical potential analysis does not include an assessment of supply-side

conservation and efficiency opportunities. In past DSM Goals proceedings, this Commission has recognized that supply side measures require substantially different analytical methods than do demand-side systems and provide results that are difficult to combine with conservation goals. As a consequence, the Commission has consistently determined that evaluation of opportunities for supply-side efficiency improvements is better addressed in other contexts, such as the Commission's review of utility Ten Year Site Plans. Although supply-side efficiencies were not considered in the Company's technical potential analysis, Gulf Power routinely considers energy efficiency in its ongoing generation, transmission, and distribution planning process.

Q. Please discuss how supply-side efficiencies are incorporated in Gulf's planning process.

A. Supply-side efficiencies are considered in many parts of Gulf's generation, transmission, and distribution planning processes. First, efficiency is at the core of the integrated planning process. It is through this process that the most efficient resource plan is put forth to meet Gulf's load requirements. This process considers all resources available to meet the company loads and selects any required generation technologies based not only on capital costs, but also on the variable costs of production including fuel. The resulting analysis selects the most cost-efficient alternative. The concept of efficiency carries through to operations of the generation fleet as well. The dispatch of generating units includes each unit's fuel efficiency, or heat rate, in the economic dispatch equations such

that the most cost-efficient mix of generators is meeting supply at any point in time. Similarly, analysis of the transmission and distribution system considers improvements that resolve thermal issues thereby reducing line losses. Capacitor banks are an example of such an improvement.

Q. How do these supply-side efficiencies impact demand-side management programs?

A. Supply-side and demand-side alternatives are both intended to produce the most cost-efficient resource plan to satisfy the Company's loads. Since they are both compared in the integrated resource planning process, the more efficiently the supply-side operates, the less cost-effective demand-side alternatives are to pursue.

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

A. Yes. Through the Achievable Potential Study performed by Nexant, a robust and comprehensive assessment of the full achievable potential of demand-side conservation and energy efficiency measures, including demand response and demand-side renewables, has been completed. This assessment included modeling projections of achievable potential in both a RIM/PT and TRC/PT portfolio.

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

A. No. In past FEECA proceedings, the Commission determined that it was appropriate to set goals equal to zero in cases where no DSM measures were found to be cost-effective. See Order Nos. PSC-00-0588-FOF-EG; PSC-00-0587-FOF-EG; PSC-04-0768-PAA-EG; PSC-04-0767-PAA-EG. Given that no renewable measures passed the Commission's approved cost-effectiveness criteria, setting renewable goals at a level above zero in this proceeding would not be appropriate.

Q. Aside from establishing separate goals for demand-side renewable energy systems, are there other actions that Gulf or the Commission has taken, or can take, to encourage the development of demand-side renewable energy systems?

A. In 2008, the Commission adopted amendments to Rule 25-6.065, F.A.C. providing for expedited interconnection of small customer-owned renewable generation and allowing for net metering of excess energy. In its 2014 DSM Goals order, the Commission declined to establish separate goals for renewable systems and held that "the rule is an appropriate means to encourage the development of demand-side renewable energy, as it expedites the interconnection of customer-owned renewable energy systems and benefits customers through net metering." See Order No. PSC-14-0696-FOF-EU at p. 48. As evidence of this rule's effectiveness in increasing the adoption of demand-side renewable energy systems, since 2008 over 1,200 residential and commercial renewable energy systems

have been interconnected on Gulf's grid with a capacity over 7,500 kW. Also, Gulf does, and will continue to, provide education concerning renewable energy technologies, including solar, on its website and through customer advisors across Northwest Florida.

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

A. Consistent with its precedent, the Commission should continue to use the combination RIM and PT cost-effectiveness tests coupled with the two-year payback criterion to set goals for Gulf Power. This combination of tests provides an appropriate balance between participating and non-participating customer benefits and ensures downward pressure on overall electric rates while still supporting appropriate levels of conservation activities over the period 2020 through 2029.

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

Q. Do Gulf Power's proposed DSM goals appropriately reflect consideration of free riders?

A. Yes. Consistent with the Commission's precedent, Gulf Power utilized a two-year payback criterion to screen for free ridership.

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

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

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

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

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

A. Yes. Gulf is not currently incurring costs associated with existing state or federal regulations on the emissions of greenhouse gases and, therefore, Gulf has appropriately not included assumptions of costs for greenhouse gas emissions in the development of proposed goals.

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

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

Section 4: Sensitivities

Q. Has Gulf completed any sensitivities v. the RIM and TRC Base Cases?

A. Yes. Gulf and Nexant performed additional economic potential screening on the DSM measures included in the technical potential for alternative fuel cost projections and free-ridership periods as requested in the Order Establishing Procedure in this docket. The purpose of these additional evaluations was to determine how sensitive the economic potential is to these factors. The first sensitivity was performed for two additional fuel cost scenarios, "low fuel" and "high fuel." Since fuel cost projections are an input in the cost-effectiveness evaluations, different fuel cost assumptions can increase or decrease the avoided cost benefits of each

measure's savings, and, consequently, the cost-effectiveness results. Each of these fuel cost projections represents a planning scenario utilized by Gulf Power in the normal integrated resource planning process. A summary of these results can be found in Schedule 6 of my Exhibit.

The second sensitivity was for shorter and longer free-ridership periods. For this evaluation, Nexant calculated the economic potential utilizing a one-year (shorter) and three-year (longer) payback period to determine how sensitive the economic potential was to these alternate free-ridership periods. This evaluation was completed by removing measures from the economic potential for which customer payback was less than one or three years without any utility-provided incentive. A summary of these results can be found in Schedule 7 of my Exhibit.

Section 5: Additional Supporting Information

Q. For Gulf Power, what is the projected annual bill impact on residential customers using 1,200 kWh/month resulting from these proposed goals?

A. The annual bill impact associated with Gulf's proposed goal (RIM portfolio) and TRC portfolio is reflected in Schedule 8 of my Exhibit. These bill impacts reflect the projected costs associated with achieving the goals associated with EE, DR, and DER measures addressed in this proceeding. In summary, the annual bill impact of the RIM-based proposed goal is $5 less than the TRC portfolio in 2020, growing to over $15 per year less than the TRC portfolio in each of the years 2026 to 2029.

Section 6: Conclusions

Q. What are Gulf's proposed DSM Goals for 2020-2029?

A. Gulf proposes that the Commission approve the DSM Goals set forth in Schedule 1 of my Exhibit. The goals represent the total cost-effective winter and summer peak MW demand reductions and the annual GWh savings at the generator which are reasonably achievable through implementation of demand-side programs in Gulf Power's service area for the residential and commercial/industrial customer classes. These goals are based on measures passing the RIM and PT cost-effectiveness tests and avoid free-ridership through application of the two-year payback criterion.

Q. Has Gulf Power used a sound and reasonable process consistent with Florida's statutory and rule-based requirements to determine its 2020 through 2029 DSM goals?

A. Yes. Gulf Power has proposed goals based on a full assessment of technical, economic, and achievable potential for demand-side conservation and efficiency measures, including demand response and demand-side renewable energy systems in a manner consistent with requirements of section 366.82(3), Florida Statutes, and FPSC Rule 25-17.0021.

Q. Does this conclude your testimony?

A. Yes.

BY MR. GRIFFIN:

Q And Mr. Floyd, did you have any exhibits to your testimony?

A Yes, I did.

Q And that would consist of Exhibit JNF-1, containing eight schedules; is that right?

A Yes.

Q And do you have any corrections to those exhibits?

A No, I do not.

MR. GRIFFIN: And Mr. Floyd's exhibit, Mr. Chair, has been marked as hearing Exhibit 35.

CHAIRMAN GRAHAM: Duly noted.

BY MR. GRIFFIN:

Q Mr. Floyd, would you please summarize your testimony.

A Yes.

Good morning, Commissioners. Gulf Power's goals in this docket are based on a robust statutory process that's been time-tested. The same process has supported substantial DSM achievements by Gulf for many years.

This process ensures that our general body of customers is not harmed through cross-subsidies and rates higher than they otherwise would be. The process

ensures that cost-effective and reasonably-achievable energy and demand savings are captured and deployed.

The primary considerations for this Commission have historically been cost-effectiveness and avoidance of cross-subsidies. Regarding cost-effectiveness, the Commission should continue utilizing the RIM test as the criteria for establishing goals. The RIM test ensures no cross-subsidy occurs between customers who cannot or choose not to participate in utility-sponsored DSM programs and those who do. In this way, the RIM test ensures that all customers benefit.

Another key aspect of this process is addressing free-ridership. Gulf supports continued use of the two-year payback methodology, which is a logical, efficient-to-implement tool that's based on longstanding Commission precedent.

In this proceeding, Gulf Power's market-potential study began by evaluating a comprehensive list of almost 300 energy-efficiency, demand-response, and demand-side renewable measures.

With the assistance of Nexant, Gulf carefully analyzed these measures and over 4,000 permutations of market applicability to determine which were cost-effective and the reasonably-achievable potential of those that were.

The fact that the results of Gulf's market-potential study show less cost-effective energy and demand savings does not mean the process is broken. To the contrary, it appropriately recognizes the combined effects of increasingly-stringent building codes and appliance-efficiency standards and decreases in utility-avoided costs including fuel.

These combined impacts naturally result in less energy and demand savings that can be cost-effectively gained through utility-sponsored demand-side management. And demand-side renewables have experienced tremendous growth since the end of utility incentives in 2015. So, customers are receiving the benefits of energy efficiency and demand-side renewables in the market in the most-efficient way without unnecessary incentives.

In closing, my testimony supports goals for Gulf that are the result of the robust process established for Florida, a process that appropriately focuses on cost-effectiveness and minimization of cross-subsidies.

Thank you.

MR. GRIFFIN: We tender the witness for cross-examination.

CHAIRMAN GRAHAM: Thank you.

Mr. Floyd, welcome.

THE WITNESS: Thank you.

Ms. Christensen, good morning.

MS. CHRISTENSEN: Good morning.

CHAIRMAN GRAHAM: Welcome to the front row.

MS. CHRISTENSEN: Thank you.

We have no questions of this witness on his direct testimony. Thank you.

CHAIRMAN GRAHAM: Fantastic.

Mr. Moyle.

MR. MOYLE: I just have a couple.

EXAMINATION

BY MR. MOYLE:

Q You talked about cross-subsidies. Why -- why should the Commission avoid cross-subsidies?

A Well, I think, simply, it's a matter of -- of not having some customers pay for things that they don't benefit from or having some customers pay for things that other customers receive the benefit from.

Q All right. So, if there -- there's a great new program, but it's not -- it's not cost-effective under the RIM test, then, has the historical practice been to say, well, we're not gonna -- we're not gonna pay for that because it involves cross-subsidization?

A That's correct.

Q Yeah. And with respect to your comment about standards and measures -- those are building-code standards and also efficiency measures for equipment and things like that; is that right?

A Yes.

Q And -- and have you done any analysis or do you know -- because the -- the goals are -- are less -- the goals that you're suggesting are less than they have been, historically, right?

A Yes, they're less than they were in the previous proceeding.

Q Okay.

A That's correct.

Q Have you done any kind of analysis to say, well, some of that reduction is being picked up by measures and standards that the government has acted in other ways with respect to putting in place building codes or -- or energy-efficiency measures, and the savings that previously were related to goals are now being captured in standards and measures in another government program?

Have you looked at that or can you comment on that, please?

A Yes, and that is reflected in the study as a baseline for what the available potential is going

forward. In Gulf's case, through 2028, I believe it is, our forecast reflects --

CHAIRMAN GRAHAM: I'm going -- I'm going to cut you off here. This is too much like friendly cross. Let's move on.

MR. MOYLE: That -- that was my last question.

CHAIRMAN GRAHAM: Okay. Ms. Wynn, do you have any questions?

MS. WYNN: No, Mr. Chairman.

CHAIRMAN GRAHAM: Thank you.

Kelley?

MS. CORBARI: FDACS has no questions.

CHAIRMAN GRAHAM: SACE. Mr. Cavros, welcome back to the front row.

MR. CAVROS: Good to see you, Chairman Graham, Commissioners. Good morning.

EXAMINATION

BY MR. CAVROS:

Q Mr. Floyd, good morning. How are you?

A Good morning.

Q Mr. Floyd, you're Gulf Power's manager of strategy and market intelligence; is that right?

A Yes.

Q Okay. And you're here to support Gulf's proposed goals in -- in this docket, correct?

A Yes.

Q Okay. And if I'm not mistaken, you also supported Gulf's goals in 2014 and -- and also 2009. That's as far as I go back, but is -- is that correct?

A Yes, that's correct.

Q Yeah. Okay.

I'm going to ask you sort of a few basic questions. You know, we sometimes tend to jump into acronyms and numbers really quickly. So, these first few questions may seem a little basic. So, I apologize for that, but -- so, the Commission is -- is setting what is called demand-side management goals in this proceeding; is that correct?

A Yes.

Q Okay. And the utilities are required to meet the goals set by the Commission in this docket; is that right?

A Well, the utilities are required to endeavor to achieve those goals to the best of our ability, given the customers' willingness to participate in the programs.

Q And if you don't meet the goals, the Commission has the authority to assess penalties against utilities; is that correct?

A That's my understanding, yes.

Q And Gulf's goals are expressed in terms of summer megawatt, winter megawatt, and gigawatt hours, correct?

A Yes, that's correct.

Q So, let's focus on -- on gigawatt hours for -- for the benefit of any Gulf customers that may be watching the proceeding this morning. A gigawatt hour is a measure of energy use; is that right?

A Yes, that's correct.

Q And a residential-customer bill is typically expressed in -- in kilowatt hours monthly, correct?

A Yes.

Q Okay. And an average bill is -- or an average customer, residential, uses about 1,100 kilowatt hours a month; is that fair to say?

A That -- that's fair to say, 11- to 1,200 kilowatt hours a month.

Q Okay. And if you multiply kilowatt hours times a thousand, you get megawatt hours; is that right?

A Yes, that's correct.

Q And then if you multiply megawatt by a thousand, you get gigawatt hours, right?

A Yes.

Q Okay. And a gigawatt-hour goal, from -- from a goal-setting perspective, is a quantitative goal for

reducing your customer's energy use through energy-efficiency programs. Did I state that correctly?

A I -- I'm not sure. Could you ask that again, please?

Q Yeah, sure. So, the gigawatt-hour goals that -- that -- from a goal-setting perspective is a -- a quantitative goal for reducing overall customer energy use through energy-efficiency programs.

A Yes.

Q And a gigawatt-hour goal can also be referred to as -- as energy savings; is that accurate?

A Yes, that's fair.

Q And as a general matter, when customers reduce their energy use, they're saving money on their bills; is that right?

A Yes.

Q Okay. And the energy savings are accomplished through utility-sponsored energy-efficiency programs; is that right?

A Well, that's one of many ways that a customer could reduce their energy use, but yes, the utility-sponsored programs is one way.

Q Okay. And I'm referring to the goals that are -- that are set in this docket.

A (Nodding head affirmatively.)

Q And the -- the scale of those energy-efficiency programs are directly related to the goals that are set in this docket, correct?

A Yes.

Q And the goals are set for a ten-year period; is that right?

A Yes, that's correct.

Q And they're -- they're set for -- for two customer classes, right?

A Yes, for residential and for commercial/industrial customers.

Q Okay. And by residential, you mean a single-family homes, multi-family structures like -- like condominiums and manufactured homes; is that correct?

A Yes. Any customers that are -- are residential in nature, regardless of what building type they live in, that's right.

Q Okay. So, residential customers is essentially a family or families? If --

A Could be, yes.

Q So, if I use them interchangeably, you'd be okay with that? Okay.

A Sure.

Q And Gulf has approximately 1400- -- I guess 413,000 residential accounts or family accounts; is that

correct?

A Yes, that's correct.

Q Okay. And an average household is about two and a half persons in Gulf's territory?

A I -- I'm not familiar with what the average number of occupants per household is.

Q Uh-huh. Okay. If -- if it were two and a half persons per household, you would agree that there's about over a million people that are served by Gulf Power?

A That math works out that way, yes.

Q Okay. And by commercial customers, we mean building types like restaurants, offices, and schools; is that right?

A Yes, that's right.

Q And by industrial customers, we mean customers like manufacturing facilities?

A That's correct.

Q And Gulf has about 57,000 commercial accounts. Does that seem about right?

A That seems about right.

Q Okay. Can I turn your attention to your exhibit, JNF-1.

A Is that in this stack of exhibits here?

Q I -- I -- I apologize. This is in your

testimony.

A Okay.

Q Your direct testimony.

A Okay.

Q Okay. So, this is a table that provides the ten-year goals that -- that Gulf is proposing to this Commission for residential customers and -- and commercial/industrial customers; is that right?

A Yes, that's correct.

Q So, if you look at the "annual gigawatt hours" row, going across, I wanted to ask you a few questions about this table.

A Sure.

Q Okay. So, what is your family energy-savings goal or residential goal for 2020?

A I'm sorry. Which goal?

Q Your residential goal, annual gigawatt-hour goal -- or your energy-saving goal?

A The proposed annual gigawatt-hour goal is zero, which, again, is a result of the process that we go through here to evaluate over -- or almost 300 energy-efficiency and demand-response measures to determine which ones of those are cost-effective to pursue.

And in this case, the result of that rigorous

process, you know, produces this outcome of zero for energy efficiency, gigawatt hours.

Q And Mr. Floyd, we'll get to that rigorous process in a -- in a moment.

For 2021, what is your family energy-savings goal?

A I'm -- I'm sorry. I don't see a family energy-savings goal here --

Q Okay. That would be the residential. I -- I'm using them interchangeably, but your annual energy and gigawatt hours for residential.

A Zero.

Q Okay. And for 2022?

CHAIRMAN GRAHAM: Mr. Cavros, let's move on. They're zero all the way across.

MR. CAVROS: Uh-huh.

BY MR. CAVROS:

Q Are you -- so, Mr. Floyd, your total family energy-savings goal for the -- for the whole period is -- is zero; is that correct?

A The proposed residential goal for -- for the ten-year horizon of this is zero.

Q Uh-huh. And for your business or commercial and industrial energy-savings goals for the ten-year period -- what is that goal?

A The annual energy goal is zero.

Q And then for the -- for both the residential, or the family energy savings, and the commercial and industrial energy savings combined for the ten years -- what is that goal?

A That is the sum of the residential and commercial/industrial. And that is zero as well.

Q Mr. Floyd, in order to address so-called free-ridership, Gulf uses a -- a two-year payback methodology to eliminate measures from further potential analysis that are projected to have a two-year simple payback to customers, correct?

A Yes, that's correct.

Q And free-ridership refers to customers that will adopt an energy-efficiency measure on their own, correct?

A I would say, yes, that's a general -- generally-accepted definition.

Q And these customers are going to naturally adopt the measure, absent a utility program; is that correct?

A The assumption is that they would adopt, at a higher rate, due to the -- the economic-value proposition of having a relatively-short payback.

Q So, then, you would agree that they would

naturally adopt the measure, absent a utility program?

A I would agree that the premise of the two-year payback is that customers with -- with a short payback opportunity would reasonably adopt those measures at a higher rate than -- than measures that would have a much longer payback.

Q So, let me reframe the question, then. The customers are going to naturally adopt the measure because they're not waiting for a utility incentive; is that correct?

A Well, I would say sometimes that may happen; sometimes it may not.

Q Okay. Help me out with a definition here. I thought a free rider was a customer that adopts -- is provided a utility incentive that might otherwise naturally adopt the measure without a utility incentive; is that correct?

A I -- I believe that a free rider is a customer who would have otherwise adopted the measure, regardless of whether the u- -- utility incentive was available or not.

Q So, could you please turn to your -- to your testimony, if you could, Page 17, Line 12 to 15.

A Okay. I'm --

Q Okay. Great. And I'm -- I'm going to read

this out -- aloud: Measures that have a customer payback of less than two years without a utility centive -- a utility incentive are considered to already present the customer with a reasonable economic proposition and, therefore, are not included in the proposed goal.

By "reasonable," you mean reasonable to the customer, correct?

A Yes, I think reasonable in the sense that it is a short payback.

Q Okay. And "reasonable" assumes that the customer has adequate information about the measure, correct?

A Not necessarily; although, I would agree that having information is an important aspect of making any kind of decision.

Q "Reasonable" also assumes that the customer has the financial resources to install the measure, correct?

A It could be. Again, it's not really based on what resources the customer has available. Again, it's based more on the reasonableness of a short payback opp- -- savings opportunity.

Q Would you agree that commercial and industrial customers are generally more aware about the paybacks of

individual measures than families?

A Not necessarily. I've talked to a number of -- of families who very-closely monitor the paybacks of various efficiency opportunities. And I've -- and I've had similar conversations with business owners who -- who don't pay that much attention to it. You know, maybe they're focused on other aspects of their business. So, I would not draw that broad conclusion.

Q Well, let -- perhaps an example would be -- would be helpful. You would agree that a big-box store chain, like Walmart, would be more likely to have the financial resources and the information to -- than, say, a customer that shops at Walmart, a hard-working family struggling to put food on their table for their kids.

Who would have more information and more resources in that example?

A Again, I wouldn't speculate as to who would have -- have more resources or information. Certainly, customers like Walmart and -- and other large businesses like that do make, you know, great efforts at evaluating opportunities for efficiency adoption in their businesses, but I -- I -- I couldn't speculate as to which one would have more information.

