Please note that during the 2009 Goals docket (Docket 080407-EG), FPL addressed, through rebuttal testimony and interrogatory responses, Staff witness Spellman's contentions regarding technologies that were purportedly not reflected in the 2009 Technical Potential. Please see the attached excerpt from John Haney's rebuttal testimony (page 4, line 8 through page 5, line 4) and FPL responses to Staff's interrogatories No. 13 and 14. Based on information available at the time of the 2014 update, some of the referenced measures are among the 25 new measures added by the FEECA utilities. For Residential, smart strips and light emitting diodes (LEDs) have been added. For Commercial, high efficiency holding cabinets and high efficiency steamers have been added.

BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 080407-EG
FLORIDA POWER & LIGHT COMPANY

IN RE: FLORIDA POWER & LIGHT COMPANY'S
PETITION FOR APPROVAL OF
NUMERIC CONSERVATION GOALS

REBUTTAL TESTIMONY & EXHIBIT OF:

JOHN R. HANEY

associated with particular measures overlapped and were being captured by other measures in the analysis.

GDS's assertion that "many" measures were excluded is inaccurate. To my knowledge, only a small number of measures were determined to be inappropriate for further evaluation by the Collaborative due to their lack of availability in Florida or a lack of specific cost, savings, or baseline data .

Q. Were the measures identified by GDS on page 25, line 20 through page 26, line 1, and page 27, lines 1-12, addressed by the Collaborative?

A. Yes. In fact, a detailed explanation of each measure is found in FPL's response to Staff's Third Set of Interrogatories questions 13 and 14, provided as Exhibit JRH – 19. As demonstrated therein, there was a sound and reasoned Collaborative determination made that these measures would be inappropriate for inclusion in the Technical Potential studies.

It is important to also note that GDS has incorrectly identified measures as "excluded" which were in fact included within the Technical Potential. GDS presents a list of commercial measures in Table 2 of GDS's testimony, and indicates that these measures should have been included. However, several of the measures listed – such as Vending Miser, Zero Energy Doors, Door Heater Controls, Scroll Compressors, and Floating Head Pressure Controls - are indeed included in the Technical Potential Study measure lists in Appendix B of FPL's Technical Potential report. Had GDS reviewed the information rigorously

compiled and provided in discovery, they would have noted the inclusion of these measures. As mentioned above, other measures were excluded due to the sound, reasoned factors identified by the Collaborative and were also explained in FPL's responses to interrogatories noted above.

II. GDS's Uneven Allegations Regarding the Two-Year Payback Criterion

Q. GDS indicates on page 28, line 9 that a two-year minimum payback requirement is not necessary for all customer sectors. Do you agree?

A. No, in fact the DSM Goals Rule explicitly requires that free ridership must be addressed in the goal setting process. FAC 25-17.0021 (3) states: "Each utility's projection shall reflect consideration of overlapping measures, rebound effects, ***free riders***, interactions with building codes and appliance efficiency standards, and the utility's latest monitoring and evaluation of conservation programs and measures." The rule also requires all market segments – residential and commercial/industrial – to be addressed in establishing goals projections. It is helpful to note that on page 32, lines 4-5, GDS agrees with the Collaborative that the two-year payback screen is a legitimate method to address free ridership with respect to large commercial or industrial customers; it is only its application to residential and small commercial customers that GDS disputes.

Florida Power & Light Company
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Staff's Third Set of Interrogatories
Interrogatory No. 13
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Q.
Please explain why the following energy efficiency measures were excluded from the Energy Efficiency Technical Potential Study. As part of this response, please provide an estimated kWh and kW savings potential for each measure based on the Florida market.

Residential Sector:

A. Smart Strips/Phantom Load Switch

B. Second refrigerator turn-in

C. Light Emitting Diode (LED) lighting

D. Programmable thermostats

E. Second freezer turn-in

F. Zero-energy homes

G. T-5 lighting

H. Daylighting/Solar tubes

I. Dimmable CFLs

J. LED Holiday Lighting

A.

In general, the residential efficiency measures listed below were excluded from the technical potential study due to either: 1) a lack of reliable and readily available cost, savings, or baseline data to support a robust analysis of potential; and/or 2) evidence that the incremental energy savings associated with particular measures overlapped and were being captured by other measures in the analysis. Below, we provide explanations specific to each of the measures listed below.

