Orlando Utilities Commission
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Exhibit OUC-2

Orlando Utilities Commission

2004 Numeric Conservation Goals: Demand-Side Management Plan

Submitted to the Florida Public Service Commission
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Table of Contents

List of Tables

Executive Summary

In accordance with Rules 25-17.0021-.005, Florida Administrative Code, the Florida Public Service Commission (FPSC, or the Commission) must establish numeric conservation goals for Orlando Utilities Commission (OUC), as OUC is classified as an affected electric utility as defined in Section 366.82(1), Florida Statutes. This report presents OUC's proposed Demand-Side Management Plan (DSM Plan) for the next ten years, consistent with the FPSC Rules alluded to above.

OUC has a long history of supporting demand-side management and promoting conservation to its residential and commercial customers. In support of this priority, OUC has chosen to complete a comprehensive analysis of approximately 200 potentially cost-effective conservation measures for the 2004 Numeric Conservation Goals Filing. Demand and energy savings, energy usage, and measure-specific costs were generated for each of these measures from a variety of sources. Once all pertinent information was compiled, it was input into the FPSC-approved Florida Integrated Resource Evaluator (FIRE) model to evaluate the cost-effectiveness of these DSM measures. The FIRE model evaluates cost-effectiveness through three tests, including the *Rate Impact Test*, the *Total Resource Test*, and the *Participant Test*.

From OUC's perspective, a DSM measure is only cost-effective if it passes the Rate Impact Test. This criterion is consistent with OUC's previous Numeric Conservation Goals filings, as well as those of other Florida utilities. In this regard, OUC utilized the results of the Rate Impact Test to develop numeric conservation goals for the ten-year period encompassing 2005 through 2014.

Of the numerous DSM measures tested by OUC for cost-effectiveness, none passed the Rate Impact Test. Since every measure failed the cost-effectiveness test, the proposed numeric goals for OUC's residential, commercial, and industrial sectors are zero.

Although none of the measures examined for this filing proved to be cost-effective, OUC has elected to continue to offer its existing demand-side management programs. This philosophy of offering its customers DSM programs is consistent with OUC's history of supporting demand-side management and conservation.

1.0 Introduction

In accordance with Rules 25-17.0021-.005, Florida Administrative Code, the Florida Public Service Commission (FPSC, or the Commission) must establish numeric conservation goals for Orlando Utilities Commission (OUC), as OUC is classified as an affected electric utility as defined in Section 366.82(1), Florida Statutes. This report presents OUC's proposed Demand-Side Management Plan (DSM Plan) for the next ten years, consistent with the FPSC Rules alluded to above.

OUC's *2000 Demand-Side Management Plan*, approved by the FPSC on March 23, 2000, established zero residential, commercial, and industrial goals for OUC. Although OUC's DSM goals as approved in 2000 were zero, OUC recognized the importance of energy efficiency and conservation. Therefore, OUC has voluntarily maintained and continued the following programs that have shown high customer interest and participation.

- Residential Energy Survey Program
- Residential Energy Efficiency Rebate Program
- Residential Low-Income Home Energy Fix-Up Program
- Residential Insulation Billed Solution Program
- Residential Efficient Electric Heat Pump Program
- Residential Gold Ring Program
- Residential Night Security Lighting Program
- Residential Energy Conservation Rate
- Commercial Energy Survey Program
- Commercial Lighting Retrofit Program
- Commercial OUConsumption Online Program
- Commercial OUConvenient Lighting Program
- Commercial Power Quality Analysis
- Commercial Infrared Inspections
- Commercial Single and Three-Phase Service
- OUCooling

In general, many things have changed over the last few years leading to a decrease in customer participation and decreased cost-effectiveness of DSM programs. As each program continues, participation tends to gradually decrease because the market

for the program becomes saturated. Most of the customers that want to and are willing to participate will have done so early in the program.

The decrease in cost-effectiveness of DSM programs is a result of numerous factors. Government mandates have forced manufacturers to increase their efficiency standards, thereby decreasing the incremental amount of energy savings achievable; the efficiency of new generation has increased and the cost of installing new generation has decreased; and with interest rates near all-time lows, the carrying costs of power plants have been greatly reduced. All of these factors have resulted in it becoming more difficult for DSM to be cost-effective and to achieve high levels of customer participation.