Q Is it your testimony, then, that shoppers at Walmart have the same resources and information on

energy-efficiency measures, payback of energy-efficiency measures, as do executives and staff at Walmart?

A No, I don't believe I've stated that in my testimony.

MR. CAVROS: Could you -- I've got a few exhibits and I think I'm going to mark the first one, Chairman.

CHAIRMAN GRAHAM: The first one will be 308.

MR. CAVROS: Is -- is -- would be 308? Okay. This would be Excerpt No. 22.

MS. DZIECHCIARZ: Sorry, I believe we're on 307.

CHAIRMAN GRAHAM: 308. Mr. Moyle's was labeled 307.

I'm sorry. Mr. Cavros, which one are we labeling 308?

MR. CAVROS: So, this is Excerpt No. 22 from Gulf's response to SACE's first set of interrogatories.

CHAIRMAN GRAHAM: You said Excerpt 22?

MR. CAVROS: It -- it -- it -- the description is Excerpt No. 22.

MS. HELTON: It's a-ways down in the packet.

MR. CAVROS: Yes.

CHAIRMAN GRAHAM: Excerpt No. 22 from Gulf's

response to SACE's first set of interrogatories?

MR. CAVROS: Yes, sir.

CHAIRMAN GRAHAM: Okay. It's 308.

(Whereupon, Exhibit No. 308 was marked for identification.)

CHAIRMAN GRAHAM: All right, Mr. Cavros.

MR. CAVROS: All right. Thank you.

BY MR. CAVROS:

Q Mr. Floyd, are -- are you there?

A Yes.

Q Okay. Great.

You sponsored this exhibit; is that correct?

A Yes, I believe so.

Q Okay. And this is a question about the two-year payback. And the answer, starting at the second -- second sentence is -- and I'll read it into the record: Gulf does believe that utilizing a two-year payback methodology to address free-ridership in the goal-setting phase of this process is a reasonable, administratively-efficient proxy for screening those measures that are most likely to experience high free-ridership simply due to short payback.

The two-year payback screen is not a determination of how many Gulf customers have the information and resources to adopt measures of a two-

year payback or less, correct?

A Correct.

Q And you would agree that "administrative efficiency" means to achieve a goal with a minimum of time and expenditure?

A I -- I -- I -- I don't have an opinion about the definition of that.

Q Okay. Well, you used the term in your response, Mr. Floyd. I'm just trying to understand what you meant by "administratively efficient."

A Well, in this case, administrative -- "administratively efficient" simply was intended to demonstrate how this -- this tool can be used in the goal-setting process in a consistent, logical manner that -- that addresses free-ridership for the purposes of setting goals.

MR. CAVROS: Mr. Chairman, I would like to mark an exhibit. It's entitled "Excerpt No. 8 from Gulf's responses."

CHAIRMAN GRAHAM: We'll label that 309.

MR. CAVROS: It will be 309.

(Whereupon, Exhibit No. 309 was marked for identification.)

BY MR. CAVROS:

Q All right. Mr. Floyd, are you there?

A Yes.

Q Okay. Mr. Floyd, do -- you sponsored this exhibit, correct?

A Yes, I did.

Q The first sentence says, "Gulf exclusively utilized the two-year payback methodology;" is that correct?

A Yes.

Q And then there are two more sentences. And then the fourth sentence starts with: Other me- -- other methodologies, including customer surveys and historical trends, are more related to demand-side management program designs, which are not the subject of this proceeding.

Do you see that?

A Yes, I do.

Q So, you do surveys to gather information for demand-side programs, correct?

A I -- I'm sorry. What type of surveys would that be?

Q Sure. In your response, you reference customer surveys and historical trends that are more related to demand-side management program designs.

A Right. So, if -- if you look at the question there, the question asked about other methods. And the

example was surveys and historical trends. So, I was merely responding to the question to address those aspects of the question.

Gulf does not perform any customer surveys to attempt to measure free-ridership in a program.

Q Mr. Floyd, what's the simple payback, to me, in terms of years, for increasing my home attic insulation to an R-value of 38?

A I don't recall that off the top of my head.

Q Oh, I was asking specifically for me, in terms of years. If you could provide me some guidance on increasing my attic insulation to R38, what's the -- what's the payback in terms of years, for me, on that?

A I -- I don't recall that.

Q So, your answer is, you do not know?

A That's correct.

MR. CAVROS: I'm going to -- Chairman, I'm going to mark another exhibit.

CHAIRMAN GRAHAM: Sure.

MR. CAVROS: It's Excerpt No. 11.

CHAIRMAN GRAHAM: We'll label it 310.

Mr. Floyd, can I also get you to mark these as well, just in case the next witness has to answer these things?

THE WITNESS: Sure.

(Whereupon, Exhibit No. 310 was marked for identification.)

THE WITNESS: What was -- what was the number on this one?

CHAIRMAN GRAHAM: 310.

THE WITNESS: 310. Okay. Sorry. Thank you.

BY MR. CAVROS:

Q Mr. -- are you there, Mr. Floyd?

A Yes, I am.

Q That's okay.

A Thank you.

Q You sponsored the answer to this interrogatory; is that correct?

A Yes.

Q And the discount rate that Gulf used in its cost-effectiveness test was 7.25 percent; is that correct?

A Yes, that's correct.

Q And this represents the weighted cost of capital for Gulf; is that right?

A Yes.

MR. CAVROS: Chairman, I would like to enter -- or mark another exhibit, rather, Excerpt No. 2.

CHAIRMAN GRAHAM: Okay. We'll label that 311.

(Whereupon, Exhibit No. 311 was marked for identification.)

BY MR. CAVROS:

Q Mr. Floyd, this is a Gulf response to one of staff's interrogatories. And it's a table that shows natural-gas price-projection error rates. And it has columns that -- the first table has a Column 5, which represents the error rate of natural-gas price projections five years out. Do you -- do you see that, Column 5?

A Yes, I do.

Q And the row "Average"?

A Yes, I see that.

Q Okay. And that says minus 50.5 percent; is that correct?

A Yes. That's what's in the table, yes.

MR. CAVROS: Okay. Thank you.

Chairman, I would like to mark another exhibit. This would be Gulf's responses to safe's -- SACE's fifth set of interrogatories, Nos. 89 to 103.

CHAIRMAN GRAHAM: Okay. We'll give that 312.

MR. CAVROS: Okay.

(Whereupon, Exhibit No. 312 was marked for identification.)

COMMISSIONER POLMANN: Mr. Cavros, could you state that title again? What is the exhibit title?

CHAIRMAN GRAHAM: Gulf's responses --

MR. CAVROS: I'm sorry.

CHAIRMAN GRAHAM: -- to SACE's fifth set of interrogatories, Nos. 89 through 103.

COMMISSIONER POLMANN: Thank you, Mr. Chairman.

CHAIRMAN GRAHAM: Mr. Cavros.

MR. CAVROS: Thank you.

BY MR. CAVROS:

Q Mr. Floyd, if you could, turn to the first exhibit, Interrogatory No. 89. And I'm going to read the first sentence for you -- by the way, you sponsored these -- these responses, correct?

A I believe that is correct, yes.

Q Okay. The first line states: Gulf Power's load forecast did not assume that there would be no additional adoption by customer -- by customers of energy-efficiency measures above baseline codes and standards.

Did I read that correctly?

A Yes.

Q And the last sentence in that response says: The impacts of a naturally-occurring efficiency adoption

above baseline codes and standards are implicitly, not explicitly, captured in the forecast.

Did I read that correctly?

A Yes.

Q Okay. Could I turn your attention to the -- to No. 90 on the next page. In your answer, starting on the second sentence, it says: Instead, the forecast reflects the impacts in aggregate of naturally-occurring adoption of effici- -- of efficiency measures above baseline codes and standards.

Did I read that correctly?

A There's some more after that.

Q Okay. Right. To the extent that historic customer behavior reflects this naturally-occurring adoption?

A That's -- that's correct.

Q Thank you.

If I could ask you, for a moment, to skip 91 and go to 92.

A Okay.

Q And I'm going to -- thank you -- I'm going to -- I'm going to read that first sentence: As described on Pages 3 and 4 of Mr. Herndon's rebuttal testimony, the two known sources mean the two sources of naturally-occurring efficiency, codes and standards, and

baseline adoption of already-implemented EE technologies and measures, which are known to be accounted for in the utility forecast.

Did I read that correctly, sir?

A Yes, you did.

Q Okay. Great.

So, I'm going to ask you to flip back to 91, now, if you could, and I'm going to read the second sentence to you in that response: Where customers have previously installed EE equipment or technologies, either through a utility DSM program or on their own, and this is captured in the utility load forecast, this portion of the market is excluded from the technical potential.

Did I read that correctly?

A Yes, that's correct.

Q And then I'm just going to ask you to jump to 96, if you could. And that first sentence there on 96 says: Gulf contends the forecast provided to Nexant implicitly reflects naturally-occurring adoption of efficiency measures above baseline standards, et cetera.

A Well --

Q And --

A Could you -- could you read the rest of the sentence, please?

Q Sure, "... To the extent that historical usage reflects the impacts of these adoptions." Okay?

A That's correct. So, just to clarify this, the -- the forecast that Gulf provided to Nexant here reflects the impacts of customers having adopted measures above the -- the baseline, the code baselines over -- over time, some of that being in Gulf's DSM programs and some of that being outside Gulf's DSM programs.

But -- but this just captures the impact over time as a reduction in actual sales to customers. That impact does not increment over time. It merely just holds level over time and is used to establish the baseline from which to evaluate additional potential that's available through the demand-side management programs.

MR. CAVROS: Mr. Chairman, I would like to mark another exhibit. This would be bill impact, costs updated.

CHAIRMAN GRAHAM: We will give that 313.

(Whereupon, Exhibit No. 313 was marked for identification.)

BY MR. CAVROS:

Q Mr. Floyd, this is response from Gulf to one of SACE's request for production of documents. This

table contains the administrative costs of all measures that Gulf considered in its technical potential; is that correct?

A There's a number of pages of measures here. I'm not sure that this is all of them, but if that's -- if this was the entirety of our response, then -- then, yes, I would agree that that's what this appears to be.

MR. CAVROS: Okay. Mr. Chairman, I'd like to mark a -- another exhibit at this point. This would be Gulf's responses to staff's Rog 52.

CHAIRMAN GRAHAM: We'll give it 314.

(Whereupon, Exhibit No. 314 was marked for identification.)

BY MR. CAVROS:

Q Are -- are you there, Mr. Floyd?

A Yes.

Q Okay. If you could turn to the table that has the residential administrative-cost comparisons, I'd appreciate it. It's just a couple of pages in.

A Okay.

Q All right. Thank you.

So -- so, this table is -- has the administrative costs for measures from the costs used -- administrative costs for measures used in 2019 and the administrative costs that were used in 2014, correct?

A Yes.

Q And the -- the last FEECA proceeding, you used a flat cost of $50 per measure; is that right?

A That -- yes, that's what this table reflects.

Q And this time, you used a different methodology that apportioned cost based on kilowatt-hour savings; is that correct?

A Yes, Witness Herndon explained this yesterday. The approach that was used in this proceeding to estimate the administrative costs was a -- kind of an aggregate of multiple utility costs and -- and Gulf chose to use that as a -- as a -- as a more-representative approach to establishing those costs since many of these measures were not in Gulf's portfolio and we had no actual program experience for those measures.

Q Based on the methodology you used, you would agree that the necessary outcome is that measures with a higher kilowatt-hour savings would necessarily have a higher administrative cost, correct?

A As Witness Herndon explained, that was the methodology that was used, which is -- if I recall his testimony correctly, it's a common methodology used in these sorts of studies.

In -- in Gulf's case, you know, while these

numbers do vary a good bit, the impact of it was actually very minimal. Out of all the measured permutations that were evaluated, there were only two measured permutations out of, I believe, 442 that were actually screened out due to the administrative costs in Gulf's analysis.

Q Mr. Floyd, that wasn't my question. My -- my question was: If you apportion costs on -- on kilowatt hours saved, necessarily, measures with -- with higher kilowatt-hour savings would also have higher administrative costs, correct?

A Yes.

Q Thank you.

I just want to turn your attention to the first -- the -- the bottom row on the first table, "Residential 17 SEER, Air Source Heat Pump." The administrative cost for that was $239.92?

A Yes.

Q And the administrative costs for that in 2014 was $50, right?

A That was a number we used in 2014, yes.

Q And similarly, for the 21 SEER air source heat pump, which is on the next page, about four -- four rows down, that program and administrative cost was $392.52; is that correct?

A Yes.

Q And last time, it was $50, correct?

A Yes.

Q I'd like you to -- if you could, to go to residential ceiling insulation, which is -- you have to flip over the page. And it would be about three-quarters of the way down. Residential ceiling insulation, R12 to R38, had an administrative cost of $166.95 this time; is that correct?

A That is the value that was used for the evaluation here, for the screening, for the administrative-cost screening, that's correct.

Q And there's a similar measure about three columns down. Do you see it: Ceiling insulation R30 to R38?

A Yes.

Q I apologize. Let's go one column up, R2 to R38. And the cost there is $640.86; is that correct?

A Yes.

Q And that's an administrative cost.

So, the administrative cost to go from R2 to R38 ceiling insulation is almost four times higher than a similar measure for R12 to R38, correct?

A I -- I don't -- I haven't done that math in my head, but I'll -- I'll take your -- your calculation.

Again, these -- these administrative costs here are -- are used in this goal-setting process. And as Witness Herndon explained yesterday, they would not necessarily be representative of actual program administrative costs. That would depend on the nature of the program, how it was designed, how it was implemented in the market, the total scope of the portfolio. So, there could be a number of things that could drive what the actual cost was.

But for the purposes of screening these measures and evaluating the economic and achievable potential in this proceeding, it was necessary to establish some methodology. And the approach they took is a reasonable way to do it.

MR. CAVROS: Chairman, I'd like to mark another exhibit. This would be the 2019 excerpt from the GPC ten-year site plan.

CHAIRMAN GRAHAM: We'll give it 315.

MR. CAVROS: Thank you.

(Whereupon, Exhibit No. 315 was marked for identification.)

BY MR. CAVROS:

Q Mr. Floyd, this is an excerpt from Gulf Power's 2019 ten-year site plan that was filed April 1st, 2019, with the Commission. If I could ask

you to turn to the very last page of this excerpt, and it's a schedule entitled, "Gulf Power Company Energy Sources."

A Okay.

Q And the -- the third column down is -- is coal. And you see in -- it says that, in 2019, Gulf's coal use is 52.23 percent of net energy load. Am I reading that correctly?

A I'm -- I'm not very familiar with this table, so I can't say for certain if you're reading that correctly, but that would appear to be what that represents.

Q Thank you.

And by 2024, it has Gulf Power generating over 60 percent of its net energy load from coal. Do you see that, sir?

A I -- I see that value there, yes.

Q Now, Gulf had no benefit for carbon-emission compliance in its cost-effectiveness test; is that correct?

A That's correct.

Q And I'm going to ask you to -- to skip down to Row 17, CTs, or combustion turbines. And it appears that, across that row, the use of CTs declines and, by 2026, Gulf Power is no longer using natural

combustion -- natural-gas combustion turbines; is that correct?

A Those -- those last few columns do go to zero; although, I note that the "CC" columns increase from 2024. You know, beginning in 2025, that jumps up quite a bit.

Q Okay. Thank you.

I want to skip to -- a moment, just to building codes and -- and appliances. We -- we've heard quite a bit of that from other witnesses' testimonies. You speak about it generally on -- on Page 5 to Page 6. I'm -- I'm not going to -- I'm not going to read any specific lines. I'll just ask you a few questions --

A Sure.

Q -- generally about that.

So, building codes apply to new homes and businesses; is that right?

A Yes, that's correct.

Q And if you're a hard-working family in Gulf Power's territory and you can't buy a new home and, therefore, you're -- you're not going to realize the benefit of that new building code if you remain in your current home. That is a correct statement, right?

A I wouldn't necessarily agree with that. I -- I think that for -- the example that comes to my mind is

ceiling insulation. Just through the awareness of the greater requirements for ceiling insulation, it's a very common practice that an existing home might have additional ceiling insulation added to it to be consistent with what the current new-home building code is.

So, I -- I wouldn't say that the fact that a customer doesn't build a new home would necessarily preclude them from benefiting from some of the en- -- enhancements and improvements in the building code that have occurred over time.

Q Let -- let me ask it maybe a different way: I have a home that was built in 1954. It doesn't automatically become more efficient because the Florida Building Commission updated a -- a Florida Building Code, correct?

A That's correct.

Q Okay. And is it also correct that other states have buildings codes as well?

A As far as I know, yes, they do.

Q And appliance standards apply to new appliances, correct?

A Yes, that's correct.

Q So, if you're a hard-working family in Gulf's territory and you can't purchase a new $1,100

refrigerator, you're not going to directly realize the benefit of those new-appliance standards if you continue to use your current refrigerator, correct?

A At -- at the time that you replace an appliance, you would automatically benefit from the higher appliance-efficiency standards that are present for refrigerators or air conditioners or other -- televisions, computers, video games, any other kinds of appliances that are out there.

So -- and -- and that's really one very good thing about the appliance-efficiency standards that is working very efficiently in the marketplace is that, as customers have to replace refrigerators, as they -- as they, you know, reach end of life, or air conditioners, they automatically benefit from the increases in efficiency that those appliance-efficiency standards have put in place.

And they really don't even have to understand that. All they have to do is go to their local Lowe's or Home Depot and buy a new refrigerator and they are automatically gaining a tremendous efficiency ga- -- improvement in that product.

Q Mr. Floyd, let me ask my question a different way: Just because the Department of Energy promulgates a new appliance standard, say, for refrigerators, my

refrigerator at home doesn't automatically become more efficient, correct?

A That's correct.

Q Okay. Mr. Floyd, would -- would you be surprised if I told you that Tampa Electric's gigawatt-hour energy-saving goal is 165 gigawatt hours?

MR. GRIFFIN: Objection, Mr. Chairman. That calls for Mr. Floyd to speculate on another utility.

MR. CAVROS: If he knows.

CHAIRMAN GRAHAM: You can.

THE WITNESS: I -- I'm not.

CHAIRMAN GRAHAM: -- answer the question, if you know specifically.

THE WITNESS: I -- I don't know specifically.

MR. GRIFFIN: Thank you.

BY MR. CAVROS:

Q Would you know if that's an increase from the 2014 goals?

A No, I do not.

Q Would you know that -- would you know if structures in Tampa Electric's territory are subject to building codes?

A By structures, you mean homes and businesses?

Q Correct.

A Yes, I would assume they are subject to the same state building codes and, perhaps, even local building codes that may -- may be in place. I'm just not familiar with that.

Q Sure. And you would also agree that they are -- their customers are subject to same appliance-efficiency standards --

A Yes, I would.

Q -- that are promulgated, correct?

A Yes.

Q Okay. I just have a few more questions for you, Mr. Floyd. Turning to -- I couldn't find a table in your testimony, but turning to Page 13 of your testimony, it says that your technical potential had 2,568 gigawatt hours of -- of ener- -- energy savings; is that correct?

A Yes, that's what it reads here.

Q Okay. And so, I -- I tried to track this through your testimony. So, if you turn to Page 18, which discusses your economic potential, your -- it -- it states, starting on Line 9, that your -- what was left over from that 200- -- 2,568 gigawatts technical potential was 114 gigawatts for the -- the RIM test, rate impact measure test, and 1,762 gigawatt hours for the total resource cost test.

Do you see that?

A Yes.

Q So, I did a back-of-the-envelope calculation last night and found that by applying the rate impact measure test, you reduced economic potential -- or rather, it reduced potential by 95 percent. That would be 114 gigawatt hours divided by 2,568. Would you agree with that?

A I haven't performed the calculation, but that would be -- that would be a way to get there.

Q Okay. And also, I divided the TRC economic potential by the total gigawatt hours in the technical and I came up with a 32-percent reduction for the total resource cost test. Does that sound about right?

A Sure. I'll trust your math.

Q Okay. It was late last night, so -- and then, going to the achievable potential, which I found on Page 20, the -- applying the rate im- -- starting on Line 22 I -- I saw that the RIM produced six gigawatt hours of achievable potential.

And again, I did a back-of-the-envelope calculation and that ended up being two-tenths of 1 percent of the technical potential. Does that sound about right? I divided six by 2,568.

A Okay.

Q But you still had -- but your goal was zero, right?

A That's our proposed goal, yes.

Q Okay. On Page -- between Page 21 and 22, you explained why you didn't include even the six gigawatt hours. And I'm going to just read the last line of the first paragraph on Page 22 for you: Developing and implementing a DSM program centered around such a small number of measures which are, in turn, limited in application to a -- very uniquely-situated commercial customers would be highly impractical from a cost, administrative, and customer-adoption perspective.

I asked you at the beginning of our cross-examination if we were in the goal-setting stage, and you responded in the affirmative, right?

A Yes.

MR. CAVROS: And you would also -- scratch that.

Okay. Just another -- one or two more questions and I think I'll be winding up, Chairman.

BY MR. CAVROS:

Q As part of the technical potential, there was an examination of demand-side renewable energy, correct?