Note that since these measures were not assessed as part of the study, kWh and kW savings potential estimates for those measures in Florida were never produced and are thus not available.

Residential Sector:

A. Smart Strips/Phantom Load Switch

Smart Strips save energy by reducing or eliminating standby power losses from home electronics that draw power in "off" mode. The Energy Star home electronics measures considered in the study are specifically designed to capture those same savings (i.e., reduction or elimination of standby power losses) using power management technology in the end-use device itself, rather than at the plug.

Note that Itron also explored including Green Plugs as a measure in the study but determined that this technology is currently upstream OEM technology, applicable only to DC-powered portable electronics and that currently there are no products commercially available with embedded Green Plug technology.

B. Second refrigerator turn-in

Second refrigerator early retirement was not included as a measure in this study because the evaluation literature indicates that this measure often has very high levels of free ridership. We note, for example, that the long-term saturation of second refrigerators in states with many years of refrigerator retirement programs, such as California, shows little, if any, reduction.

C. Light Emitting Diode (LED) lighting

LEDs were not included in the study because this lighting technology currently delivers less energy savings per fixture compared to CFLs (30-50% for LEDs compared to 60-75% for CFLs) and costs approximately 10 times as much as a CFL (~$30/lamp for LEDs compared to $2-3/lamp for CFLs). In this respect, the technical potential of LEDs is largely subsumed in the technical potential of CFLs given that the applicability of these technologies to residential lighting applications is similar.

D. Programmable thermostats

This measure was excluded for two reasons. First, ex-post evaluations of energy savings are inconclusive regarding whether material savings result from this measure. Second, evaluation studies indicate very high levels of free ridership because programmable thermostats are standard practice.

E. Second freezer turn-in

Second freezer early retirement was not included as a measure in this study because the evaluation literature indicates that this measure often has very high levels of free ridership.

F. Zero-energy homes

Zero-energy homes are bundles of energy efficiency measures and distributed generation technologies, typically consisting of high levels of insulation, reflective roof surfaces, high-efficiency end-use equipment, solar thermal water heating, and rooftop solar photovoltaic (PV) arrays for generating electricity to displace power from the utility grid. Each of these components of zero-energy homes was included as individual measures in the technical potential study.

G. T-5 lighting

T-5 lighting was not included in the study primarily because this technology exhibits very similar energy savings characteristics as the T-8 measure that was included in the study, i.e., the luminous efficacy (lumens per watt) of T-5 lamps is similar to that of T-8 lamps. In this respect, the technical potential of T-5 lamps is subsumed in that of T-8 lamps.

H. Daylighting/Solar tubes

Residential daylighting was not included in the study due a lack of reliable costs and savings data and reliable estimates of the interactions between increased solar gains from this measure with residential HVAC loads.

I. Dimmable CFLs

Since the luminous efficacy of dimmable CFLs is the same or lower than that of non-dimmable CFLs, the technical potential of dimmable CFLs is subsumed in the technical of non-dimmable CFLs to the extent that the applicability of dimmable and non-dimmable CFLs overlap significantly. Additionally, the reliability and performance of dimmable-CFLs is currently poor compared to non-dimmable CFLs, which adds significant uncertainty to estimating the costs and savings of current dimmable CFL products.

J. LED Holiday Lighting

LED Holiday Lighting was excluded from the study primarily due to a lack of reliable baseline data on holiday lighting saturation, unit consumption, and usage patterns in Florida. In addition, this is likely a relatively small measure in terms of aggregate savings.

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Interrogatory No. 14
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Q.
Please explain why the following energy efficiency measures were excluded from the Energy Efficiency Technical Potential Study. As part of this response, please provide an estimated kWh and kW savings potential for each measure based on the Florida market.