OUC evaluated numerous DSM measures to determine which show the potential to be cost-effective using the FPSC-approved FIRE model for the 2004 Numeric Conservation Goals proceeding. The FIRE model performs a cost-effectiveness evaluation by computing three benefit to cost ratios consisting of the *Rate Impact Test*, the *Participant Test,* and the *Total Resource Test*. These tests, as well as the FIRE model methodology and inputs, are described in more detail in OUC's *2004 Numeric Conservation Goals: Demand-Side Management Measure Evaluation,* filed with the FPSC in conjunction with this report.

OUC requires that the DSM measure under consideration pass the Rate Impact Test in order to be considered cost-effective. None of the DSM measures evaluated in support of the 2004 DSM Plan passed the Rate Impact Test (i.e. yielded a Rate Impact Test value of greater than or equal to one). Therefore, OUC's proposed numeric conservation goals for 2005 through 2014 are zero for OUC's residential, commercial, and industrial sectors.

Although none of the DSM measures proved to be cost-effective, OUC believes that DSM is an important service to its customers and the community. Therefore, OUC proposes to continue to voluntarily offer its existing programs that focus on energy efficiency and conservation and that have garnered high participation in the past. In addition, OUC will continue to volutarily consider new residential, commercial, and industrial programs that will benefit OUC customers and the community as a whole.

2.0 Demand-Side Management Plan

Although none of the demand-side management measures evaluated using the FIRE model passed the cost-effectiveness screening, OUC's existing conservation programs have proven to be a valuable service to OUC customers and the community. As a result, OUC proposes to continue to voluntarily offer the existing conservation programs, as long as appropriate. OUC also proposes to continue to voluntarily examine new, potentially cost-effective programs. This section provides a discussion of each of the conservation programs currently offered by OUC.

2.1 Residential Programs

2.1.1 Residential Energy Survey Program

This program is designed to provide residential customers with recommended energy efficiency measures and practices. The *Residential Energy Survey Program* consists of three measures, including the *Residential Energy Walk-Through Survey*, the *Residential Energy Survey Video and CD*, and an interactive *On-Line Energy Survey*.

The *Residential Energy Walk-Through* Survey includes a complete examination of the attic, HVAC, air duct and air returns, window caulking, weather stripping, water heater, faucets, toilets, and lawn sprinkler systems. Literature on other OUC programs is also provided to the residential customers. The participant is given a choice to receive either a low-flow showerhead or a compact fluorescent bulb. OUC Energy Analysts are presently using this walk-through audit as a means of motivating OUC customers to participate in other conservation programs and qualify customers for appropriate rebates.

The *Residential Energy Survey Video* was first offered in 2000 by OUC and in November, 2001, became available to OUC customers in an interactive CD-ROM format. The video (or CD-ROM) is free and is distributed to OUC customers by request. The measure was developed to further assist OUC customers in surveying their home for potential energy saving opportunities. The video walks the customer through a complete visual assessment of energy and water efficiency in the customer's home. A checklist brochure to guide the customer through the audit accompanies the video. The video has many benefits over the walk-through survey, including the convenience of viewing the video at any time without a scheduled appointment and the ability to watch the video numerous times.

In addition to the Energy Walk-Through and the Video Surveys, OUC offers customers an interactive *On-Line Energy Survey* complete with their previous billing

information. The interactive *On-Line Energy Survey* is available on OUC's website, www.OUC.com.

One of the primary benefits of the *Residential Energy Survey Program* is providing education to the customer on energy conservation measures and ways their lifestyle can directly impact their use of energy. Customers participating in the *Residential Energy Survey Program* are made aware of conservation measures which they can implement. Customers will benefit from the increased efficiency in their homes, which will decrease their electric and water bills.

Participation in the *Walk-Through Energy Survey* has been consistently strong over the past ten years and interest in both the *Energy Survey Video and CD*, as well as the interactive *On-Line Energy Survey*, has been high since the measures were first introduced. Feedback from customers that have taken advantage of the surveys has been very positive.