A Yes, there was.

Q Okay. And you represented Gulf in that

process?

A Yes.

Q Was resilience considered as a benefit for solar, coupled with battery storage?

A Resilience, as a broad, undefined term, no. What was considered was the quantifiable energy and -- and peak-demand reduction benefits associated with -- with solar -- rooftop solar as well as rooftop solar coupled with battery storage.

Q Okay. Let -- let me -- let me quantify or try to put a definition on it. The way I -- I would define resilience, it's -- it's a benefit to a community of being able to -- to island itself at a time when the grid is down and to provide electricity for, you know, critical medical services or -- or charging cell phone batteries or providing light.

Were any of those benefits considered as part of the study?

A No. Those are unquantifiable in the context of this evaluation. So, that -- that was not considered.

MR. CAVROS: I have no further questions. Thank you, Chairman.

CHAIRMAN GRAHAM: Okay.

MR. CAVROS: Thank you, Mr. Floyd.

CHAIRMAN GRAHAM: Staff.

MS. DZIECHCIARZ: Thank you, Mr. Chairman.

EXAMINATION

BY MS. DZIECHCIARZ:

Q Good morning, Mr. Floyd. I'm Rachel Dziechciarz with Commission staff.

A Good morning.

Q My first two questions concern free riders and the two-year payback screening that Gulf used. Did Gulf consider using a shorter or longer payback period for its screening of free riders in this FEECA proceeding?

A No. Gulf used two-year -- two years as the -- as the payback period.

Q Okay. And why does Gulf believe that the two-year payback screening is the best method to address free-ridership?

A Well, first, it -- it's a logical, efficient-to-implement tool that's been used consistently -- you know, it has a lot of precedent here in Florida, in this proceeding.

It was also discussed at the informal meeting that was held with staff back as we began this process, as a -- as an approach to address free-ridership. And that's the reason that Gulf used it here.

Q Okay. Thank you, Mr. Floyd.

My second line of questions concern cost-effectiveness and Gulf's proposed residential conservation goals.

So, we've already established that Gulf is proposing zero goals for the residential sector, using the RIM portfolio; is that correct?

A Yes, that's correct.

Q And does Gulf plan to exclude measures that do not pass the RIM test in its future DSM plans?

A Yes, with the exception of -- of low income. So, Gulf currently has a low-income program that was proposed and approved as a part of the 2014 DSM-plan process. And so, Gulf would intend to -- to continue a program targeted towards low-income customers that, based on -- on the current evaluation, wouldn't -- would not pass RIM. So, it would not be cost-effective.

Nevertheless, that's something that Gulf supports and would intend to continue going forward.

Q Okay. Thank you.

And is it correct that Gulf may offer residential low-income programs by incorporating measures that pass the TRC scenario?

A Yes, that's correct.

Q Okay. And can you please explain why Gulf's customers should pay for programs that are not cost-

effective, using the RIM scenario?

A So, why Gulf's customers should not pay for programs used -- that are not cost-effective with RIM?

Q So, these other programs are cost-effective using TRC, but not RIM. And so, if -- can you explain why Gulf's customers should pay for programs that are cost-effective using a different test?

A Well, in general, we would say Gulf's customers should not pay for those kinds of programs, but again, in 2014, in discussions with the Commission, and at the Commission's request, to put particular focus on the low-income customer segment, Gulf developed a program offering -- albeit not RIM-passing, but recognizing that -- that that was addressing a -- a customer segment that was important to -- to provide opportunities for energy savings through a -- through a DSM program.

And so, Gulf agrees with that and was supportive of it and has -- has -- has done that since 2015, and -- and proposes to continue doing that.

MS. DZIECHCIARZ: Okay. Thank you. Staff has no more questions.

CHAIRMAN GRAHAM: Commissioners, any questions of this witness?

Commissioner Clark.

COMMISSIONER CLARK: Thank you, Mr. Chairman.

I have a couple of questions, some specific to Gulf's programs. So -- so, the energy-efficiency and demand-response programs that you have in place now -- there's a list of them in your testimony. What happens to all those programs?

THE WITNESS: Those programs, as evaluated in this proceeding, are no longer cost-effective, with the exception of the commercial demand-response programs. And so, those would -- would no longer be a part of a -- of our plan going forward.

COMMISSIONER CLARK: That included the RSVP program?

THE WITNESS: Yes, that's correct. So, that -- that program is no longer cost-effective, and so, Gulf would propose to close that program to new customers.

COMMISSIONER CLARK: And that would include removing the tariffs, the equipment, the installed equipment, things of those nature.

THE WITNESS: At this point, Gulf's intention is to propose allowing the customers that are already on the program to remain on the program. That program does provide demand in energy-savings benefits to the utility system, as well as, many of

the customers on that program like the opportunity to save on their bill.

And so, Gulf's intention, again, at this point, would be to propose allowing those customers to remain, but just close to new enrollments because that's no longer cost-effective.

COMMISSIONER CLARK: If you don't have a DSM goal, does that mean that you can't achieve energy-efficient savings?

THE WITNESS: No, I wouldn't say that at all. You know, Gulf, along with the other utilities, have energy-audit programs that assist customers and give customers recommendations and assistance in identifying energy saving-opportunities. And we don't count those savings, but there are certainly a lot of energy savings that result from those kind of -- that kind of assistance that we provide to customers.

COMMISSIONER CLARK: Do you think sometimes we use the terms "demand response" and "energy efficiency" like they're interchangeable when they're actually kind of two separate things? Is that a fair statement?

THE WITNESS: I do think that that -- sometimes those terms get -- get mixed together.

COMMISSIONER CLARK: That leads to my second question: In measuring demand for commercial and industrial customers, what increment of time do you measure demand in for billing purposes?

THE WITNESS: Well, it depends on the rate. So, on our demand rates, it's a 15-minute interval is what is used for measuring demand. So, that -- that's -- that would be --

COMMISSIONER CLARK: So, it would be theoretically possible for a commercial consumer to eliminate 70 to 80 percent of their energy usage and never impact their demand, is that correct, if they turned a unit on for 15 minutes, let it run, and never turned it back on the rest of the month?

THE WITNESS: That's correct. So, they could set --

COMMISSIONER CLARK: So, you're --

THE WITNESS: -- the demand and -- and not impact their demand; although, they could reduce a tremendous amount of energy.

COMMISSIONER CLARK: So, there is -- there are achievable ways to -- there are ways to achieve energy-efficiency, the saving or elimination of the consumption of kilowatt hours without having any impact on the demand whatsoever.

THE WITNESS: That's right. I would characterize that more as conservation, you know, turning the lights off, eliminating usage, probably more than efficiency.

COMMISSIONER CLARK: Which achieves the same results; we're saving energy --

THE WITNESS: That's correct.

COMMISSIONER CLARK: -- correct?

That's all I have, Mr. Chairman.

CHAIRMAN GRAHAM: Commissioner Brown.

COMMISSIONER BROWN: Thank you.

Thank you for your testimony. Going back to staff's question on the two-year payback period, I just want to dive into that a little bit more.

THE WITNESS: Sure.

COMMISSIONER BROWN: You talked about an informal staff meeting. And your testimony kind of reflects the reason -- and the evidence that supports using the two-year payback was just because the Commission has historically used that period -- or actually encouraged that period.

You didn't consider another alternative time period, even given the increased energy-efficiency standards and the building-code standards?

THE WITNESS: No, we did not evaluate any

other time period. We did, at staff's request, provide a sensitivity to the economic potential associated with a longer and shorter payback period.

COMMISSIONER BROWN: Was it a one-year and a three-year?

THE WITNESS: A one-year and three-year, but that -- that sensitivity did not carry all the way through the achievable potential that would result from that.

COMMISSIONER BROWN: Is that evidence in the record?

THE WITNESS: Those sensitivities are in the record, yes, as -- at the economic-potential level.

Again, that -- that is -- that is -- does not reflect likely customer adoption; it merely reflects how many measures kind of stay in the pool based on those free-ridership or those payback period -- payback periods.

COMMISSIONER BROWN: Okay. Your testimony talks about that the evidence supports continuing to use a two-year payback. Can you specifically point me to what that evidence is?

THE WITNESS: Well, it is, I would say, primarily the precedent of using that and -- and

the evidence -- or the -- the order from the last goals docket and previous ones where the Commission has supported that and found that that was an appropriate way to address free-ridership in this -- at this -- in this proceeding, in the goals-setting proceeding.

COMMISSIONER BROWN: So -- but based on your proposal of the -- of the goals, slashing them in half -- more than half and -- and your energy goal being zero, it obviously appears that there is a -- a bigger change from the last goals-setting proceeding -- market change.

THE WITNESS: Well, there -- there's -- there's the continuing impacts of -- of coded -- codes and standards as well as decreasing avoided cost benefits, which are really the primary drivers of less of these measures being cost-effective to -- to pursue.

It -- it really isn't related to payback. In fact, in Gulf's case, there are no residential measures that were eliminated from consideration simply due to the two-year payback. So, it's prim- -- the -- the outcome of this, the results of this -- of this analysis is driven more by changes in avoided cost and just the reduction in available

potential to be pursued with the utility-sponsored programs.

COMMISSIONER BROWN: In your opening statement, you said that the process is not broken. And I think you were referring to the demand-side renewables; is that right?

THE WITNESS: Well, I was referring more broadly to this process that we go through here to evaluate the technical potential and then determining which of those measures are economic -- you know, that -- economic to pursue through the cost-effectiveness process and then determining what the reasonably-achievable potential is. The pro- --

COMMISSIONER BROWN: So, is zero -- so, do -- do zero goals mean that -- that the D- -- FEECA is working?

THE WITNESS: The -- the -- the zero goals is an outcome of that process. And given the -- the information that we have at the time, the forecasts of avoided costs and -- and the continuing impacts of codes and standards -- that is the result of that process.

And each time we go through this process, things change. Sometimes they may go up; sometimes

they may go down, but it's a -- it's a result of the process. It's not necessarily an outcome that is predetermined.

So, we -- we're -- you know, we have no objective here other than ensuring that we set goals that are based on what's cost-effective and reasonably achievable.

COMMISSIONER BROWN: You also stated that demand-side renewables are growing for Gulf's customers.

THE WITNESS: Yes, that's correct. Growing tremendously.

COMMISSIONER BROWN: Now, are they growing without incentives because the costs are coming down or are they growing because of our net-metering rule?

THE WITNESS: Well, we haven't done any analysis to determine specifically why that is the case, but it's probably a combination of the two. I think prices are coming down. There are more -- more solar providers in Gulf's service area. So, that naturally creates, you know, some competition among those.

And certainly, the net-metering rule, you know, creates a -- a good, you know, understood

model for the customer. And so, since the time that -- that we ended the -- kind of the pilot phase of incentives back in 2015, we've actually seen quite a bit more adoption occur since that time just due to those natural market forces that are in place.

COMMISSIONER BROWN: What is Gulf doing to encourage -- encouraging the demand-side renewables?

THE WITNESS: Well, a couple of things. You know, one, as -- as customers ask about that -- we're a resource. We have experts on our staff that -- that came out of that industry, so they understand the technologies very well, and they -- they can provide information to customers, help them understand, you know, how -- how they might apply that in their situation.

So, we do a lot of that kind of educational, informational sort of -- you know, sort of assistance to customers to help them in making the best decision for their situation.

COMMISSIONER BROWN: So, let me talk about the education. You -- you touch on that in your prefiled testimony a little bit. Gulf has always been customer-centric or strived to be customer-

centric.

What are you doing, other than putting it on your website and -- to -- to educate customers about your DSM programs as well as encouraging demand-side renewables?

THE WITNESS: Well, for the -- for the energy-efficiency or demand-side management programs, we address those through our energy audits, where we go into customers' homes and where they can go online and learn about ways to save.

Some of these things are -- are associated with the program that we offer, but many of those things aren't. Many of those resources and -- and tips that we provide to customers are related to things that are either low-cost or no-cost things that a customer can do. It's just a general effort on the company's part to assist customers in -- in managing their electricity usage. So, that -- that is an aspect of our educational effort.

We also, you know, present in a lot of public sessions, trade shows, home shows, those sorts of things, where we frequently have a booth, so customers can come by and learn about energy-efficient technologies; again, some, you know, maybe that are a part of a program that we offer,

but many that aren't. But again, we want to make sure customers have as much information as they can to make wise decisions.

COMMISSIONER BROWN: Thank you.

Just two more questions. Going back to the demand-side renewables, has Gulf looked at any other next-gen type of demand-side renewables that you could offer your customers?

THE WITNESS: So, Gulf -- actually, previous to this study, we did some research coupling rooftop solar and battery storage to determine, you know, how much benefit the battery storage could add to -- to -- to solar, to be able to get it to, you know, be on our peak, to be able to get peak reduction.

And we demonstrated that that is a -- a feasible approach to utilizing those two technologies. At the time, the cost, though, particularly the battery storage, is still so high that it's not overall cost-effective to -- to do -- to offer to customers.

But those are the kinds of things that Gulf is continually evaluating to look for ways to better utilize those renewable resources on our system to help manage peak demands and -- and increase the

overall efficiency of the utility system.

COMMISSIONER BROWN: I agree. And if -- as you stated earlier about low income not necessarily passing the test, but the Commission previously allowed low-income programs to be included and offered. It -- this is something that would also be interesting, as Florida Power & Light also proposed as an R and D project.

Lastly, if a utility seeks -- intends to seek cost recovery for programs, do you think, then, that programs should be tailored to -- to the proposed goals, i.e., for example, a number that exceeds zero.

So, if you're going to seek cost recovery ultimately by the Commission, but your goals are zero, do you think that should be allowed? And if so, why?

THE WITNESS: Well, I don't have a legal opinion about this. So, I -- I can't really speak to, you know, whether that -- whether the statute supports it, but just from a practical standpoint, you know, if it's something that the Commission supports and it -- and it's something that the company is doing in response to addressing a -- a, you know, particular part of the market that is --

that has been deemed important to address, then I -- I -- it would seem reasonable that the company should be able to get cost recovery for that, similar to how we get cost recovery for energy-audit offerings and those sorts of things.

Even though we don't have numeric goals associated with those, those are programs --

COMMISSIONER BROWN: Those are specifically stated, though, and required in our statute. The audits are required.

THE WITNESS: That's correct.

COMMISSIONER BROWN: And that's a separate provision in the statute. So, that's different.

THE WITNESS: That's right. I -- that's correct.

COMMISSIONER BROWN: Thank you for your testimony.

CHAIRMAN GRAHAM: Commissioner Fay.

COMMISSIONER FAY: Thank you, Mr. Chairman.

Thank you for being here, Mr. Floyd. If I could ask you to turn -- you have your testimony in front of you?

THE WITNESS: Sure.

COMMISSIONER FAY: If I could ask you to turn to Page 18 of your testimony, I just want to get

two quick clarifications from you. The first is starting at the top of that page. You reference the -- while the section of the most-appropriate approach to account for free riders as required by 25170- -- 02 -- I -- I was trying to interpret maybe what that -- that reference was to -- to. That's not an existing section, but I believe there's -- Section 25170021 states some of these goals.

So, was the idea basically just that you were trying to reference how that satisfies that rule's mandate?

THE WITNESS: So, actually, I believe, if you flip back one page to Page 17, I was -- I was just quoting a -- a section of the previous Commission order, beginning on Line 24, where it begins, "We have consistently approved goals" -- that's just a quotation of the -- of the previous Commission order on this subject.

COMMISSIONER FAY: Correct you are. And that order references a different section, but I think I understand what you're saying.

So, then, if you -- if you consider that two-year payback period that -- that same language that comes from that order talks about the potential --

or has some discussion about the potential of a different payback period for different ratepayers, different rate categories.

Is that something that you considered or looked at?

THE WITNESS: We did not consider that in this proceeding; although, certainly, you know, going forward, you know, that -- that is something that could be considered; maybe a longer payback criteria for, you know, commercial/industrial customers might be -- you know, that's not necessarily unreasonable to consider.

COMMISSIONER FAY: Okay. Thank you, Mr. Chairman.

CHAIRMAN GRAHAM: Commissioner Polmann.

COMMISSIONER POLMANN: Thank you, Mr. Chairman.

Thank you, Mr. Floyd, for your testimony.

THE WITNESS: Yes.

COMMISSIONER POLMANN: There have been some questions here regarding -- there are many similarities among all the FEECA utilities, and then there's some differences, and I -- I think this may be -- and I don't know specifically that this is the first time that we've had all the FEECA

utilities follow a similar or a consistent procedure, but why is it that -- that Gulf has come together with a singular procedure, set of parameters, so forth, if -- if that's true?

Do you -- do you see Gulf adopting this uniform program with all the FEECA utilities -- not the program, but the set of analyses provided by Nexant? Is that in -- in your utility's best interest?

THE WITNESS: Commissioner, the -- this process -- all the FEECA utilities have actually gone through this process together, since it was put in place maybe in the mid -- mid to late nineties, and there has been a general structure to that process that was updated in 2008, with some amendments to the FEECA statute that -- that really set in place the process that we currently use.

So, we used it in 2009 and 2014 and here, where we start with a technical-potential study that really evaluates what is technically feasible. And then we all go through the process of determining what's cost-effective based on our unique utility situation, which is important because each utility does -- you know, has its own planning process and does have, you know, unique

aspects of that.

And then, we -- we, then, determined out of what is economic to pursue -- in other words, what is cost-effective -- how much of that is reasonably achievable.

So, we go through the same process. So, the -- the utilities do that. We -- we come up with different results. And that's entirely okay. It's -- it just reflects the fact that our -- we're in different places in our planning process and -- and we have different needs on the horizon, and we have different cost structures and avoided cost structures.

And so, the fact that we end up with different results is not anything abnormal. It's just a -- it's just an outcome of the process.

COMMISSIONER POLMANN: You had mentioned earlier in testimony here that there are program elements that Gulf does not have that others do and so forth and, through the Nexant process, there was a -- a combination of all the elements put together and some average values and so forth.

Can you clarify for me how that affected your analysis? I -- I -- maybe I just don't understand that. I --

THE WITNESS: You --

COMMISSIONER POLMANN: I --

THE WITNESS: Yes, sir. So, I think I -- I was -- we were talking about administrative costs. And -- and I was just stating that, for many of the measures that we evaluated here -- those were not measures that Gulf currently had in any programs. So, we didn't know what a reasonable administrative cost was for a -- you know, for a particular measure.

And so, instead of just guessing at that, we relied on our consultant, who's done a number of these kinds of studies, to collect information from as many utilities as they could to -- to give a more representative picture of, you know, what a reasonable administrative-cost assumption would be.

Again, you know, this is the necessary part of evaluating the cost-effectiveness, and so it had to be done here, but ultimately, in program implementation, those costs will depend on, you know, how exactly the program is implemented.

So, that was what I was referring to when I said we use kind of the -- we leaned on the experience of other FEECA utilities as well as other regional utilities, as -- as Witness Herndon

explained yesterday, to come up with those costs.

COMMISSIONER POLMANN: Okay. Thank you for that explanation. Maybe my earlier question wasn't -- wasn't clear. I -- my follow-on, then, would be, did -- did that result in Gulf either considering elements that you would not otherwise consider because you -- you gained some -- some estimated values from -- from the larger group that you otherwise didn't have your own experience with -- did it cause you to maybe examine some things that you would not otherwise have done or -- or cause you to delete something that you have not in the past?

Was there a different outcome, you think, because of the Nexant process?

THE WITNESS: Well, the Nexant process --

COMMISSIONER POLMANN: Meaning, their model. Not -- I understand you're using a very similar process that you've done.

THE WITNESS: Right.

COMMISSIONER POLMANN: But the numerical analysis.

THE WITNESS: Well, the -- again, the process lends itself to, you know, gaining a lot of -- of information and insight about measures that we

don't have experience with.

So, we started here with almost 300 different energy-efficiency and demand-response and demand-side-renewable measures. So, that, in itself, was a benefit of the process in that we did not have that kind of information before we started this.

We performed the cost-effectiveness evaluation of that based on Gulf's costs and benefits. And then Nexant, you know, completed the -- the process by putting that into their models to project what was achievable out of that.

So, I would say that, yes, we benefit greatly from -- from using a -- a consultant like Nexant to help us with this process, but the outcome is -- is really just a result of the analytical evaluation.

And so, that's -- I'm not sure if that --

COMMISSIONER POLMANN: No, that --

THE WITNESS: -- completely got at your question.

COMMISSIONER POLMANN: No, I think -- I think you've -- you've answered my -- Mr. Chairman, just to -- I want to follow up to the other Commissioners' questions, sir.

Were you here yesterday, sir, and heard a question -- I believe it was the Chairman that was

talking about the smart technology in -- in-home, having a homeowner -- that the benefit of even down to real time with smart meters and so forth, being able to monitor their -- their electric use and then, perhaps, being able to alter use of appliances or -- or things like that?

THE WITNESS: Yes, sir, I was here for that.

COMMISSIONER POLMANN: Okay. And then, moments ago, with Commissioner Clark, the concept of DSM and -- and what exactly that means, efficiency or conservation or -- so forth. And I believe your words were something to the effect of, well, turn the lights off. That's a conservation concept. And -- and then you were responding to Commissioner Brown and talking about education.

So, my -- my question, as a follow-up to you is, is education really all about behavior change of the -- of the customer? Are you trying to induce a behavior change or help the customer understand how to change their behavior?