Commercial Sector:

A. Programmable Thermostat
B. Energy Efficiency "Smart" Power Strip for PC/Monitor/Printer
C. Energy Star Compliant Single-Door Refrigerator
D. Vending Miser for Non-Refrigerated Machines
E. Specialty Lighting
F. Integrated Building Design
G. Energy Efficient Windows
H. High Efficiency Steamer
I. High Efficiency Holding Cabinet
J. Induction Cook-tops
K. Refrigeration Economizer
L. Commercial Reach-In Cooler
M. Commercial Reach-In Freezer
N. Commercial Ice-Maker
O. Zero-Energy Doors – Coolers
P. Zero-Energy Doors – Freezers
Q. Door Heater Controls
R. Discus Compressor
S. Scroll Compressor
T. Floating Heat Pressure Control
U. Pools – pumps, temperature controls, etc.
V. High Efficiency Hot Tubs/Spas

A.
As described by Itron: In general, the commercial efficiency measures listed below were excluded from the technical potential study due to either: 1) a lack of reliable and readily available cost, savings, or baseline data to support a robust analysis of potential; and/or 2) evidence that the incremental energy savings associated with particular measures overlapped and were being captured by other measures in the analysis. Below, we provide explanations specific to each of the measures listed below.

Note that several measures listed below were indeed included in the technical potential study.

For the measures that were not included in the study, kWh and kW savings potential estimates for those measures in Florida were never produced and are thus not available.

Commercial Sector:

A. Programmable Thermostat

This measure was excluded for two reasons. First, ex-post evaluations of energy savings are inconclusive regarding whether material savings result from this measure. Second, evaluation studies indicate very high levels of free ridership because programmable thermostats are standard practice.

B. Energy Efficiency "Smart" Power Strip for PC/Monitor/Printer

Smart Strips save energy by reducing or eliminating standby power losses from office equipment that draw power in "off" mode. The Energy Star office equipment measures considered in the study are specifically designed to capture those same savings (i.e., reduction or elimination of standby power losses) using power management technology in the end-use device itself, rather than at the plug.

C. Energy Star Compliant Single-Door Refrigerator

This measure was not included in the study for two main reasons. First, the commercial refrigeration measures assessed by Itron (see measures 501-517 in Appendix B of each FEECA utility's technical potential report), focused on measures applicable to remote refrigeration systems, which are the primary type of refrigeration systems used in grocery stores. Second, Itron expects that the 2010 EPACT standards for self-contained, single-door refrigerators will adopt minimum efficiency levels approximating current Energy Star compliant performance levels. This expected change to the baseline for self-contained, single-door commercial refrigerators would result in very little incremental savings, if any, from units compliant with the current Energy Star product specification.

D. Vending Miser for Non-Refrigerated Machines

This measure is included in the study. See measure 901 ("Vending Misers") in Appendix B of each FEECA utility's technical potential report.

E. Specialty Lighting

This does not appear to be a specific energy efficiency measure per se. Note that the technical potential study included efficiency measures applicable to the following commercial lighting types: general service indoor lighting, high-bay indoor lighting, and outdoor lighting.

F. Integrated Building Design

Integrated building design measures were included in the achievable potential analysis for commercial new construction, as indicated in the response to Interrogatory No. 12.

G. Energy Efficient Windows

Advanced windows were not included as a measure in the existing construction analysis primarily because the stock turnover rate for replacement windows in existing commercial buildings is very slow, such that this measure does not represent a significant energy savings opportunity in existing commercial construction. Indeed, FPL has offered incentives for efficient window replacements in commercial buildings as part of its building envelope program for the past ten years and has experienced zero participation. Note that advanced windows are implicitly included in the integrated design "packages" analyzed in commercial new construction.

H. High Efficiency Steamer

This measure was excluded for two main reasons. First, commercial electric cooking accounts for a very small share of total electricity sales and peak demand from commercial customers in Florida (approximately 2% - see Figures 3-13 to 3-15 in each FEECA utility's technical potential report). Given the limited time and resources available for this study, Itron focused first and foremost on the largest end uses and the respective efficiency measures applicable to those end uses. Second, in Itron's judgment, there is still a high level of uncertainty regarding both the costs and savings associated with commercial cooking measures, which severely limits the reliability of related estimates of technical potential and cost-effectiveness.

I. High Efficiency Holding Cabinet

This measure was excluded for two main reasons. First, commercial electric cooking accounts for a very small share of total electricity sales and peak demand from commercial customers in Florida (approximately 2% - see Figures 3-13 to 3-15 in each FEECA utility's technical potential report). Given the limited time and resources available for this study, Itron focused first and foremost on the largest end uses and the respective efficiency measures applicable to those end uses. Second, in Itron's judgment, there is still a high level of uncertainty regarding both the costs and savings associated with commercial cooking measures, which severely limits the reliability of related estimates of technical potential and cost-effectiveness.