2.1.2 Residential Energy Efficiency Rebate Program

This program provides an incentive for customers to implement efficiency improvements to the building envelope identified during the residential energy survey. OUC customers who receive an energy survey will be provided with recommendations on building envelope improvements. If the customer invests in these improvements, a number of rebates are available from OUC, in addition to the monthly savings in the customer's electric bill. OUC will rebate customers up to $75 for the purchase of caulking, weather stripping, window tinting, and solar screening. A rebate of $75 is provided for repairs to leaking ducts, and a $100 rebate is offered for an upgrade of attic insulation to R-19. All rebates are applied as credits to the customer's monthly electric bill.

2.1.3 Residential Low-Income Home Energy Fix-Up Program

This program targets residential customers with a total annual family income of less than $25,000. Every customer who wishes to participate in this program must request a free Residential Energy Survey. Audit recommendations usually require the customer to spend money replacing or adding energy conservation measures, which low-income customers may not have the discretionary income to implement.

Through the program, OUC pays 85 percent of the total contract cost for home weatherization for the following measures:

- attic insulation
- exterior and interior caulking

- weather-stripping doors and windows
- minor air conditioning / heating supply and return air duct repairs
- water heater and hot water pipe insulation
- minor water leakage repair
- installation of water flow restrictors
- minor electrical repairs

Under this program, OUC will arrange for a licensed, approved contractor to perform the necessary repairs and will pay for 85 percent of the bill. The remaining 15 percent can be paid for on the participant's monthly electric bill. The purpose of the program is to reduce the energy cost for low-income households, particularly those households with elderly persons, disabled persons, and children, by improving the energy efficiency of their homes and ensuring a safe and healthy community.

Through this program, OUC helps to lower the bills of low-income customers who may have difficulty paying their bills. Reducing the bill of the low-income customer may improve the customer's ability to pay the bill, thereby decreasing costly service disconnect fees and late charges. OUC believes this will help to achieve and maintain high customer satisfaction.

2.1.4 Residential Insulation Billed Solution Program

This program is available to OUC residential customers who utilize some type of electric heat and/or air conditioning. To qualify, customers must request a free *Residential Energy Survey* and have a satisfactory credit rating with OUC. The program allows customers who insulate their attics to an R-19 level to pay for the insulation on their monthly utility bill for up to two years without being required to put any money down and, in addition, the customer will receive a $100 rebate. OUC directly pays the total cost for installation when the customer makes payments to OUC as part of their monthly utility bill. Feedback from customers that have taken advantage of the program has been very positive.

2.1.5 Residential Efficient Electric Heat Pump Program

This program is designed to increase the efficiency and decrease thermal energy losses of residential HVAC systems. This program targets OUC customers with existing strip heating systems, or inefficient air conditioning and heating equipment. Customers who replace inefficient equipment with an efficient heat pump with a Seasonal Energy Efficiency Ratio (SEER) rating of 11 or higher will qualify for a rebate of between $100 and $300, depending on SEER rating. In addition, customers will benefit from energy

savings from duct repairs completed during the heat pump installation. To qualify for the rebate customers must choose a qualified, licensed and insured air conditioning contractor. Once OUC receives the rebate application, a credit is applied to the customer's account.

2.1.6 Residential Gold Ring Program

The *Residential Gold Ring Program* works closely with Energy Star Ratings. In developing the program, OUC has partnered with local home builders to construct new homes according to OUC's Gold Ring energy and water efficiency standards. Features include high efficiency heat pumps, heat recovery water heaters, R-30 attic insulation, interior air ducts, window shading, etc.

The contractor is required to install R-30 insulation and include four other conservation measures from a list of conservation measures developed by OUC. In return for each Gold Ring home built, the builder receives a free Energy Star Home Rating and blower door test. In addition, the builder receives $225 toward advertising costs. The advertising must include a reference to the high efficiency Gold Ring homes available. However, OUC is in the process of exploring modifications to the program which would eliminate the advertising payment to the home builders but continue to highlight the builders' participation in the program through OUC's own advertising for any new builder wanting to participate in the program.