Even if they don't have the smart technology, which would require an investment on their part -- customers don't necessarily have the ability to invest in the smart technology. So, how do you -- how do you help a customer change their behavior in

a way that's sustainable?

That's my concern. You know, some people want to change -- change how they eat because it's good for their health, but it may be not sustainable. So, how -- is your -- is your education program sustainable?

THE WITNESS: I would say that --

COMMISSIONER POLMANN: And how do you know that?

THE WITNESS: Well, I would say that, yes, it is sustainable. We put in -- you know, into place tips and recommendations that are reinforced with customers, you know, beginning with an energy audit, continuing with tips that we -- that we publish frequently.

And an example of that would be like season-change tips is one I can think of where we provide information to customers, kind of in the form of, for every degree above -- say, in the summer, for every degree above 78 -- or every degree below 78 that you set your thermostat, you know, it costs "X" percent more in energy use to cool your home.

So, it's that kind of education that helps build an understanding throughout the customer base as how the decisions that they make regarding the

energy use -- how it impacts their bill.

And so, Gu- -- again, you know, Gulf, for many years, has been very focused on helping educate customers, helping customers understand those kinds of things.

How sustainable it is -- we've not measured that, that I recall, you know, but just from the standpoint that we've been doing it many, many years and I know we've permeated the -- the market for generations, now.

And so, we -- we've done in schools. We have, you know, school children learning about ways to reduce energy use and manage energy use and -- and then going home and telling their parents about it.

I've heard a number of stories, you know, where parents have said, yeah, my -- my child came home and, you know, told me, we need to -- we need to check our air conditioner, have it tuned up, or whatever.

So, in that sense, I would say that -- that it is sustainable. And that's really the goal, is to -- is to get this to permeate from generation to generation so that it becomes -- that it just becomes the standard way of life.

COMMISSIONER POLMANN: Well, my point there,

sir, and I think you -- you answered it in -- in your comments, is that an education program -- we don't know how to measure that. And if you have a zero coal -- goal, but an ongoing element of your program is education, I'm not sure how we support the education program as the answer to a zero goal.

So, I'm -- I'm looking for the answer to the confirmation that that's helping the customer, especially the low-income customer to achieve a bill reduction, but it's not something you're measuring and don't -- maybe don't know how to measure.

So, I'm -- I'm trying to understand how we get that as a result of this proceeding to help the low-income customer who can't buy a smart device or buy a lower-use -- you know, cost-efficient refrigerator that everybody is talking about. I'm -- I'm in a quandary.

THE WITNESS: Well, I think there's --

COMMISSIONER POLMANN: So, I mean, I think you've answered the question that -- that we keep putting information out there. I -- I get the information, turn -- turn your thermostat in the right direction. That doesn't mean my family listens or -- when I say turn the lights off. That

-- I mean, I -- I'm an ongoing education guy at my own house, but I pay the bill, they don't.

So, the other question, and -- and if there was a pilot program, again, with a zero goal, would you be coming in with a pilot program and -- and now is not the time to get into that's a program element, but again, it becomes a cost-recovery issue, and Commissioner Brown touched that.

Mr. Chairman, that's all I have. That's not really a question.

THE WITNESS: I -- could I just clarify one thing on the low income? I think there's -- there's really kind of two aspects to that. Certainly, there's an educational aspect to it, but -- but the g- -- but the program that -- that Gulf Power offers and that I've been referring to is a program which actually puts more-efficient measures in a customer's home. So, they save money.

It provide- -- it puts more-efficient light bulbs in their home. It puts low-flow showerheads in their home. It puts faucet aerators in their home. It puts things in their home, at no cost to the customer, that save them money.

Now, there's an education layer on top of that

to help them understand, okay, here are some things, you know, that are -- that are going to help you save, but here are many other ways that you, on your own, without spending any more money can manage your -- your electric bill.

And I -- and we think and believe that it's important the more the customer understands that -- the more all customers understand that, the better that they can manage their -- their energy usage.

COMMISSIONER POLMANN: Thank you, Mr. Floyd. I -- I appreciate the explanations.

CHAIRMAN GRAHAM: Commissioner Clark.

COMMISSIONER CLARK: And I -- I just want to clar- -- follow-up and clarify. I didn't do a very good job. Commissioner Polmann, I think you're -- you're absolutely on the right track there.

And that's one of the reasons why I talked a minute ago about the difference between energy-efficiency and DSM programs because as -- and the reason that I asked the question, what will you continue to do. You will still come back to this Commission and ask for recovery under the energy-conservation clause for energy audit programs and things of that nature.

THE WITNESS: Yes.

COMMISSIONER CLARK: You just won't be asking for recovery of specific DSM programs, which in -- which you do not feel met the RIM test or the TRC test; is that correct?

THE WITNESS: That's correct.

COMMISSIONER CLARK: I think --

THE WITNESS: With the exception of -- of low income, that's -- that's --

COMMISSIONER CLARK: With the exception of low-income.

THE WITNESS: That's correct.

COMMISSIONER CLARK: You're going to ask for recovery for that program even though it did not meet RIM. So, we're still going to see your other programs -- and I guess we'll see that in another docket or at some other point in time.

THE WITNESS: Yes.

COMMISSIONER CLARK: I'm looking at staff for some clarification here.

THE WITNESS: Yes.

COMMISSIONER CLARK: But we're still going to see all of this -- all of these costs coming back. This is strictly a discussion about DSM and whether or not there should be goals set with that program; not whether or not you're going to continue to do

efficiency programs to help achieve conservation, correct?

THE WITNESS: That's correct.

CHAIRMAN GRAHAM: Redirect.

MR. GRIFFIN: Just a -- just a few, Mr. Chairman.

FURTHER EXAMINATION

BY MR. GRIFFIN:

Q And let's start, Mr. Floyd, with the administrative costs because you received questions about those from Mr. Cavros and Commissioner Polmann.

And I think you alluded to this in response to Mr. Cavros' question, but I just want to make sure that the -- the record is clear in that regard.

What -- what impact on the economic screenings, if any, did the use of the administrative costs contained in the record have?

A It -- it had a very minimal -- minimal impact. As I had mentioned earlier, only two of the measured permutations out of 442 that were evaluated were -- were eliminated, due to the -- to the administrative-cost screen.

Q Let's turn to the two-year payback screen because I've got a similar question there on that. And again, I think you alluded to it, but I -- I just want

to make sure that we're clear. In the residential RIM portfolio, what impact, if any, did the use of the two-year payback screen have on your screening analysis?

A There -- there were no measures eliminated in the residential RIM portfolio, due to the two-year payback screen.

Q Okay. Thank you.

I think Mr. Cavros asked you a question very early on regarding energy savings and the impact on customer bills. And the gist of the question was: In the context of DSM, wouldn't you agree that energy savings lowers customers' bills. And I think you correctly answered that it does.

But I want to go that -- that next step and ask you: What impact, if any, does it have to non-participants in DSM programs?

A Well, it depends. If that energy savings is a result of a DSM program that passes RIM, then it doesn't have any negative impact on those non-participating customers. If it's a result of a program that doesn't pass RIM, then it could potentially have the impact of increasing the cost or -- you know, through a subsidy. So, those non-participating customers, then, are -- are helping pay for that program at a greater degree than they are receiving any benefit.

So, that's -- that's the importance of using the RIM test in this proceeding is to ensure that that cross-subsidy doesn't occur through DSM programs so that all customers are better off, whether they participate in the program or not.

Q My -- my last question, Mr. Floyd, involves the -- what SACE has characterized as naturally-occurring adoption. And Mr. Cavros took you through a number of interrogatory responses and kind of piecemealed through those, selecting one sentence from one and another. Do you remember that?

A Yes, I do.

Q And -- and just because of the way that that questioning occurred, I want to make sure that there's nothing else that you want to say about naturally-occurring adoption at this point in this proceeding. I -- I'm not suggesting you need to. I just want to make sure you have an opportunity to.

A No, again, the -- this whole concept, you know, is -- is really just reflecting the amount of efficiency that has occurred in the past that is reflected in our forecast or captured in our forecast and -- in a way that it's used to set the baseline to determine what is potentially achievable going forward.

So, the -- it is simply the mechanism and the

forecast for how that is captured.

MR. GRIFFIN: Thank you.

Mr. Chair, that's all I have.

CHAIRMAN GRAHAM: Exhibits?

MR. GRIFFIN: Let's see. Mr. Floyd's is 35.

CHAIRMAN GRAHAM: If there's no opposition, we'll enter Exhibit 35 into the record.

(Whereupon, Exhibit No. 35 was entered into the record.)

CHAIRMAN GRAHAM: Mr. Cavros?

MR. CAVROS: Chairman, I'd like to enter Exhibits 308 to 315.

CHAIRMAN GRAHAM: If there's no --

MR. GRIFFIN: No objection.

CHAIRMAN GRAHAM: -- no objection, we'll enter Exhibits 308 through 315.

I think that's all the exhibits we've had for this witness.

(Whereupon, Exhibit Nos. 308 to 315 were entered into the record.)

CHAIRMAN GRAHAM: I know the first break of the day is always the most important and most looked-forward-to, so I think we're about time for that.

I know the next two witnesses are for FPUC.

That allows Ms. Keating to get to the front. So, let's take a seven-minute break, so that's ten 'til by that clock in the back.

(Brief recess.)

CHAIRMAN GRAHAM: Ms. Keating, your witness.

MS. KEATING: Thank you. And good morning, Commissioners.

FPUC calls Scott Ranck.

EXAMINATION

BY MS. KEATING:

Q Mr. Ranck, before we begin, you were sworn yesterday; were you not?

A That's correct.

Q Okay. So, would you please state your name and business address for the record.

A My name is Scott Ranck. I'm the energy conservation manager for Florida Public Utilities.

Q Okay. Have you caused to be prepared and filed in this proceeding 11 pages of direct testimony?

A Yes, I have.

Q And do you have any changes or revisions to that testimony?

A No, I do not.

Q And if I asked you the same questions today, would your answers still be the same?

A Yes, they would.

MS. KEATING: Okay. Mr. Chairman, at this time, FPUC would ask that Mr. Ranck's direct testimony be inserted into the record as though read.

CHAIRMAN GRAHAM: We'll insert Mr. Ranck's direct testimony into the record as though read.

(Whereupon, Witness Ranck's prefiled direct testimony was inserted into the record as though read.)

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

Docket No. 20190017-EG

IN RE: COMMISSION REVIEW OF NUMERIC CONSERVATION GOALS

(Florida Public Utilities Company)

DIRECT TESTIMONY OF G. SCOTT RANCK

ON BEHALF OF FLORIDA PUBLIC UTILITIES COMPANY

I. Introduction

Q. Please state your name and business address.

A. My name is G. Scott Ranck. My business address is 331 W. Central Avenue, Suite 200, Winter Haven, Florida 33880.

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

A. I am employed by Florida Public Utilities Company (FPUC) as Energy Conservation Manager.

Q. Please summarize your educational background and professional experience.

A. Upon receiving certification in residential construction from Williamsport Area Community College (n/k/a Pennsylvania College of Technology), I began my career in construction building houses in Pennsylvania and North Carolina. I then pursued my Bachelor's Degree in Theology (Summa Cum Laude) from Piedmont International University, Winston-Salem, NC. Upon graduation, I was a pastor for almost 20 years and have since become a published author. I then pursued a career change and in 2006, went back to my construction roots as an employee of FPUC in the natural gas conservation department. I became a Residential Energy Services

Network (RESNET) Home Energy Rating System (HERS) Rater in February of 2009. I was subsequently promoted to Senior Energy Conservation Specialist with FPUC in January of 2012. In this role, I was responsible for implementing the Company's natural gas energy conservation program and also assisted with the implementation of FPUC's Electric Demand-Side Management (DSM) Program. Furthering my pursuit of additional training in building science, energy and related topics, I received certification as a Certified Energy Auditor (CEA) on January 25, 2011, as well as certification as a Certified Energy Manager (CEM) in April 2013. Both credentials are through the Association of Energy Engineers. I was also appointed to the Energy Technical Advisory Committee for the Florida Building Commission in December of 2016. Recently, I was promoted to Energy Conservation Manager with FPUC in March of 2019. In this new role, I oversee both natural gas and electric energy conservation programs for the Company.

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

A. The purpose of my testimony is (1) to discuss FPUC's historical and ongoing commitment to conservation and demand-side management (DSM), (2) to describe the overall process employed to evaluate FPUC's proposed DSM goals for the next 10-year cycle, and (3) to explain FPUC's proposed DSM goals, as well as its approach to conservation programs.

Q. Are you sponsoring any exhibits with your testimony?

A. No, I am not.

Q. Please describe FPUC's service territory and the customers that FPUC serves.

A. Florida Public Utilities Company is an electric utility regulated by the Florida Public Service Commission (Commission) pursuant to Chapter 366, Florida Statutes. FPUC provides electric distribution service to more than 28,000 customers in two, non-contiguous service territories, referred to as the Northeast Division and the Northwest Divisions. The Northeast Division serves retail consumers on Amelia Island, including the City of Fernandina Beach. The Northwest Division serves consumers in the City of Marianna and the surrounding areas including portions of Calhoun, Jackson, and Liberty counties, located in the northern tier of Florida's panhandle region. Across FPUC's electric divisions, the Company serves mostly residential customers, as well as some commercial and industrial customers.

II. FPUC's Historical DSM Program

Q. Does FPUC currently offer DSM programs to its customers?

A. Yes, Conservation goals were first established by the Commission for FPUC in 1996 focusing on conservation programs that were cost-effective under the Ratepayer Impact Measure (RIM) and Participants Tests.

In 2008, FPUC participated in a collaborative with the other Florida utilities subject to the requirements of the Florida Energy Efficiency and Conservation Act, Sections 366.80 et seq., Florida Statutes, (jointly, FEECA utilities) to engage a single contractor, Itron, to identify DSM measures and evaluate the technical, economic, and achievable potential for DSM for each of the utilities' service areas.

In 2015, FPUC proposed adjustments to its DSM Plan based on revised conservation goals established for the Company by way of a proxy methodology approved by the Commission in Order PSC-2013-0645-PAA-EU. The revised DSM Plan was approved by the Commission as reflected in Order No. PSC-2015-0326-PAA-EU, and Consummating Order No. PSC-2015-0360-CO-EU.

In 2018, FPUC again collaborated with the other FEECA utilities to jointly engage an experienced outside engineering consultant (Nexant) charged with evaluating the technical, economic and achievable potential for DSM tailored to each of the utilities' service areas.

Q. Please explain FPUC's approach to DSM programs.

A. As suggested by FPUC's size, the Company's limited resources impact its approach to conservation and DSM. As such, educating customers on the benefits of energy efficiency and energy conservation is a key element of FPUC's DSM plan. The Company puts a heavy emphasis on promoting zero-cost or low-cost energy efficiency and conservation measures through the Company's customer education initiatives.

Q. Does FPUC have a Demand Response (DR) program?

A. No. FPUC does not have a true Demand Response program, although it has implemented time-of-use rates in its Northwest Division on an experimental basis. To date, DR has not been included in FPUC's goals.

Q. Please provide additional detail regarding FPUC's current demand-side management programs.

A Certainly. As noted previously, FPUC's 2015 Demand-Side Management Plan was approved in August of 2015. Under its current DSM plan, FPUC implemented the following programs: Residential Energy Survey, Residential Heating and Cooling Upgrade, Commercial Heating and Cooling Upgrade, Commercial Chiller and Commercial Reflective Roof.

Since 2015, program participation totals for the Residential Energy Survey program were 962 participants, while the Residential Heating and Cooling Upgrade experienced 1015 program participants during this period. Commercial Heating and Cooling Upgrade has experienced 6 total participants since 2015. The Commercial Chiller program has experienced 1 participant and Commercial Reflective Roof has experienced 60 participants.

In 2018, FPUC significantly exceeded the residential winter peak demand goal, the summer peak demand goal, and energy reduction goals. The main reason for this level of exceedance was due to the high participation rate in the Residential Heating and Cooling Upgrade Program. While FPUC fell short of the commercial /industrial winter peak and energy reduction goals, FPUC exceeded the total winter peak demand goal (Total Achieved 0.205 MW), the total summer peak demand goal (Total Achieved 0.403), and the total energy reduction goal (Total Achieved 0.851 GWh).

III. Evaluation of New Goals

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

A The Commission should use the results of the RIM Test as the threshold for setting DSM goals. If the results of the RIM test indicate a DSM measure may be cost-effective, then it should also be required to pass both the TRC test and the Participants test.

Q. How were potential new DSM measures identified and evaluated for FPUC for purposes of this proceeding?

A. New DSM measures were identified and evaluated by the engineering consultant for the FEECA utilities, Nexant.

Q. How was FPUC's achievable potential for the 2020 through 2029 period determined?

A. The achievable potential estimates for FPUC were developed by Nexant, and addressed in the testimony and Exhibit JH-6 of Jim Herndon.

Q. What are FPUC's estimated residential and commercial/industrial energy efficiency achievable potentials based on the RIM test?

A Nexant's analysis indicates that there is no achievable potential for either residential or commercial/industrial energy efficiency for FPUC based on the RIM test, as reflected in Witness Herndon's Exhibit JH-6.

Q. What are FPUC's estimated achievable potentials for residential and Commercial/industrial demand response?

A Nexant's analyses indicates that there is no achievable potential for either residential or commercial/industrial demand response for FPUC based on the RIM test.

Q. Is the demand response achievable potential included in FPUC's proposed DSM goals?

A No.

Q. Have any residential and commercial/industrial demand-side renewable energy technologies been identified as meeting the achievable potential standard under the RIM test?

A No. Nexant's analysis indicates that there is no achievable potential for residential and commercial/industrial demand-side renewable technologies for FPUC based on the RIM test.

Q. Do applicable building codes and requirements for appliance efficiencies impact the assessment of DSM technologies for FPUC under the RIM test?

A. Yes. The impacts of the stringent building code provisions of *the Florida Building Code, Energy Conservation* on DSM are taken into consideration in the analyses conducted by Nexant, as noted in section 4.2 EE Technical Potential of Witness Herndon's Exhibit JH-6, which is the *Market Potential Study of Demand-Side Management in Florida Public Utilities' Service Territory*. The existing building code provisions, as well as increased federal requirements regarding lighting efficiencies,

as well as appliance efficiencies such as those mandated for water heaters and HVAC equipment, serve to further reduce the likelihood that any available technologies will pass the technical potential requirements of the RIM test for FPUC. I further expect that the building codes for the next DSM period will only become more stringent.

Q. Does the analysis conducted by Nexant provide an adequate assessment of the full technical potential of demand-side and supply-side conservation and efficiency measures available to FPUC, including demand-side renewable energy systems?

A Yes. Drawing upon their recognized expertise, Nexant utilized its models to comprehensively analyze the full technical potential of energy efficiency, demand response, and demand-side renewable energy technologies for FPUC, as described in the testimony of Jim Herndon, resulting in a reasonable assessment of the full technical potential of available demand-side and supply-side conservation and efficiency measures.

Q. Does the analysis conducted by Nexant provide an adequate assessment of the achievable potential of demand-side and supply-side conservation and efficiency measures available to FPUC, including demand-side renewable energy systems?

A Yes. As a non-generating utility, supply-side conservation and efficiency measures are not applicable to FPUC. The achievable potential study performed by Nexant does however provide a reasonable assessment of the achievable potential of available demand-side and supply-side conservation and efficiency measures, including demand-side renewable energy systems.

IV. Conclusions

Q. Should the Commission establish separate goals for demand-side renewable energy systems for the period 2020 through 2029?

A No. The Commission should not establish separate goals for FPUC for demand-side renewable energy systems. All conservation goals for FPUC should be established to promote cost-effective DSM without any bias towards any particular technology or program. Furthermore, if demand-side renewable energy systems are cost-effective, FPUC should have the flexibility to include such systems as part of their renewable portfolio or as part of their DSM goals.

Q. Should the Commission establish separate goals for FPUC for residential and Commercial/industrial customer participation in utility energy audit programs for the period 2020 through 2029?

A No. The Commission should not establish separate goals for residential and Commercial/industrial customer participation in utility energy audit programs. Utility energy audits are performed by FPUC in response to customers expressing an interest in such audits. The utility does not require that customers participate in energy audits. FPUC should be allowed the flexibility to integrate energy audits into its conservation programs as appropriate.

Q. Please identify the 2020 through 2029 projected technical potential for FPUC.

A The projected technical potential for FPUC is presented in section 5.2 EE Technical Potential, page 35 of the Nexant report titled *Market Potential Study of Demand-Side Management in Florida Public Utilities' Service Territory*, which is Exhibit JH-6

to Witness Herndon's testimony. The report concludes that there are no technologies meeting the technical potential criteria of the RIM test for FPUC.

Q. What overall DSM goals (peak demand and energy reductions) are appropriate and reasonably achievable for FPUC for the 2020 through 2029 period?

A Based on Nexant's evaluations using the RIM test, no DSM measures were shown to be cost-effective. Therefore, FPUC is requesting that the Commission establish no mandated DSM goals for FPUC for the 2020 through 2029 period.