J. Induction Cook-tops

This measure was excluded for three main reasons. First, commercial electric cooking accounts for a very small share of total electricity sales and peak demand from commercial customers in Florida (approximately 2% - see Figures 3-13 to 3-15 in each FEECA utility's technical potential report). Given the limited time and resources available for this study, Itron focused first and foremost on the largest end uses and the respective efficiency measures applicable to those end uses. Second, in Itron's judgment, there is still a high level of uncertainty regarding both the costs and savings associated with commercial cooking measures, which severely limits the reliability of related estimates of technical potential and cost-effectiveness. Third, this particular commercial cooking technology has historically had very high incremental costs.

K. Refrigeration Economizer

Refrigeration economizers (bringing in outside air to provide free cooling for large, walk-in coolers or freezers) were not included in the study due to the limited feasibility of this measure in the Florida climate. Specifically, refrigeration economizers require outside air temperatures to be at or lower than the desired temperature inside walk-in coolers and freezers for a significant period of time in order to derive energy savings benefits. Florida's warm climate, even during the winter season, severely limits the number of hours where refrigeration economizers can be effective energy savings strategies. Additionally, the ambient humidity levels of outside air in Florida pose a significant barrier to the use of outside air economizers as an efficiency measure due to the additional energy required to remove moisture from any outside air brought into conditioned spaces.

L. Commercial Reach-In Cooler

This does not appear to be a specific energy efficiency measure *per se* . Note that the commercial refrigeration measures assessed by Itron (see measures 501-517 in Appendix B of each FEECA utility's technical potential report), focused on measures applicable to remote refrigeration systems. In grocery store settings, these remote refrigeration systems serve many different kinds of refrigerated spaces (e.g., walk-in coolers, display cases, etc.) including reach-in coolers.

M. Commercial Reach-In Freezer

This does not appear to be a specific energy efficiency measure *per se.* Note that the commercial refrigeration measures assessed by Itron (see measures 501-517 in Appendix B of each FEECA utility's technical potential report), focused on measures applicable to remote refrigeration systems. In grocery store settings, these remote refrigeration systems serve many different kinds of refrigerated spaces (e.g., walk-in coolers, display cases, etc.) including reach-in freezers.

N. Commercial Ice-Maker

This does not appear to be a specific energy efficiency measure *per se* .

O. Zero-Energy Doors – Coolers

This measure is included in the study. See measure 513 ("High R Value Glass Doors") in Appendix B of each FEECA utility's technical potential report.

P. Zero-Energy Doors – Freezers

This measure is included in the study. See measure 513 ("High R Value Glass Doors") in Appendix B of each FEECA utility's technical potential report.

Q. Door Heater Controls

This measure is included in the study. See measures 511 ("Anti-sweat Controls") in Appendix B of each FEECA utility's technical potential report.

R. Discus Compressor

This measure is a form of high efficiency compressors for refrigeration systems. High efficiency compressors for commercial refrigeration systems are included in the study (see measure 505 in Appendix B in each FEECA utility's technical potential report).

S. Scroll Compressor

This measure is a form of high efficiency compressors for refrigeration systems. High efficiency compressors for commercial refrigeration systems are included in the study (see measure 505 in Appendix B in each FEECA utility's technical potential report).

T. Floating Head Pressure Control

This measure is included in the study. See measure 507 ("Floating Head Pressure Controls") in Appendix B of each FEECA utility's technical potential report.

U. Pools – pumps, temperature controls, etc.

This measure was not included in the study due to a lack of data required to reasonably characterize separate baselines for energy consumption and peak demand associated with swimming pools in commercial facilities. Specifically, the 1996 commercial end-use survey conducted by Regional Economic Research for FPL did not develop or estimate end-use saturations, equipment densities, full load equivalent operating hours, or connected loads for commercial swimming pools, and other independent baseline estimates for this commercial

end use were not readily available at the time of the study.

V. High Efficiency Hot Tubs/Spas

This measure was not included in the study due to a lack of data required to reasonably characterize separate baselines for energy consumption and peak demand associated with hot tubs and spas in commercial facilities. Specifically, the 1996 commercial end-use survey conducted by Regional Economic Research for FPL did not develop or estimate end-use saturations, equipment densities, full load equivalent operating hours, or connected loads for commercial hot tubs and spas, and other independent baseline estimates for this commercial end use were not readily available at the time of the study.