Gold Ring Homes can use 20 to 30 percent less energy than other homes. Gold Ring homeowners benefit from lower energy bills and qualification for all Federal Housing Association, U.S. Department of Veterans Affairs, and Energy Efficient Mortgage programs. This allows the homeowner to increase their income to debt ratio by two percent and makes it easier to qualify for a mortgage.

2.1.7 Residential Night Security Lighting Program

OUC allows residential customers to pay for the cost of security lighting on their monthly utility bill. The customer is allowed to continue doing so for up to one year. The costs covered include the fixtures, bulbs, materials, labor, and warranty. Lighting must be installed by licensed contractors who will supply a warranty for the fixtures and the work.

2.1.8 Residential Energy Conservation Rate

Beginning in October, 2002, OUC modified its residential rate structure to a two-tiered block structure in order to encourage energy conservation. Residential customers using more than 1,000 kWh per month will pay a higher rate for the additional energy

usage. The purpose of this rate structure is to make OUC customers more energy-aware and to encourage conservation of energy resources.

2.2 Commercial Programs

2.2.1 Commercial Energy Survey Program

This program is designed to provide commercial and industrial customers with recommended energy efficiency measures and practices. The *Commercial Energy Survey Program* includes a complete examination of the HVAC system and duct work, refrigeration equipment, lighting, water heating, motors, process equipment, and the building envelope by an experienced energy expert. The customer receives a brief report at the time of the survey in addition to the book *Business Energy Efficiency Guide,* which demonstrates how businesses can profit from energy management. Within 30 days of the audit, the customer also receives a detailed written report containing the results of the energy survey and cost-effective recommendations to increase the energy and water efficiency. OUC energy analysts are using this program as a means of motivating OUC customers to participate in other conservation programs.

2.2.2 Commercial Indoor Lighting Retrofit Program

This program reduces energy consumption for the commercial customer through the replacement of older fluorescent and incandescent lighting with newer, more efficient lighting technologies. A special alliance between OUC and the lighting contractor enables OUC to offer the customer a discounted project cost. An additional feature of the program allows the customer to pay for the retrofit through the monthly savings that the project generates. Up-front capital funding is not required to participate in this program. The project payment appears on the participating customer's utility bill as a line-item. After the project has been paid for in full, the participating customer's annual energy bill will decrease by the approximate amount of the projected energy cost savings.

2.2.3 Commercial OUConsumption Online Program

This program enables businesses to check their energy usage and demand from a desktop computer, thereby allowing businesses to manage their load. Customers are able to analyze the metered interval load data for multiple locations, compare energy usage among facilities, and measure the effectiveness of various energy efficiency efforts. The data can also be downloaded for further analysis. Participants must cover the cost of

additional infrastructure at the meter(s) and are responsible for a $35.00 per month per channel fee for this service.

2.2.4 Commercial OUConvenient Lighting Program

OUConvenient Lighting provides complete outdoor lighting services for commercial applications including industrial parks, sports complexes, and residential developments. Each lighting package is customized for each participant, allowing the participant to choose among light fixtures. OUC is responsible for all of the equipment costs and maintenance. The participant then pays a low monthly fee for each fixture. OUC also retrofits existing fixtures to new light sources or higher output units, increasing efficiency in addition to providing preventive and corrective maintenance.

During 2003, OUC installed over 2,500 lights through its *OUConvenient Lighting Program.* Additionally, lighting agreements were reached with several notable residential communities including Baldwin Park in Orlando, Harmony in Osceola County, and the Reunion Resort and Club near Walt Disney World. New lighting contracts were also negotiated with shopping centers, office buildings, sports facilities, and other commercial customers. The number of customers seeking OUC indoor lighting expertise has also increased.