Q. Should DSM goals nonetheless be set for FPUC to 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 No. Greenhouse gases are not currently regulated at either the State or Federal level, and there currently are no costs imposed on the emissions of greenhouse gases. It is therefore not appropriate to base DSM goals on speculation regarding yet-to-be defined regulations of emissions of greenhouse gases.

Q. Does FPUC propose to continue its existing conservation programs even though FPUC is requesting that no goals be applied based on Nexant's evaluations?

A Yes. Although FPUC does not think that conservation goals should be established for FPUC for the next implementation period, FPUC proposes to update its existing conservation programs and, subject to Commission approval of cost recovery through the Conservation Cost Recovery Clause, continue to offer those programs to its customers. FPUC has invested significant cost and effort in the development and implementation of its existing conservation programs, such that, when

considered as a whole, maintaining the existing offerings is marginally cost effective. FPUC strongly believes that maintaining its existing programs is in the best interests of the Company and its customers, many of whom are lower income and live in areas hard-hit by recent hurricanes. The existing programs provide not only conservation benefits consistent with the intent of FEECA, but also cost-management and cost-saving options for our most vulnerable customers.

Q. **Does this conclude your testimony?**

Yes, it does.

BY MS. KEATING:

Q Mr. Ranck, did you sponsor any exhibits with your testimony?

A No, I did not.

Q And have you prepared a brief summary of your testimony?

A Yes, I have.

Q Would you please go ahead and present that.

A As the -- good -- good morning, Commissioners.

CHAIRMAN GRAHAM: Good morning.

THE WITNESS: As the Commission knows, FPU's electric division is fairly small and serves customers in two separate areas of the state.

FPUC is committed to energy conservation and is subject to FEECA. FPU has offered cost-effective conservation programs consistent with Commission-established goals since 1996, and was stated earlier, had programs prior to that as well.

FPUC focuses its conservation and DSM resources on customer education that puts the emphasis on zero-cost or low-cost energy-efficiency and conservation measures.

Our most-effective programs have been our residential heating and cooling program, a residential energy-survey program, and our

commercial reflective-roof program.

For this goal-setting process, we believe that the RIM test and the participant test are the appropriate tests upon which FPUC's goals should be set, and based on the analysis completed by Nexant, there are no achievable potential for new residential or commercial/industrial energy-efficiency measures for FPUC. This includes renewable-energy systems as well.

So, FPC -- FPUC asks the Commission not establish numeric conservation goals for FPUC, or set them at zero. FPUC does believe that at least some of its current programs, when updated, can continue to provide cost-effective opportunities for our customers to participate in conservation efforts.

Moreover, these programs provide opportunities for our most-vulnerable cust- -- customers to manage their energy costs; therefore, FPUC is asking that it be allowed to submit a DSM plan following this proceeding that would consist of updated versions of its existing programs, if proven to remain cost-effective.

While goals should not be set for the company, given that no measures demonstrate achievable

potential, FPUC's ability to offer cost-effective programs would be of great benefit to our customers and fulfill the underlying intended purpose of FEECA.

MS. KEATING: Thank you, Mr. Ranck.

FPUC tenders the witness for cross.

CHAIRMAN GRAHAM: Okay. Ms. Christensen?

MS. CHRISTENSEN: Good morning.

EXAMINATION

BY MS. CHRISTENSEN:

Q Good morning, Mr. Ranck. I have a few questions for you this morning. And if I heard you correctly, through your introduction, FPUC is not proposing any DSM measures be set for the company; is that correct?

A Would you repeat that?

Q Certainly. FPUC is not proposing any DSM measures be set for the company; is that correct?

A You mean, as far as the goals?

Q Correct.

A That's correct.

Q Okay. And FPUC is proposing to continue -- or is it correct that FPUC is proposing to continue its current DSM programs?

A Yes, it is.

Q Okay. And is it also correct that FPUC does not have specific programs for low-income customers, but that many of your customers, or current customers using the current DSM programs, are low-income?

A That would be correct.

Q Okay. And the current DSM programs produce DM -- DSM megawatts savings; is that correct?

A They have for the last ten years.

Q Okay. And would you agree that the megawatts associated with the DSM programs should be added or should be included as part of your 2020-to-2029 DSM goals?

A We are seeking no goals to be set for this.

MS. CHRISTENSEN: I have no further questions. Thank you.

CHAIRMAN GRAHAM: Thank you.

Ms. Wynn, any questions of this witness?

MS. WYNN: No, Mr. Chairman.

CHAIRMAN GRAHAM: Kelley?

MS. CORBARI: No questions.

CHAIRMAN GRAHAM: SACE?

MR. MARSHALL: No questions.

CHAIRMAN GRAHAM: Staff?

MR. KING: Yes, we have a few questions. Thank you, Chairman.

EXAMINATION

BY MR. KING:

Q Mr. Ranck, my name is Andrew King. I'm with Commission staff. I've got a few questions for you.

Do you have that handout packet from staff?

A Yes, I do.

Q Okay. Hopefully we won't need it, but just in case, you'll have it there.

So, we've already gone through that FPUC is requesting zero conservation goals and that's because no measure was found to be cost-effective under the RIM test; that's correct?

A That's correct.

Q Okay. But -- and we've also established FPUC wants to update its existing conservation programs and continue offering them?

A Yes, that's correct also.

Q Okay. And you believe that, when considered as a whole, these updated programs will be marginally cost-effective; is that correct?

A Yes, sir.

Q Okay. How can these updated programs be marginally cost-effective if none of the measures within the programs are, themselves, cost-effective?

A We feel like the -- the tests that were done

were looking at individual pieces, basically, equipment, and so forth, where a plan would have to be developed around it.

We already have considerable ratepayer dollars invested in the development of our current programs, including like a robust website where customers can file for their rebates, et cetera. And it would be a shame to waste all those dollars and just say, stop it.

And the customers benefit. We've had over 2,000 participants in our programs, and we're only looking at a customer base of 28,000. So, that's pretty good involvement.

Q Okay. So, is there the possibility that these updated programs would not be cost-effective?

A We won't know that until we hear what happens in this proceeding and then we do some number-crunching on the back side to see if we can make it work.

Q Okay. If -- if that ends up being true, that none of the updated programs are cost-effective, will you still desire to implement those programs?

A We would. We're a very customer-centric company as well. And prior to my promotion to this role, I was in the trenches. I mean, I -- I was going out, doing the energy audits, speaking at conferences, educating people. And it's -- we don't get credit for

the behavior changes, but they're hugely significant.

Q Okay. Can you explain why FPUC's customers should pay for these programs, if they end up not being cost-effective?

A It seems to me that our customer base, in many ways, is like a -- a smaller family. And one -- one example I'll give you -- even though, most of the time, our commercial programs have not met the objectives -- overall we meet it with all our programs.

A couple of years ago, up in Jackson County, we provided an investment-grade audit for the Jackson hospital. Out of that came a chiller upgrade that allowed us to actually meet our conservation goal for that -- that particular year, in 2016. But this past year, they also put on a reflective roof on -- on the entire hospital, which is a big energy savings.

But when I look at that particular case, those upgrades benefit that entire commun- -- community. It's not just one customer. So, it's -- it's hard to put a number on some of that stuff, but we feel like our programs provide value to our customers.

Q Okay. Thank you.

We're going to switch gears a little bit and turn to free-ridership. FPUC used a two-year payback screening to account for free riders in this proceeding;

is that correct?

A That's correct.

Q Did FPUC consider using any alternative methods to account for free riders, such as surveys or historical data?

A Is -- no surveys were done and, in previous testimonies, we heard that they looked at the one- and three-year consideration. We also did, but settled on the two-year, as what's been done by the Commission, pretty much all along.

Q Okay. And so, just to follow up on that last statement, why does FPUC believe that the two-year payback screening is the best method to screen for free-ridership?

A It just seems like that's the logical cutoff point for where you're going to eliminate the free riders, and other customers still can benefit using that two-year payback.

Q Okay. And I think just a couple more questions and staff will be done.

Is it true that the total conservation cost-recovery amount FPUC will collect in the calendar year, 2019, is approximately $650,000?

A That sounds correct.

Q Okay. And is FPUC's estimated total expense

for the full current FEECA goals-setting proceedings, including consultant fees, legal expenses, and others, approximately 350,000?

A That sounds correct, also.

MR. KING: Okay. Thank you, Mr. Ranck.

Staff is done.

CHAIRMAN GRAHAM: Thank you.

Commissioners?

Redirect?

MS. KEATING: Just a couple, Mr. Chairman.

CHAIRMAN GRAHAM: Sure.

REDIRECT EXAMINATION

BY MS. KEATING:

Q Mr. Ranck, just to follow up and clarify a point that you discussed with staff, if you don't have goals, would FPUC still be able to achieve energy savings from DSM programs, if allowed to maintain them?

A We believe so.

Q And one other clarification point: Did Nexant's analysis review FPUC's DSM programs?

A No, they did not.

MS. KEATING: Okay. Thank you, Mr. Ranck.

CHAIRMAN GRAHAM: Exhibits -- you have none.

MS. KEATING: We have none.

CHAIRMAN GRAHAM: Staff?

MR. KING: We have --

CHAIRMAN GRAHAM: Okay.

MR. KING: We have none.

CHAIRMAN GRAHAM: Okay. We're good.

MS. KEATING: May Mr. Ranck be excused?

CHAIRMAN GRAHAM: He may, sure.

Your next witness.

MS. KEATING: Mr. Chairman, our next witness, Robert Camfield. The parties all stipulated that Mr. Camfield's testimony and exhibits could be entered into the record without cross.

CHAIRMAN GRAHAM: Okay.

MS. KEATING: And Mr. Camfield was excused previously from attendance at the hearing.

CHAIRMAN GRAHAM: Okay. So, at this time, we will enter his prefiled direct testimony into the record as though read.

(Whereupon, Witness Camfield's prefiled direct testimony was inserted into the record as though read.)

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 20190017-EG

IN RE: COMMISSION REVIEW OF NUMERIC CONSERVATION GOALS

(Florida Public Utilities Company)

DIRECT TESTIMONY OF ROBERT J. CAMFIELD

ON BEHALF OF FLORIDA PUBLIC UTILITIES COMPANY

I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Robert J. Camfield. My business address is 800 University Bay Drive, Suite 400 Madison, WI 53705.

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

A. I am employed by Christensen Associates Energy Consulting, LLC in the capacity of Senior Regulatory Consultant.

Q. Please describe your background and professional responsibilities.

A. My professional background is concentrated in electricity and gas utility services. This work has focused predominantly on the numerous issues associated with resource decisions and the process of determining prices for utility services, as set by regulatory authorities.

Q. Please describe Christensen Associates Energy Consulting, LLC.

A. Christensen Associates Energy Consulting is an integral part of Laurits R. Christensen Associates. Our consulting group is a full-service consulting firm focused on applied economics, with four practice areas including transportation, energy, litigation

support, and analytical support for the U.S. Postal Service. We have served the electricity and natural gas industry since 1976, and our senior staff has decades of experience including testimony and official reports on a variety of topics, as filed before numerous state and federal regulatory authorities in the U.S. as well as regulatory authorities overseas including Canada.

Q. Have you provided testimony before the Florida Public Service Commission?

A. I have testified before Florida regulators regarding a variety of topics including power supply agreements, projections of electricity demand, cost allocation, escalation rates of resource inputs, and cost of capital.

Q. Please state your educational background and experience.

A. I have many years of experience in the energy industry and the economics of regulation including resource decisions, regulatory governance and incentive plans, market restructuring, cost allocation, energy contracts, cost of capital, and performance benchmarking. I have testified on a host of topics including cost of capital and rate of return, demand for electricity, resource planning, transmission congestion, rate of return incentives, wholesale power agreements, cost benchmarking and corporate performance, power procurement processes, electric and natural gas rate design, and regulatory phase-in plans. I have assisted electric utilities to determine Open Access Transmission Tariff (OATT) prices for regulatory filings and the commercial terms of power supply agreements. I have served in the capacities of System Economist for Southern Company and Chief Economist for the New Hampshire Public Utilities Commission. I have also published articles in *The Electricity Journal*, *CIGRE (International Council on Large Electric Systems)*, *IEEE*

Transactions on Power Systems, and contributed sections to *Pricing In Competitive Markets* and *Electricity Pricing In Transition*, Kluwer Academic Publishers. My management experience includes numerous projects involving retail and wholesale markets in the U.S. and abroad. I have served as the program director for Edison Electric Institute's (EEI) Transmission and Wholesale Markets summer program. I am a graduate of Interlochen Arts Academy and hold an M.A. in Economics from Western Michigan University. My resume is attached as Exhibit No. 4__(RCJ-4).

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

A. The purpose of my testimony is to discuss Florida Public Utility Company's (FPUC) avoided costs, as utilized by Nexant Consultants for purposes of economic and achievable conservation and demand-side evaluations. The testimony which follows summarizes FPUC's projections of avoided costs and discusses the underlying methodology.

Q. Please describe how the testimony content is organized.

A. The testimony which follows is organized into several sections including I. INTRODUCTION; II. CONTEXT: MARKETS SERVED BY FLORIDA PUBLIC UTILITIES COMPANY; III. AVOIDED COSTS: DEFINITION AND STRUCTURE; IV. SUMMARY OF FINDINGS AND AVOIDED COST RESULTS; V. DISCUSSION OF METHODOLOGY.

Three exhibits are sponsored with my testimony, including Exhibit No. 1 _ [RJC-1] in support of the Summary section, and Exhibit No. 2 _(RJC-2) in the Result Details section. A copy of my resume is presented in Exhibit No. 3 _[RJC-3].

II. CONTEXT: MARKETS SERVED BY FLORIDA PUBLIC UTILITIES COMPANY

Q. Please describe Florida Public Utilities Company and arrangements for power supply.

A. Florida Public Utilities Company is an electricity distributor. FPUC provides electric service to more than 28,000 customers in two non-contiguous service territories, referred to as the Northeast and Northwest Divisions. The Northeast Division serves retail consumers on Amelia Island, located in the far Northeast corner of Florida and including the City of Fernandina Beach. The Northwest Division serves consumers in the City of Marianna and the surrounding area including portions of Calhoun, Jackson, and Liberty counties, located in Florida's panhandle region. Combined, FPUC's two electricity divisions serve non-coincident peak loads of 170 MW and energy consumption of 706,300 MWh, stated annually for 2018.

Rather than producing generation services from resources internal to the Company, FPUC has in place power supply agreements with regional wholesale suppliers for generation services, and purchases transmission services under the Open Access Transmission Tariffs (OATT) of the respective transmission service providers. Under the power supply agreements—sometimes referred to as full requirements services—FPUC purchases wholesale power and accompanying transmission services from Florida Power & Light (FPL) and Gulf Power Company. For its Northeast Division, Florida Public Utilities Company also purchases power from the new Eight Flags Combined Heat and Power (CHP) facility. In addition, FPUC's Northeast Division obtains intermittent power supply from two large industrial consumers, Rayonier Advanced Materials and West Rock Paper and Packaging Products.

The estimates of avoided costs presented below are for Florida Public Utilities Company's Northeast Division. The avoided cost outlook for FPUC's Northwest Division has not been estimated, as FPUC's power supply agreement with the Southern Company, which currently serves the Northwest Division, is nearing end-of-term. New commercial terms for generation and transmission supply will soon be put into place, possibly calling for major revisions in supply costs, both as a matter of level and of configuration.

III. AVOIDED COSTS: DEFINITION AND STRUCTURE

Q. What is avoided cost and how are estimates of avoided costs used?

A. "Avoided cost" refers to the resource cost savings associated with changes in the services provided. Sometimes referred to as marginal costs, avoided costs are particularly important to infrastructure industries such as electricity and gas utility services. By definition, avoided costs reflect cost savings at the margin: the reduction in the total cost incurred by service providers with respect to a change (decrease) in the level of services provided. Avoided costs are typically measured as $/MCF in the case of gas services, and $/MWh in the case of electricity. The avoided cost estimates presented below are for electricity services.

Resource cost savings—i.e., avoided costs—are highly specific to the timeframe in which services are provided to consumers. For this immediate proceeding before the Florida Public Service Commission (Florida PSC), the relevant application of avoided costs is electricity demand side resource options including demand side management (DSM), distributed energy resources (DER), and tariff design in the form of static and dynamic pricing options, together referred to as demand

response (DR). As an example, a large industrial customer selects a dynamic pricing option with hourly day-ahead prices. Off-peak prices based on avoided costs are typically $35/MWh (3.5 cents/kWh), whereas peak hour prices may reach well above $200/MWh (20.0 cents/kWh). Compared to the standard tariff, we can expect that electricity consumption will rise somewhat during off-peak hours increasing costs by $35/MWh, offset by consumption decreases during on-peak hours, thus reducing total costs by $200/MWh.

In brief, avoided costs serve as the cost benchmark by which supply - and demand - side resource options are gauged. The selection of demand-side options often involves long-term commitments, much like supply options. Accordingly, the process of resource assessment employs estimates of avoided costs over extended future years. To this end, FPUC's avoided cost estimates reach forward through 2038.

Q. What is the structure of forward-looking avoided costs and how are they estimated?

A. Avoided costs reflect the underlying resource technologies used in the production and transport of electricity from locations where it is produced to locations where it is consumed. Given technologies, avoided costs are determined by the costs of inputs including fuel, capital, and operating expenditures for labor, materials, and outside services. Until the recent appearance of battery storage at viable cost levels, electricity could not be readily stored at a sizable scale. Hence, electricity production must match demand exactly, in real time. Cost arbitrage across

timeframes (off-peak, peak) is not readily possible; as a consequence, avoided costs can vary dramatically over the course of hours or from one day to another.

Electricity services are generally defined according to commonly recognized functional activities including generation, transmission, and distribution services. Avoided costs are organized in similar fashion: the costs of generation and power delivery are estimated for energy and capacity dimensions, where energy costs within power delivery account for the costs associated with physical losses in transmission and distribution circuits and transformers.

Q. What is the perspective of FPUC with respect to avoided costs?

A. For the immediate purposes, avoided costs reflect the input costs that are expected to be paid for the generation and transmission services received under FPUC's power purchase agreement with FPL, referred to as Native Load Firm All Requirements Power and Energy Agreement (power supply agreement). This presents a potential challenge for avoided cost estimates: the charges paid for power—that is, the private costs incurred by FPUC for power supply—may vary inordinately from the economic costs of producing and delivering electricity. While unlikely, it is possible for substantial differences to arise because of several contributing factors such as the exercise of market power, the use of financial costs as the basis to set contract prices, or major resource imbalances. For FPUC, these conditions do not appear to hold: that is, the underlying prices paid by FPUC for power supply appear to reasonably approximate the underlying incremental costs (marginal costs) used by FPL to provide generation and transmission services.

Estimates of avoided cost for FPUC are projected for off-peak and peak load hours for individual months. Estimates of avoided costs are developed for, and thus align with—the three major components specified within FPUC's power supply agreement with FPL. These cost components are covered two service categories, referred to as Intermediate Block Service (IBS) and Load Following Service (LFS). Avoided transmission services cover the transmission services provided by FPL, as well as the conventional suite of ancillary services covered within FPL's OATT. Estimates of avoided generation and transmission costs are adjusted for estimates of power delivery line and transformer losses, including losses for distribution services.

IV. SUMMARY OF FINDINGS AND AVOIDED COST RESULTS

Q. Please discuss Florida Public Utility Company's projections of avoided costs for use in the FEECA evaluation studies.

A. Exhibit RJC-1 summarizes FPUC's estimates of avoided costs over years 2019-2038. Reported in nominal dollars for selected years, avoided costs are presented for off-peak and peak timeframes according to season and cost component. The seasonal definitions include the winter season covering the months of November through March, the off-peak season including the months of April and October, and the summer season covering the months of May through September. As discussed above, cost components align with the structure of the commercial terms of FPUC's power supply agreement with FPL and include separate charges for energy and non-fuel operations and maintenance (O&M) and referred to as *Non-Fuel Energy Price*, under both Intermediate and Load Following service categories and charged on a $/MWh basis; and charges for generation capacity under Load Following Service

and billed as $-kW-month demand charges. As described above, avoided transmission capacity and energy costs (losses) take account of the transmission services provided under FPL's OATT, where charges for services are billed as $/kW-month demand charges under several transmission schedules.

A close review of Exhibit 1 gives rise to several observations. First, the overall average avoided costs rise by 3.0% annually through 2028, though fuel costs are expected to rise only modestly, from $2.90/MMBTU in 2019 to $3.17/MMBTU in 2028, an annual rate of change of 1%. In other words, avoided costs are rising at approximately 3 times faster than fuel costs, even though fuel charges are the major cost element within avoided costs. This difference in escalation between avoided costs and fuel costs is a consequence of the expected ongoing increases in electricity usage by FPUC's customers which, by assumption, are expected to rise 1% annually. Essentially, the progressively higher load levels over time result in sizable increases in the number of hours where LFS fuel charges are on the margin, in lieu of IBS fuel charges. This matters in a significant way: Stated on a $/MWh basis, as the input energy content (BTU) underlying LFS fuel charges are nearly 50% above input energy content for IBS fuel charges.

Second, projected generation capacity costs remain unchanged for years 2019-2028, per the FPU-FPL power supply agreement for LFS. For years beyond 2028 through 2038, projected capacity costs are declining, from $11.09/MWh to $10.15/MWh—a decrease of approximately 0.9% annually. This path of declining costs reflects the expectation of utility-scale solar power assuming a prominent position in FPL's portfolio of generation supply which, with battery storage

capability, assists in the provision of capacity under LFS. Should these years beyond 2028 not include steadily increasing solar energy in the provision of capacity, on the margin, the baseline avoided cost scenario, overall, rises somewhat more rapidly, as charges for LFS capacity are higher. This condition holds, providing that the costs for the solar/storage resource bundle is less than the costs of natural gas supply. Analysis suggests that if capacity is satisfied exclusively with natural gas resources (single cycle combustion turbine technologies) in isolation of the solar/battery resource bundle, capacity costs under LFS can be expected to rise at approximately 2.6% annually.

Expectations of transmission charges are set according to the recent historical experience of FPL with respect to investment and operations and maintenance expenditures in transmission, stated on a $/mile of facilities basis. This history suggests that transmission OATT charges will rise by 2.5% annually over the forward period through 2038.

Taken as a whole, FPUC anticipates that its overall avoided costs for generation and transmission (G&T) charges will rise from $46.61/MWh in 2020 to $73.03/MWh in 2038, an average annual rate of escalation of 1.6%, and somewhat less than the expected overall price inflation across the U.S. economy. Nonetheless, it goes without saying: the evolution of wholesale prices for generation and transmission services paid by FPUC can assume a different path. Indeed, the long-term history of electricity prices reveals noticeable variation in the trends in electricity prices paid by consumers.

V. DISCUSSION OF METHODOLOGY

Q. Please describe the notion of avoided costs.

A. As alluded to above, avoided costs are a variant of marginal supply costs. By definition, marginal costs—and thus avoided costs—refers to the change in total supply cost with respect to a change in the quantity of supply. The quantity of supply—or the quantity of output supplied—refers to the production and delivery of goods and services. With few exceptions, costs are a positive function of supply: total costs rise with increases in supply and decline as supply decreases.

Q. Are avoided costs different from marginal costs?

A. No. Avoided electricity costs are a specific application of marginal costs and, apparently, originate with the Public Utility Regulatory Policies Act (PURPA) of 1978 and incorporated in rules by the Federal Energy Regulatory Commission in 1980. Avoided costs are *internal costs not incurred* (or foregone) by service providers as a consequence of reductions in load *or* increases in alternative supply such as the purchase of power from qualifying facilities defined under PURPA or renewable resources. Marginal costs are similarly defined: the incremental (decremental) cost impact arising from an increase (decrease) in the services provided by electricity service providers (utilities).

More generally, avoided costs capture the decremental cost impact resulting from a decrease in services provided by conventional utilities resources (generation, transmission, possibly distribution). In the context of the immediate analysis, the decrease in utility services provided as a result of DSM, would be supplanted by demand side resources. If demand side resources are available at lower costs than

the internal economic costs associated with the provision of services, as provided by utilities, total costs decline. Depending on the relative position of average prices set according to financial costs and avoided costs, average prices can rise as the employment of demand side resources increases. An exception to this general observation is the well-known two-part tariff application of time-varying pricing, which is often the structure for implementing dynamic pricing.

Q. Please discuss the features of electricity services and how electricity characteristics impact avoided costs?

A. The costs of producing goods and providing services is specific to the technologies and processes of supply. This is particularly the case of electricity services, where avoided and marginal costs are highly differentiated by timeframe—and also by location. This feature of electricity services is a direct consequence of power system supply technologies. Power systems constitute highly integrated systems for the production and transport of electricity from locations where it is produced to locations where it is consumed. Electricity services are provided as a continuous flow, with only occasional interruption to supply.

Power systems have unusual characteristics and features. First, demand and supply must be balanced in real time in order to avoid system collapse—a sudden, near-instantaneous loss of supply. Thus, the production of electricity is virtually identical to demand within each moment of time, as electricity cannot be stored on a sizable scale—notwithstanding battery storage technologies. Non-storability also means that inventories cannot readily serve as a means of cost arbitrage. Second, electricity flows within power delivery circuits follow, exactly, physical laws.

Together, these power supply features mean that operators of power systems, in addition to ensuring real-time balance of production and demand, carefully monitor flows within transport systems including high voltage transmission and distribution circuits. Indeed, power flows across circuits must remain strictly within pre-defined operational boundaries set by the North American Electric Reliability Corporation (NERC).

Features of electricity supply have major cost implications. Avoided and marginal costs are highly sensitive to near-term availability of supply. As electricity loads approach supply constraints, costs can vary dramatically: over the course of a single day—or between a high load-high cost day and a normal load day—costs can vary by a factor of 10 to 1 or greater. On occasion, hourly avoided costs can range from well over $1000/MWh to less than $30/MWh, though typical peak period avoided costs approximate $65/MWh, or 6.5 cents/kWh.

Q. Please describe how FPUC's estimates of avoided costs are developed, and identify the major inputs used in the estimation process.

A. Estimates of forward-looking avoided costs are developed using simulation methods. Avoided cost estimates, simulated for 2019-2038, are based on known parameters, observed market prices where relevant, observed electricity demand, historical cost data, and various cost studies, reports, and surveys, as follows:

- *Known parameters* reflect the commercial terms of the FPUC's ten-year power supply agreement with Florida Power and Light;

- *Observed market prices* refer to the records of daily spot natural gas prices at Florida Gas Transmission's Zone 3 hub, and Henry Hub futures contracts traded on the Chicago Mercantile Exchange;
- *Observed demand* refers to the measured hourly loads of FPUC's Northeast Division;
- *Historical cost data* refers to the detailed historical cost experience of FPL as reported within the public domain;
- *Cost studies and reports* refer to the Regional Load and Resource Plan of the Florida Reliability Coordinating Council and the long-term projections of energy supply costs based on simulation tools, as reported in the *Annual Energy Outlook* published by the Energy Information Administration; and,
- *Cost surveys* refer to surveys of observed or estimated costs of power technologies including single cycle combustion turbine (CT) and solar power generation (stated on a $/MWh basis); historical labor costs (wages and salaries) reported by the Bureau of Labor Statistics; and the costs of renewable resources reported by the National Renewable Energy Laboratory.

Q. Can you please describe the approach utilized to estimate Florida Public Utilities Company's avoided costs?

A. Estimates of FPUC's avoided costs draw upon *short-* and *long-run* marginal cost concepts. The most relevant definition for cost analysis and program evaluation—including efficient pricing of electricity services—is *short-run cost*, estimated for either near-term or longer-term forward periods, and including energy and reliability. As a practical matter, however, short-run reliability costs are not directly

observable. Fortunately, estimates of *long-run costs* can often serve as viable proxies for forward-looking short-run marginal costs.

Avoided cost estimates follow directly from estimates of the service quantities (customer loads), and the underlying costs of the resources available to serve loads. Florida's assessment of demand-side resources under FEECA involves avoided cost estimates over an extended forward period—approaching 2040. Accordingly, avoided cost estimates were developed for this long-term forward timeframe. In the case of loads, FPUC's avoided cost estimates are based on the 2018 hourly loads of FPUC's Northeast Division, served by FPL.

Q. Can you please discuss the service quantities that support FPUC's estimates of avoided costs?

A. For our purposes, the relevant loads for estimation of avoided costs are the hourly purchases of energy and capacity (generation, transmission) by FPUC under the power supply agreement and FPL's OATT. This load definition is net load delivered at FPUC's 138 kV transmission substation, constituting the sum of the hourly consumption of electricity of customers served by the Northeast Division under its retail tariff, minus power supply produced by on-site cogeneration facilities and the Eight Flags generator (approximately 20 MW).

The Northeast Division's net hourly purchases of energy and capacity are projected to rise by a modest 0.2% annually through 2028. As a matter of assumption, the Northeast Division's load levels (net purchases) are held constant at the 2028 level over the remaining forecast period for avoided cost estimates, 2029-2038. Pages 1

and 2 of Exhibit RJC-2 present the net hourly loads of the Eastern Division, shown as average hourly load profiles for 2018 and previous years for the months of January and July.

Q. Please discuss the process for determining resource costs included in FPUC's avoided cost estimates.

A. As alluded to above, FPUC's estimates of forward-looking avoided costs are structured in a manner similar to the FPUC-FPL power supply agreement covering generation services and, separately, transmission services. As mentioned, the charges for generation services include energy costs and capacity costs, as defined in the commercial terms of the IBS and LFS. The starting point is hourly load level, which determines whether IBS or LFS charges are on the margin.

Avoided energy costs include fuel costs and non-fuel operations and maintenance (O&M) costs, which are specific to IBS and LFS. Avoided capacity costs reflect LFS capacity charges. In the case of fuel costs, charges are differentiated according to heat rates. If the hourly load is equal to or less than 10.0 MW, IBS-based fuel and O&M cost estimates determine avoided costs; if the hourly load is greater than 10.0 MW, LFS-based fuel and O&M cost estimates coupled with LFS capacity costs determine hourly avoided costs. (Note, however, that avoided capacity costs do not necessarily appear in all hours where LFS resource costs are on the margin.)

Q. How has FPUC estimated avoided fuel costs?

A. Avoided fuel costs are driven by estimates of the natural gas purchase costs FPL, including pipeline transportation charges and commodity charges. Currently, the

charges paid by FPL for gas transportation, relevant for FPUC'S estimates of avoided costs, are approximately $0.95/MMBTU under the pipeline tariff of Florida Gas Transmission (FGT). Under IB and LFS terms, gas commodity prices are set according to FGT Zone 3 wholesale gas prices. Analysis of daily gas prices over recent months suggest that, often, Zone 3 gas prices closely follow Henry Hub gas prices. This is a convenient result for purposes of avoided cost estimation: Henry Hub prices serve as a proxy for Zone 3 prices. In short, owing to the close parallel between Zone 3 and Henry Hub prices, FPUC's estimates of avoided fuel costs are based on Henry Hub gas futures prices, as settled on the Chicago Mercantile Exchange for monthly deliveries through year 2028, plus observed transportation charges.

Projections of natural gas prices for years 2029-2038 are based on forecast natural gas prices, as reported within the 2019 Annual Energy Outlook (AEO) published by the Department of Energy (DOE). For purposes of avoided cost estimation, FPUC has attenuated the annual rates of natural gas price escalation reported by DOE. The concern is potential forecast bias within AEO's projections of natural gas prices over recent years—an issue which is being further discussed.

Q. Please discuss the methodology for estimating the non-fuel O&M cost component of FPUC's avoided energy costs.

A. For supply provided under both IBS and LFS, projections of non-fuel O&M cost components, stated on a $/MWh basis, are specified through 2028 under the power supply agreement. Beyond 2028, non-fuel O&M costs for IBS and LFS supply are based on projections of non-fuel O&M costs for FPL's fleet of natural gas generators. Rates of non-fuel cost escalation are based on expected inflation,

according to the difference between observed interest rate yields on 10-year U.S. Treasury Constant Maturity and Inflation Protected securities of approximately 2.00% (2.48% − 0.54% = 1.94%). Avoided non-fuel energy costs are, as a matter of assumption, separated into two components: external contract service and internal costs. For years beyond 2028, external costs escalation is set at 2.00%. The internal cost component incorporates two adjustments: an upward adjustment of 1.06 percentage points to account for economy-wide differences between labor costs and inflation, as observed historically; and a downward adjustment of 0.50 percentage points for expected productivity gains within FPL's gas generation function.

Q. Please review FPUC's methodology for estimating avoided generation capacity costs.

A. Avoided generation capacity costs are LFS cost components and are specified as $/kW-month demand charges with the power supply agreement through 2028. For years 2029-2038, avoided costs are determined by the weighted combination of natural gas and solar/storage resource costs. The weights are determined by the relative shares of natural gas and solar/storage resources within FPL non-nuclear generation supply. The relative shares reflect the baseline scenario of FPL's future generation mix, as estimated. In turn, FPL's baseline generation mix, projected for 2029-2038, are determined by the all-in projected costs of FPL's natural gas supply and solar/storage technology costs, stated in terms of $/MWh.

For solar/storage technology, the path of future costs assumes a declining logistic function. Under the baseline scenario of FPL's generation mix, projected

solar/storage technology costs are $49/MWh in 2029, declining to $44/MWh in 2038. The projected all-in costs of the counterpart electricity supply technology, gas-fueled generation, are $62/MWh and $73/MWh for 2029 and 2038 respectively. Owing to its inherent cost advantage under the baseline scenario for FPL, solar/storage assumes a progressively rising share of FPL's generation mix. Under the scenario, levels of natural gas supply reach a maximum of 99 TWh in 2025, declining to 66 TWh in 2038. This result appears to be fully in accordance with other long-term projections of generation mix, including recent editions of the Annual Economic Outlook.

Once determined, avoided capacity costs are distributed to hours of each month according to the likelihood that individual hourly loads would be the maximum hourly load for determining monthly capacity costs, as billed. This approach is non-linear and tends to distribute $/kW-month capacity costs across peak hourly loads. The outstanding issue is whether capacity should be distributed narrowly or broadly across hours. FPUC's estimates of avoided costs takes the latter approach: capacity costs are distributed fairly broadly across peak load hours, based upon a parameterized non-linear max function.

Q. Please review FPUC's methodology for estimating avoided transmission capacity costs.

A. Avoided transmission capacity costs are based on projections of FPL's OATT prices for transmission services. The estimates of OATT prices reflect projections of FPL's all-in financial costs for transmission services for 2020-2038. Transmission cost projections are

based on FPL's historical cost records for transmission, as reported in its FERC Form 1 reports for years 1994 through 2016. These historical costs serve as a basis to determine trends in transmission cost expenditures, both capital and operating. Once estimated, the trends in cost experience are extended over future years which, reflected in OATT prices for transmission services, are expected to rise at 2.49% annually.

Avoided transmission capacity costs, stated on $/kW-month basis, are distributed to hourly peak loads in a manner similar to that used for generation capacity costs. Transmission capacity costs are distributed somewhat more narrowly than generation capacity costs.

Also, FPL's charges for transmission services under its OATT cover the resource costs associated with the conventional suite of ancillary services including Scheduling (AS1), Reactive Power and Voltage Support (AS2), Regulation Services (AS3), Energy Imbalance Services (AS4), and Spinning and Supplemental Reserves (AS5, AS6).

Q. You have mentioned that avoided costs can vary substantially according to timeframe. Please elaborate?

A. As discussed, FPUC's avoided cost methodology takes account of time varying nature of resource costs, for electricity services. To this point, Exhibit RJC-3 presents the hourly profile of all-in avoided costs, estimated for the months of January and July for 2024. As shown, hourly avoided costs vary by approximately 2 to 1, *on average*. However, the hourly variation is dramatically higher—the hourly maximum avoided costs reaches over $600/MWh, for several hours. For this reason, properly designed dynamic pricing options provide the capability to provide major reductions in total resource costs.

Q. Is it your opinion that the appropriate avoided cost inputs were provided to Nexant for use in the Market Potential Study done for FPUC?

A. Yes.

Q. Does this conclude your testimony?

A. Yes. It does.

CHAIRMAN GRAHAM: And --

MS. KEATING: Thank you, Mr. Chairman.

And Mr. Camfield's exhibits are already marked on staff's exhibit list as Exhibits 36 through 39.

CHAIRMAN GRAHAM: And if I have no objections, we will enter Exhibits 36 through 39 also into the record.

(Whereupon, Exhibit Nos. 36 through 39 were entered into the record.)

MS. KEATING: Thank you, Mr. Chairman.

And with that, that is the last of FPUC's witnesses in this proceeding. There was no intervenor testimony in FPUC's docket, and thus, no rebuttal testimony, in FPUC's docket.

As such, Mr. Chairman, we would respectfully request that FPUC be excused from the remainder of this proceeding, including Counsel.

CHAIRMAN GRAHAM: You don't want to be here to spend time with us? I'm a little offended.

MS. KEATING: I'll be back. I'll be back.

(Laughter.)

CHAIRMAN GRAHAM: Yes, you can be excused. Thank you.

MS. KEATING: Thank you, Mr. Chairman.

CHAIRMAN GRAHAM: Okay. Duke.

MR. BERNIER: Thank you, Mr. Chairman. Duke Energy calls Ms. Lori Cross.

EXAMINATION

BY MR. BERNIER:

Q Ms. Cross, you were previously sworn; is that correct?

A Yes.

Q Thank you.

Could you please identify yourself for the record and provide your business address.

A My name is Lori Cross. My business address is 299 First Avenue North, St. Petersburg, Florida 33701.

Q Thank you.

And did you prepare and cause to be filed direct testimony and exhibits in this docket?

A Yes, I did.

Q And do you have any corrections to make to your prefiled direct testimony or exhibits?

A No.

Q And if I were to ask you the same questions today, would your answers be the same?

A Yes, they would.

MR. BERNIER: Thank you.

Mr. Chairman, at the time, we -- DEF would ask that Ms. Cross' direct testimony be entered into

the record as though read.

CHAIRMAN GRAHAM: We will enter Ms. Cross' direct testimony into the record as though read.

MR. BERNIER: Thank you.

(Whereupon, Witness Cross' prefiled direct testimony was inserted into the record as though read.)

DUKE ENERGY FLORIDA

DOCKET NO. 20190018-EG

DIRECT TESTIMONY OF

LORI CROSS

INTRODUCTION AND QUALIFICATIONS

Q. Please state your name and business address.

A. My name is Lori Cross. My business address is 299 First Avenue North, St. Petersburg, Florida 33701.

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

A. I am employed by Duke Energy Florida, LLC ("Duke Energy Florida," "DEF," or "the Company") as Strategy and Collaboration Director in the Customer Planning and Analytics Department.

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

A. My responsibilities include the regulatory planning, support and compliance of the Company's Demand-Side Management ("DSM") programs. This includes support for development, implementation and training, budgeting, and accounting functions related to these programs. By DSM, I mean both

dispatchable (demand response or direct load control) and non-dispatchable (energy efficiency) types of programs.

Q. Please summarize your educational background and professional experience.

A. I have a Bachelor of Science degree in Business from the University of South Florida. I have over thirty (30) years of experience in the electric industry. My experiences include roles in DSM Program Support, Rates, Regulatory Planning, Financial Planning, Accounting, and Treasury.

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

A. Yes. I have provided 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 Duke Energy Florida's proposed numerical DSM goals for 2020-2029 for Commission review and approval. DEF's proposed goals are based upon the analysis completed by the Company in accordance with the requirements set forth by Staff in the Order Establishing

Procedure in this docket. Additionally, the goals proposed in this proceeding are supported by the results of a new Technical Potential (TP) study completed by Nexant, Inc.

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 No. __ (LC-1): Duke Energy Florida's Residential and Non-Residential Annual Potential RIM Evaluation for 2020-2029 at the generator.
2. Exhibit No. __ (LC-2): Duke Energy Florida's Residential and Non-Residential Annual Potential TRC Evaluation for 2020-2029 at the generator.
3. Exhibit No. __ (LC-3): Duke Energy Florida's Avoided Cost Assumptions.
4. Exhibit No. __ (LC-4): Duke Energy Florida's Fuel and Carbon Price Sensitivities.
5. Exhibit No. __ (LC-5): Summary of Achievements of Existing DSM Programs.
6. Exhibit No. __ (LC-6): Measures Included in Economic Potential Based on RIM and TRC Evaluations.
7. Exhibit No. __ (LC-7): Projected RIM and TRC Portfolio Costs and Residential Customer Rate Impacts

Q. Please summarize your testimony.

A. My testimony presents the Company's proposed goals for the 2020-2029 period for Commission review. I describe the process that was used to develop the proposed DSM goals and provide a summary of those results. My testimony includes the estimated average residential customer bill impacts based on both the Rate Impact Measure ("RIM") evaluation and the Total Resource Cost ("TRC") evaluation. I also discuss the current DSM programs and provide an explanation for the differences in the proposed goals and the current goal levels.

Q. What was the process used to determine DEF's proposed goals?

A. DEF, along with the other FEECA utilities, contracted with Nexant, Inc., to develop a new comprehensive Technical Potential ("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 Nexant to develop the economic and achievable potential.

The FEECA utilities worked collaboratively with Nexant 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 Market Potential Study Report ("MPS") presented in Exhibit No. __ (JH-4) to Mr. Herndon's testimony. This report includes a summary of the measures eliminated or added compared to the 2014 TP study and discusses changes associated with building codes and standards.

DEF then developed the avoided cost assumptions for the base case (no CO2 pricing) and the high and low fuel sensitivities and carbon sensitivity as requested by Staff. The assumptions that support each of these cases are provided in Exhibit No. __ (LC-3) and Exhibit No.___ (LC-4).

DEF then determined the cost effectiveness of each measure included in the TP study based on both a RIM and TRC evaluation. DEF evaluated the cost effectiveness for the base case, the fuel and carbon sensitivities, and the 1- and 3-year payback sensitivities for free ridership. DEF provided the list of passing measures for the base case and each sensitivity for the both the RIM and TRC scenarios to Nexant for the Economic Potential ("EP") analysis. The list of passing measures for the base case and each sensitivity are provided in Exhibit No. __ (LC-6).

Nexant then developed the EP for the base case and each of the sensitivities utilizing the results of the RIM and TRC scenarios. Nexant then developed the

Achievable Potential ("AP") for the base case for both a RIM and TRC portfolio. A detailed discussion of the process to develop the EP and AP is included in Nexant's MPS report.

DEF reviewed the results of the AP analysis 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's proposed goals are based on the results of the RIM AP.

Q. What are Duke Energy Florida's proposed residential and non-residential DSM goals for the 2020 through 2029 time period?

A. DEF requests the Commission approve the proposed cumulative numeric goals for 2020-2029 presented in Table 1 below. The annual goals that comprise the proposed cumulative goals are provided on Exhibit No. __ (LC-1). This Exhibit also provides a breakdown of the RIM annual goals into the energy efficiency and demand response components that reconcile to the EE achievable potential and DR achievable potential presented in the MPS. These proposed DSM goals have been developed in accordance with the requirements of Commission Rule 25-17.0021(3), Florida Administrative Code, which directs utilities to propose goals "… based upon the utility's most recent

planning process, of the total, cost effective, winter and summer peak demand (KW) and annual energy (KWH) savings reasonably achievable in the residential and commercial/industrial classes through demand-side management." These goals are based on measures that are cost effective based on both the RIM and Participant cost effectiveness tests. The conjunction of these tests captures all of the relevant costs and benefits that should be evaluated when considering an efficiency or load reduction program. RIM ensures that non-participating customers will not subsidize participating customers and reasonably limits overall rate impacts to customers. The Participant test ensures that the energy efficiency measures provide benefits to participants. Goals based on the both the RIM and Participant tests 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 - PROPOSED RIM GOALS 2020-2029			
	Winter Peak MWs	Summer Peak MWs	GWH's
Residential	78	108	115
Non-Residential	121	135	51
Total	199	243	166

Q. What would the goals for 2020-2029 period be if the goals were based on a TRC evaluation?

A. The residential and non-residential goals based on a TRC evaluation are provided in Table 2 below. The annual goals that comprise the cumulative TRC goals are provided in Exhibit No. __ (LC-2). This Exhibit also provides a breakdown of the RIM annual goals into the energy efficiency and demand response components that reconcile to the EE achievable potential and DR achievable potential presented in the MPS.

Table 2

DUKE ENERGY FLORIDA - PROPOSED TRC GOALS 2020-2029			
	Winter Peak MWs	Summer Peak MWs	GWH's
Residential	89	122	194
Non-Residential	131	172	238
Total	220	294	432

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

A. Yes, the TP, that is the basis for the proposed goals, includes an evaluation of all potential demand-side conservation and efficiency measures and demand-side renewable energy systems. 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 AP results.

Q. Do the 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. The proposed goals are based on measures that pass the Participant Cost Test. This test 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 proposed goals adequately reflect the costs and benefits to the general body of ratepayers, including utility incentives and participant contributions, pursuant to Section 366.82(3) (b), F. S.

A. Yes, the proposed goals do adequately reflect the costs and benefits to the general body of ratepayers as a whole because the goals are based on measures that pass both the Rate Impact Measure (RIM) and Participant tests. The Participant and RIM tests, in tandem with each other, effectively ensure both participants and non-participants benefit.

Q. What are the projected 2020-2029 annual bill impacts for residential customers assuming usage of 1200 kWh/month for both the RIM achievable and the TRC achievable portfolio?

A. The residential bill impacts for both the RIM achievable and TRC achievable portfolio are presented in Tables 3 and 4 below. These impacts include all of the normal components that comprise a residential bill, namely, base rates, recovery clauses, customer charges, and gross receipts taxes. These costs also include the costs for maintaining the existing level of load management on the system as well as the costs of the residential and commercial energy audits. The results of these analyses show an estimated total cost for a 1200 kWh/month residential bill for the ten year period for the RIM portfolio of $20,622 and $20,656 for the TRC portfolio. This difference is 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 both the RIM and TRC analysis. The TRC portfolio costs are 9% higher on average on an annual basis than the RIM portfolio costs. The projected annual RIM and TRC portfolio costs along with the projected energy conservation clause recovery rate for a residential 1200 kwh bill are provided on Exhibit No. ___ (LC-7).

TABLE 3
RIM PORTFOLIO
PROJECTED ANNUAL RESIDENTIAL BILL - MONTHLY USAGE OF 1200 KWH'S

Total	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
$20,622	$1,882	$1,891	$1,941	$1,985	$2,031	$2,078	$2,127	$2,178	$2,227	$2,279

TABLE 4
TRC PORTFOLIO
PROJECTED ANNUAL RESIDENTIAL BILL - MONTHLY USAGE OF 1200 KWH'S

Total	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
$ 20,656	$ 1,887	$ 1,896	$ 1,945	$ 1,990	$ 2,035	$ 2,082	$ 2,130	$ 2,181	$ 2,229	$ 2,281

Q. Please describe how the Base Case for the avoided costs was developed.

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 2019 Ten Year Site Plan filing with two exceptions. The first exception is that the Base Case assumes no new DSM after 2018 and the second exception is that, in accordance with the directions in the Order Establishing Procedure, 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 the resource plan was identified as the avoided unit for purposes of evaluating the cost effectiveness of potential DSM measures. Please see Exhibit No.___ (LC-3) for a summary of the avoided cost assumptions resulting from this process.

Q. Provide a detailed description of how the sensitivities were developed and compared to the Base Case, including forecasts for fuel prices.

A. The assumptions for projected fuel prices for the high and low fuel sensitivities were based on the NYMEX forward price curves and data published by the U.S. Energy Information Administration ("EIA") in the 2018 Annual Energy Outlook report. DEF used the NYMEX high and low forward price curves for the near term projections. The projected fuel prices for the high and low cases for the out years assumed the same relative spread above and below the base case as between the EIA high and low fuel cases and the EIA base case.

DEF also analyzed the impact of the cost of carbon emissions on the RIM and TRC economic potential. As directed in the Minimum Filing Requirements (Order No. PSC-2019-0062-PCO-EG), DEF worked with Florida Power and Light ("FPL") to develop a consistent assumption for the projected cost of carbon emissions. The carbon cost used in the carbon sensitivity represents the average of DEF's and FPL's projected cost of carbon emissions. DEF's carbon cost used to calculate the average is consistent with the carbon assumption included in DEF's 2019 TYSP.

Q. How are supply-side efficiencies incorporated into DEF's planning process?

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.

Q. How do supply-side efficiencies impact DEF's DSM Programs?

A. 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 as well as detailed modeling of 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 are 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. Should the Commission establish supply-side efficiency goals in this proceeding?

A. No. DEF continuously identifies and evaluates conservation and efficiency improvement opportunities for generation, transmission, and distribution in its

planning processes (including TYSP and need determinations). Accordingly, there is no need to set goals for such supply-side efficiencies in this proceeding.

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

A. Yes, the proposed 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 and maximize cost effectiveness.

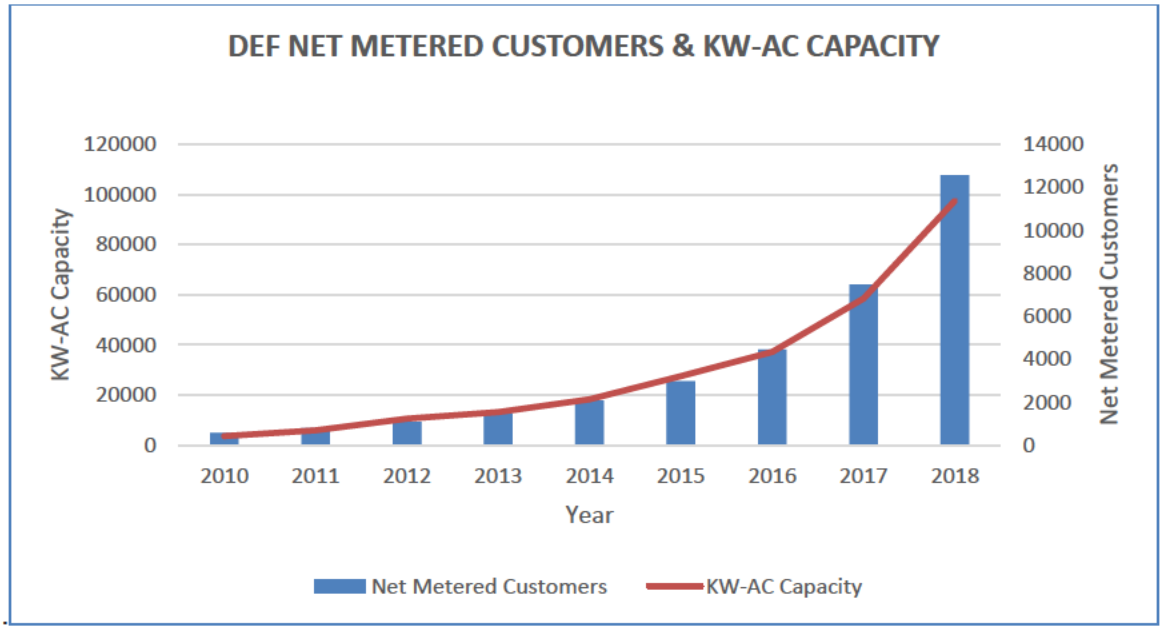
Q. Do DEF's proposed goals adequately reflect the costs imposed by state and federal regulations on the emissions of greenhouse gases?

A. Yes. Given the uncertainty of future carbon regulation, it is reasonable to exclude the cost of carbon emissions in this goals setting process.

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. 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. Florida currently ranks among the top ten states based on the cumulative amount of solar electric capacity installed. The cost to install solar has dropped significantly in recent years, and with that, DEF is seeing continued growth in the number of customers installing demand-side renewable systems on their own, without incentives from the utility. In 2018, DEF added an average of 400 net metered customers each month. The chart below shows the growth in the number of net metered customers and installed capacity for 2010 through 2018.



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. 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. Describe the demand-side management programs DEF currently offers to residential customers?

A. DEF's residential programs currently include the home energy audit program, a residential energy efficiency program, and a residential demand response program, and two programs targeted to low income customers. A brief summary of each of these programs is provided below and the actual winter kW, summer kW, and gWh achievements for 2015 through 2018 are provided in Exhibit No. ___ (LC-5):

- **Home Energy Check –** DEF provides walk-through audits, online audits, phone-assisted audits and Home Energy Rating audits to residential customers. DEF performs approximately 30,000 audits each

year. These audits provide the opportunity for DEF to inform customers about energy saving opportunities and encourage customers to install energy saving measures in their homes.

- **Residential Incentive Program -** This program provides incentives to customers who install energy efficient measures that are above the baseline requirements of codes and standards. DEF currently provides incentives for high efficiency heat pumps, duct repair, ceiling insulation, energy efficient windows, and energy star qualifying new homes through this program.

- **Neighborhood Energy Saver Program -** This program is designed to benefit low income customers. DEF targets approximately 4500 residential customer homes annually and directly installs energy efficiency measures and equipment at no cost to the customer. These measures include energy efficient lighting, ceiling insulation, duct repair, HVAC tune-ups, water heater wraps, refrigerator thermometers, wall plate thermometers, HVAC filters, weather stripping, door sweeps, caulking, and foam insulation.

- **Low Income Weatherization Assistance Program –** This program is also designed to benefit low income customers. DEF partners with local

low income weatherization providers and other agencies to provide energy saving measures in homes of qualifying customers. DEF provides incentives for water heater insulation and pipe wrap, faucet aerators, low flow showerheads, HVAC tune-ups, high efficiency heat pumps, duct repair, ceiling insulation, weather stripping, door sweeps, caulking, and foam insulation and energy star refrigerators.

- **Energy Wise** – This is a residential demand response program. This program provides bill credits to residential customers who allow DEF to control their heat pumps, water heaters, and pool pumps in periods of peak demand. Currently approximately 435,000 residential customers participate in this program.

Q. Describe the demand side management programs DEF currently offers to commercial customers.

A. DEF currently offers a commercial audit program, a prescriptive commercial energy efficiency program, a custom energy efficiency program, and demand response programs to commercial customers. A brief summary of each of these programs is provided below and the actual participation rates, winter kW, summer kW, and gWh achievements for 2015 through 2018 are included in Exhibit No. ___ (LC-5).

- **Business Energy Check** – DEF provides energy assessments to commercial customers through this program. DEF analyzes energy usage and provides recommendations on measures that can be implemented to improve energy efficiency of the facilities and operations.

- **Better Business Program** – DEF provides incentives to customers for energy efficiency measures through this program. These measures currently include:
    - Building Envelope Improvements – Cool Roof, Ceiling Insulation, Roof Insulation
    - Heating and Cooling Measures – HVAC Equipment Replacements, Demand Control Ventilation, Duct Test, Duct Repair, Energy Recovery Ventilation, HVAC Coil Cleaning, Roof Top Unit Recommissioning, HVAC Tune-ups

- **Custom Incentive Program** – This program is designed to provide incentives to commercial customers for cost effective energy efficiency measures not covered by the prescriptive measures included in the Better Business Program. DEF works directly with customers to evaluate the potential savings and cost effectiveness of energy efficiency improvements. Projects that are cost effective based on the RIM cost effectiveness evaluation are eligible for incentives.

- **Stand-by Generation** – This is a demand response program. DEF provides bill credits to customers who allow DEF to control their on-site generation facilities in periods of peak demand. The stand-by generation capacity must be at least 50 kW to qualify for this program.

- **Interruptible Program** – This is a demand response program. DEF provides bill credits to customers who allow them to interrupt their service during periods of peak demand.

- **Curtailable Program** – This is a demand response program. Customers receive bill credits for agreeing to curtail their load during periods of peak demand.

Q. Has DEF made any modifications to these programs since the last goals setting proceeding?

A. Yes. DEF reviews its processes and procedures and looks for opportunities to improve customer satisfaction and cost effectiveness of its programs on an ongoing basis. DEF has made a number of changes since the last goals setting proceeding to encourage participation, provide additional savings to customers, and ensure alignment with building codes and standards. These

changes include modifications to its low income programs, commercial custom program, and commercial energy efficiency program.

Specifically, beginning in 2016, DEF increased the targeted participation for its Neighborhood Energy Saver low income program from 3,000 to 4,500 homes annually and added measures for duct repair, ceiling insulation, heat pumps tune-ups, and home energy reports. Then in 2018, DEF further modified the program to begin providing LED lightbulbs instead of CFL's and increased the number of lightbulbs provided to customers. These changes significantly increased the savings opportunity for low income customers at no cost to program participants.

Additionally, DEF made modifications to the commercial custom incentive program to streamline the application process and encourage participation. DEF modified the customer application and approval process by providing information to customers through its external website about the types of projects that typically qualify for incentives and streamlined the application process by allowing customers to submit applications online. DEF also changed the program standards to align the eligibility requirements with the prescriptive commercial incentive program. These changes have resulted in an increase in program applications and incentives to customers.

DEF also made several changes to its commercial energy efficiency program to ensure that the eligibility requirements and reported impacts aligned with building codes and standards.

Q. Describe how DEF informs customers about low-cost and no-cost energy efficiency measures that will provide bill savings?

A. DEF informs customers about low cost and no cost energy efficiency measures in a number of ways, including through residential and commercial energy audits, community meetings, home shows, bill stuffers, emails, direct mail, home energy reports, and through its website.

DEF provides information to customers about low cost and no cost measures during the residential and commercial audits. These audits provide opportunities to help customers understand their specific energy usage, inform customers about programs and rebates that are available for energy efficiency measures, and educate customers about behavioral changes and low cost and no cost measures that will provide energy savings. DEF tracks customer satisfaction for its home energy audit program and these results show that in 2018 97% of customers surveyed ranked the home energy audit program between an 8 and 10, on a scale of 1 to 10.

DEF also provides educational material about energy savings and low cost and no cost measures to customers through both of its low income programs. DEF actually installs several low cost measures in customer homes through the Neighborhood Energy Saver (NES) program. DEF invites all of the customers who live in the targeted low income neighborhoods to a community kick-off event to explain the benefits of the NES program and to share information about low cost and no cost steps the customers can take to reduce their energy usage. DEF also provides Home Energy Reports to these customers. These reports provide customers with information about their own specific energy usage and compares their use to peer homes that are similar in size, age, and geography. The reports provide recommendations and tips about low cost and no cost measures and behavioral changes that will provide bill savings and seasonal reminders about how to save energy.

DEF also provides educational material about energy efficiency and low cost measures and behavioral changes that will provide bill savings to customers through the agencies that it partners with for the Low Income Weatherization Assistance Program.

Q. How do the proposed residential goals for the 2020-2029 period compare to the goals established in the previous goals setting proceeding?

A. Although the proposed RIM GWH goal for the residential sector for 2020-2029 is relatively close to the goal established in the previous goals setting period, the proposed winter and summer RIM MW goals for the residential sector are significantly lower than the goals established in the previous goals setting proceeding. The decrease in the MW goals is primarily due to a decrease in projected achievements for the residential demand response program. The residential demand response program was implemented in 1981 and currently approximately 435,000 residential customers, representing 27% of DEF's total residential customers, already participate in the program. Despite significant marketing efforts over the past few years, DEF has not been able to achieve the level of participation anticipated in the last goals setting proceeding. DEF believes this is primarily due to market saturation issues. Nexant factored the impact of the existing level of residential demand response into their determination of the achievable potential for the 2020-2029 period which resulted in reduced goals. Based on actual recent experience, DEF believes that this adjustment is appropriate and that the proposed residential demand response goals for the 2020-2029 period represent a reasonable assessment of the achievable potential.

Q. How do the proposed commercial goals for the 2020-2029 period compare to the goals established in the previous goals setting proceeding?

The summer and winter MW goals are higher than the goals established in the last goals setting proceeding, however the GWH goal is actually lower than the goal from the previous proceeding. This is due to a combination of factors. The increase in summer and winter MW goals is primarily due to an increase in the achievable potential for the commercial demand response programs. The decrease in the GWH goal is primarily due to the fact that the next avoided unit is farther out in the future than during the last proceeding which has influenced the cost effectiveness of commercial measures causing a change in the mix of measures included in the RIM portfolio.

Q. How are the measures included in the proposed RIM goals expected to impact program offerings to customers?

A. The demand and energy efficiency savings included in the RIM goals are primarily comprised of measures that reduce heating and cooling load which is reasonable as the TP for heating and cooling end uses makes up 59% of the total TP for residential and 35% of the total TP for commercial. Programs that target heating and cooling end uses can reduce peak demand requirements while providing significant bill savings for customers. Similar to the programs currently offered to residential and commercial customers today, DEF expects to continue to offer programs that impact heating and cooling such as, high efficiency heating and cooling, insulation, duct repair, and efficient windows.

The details of the exact measures and the appropriate level of incentive are yet to be determined and will be addressed in the program design phase.

DEF also plans to continue to support the low income programs. Here, again, the exact program offerings are yet to be determined. DEF will consider overall program costs and value to customers as we work this process.

DEF also plans to continue to provide opportunities for residential and commercial customers to participate in load management programs. These programs provide bill credits to customers who allow DEF to shut off or curtail a portion of their load during peak times. These programs provide savings as they can defer the need for additional generating resources.

CONCLUSION

Q. What is the proposed DSM goal that is reasonably achievable during the 2020-2029 period?

DUKE ENERGY FLORIDA - PROPOSED RIM GOALS 2020-2029			
	Winter Peak MWs	Summer Peak MWs	GWH's
Residential	78	108	115
Non-Residential	121	135	51
Total	199	243	166

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

A. Yes. These goals were determined after a comprehensive analysis of the 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.

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. These goals are based on measures that are cost effective under the Participants test. This test considers the costs and benefits to customers participating in the measure.

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

A. Yes. The proposed goals appropriately consider the effects of free ridership and are based on measures that are cost effective under the RIM test. Application of the RIM test ensures that the measures provide benefits to the

general body of ratepayers, to ensure the rate impact of non-participating customers is appropriately considered.

Q. Should Duke Energy Florida's proposed goals for 2020-2019 be approved?

A. Yes. Duke Energy Florida's proposed goals meet 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.

BY MR. BERNIER:

Q And Ms. Cross, have you prepared a summary of your prefiled direct testimony?

A Yes, I have.

Q Thank you.

Can you please provide your brief summary at this time?

A Sure.

Good morning, Commissioners.

CHAIRMAN GRAHAM: Morning.

THE WITNESS: My testimony presents and supports DEF's cost-effective demand-side management and energy-efficiency goals for the planning period. These goals were developed in compliance with the FEECA statute, the Commission rules, and past precedent. Our goals are reasonable and meaningful and should be adopted.

I am available to answer any questions that you may have. Thank you.

MR. BERNIER: Thank you, Ms. Cross.

DEF tenders Ms. Cross for cross.

CHAIRMAN GRAHAM: Ms. Cross, I have to say that that, by far, was the best summary I've ever heard in my life.

THE WITNESS: Thank you.

(Laughter.)

CHAIRMAN GRAHAM: OPC.

EXAMINATION

BY MS. FALL-FRY:

Q Good morning.

A Good morning.

Q I just have a couple of questions for you.

According to your testimony, you only used RIM in conjunction with the PCT to set your DSM goals, correct?

A That's correct.

Q And Duke has low-income residential DSM programs, correct?

A That's correct.

Q And your low-income programs include measures that would not pass RIM, correct?

A They currently include programs that don't pass RIM; that's correct.

Q Okay. The current ones.

And some of these measures in the low-income DSM programs included less than a two-year payback, correct?

A The current programs, yes.

Q And you're planning to retain these programs?

A We haven't actually gotten into the program-

design phase, but we will most likely retain some of those measures, maybe not all of them because we really haven't gone through that yet.

Q And you agree that the megawatts associated with your low-income programs should be included in your 2029 DSM goals -- or would be, if you con- -- if you --

A To the --

Q -- your design?

A -- extent they are included in our programs that we're -- once we design our programs, we'll submit our program plans to the Commission for approval. To the extent those measures are included and those plans approved, then yes.

Q Okay. So, just to clarify, when you testified in your rebuttal about these programs, you were referring only to current programs, not for future design.

A I actually -- you know, I'm not -- I'm actually only answering questions about my direct testimony right now. So, I don't have my rebuttal here.

MS. FALL-FRY: Okay. Thank you.

EXAMINATION

BY MR. MOYLE:

Q Good morning. I just have a -- a question or two. But just want to confirm that, over the years,

historically, Duke has provided interruptible, curtailable, and standby generation programs that have served the customers and company well; isn't that correct?

A That's correct.

MR. MOYLE: That's all I have.

CHAIRMAN GRAHAM: Ms. Wynn?

MS. WYNN: Thank you, Mr. Chairman.

EXAMINATION

BY MS. WYNN:

Q Morning, Ms. Cross. Let me direct you to the handout that was marked -- that's Exhibit No._LC5, Duke Energy Florida summary of historical achievements. This is a copy of an exhibit that was attached to your direct testimony, correct?

A Just a minute. Let me look at it.

Yes, it is.

MS. WYNN: I would like to mark this -- are we at 314?

CHAIRMAN GRAHAM: We are at 316.

MS. WYNN: Oh, sorry.

(Whereupon, Exhibit No. 316 was marked for identification.)

BY MS. WYNN:

Q Okay. I have one clarifying -- quick

clarifying question for you. These historical achievements in this table -- they are incremental from the last goal-setting case, correct?

A That's correct.

MS. WYNN: Okay. Thank you. No more questions.

CHAIRMAN GRAHAM: Okay. SACE.

EXAMINATION

BY MR. MARSHALL:

Q Good morning.

A Good morning.

Q If I could direct your attention to the exhibit with the description "Excerpt No. 12 from DEF response to SACE's first set of interrogatories, Nos. 1 through 65" -- do you see that?

A Yes.

MR. MARSHALL: And this would be Exhibit --

CHAIRMAN GRAHAM: -- 317.

MR. MARSHALL: 317.

(Whereupon, Exhibit 317 was marked for identification.)

BY MR. MARSHALL:

Q And do you -- if I could direct your attention to Interrogatory No. 12.

A Yes.

Q You sponsored the answer to this interrogatory?

A I did.

Q And the -- so, the discount rate used to assess cost-effectiveness for Duke was 7.1 percent?

A That's correct.

Q And what is a discount rate?

A It's -- it's measuring the -- the -- the cost. It's our weighted-average cost of capital.

Q And how is that used as -- as part of the process here, is what I'm getting at.

A It's part of the process that's used to bring all of the costs back to present-day dollars.

Q And if I could direct your attention to the document with the description that says, "Batch TMF 15 SEER central AC from DEF response to SACE's POD 16 from SACE's first set of PODs."

A Yes, I have that.

MR. MARSHALL: Okay. And this would be Exhibit 318.

CHAIRMAN GRAHAM: Correct.

(Whereupon, Exhibit No. 318 was marked for identification.)

BY MR. MARSHALL:

Q Duke ran its own economic-potential measures

screening in this case, right, to determine the cost-effectiveness of the measures?

A Yes, we did.

Q And -- and so, for each measure, Duke actually calculated the TRC score, the RIM score, and participant-test score?

A That's correct.

Q And so, I'd like to -- looking at Exhibit 318, did -- did -- basically, did Duke create a -- batch files for each one -- for each measured permutation?

A Yes, we did.

Q And so, here would be an example of those -- some of those test-result scores for a specific measure.

A Yes.

Q And the discount rate used is represented in the discount-rate-used column.

A Yes.

Q And so, that 7.1 percent discount rate was also used as part of the participant test?

A Yes, it was.

Q And in this example, based on the batch file name, this would be for a 15 SEER central air conditioner for a multi-family turnover segment?

A I'm sorry. I'm not seeing where it says that here.

Q At the top of the page, it should have the file name.

A Oh, I see it.

Q At the very top, center.

A Yes, that's correct.

Q And so, the participant test score for this measure was 0.99.

A That's correct.

Q If I could direct your attention to the next exhibit, it should say: DEF response to SACE POD No. 2, count DEF Nexant EE summary, base few- -- fuel, 0328-19 res tab.

A Yes.

MR. MARSHALL: All right. And this will be Exhibit 319.

CHAIRMAN GRAHAM: That is correct.

What is that description again?

MR. MARSHALL: DEF response to SACE's POD No. 2, count DEF Nexant EE summary-base fuel- --

CHAIRMAN GRAHAM: I gotcha.

MR. MARSHALL: Yeah.

(Whereupon, Exhibit No. 319 was marked for identification.)

BY MR. MARSHALL:

Q Do -- do you recognize this spreadsheet?

A I do.

Q And what is it?

A It's the Ex- -- it's our Excel file where we summarize the results of the cost-effectiveness evaluation for each of the different measured permutations.

Q And so, just to -- to make sure we're reading this correctly, if I could direct your attention to Page 2 of that Excel file, you can actually see the multi-family turnover 15 SEER central AC measured permutation.

A Yes, I found it.

Q And if you -- I know it's probably hard to follow on -- on -- on this sheet, but --

A Actually, give me a minute --

Q Sure.

A -- because I -- I'm still looking for the specific measure.

You're on -- on the second page?

Q Yes, so, it's -- it should say Page 2 at bottom -- bottom right.

A It does say Page 2.

Q It should be towards the -- the top with the 15 SEER central ACs.

A Okay. Got it.

Q And I know it's hard, but if you -- if you follow it across the page, there's three columns actually that have the RIM, TRC, and participant scores.

A Yes.

Q And those scores match for that measure what's on Exhibit 318?

A Correct.

Q And so, for that measure, it actually passed TRC and RIM.

A That's correct.

Q But because it failed the participant test, it was dropped from further analysis?

A That's correct.

Q If a different discount rate was used, could it have potentially passed the participant test?

A I don't know. I mean, we didn't evaluate this based on a different discount rate.

Q Okay. Do you have reason to believe that a different discount rate wouldn't have changed the outcome?

A I think a different discount rate could have changed the outcome. I don't know whether or not it would have passed.

Q All right. And if I could direct your attention to the next exhibit: DEF response to SACE's

POD No. 3, DEF Nexant EE summary, year 12020-with CCs-no CO2-base fuel ACH, pro cost, 032819 res tab?

A Yes, I have that.

MR. MARSHALL: And this will be Exhibit 320.

CHAIRMAN GRAHAM: That is correct.

(Whereupon, Exhibit No. 320 was marked for identification.)

BY MR. MARSHALL:

Q Do you recognize this spreadsheet?

A Yes, I do.

Q And what is it?

A This is the summary that we provided to Nexant of all of the results of the -- our economic screening.

Q And -- let's see. Do you know if there were several measures that failed the participant test, but passed the TRC, under Duke's analysis?

A There were some, yes.

Q And also, included here on Exhibit 320 are net present value program costs; is that right?

A Yes.

Q And -- and you know, you might have heard us refer to with other utilities as to administrative costs. Would -- would this include administrative costs for Duke?

A Yes.

Q And this was based on -- Duke's program costs were based on 0.049 dollars per kilowatt-hour savings; is that right?

A 0.49 -- it was cents, yes. Yes. Okay.

Q And do you -- do you know if that was a -- a lot less than the value that Nexant calculated for -- for the administrative costs that they provided to utilities?

A I don't know what -- you're asking me what Nexant used for other utilities or --

Q Well, I'm just asking you if you know whether Duke's value was -- was significantly lower than Nexant's?

A I don't know what values were for the other utilities, no.

Q But -- but Duke did use its own -- own value.

A These values are based off of our historical costs, yes.

Q And so, if you look down to the 14 SEER air source heat pump from base electric resistance heating, it includes less than $50 of net present value program costs?

A I'm sorry. You'll have to help me find that on this page.

Q Sure. It's on -- towards the bottom of

Page 1.

A Yes, that's correct.

Q And turning to the next page, Page 2, the 21 SEER air source heat pump from base electric resistance heating has less than $150 of program costs.

A Page 2 -- can you help me?

Q Sure. It's -- it should be in -- towards the middle of the page, the 21 SEER air source heat pump from base electric resistance heating.

A I'm sorry. You're -- yeah, let me -- I'll have to figure out which column it is. The headings aren't on there.

Q Yeah, I do -- the spreadsheets don't always translate well to paper.

A Okay. Found it.

Can you repeat your question?

Q Sure. The -- the program costs for the 21 SEER air source heat pump from base electric resistance heating had less than $150 of program costs assigned.

A That's correct.

Q And looking at the bottom of that page, the program costs for -- for light bulbs range from zero up to $3?

A That's correct.

Q And turning to the next page -- this would be

Page 3 at the bottom, to the two-speed pool pump, which would be about two-thirds of the way down the page.

A Okay.

Q That had program costs of $51.

A Correct.

Q And then for -- last example, down to the faucet aerator, also on that page, towards the bottom -- that had program costs ranging from 1 to $3?

A Correct.

Q And Duke believes that these are -- are reasonable program costs?

A So, they're our best estimate based off of historical, actual costs is what -- is what we used. So, you know, as part of this process, we have to come up with an estimate of program costs. And we thought this was a reasonable approach.

MR. MARSHALL: If I could direct your attention to the next exhibit, this is: DEF response to staff's second set of interrogatories, No. 35. And this will be Exhibit 321.

CHAIRMAN GRAHAM: Correct.

(Whereupon, Exhibit No. 321 was marked for identification.)

BY MR. MARSHALL:

Q And you sponsored the answer to Interrogatory

No. 35 -- oh, I'm sorry. Mr. Borsch sponsored the answer to Interrogatory No. 35.

A Yes.

Q And he's with Duke Energy?

A Yes.

Q And -- and looking at the attachment to Interrogatory No. 35, Duke was asked about natural-gas price forecasting here?

A I'm sorry. Could you repeat that?

Q Duke was asked about natural-gas price forecasting here?

A That's correct.

Q And according to the attachment, five years out, Duke had an average error rate of 48 percent?

A That's correct.

MR. MARSHALL: If I could direct your attention to the next exhibit, this is: DEF response to SACE's third set of interrogatories, No. 118. And this will be Exhibit No. 322.

CHAIRMAN GRAHAM: Correct.

(Whereupon, Exhibit 322 was marked for identification.)

BY MR. MARSHALL:

Q And you did actually sponsor the -- the answer to the answer to 118?

A I did.

Q And so, Duke has not conducted any evaluation, measurement, and verification analyses for its low-income programs?

A No.

Q Duke also provided some answers regarding its -- its -- its load forecasting in response to the Southern Alliance for Clean Energy?

A Is that --

Q They're not -- they're not in front of you?

A Not in front of me? Okay.

Q Do you remember providing those answers?

A Yes.

Q And so, just to be clear, Duke's load forecast does not assume that there won't be additional adoption by customers of energy-efficiency measures above baseline codes and standards.

A That's correct.

Q And it was Duke's load forecasting that was provided to Nexant as part of the technical-potential stage of the analysis?

A We provided the load forecasts that supported the 2017 ten-year site plan.

Q And Duke does contend that its load forecasting is accurate.

A We contend that, yeah, we're making our best effort to accurately forecast load and energy.

Q If I could direct your attention -- I think this is two ahead in the little stack here --

A Uh-huh.

Q -- to DEF response to staff's second's set of interrogatories, No. 40.

A Right, I have that.

MR. MARSHALL: All right. This will be Exhibit No. 323.

CHAIRMAN GRAHAM: That is correct.

(Whereupon, Exhibit No. 323 was marked for identification.)

BY MR. MARSHALL:

Q And you sponsored the answer to Interrogatory No. 40?

A Yes, I did.

Q And so, just to be clear, Duke only considered the payback method as the method to address free-ridership in this proceeding?

A That's correct.

MR. MARSHALL: All right. If I could next direct your attention to the exhibit that says: DEF response to staff's 11th set of interrogatories, No. 122. And this will be

Exhibit 324.

CHAIRMAN GRAHAM: That is correct.

(Whereupon, Exhibit No. 324 was marked for identification.)

BY MR. MARSHALL:

Q And you sponsored the answer to Interrogatory No. 122?

A Yes, I did.

Q And so, Duke has not conducted a survey to assess the percent and number of free-rider customers participating in its DSM programs?

A That's correct.

Q All right. Do you have your testimony with you?

A I do.

Q If I could direct your attention to your Exhibit LC-7 -- if you could, let me know when you're there.

A I'm there.

Q Okay. And so, Exhibit LC-7 presents the projected RIM and TRC portfolio costs; is that right?

A Yes.

Q And this would be based on the achievable potential?

A Yes.

Q And so, the RIM projected total costs over -- and this would be over the next ten years.

A Okay.

Q And so, the RIM projected total costs for the -- for the goals-setting period was $960.4 million?

A Yes.

Q And for that cost, that -- that would be for the -- well -- well, Duke's energy-savings goal, proposed goal, under the RIM-achievable potential, is 166 gigawatt hours?

A Just a minute. I'll have to check.

Q Sure.

A That's correct.

Q So, if we were to figure out how much cost it will be per gigawatt-hour savings and divided that 960.4 by that 166, subject to check, that would be about $5.8 million of cost per gigawatt hour of energy savings?

A Subject to check.

Q And just by comparison, the TRC total achievable-potential cost over the goals-setting period was $1,048.1 million [sic]?

A That's correct.

Q And the TRC achievable potential was 432 gigawatt hours of energy savings?

A Correct.

Q And so, the cost per gigawatt hour of energy savings under the TRC achievable potential, doing that same division again, subject to check, would be about 2-point -- about $2.4 million per gigawatt hour.

A Subject to check, yes.

Q And so, that would be less than half the cost of the RIM savings on a per gigawatt-hour basis?

A True -- correct.

MR. MARSHALL: Thank you. I have no further questions.

CHAIRMAN GRAHAM: Okay. Staff.

MS. CORBARI: I'm sorry, Chairman? Just for the record, FDACS has no questions.

CHAIRMAN GRAHAM: Okay.

Staff.

MR. KING: Thank you, Mr. Chairman.

EXAMINATION

BY MR. KING:

Q Morning, Ms. Cross.

A Morning.

Q I've just got a few questions. Hoping to be pretty quick. DEF used a two-year payback screening to account for free riders in this FEECA proceeding, correct?

A Yes.

Q Did DEF consider using any alternative methods to screen for free riders such as surveys or historical data?

A No. We don't have that information, but we did do a one- and three-year sensitivity.

Q Okay. And last question: Why does DEF believe that the two-year payback screening is the best -- best method to address free-ridership?

A We believe that it's a reasonable method to address free-ridership. We think it's reasonable to assume that, you know, customers -- not all customers, but you know, some customers will, you know, adopt measures that have less than a two-year payback.

Also, you know, it's -- part of the reason we did it is based on precedent. It's, you know, what goals have been approved on -- been used to approve goals by the Commission, you know, back since the mid-1990s.

And -- and when you look at the difference between the results for the RIM portfolio, the difference between the two-year payback and the one- and three-year payback, there was no difference for residential; there was a minor difference for commercial, but no difference for residential.

MR. KING: Okay. Thank you. That's all from staff.

CHAIRMAN GRAHAM: Commissioners.

Commissioner Brown.

COMMISSIONER BROWN: Question about a statement you made on Page 15 of your direct. You said that: Florida currently ranks among the top ten states, based on the cumulative amount of solar capacity installed.

THE WITNESS: Uh-huh.

COMMISSIONER BROWN: Are you -- where did you get that information? Where did you base that statement from?

THE WITNESS: It was -- oh, I think that was in -- based on information from FSEC. I believe that's where it came from.

COMMISSIONER BROWN: Do you know is that to date or is that from --

THE WITNESS: That was the most-current information, I think, available at the time that we did -- you know, that I prepared this testimony.

COMMISSIONER BROWN: Because I -- I think you're talking about the demand-side renewables in this area, but I --

THE WITNESS: Yes.

COMMISSIONER BROWN: -- assume that talks about the supply -- that includes supply side.

THE WITNESS: No, that -- that statement was only -- I think I was only looking at the demand side.

COMMISSIONER BROWN: So, Florida is ranked 10th --

THE WITNESS: Among the top ten --

COMMISSIONER BROWN: In the top ten states on customer-owned renewables.

THE WITNESS: I'm sorry. I don't -- I'll have to go back to my reference there. I'm -- I'm not sure. I'm sorry.

COMMISSIONER BROWN: It -- it's okay. I've seen so many different rankings and numbers.

THE WITNESS: Yeah.

COMMISSIONER BROWN: I just want to --

THE WITNESS: I have to go back and look. I'm sorry. Yeah.

COMMISSIONER BROWN: It -- and I mean, it constantly is changing.

THE WITNESS: Uh-huh.

COMMISSIONER BROWN: So, I just wanted to see if that -- that's the most accurate, for my own edification.

Regarding your low-income -- the two programs that you offer on the residential side -- I know you do an outreach to low-income communities. When do you do that?

THE WITNESS: When do we do that?

COMMISSIONER BROWN: What time of year?

THE WITNESS: We do it throughout the year, all throughout the year. We go from -- it's neighborhood to neighborhood. We usually -- you know, we evaluate at -- be- -- before the big -- the first of the year, what neighborhoods we are going to try to address during the -- that current year. And usually, for each of those neighborhoods, about 2,000 homes included.

And then, you know, as we complete one neighborhood, we move on to the next neighborhood.

COMMISSIONER BROWN: That -- that's impressive, the numbers.

Have you seen an increase in the participants in the low-income pro- -- with the low-income programs since last goal-setting proceeding since 2014.

THE WITNESS: Yes, because we are targeting more homes every year. I think, prior to 2014, we were targeting about 3,000 homes a year; now, we're

trying to get to 4,500 homes a year.

COMMISSIONER BROWN: Now, in those -- those two programs -- are they deemed cost-effective under the RIM test and participant's test?

THE WITNESS: They are currently cost-effective because we bundle measures. So, we have measures in there that aren't cost-effective under RIM and measures included that have less than a two-year payback, but because those programs include other measures that are cost-effective under RIM, the program, in total, is cost-effective.

COMMISSIONER BROWN: Got it. Okay.

Regarding the demand-side renewables -- and you -- you talk about what the company is doing and it -- it sounds pretty consistent with what the other utilities are doing, but has Duke off- -- contemplated a next-gen type of offering to -- with regard to demand-side renewables to its customers?

THE WITNESS: I think we're always looking at things, but I don't think we have proposed anything yet, but we're always looking at things. And we'll continue to evaluate, you know, as things change, as, you know -- as, you know, battery storage becomes more cost-effective -- you know, over time,

as things change, we will continue to evaluate our -- our program offerings.

COMMISSIONER BROWN: I think that's a prudent course.

And what would you state is the efforts that Duke is doing to encourage, though, the supply side -- I mean, pardon me -- the demand-side renewables, under the statute.

THE WITNESS: I think that, you know, we're providing information to our customers, you know, as far as the benefits under interconnection, you know, being net-metered, those benefits. So, I think that, you know, we're -- we're providing all of that information for our customers, which is a huge benefit to those, you know, who decide to install their own solar.

COMMISSIONER BROWN: Thank you for your testimony.

CHAIRMAN GRAHAM: Redirect?

MR. BERNIER: None, Mr. Chairman.

CHAIRMAN GRAHAM: Exhibits.

MR. BERNIER: At this time, we'd ask to enter Ms. Cross' prefiled exhibits, which I believe are Exhibits 40 through 46 on staff's comprehensive exhibit list.

CHAIRMAN GRAHAM: If there's no objections to entering 40 through 46, we will enter that into the record.

(Whereupon, Exhibit Nos. 40 through 46 were entered into the record.)

CHAIRMAN GRAHAM: SACE.

MR. MARSHALL: We move that 317 through 324 be entered.

CHAIRMAN GRAHAM: If there's no objection --

MR. BERNIER: No objection.

CHAIRMAN GRAHAM: -- to 317 through 324, we'll enter those into the record.

(Whereupon, Exhibit Nos. 317 through 324 were entered into the record.)

CHAIRMAN GRAHAM: And 316?

MS. WYNN: Yes, Mr. Chairman, we'd move that Exhibit 316 be entered into the record.

MR. BERNIER: No objection.

CHAIRMAN GRAHAM: If there's no objection to 316, we'll enter 316 into the record as well.

MS. WYNN: Thank you.

(Whereupon, Exhibit No. 316 was entered into the record.)

CHAIRMAN GRAHAM: Okay. Thank you.

Thank you, Ms. Cross.

THE WITNESS: Thank you.

(Transcript continues in sequence in Volume 4.)

CERTIFICATE OF REPORTER

STATE OF FLORIDA)
COUNTY OF LEON)

I, ANDREA KOMARIDIS, 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 22nd day of August, 2019.

ANDREA KOMARIDIS
NOTARY PUBLIC
COMMISSION #GG060963
EXPIRES February 9, 2021