2.2.5 Commercial Power Quality Analysis Program

This program enables OUC to ensure the highest possible power quality to commercial customers. There are five general categories of power irregularities including over voltage, under voltage, outages, electric noise, and harmonic distortion. Under the *Power Quality Analysis Program*, trained and experienced service personnel will help the customer isolate any problems and find appropriate solutions. The goals of this program include making the maximum effort to solve power quality problems through monitoring and interpretive analysis, identifying solutions that will lead to corrective action, and providing on-going follow-up services to monitor results.

2.2.6 Commercial Infrared Inspections Program

This program was developed to help customers uncover potential reliability and power quality problems. A highly trained and experienced technician performs the inspection using state-of-the-art equipment. The infrared inspection detects thermal energy and measures the temperature of wires, breakers, and other electrical equipment components. The information is transferred into actual images and those images reveal potential problem areas and hot spots that are invisible to the naked eye. This information allows the customer to make repairs to faulty equipment and prevent

untimely breakdowns, equipment damage, and lost profits. Following the inspection, the customer receives a detailed analysis and written report which includes a complete description of diagnostic recommendations.

2.2.7 Commercial Single- and Three-Phase Service Program

The purpose of this program is to help customers protect their electrical equipment. While most homes and small businesses generally utilize single-phase service, other customers such as large industries, shopping centers, and even some homes have electrical equipment that requires three-phase service. Because this setup requires three energized lines in order to run properly, three-phase equipment needs added protection to prevent damage due to service interruptions resulting from lightning, falling tree limbs, wind, or electrical problems within the customer's home or facility. Although three-phase equipment typically relies on fuses, breakers, or overload devices, there may not be sufficient protection in the event such power outages occur. A licensed electrician can install monitoring relays to protect against phase loss, phase imbalance, reversal, under-voltage, and over-voltage conditions.

2.2.8 OUCooling

OUCooling helps to lower air conditioning costs and reduce capital and operating costs for building owners. *OUCooling* will fund, install, and maintain a central chiller plant for each business district participating in the program. The main benefits to the businesses are lower energy consumption, increased reliability, and no environmental risks associated with the handling of chemicals. Other benefits for the businesses include avoided initial capital cost, maintenance costs, a smaller mechanical room (therefore more rental space), no insurance requirements, improved property resale value, and reduced need for maintenance personnel.

OUC's first chiller plant was installed at Lockheed Martin Corp. The plant was built in 1999 and serves eight customers. OUC next began operation of a chilled water system serving downtown Orlando. In 1999, the downtown project won three awards. In 2000, the Downtown Orlando Partnership gave its Award of Excellence to OUC based on the chilled water plant. The downtown Orlando "district cooling" division now provides air conditioning service to more than a dozen large commercial customers with a combined two million square feet of space. *OUCooling* is developing a North Chiller Plant in downtown Orlando which will eventually be connected to the existing South Plant.

During 2003, OUC extended its chilled water lines to the Hughes Square project, which includes the 150,000 square foot Hughes Supply Inc. headquarters, 25,000 square

feet of retail space, and the 266-unit City View apartments. By the end of 2003, *OUCooling* had many potential new clients considering outsourcing their chilled water production. The Sanctuary Downtown off Lake Eola and the Eola Park Place Condos (formerly the Four Points Sheraton) have signed agreements with *OUCooling*, while the Florida A&M School of Law, the condominiums at 55 West, and a new CNL office tower are all close to committing to *OUCooling*.

In 2002, the International District Energy Association (IDEA) awarded *OUCooling* a first-place award for signing up more customer square footage for its chilled-water business than any other company in 2001. *OUCooling* brought on nine million square feet of new customer space in 2001. IDEA is an association representing more than 900 district heating and cooling executives, managers, engineers, consultants, and equipment suppliers from 20 countries.

In January 2000, OUC signed a 20-year agreement to design, build, own, and operate a chiller plant for Vistana, a leading developer and operator of vacation ownership resorts. *OUCooling* currently serves the Sheraton Vistana Villages timeshare development in south Orange County. Additionally, *OUCooling* provides service to the new Mall at Millenia and has brought online a 17.6 million gallon chilled water tank at the newly expanded Orange County Convention Center. The new tank works in tandem with 20 water chillers and feeds a cooling loop that can handle over 33,000 gallons of 38-degree water per minute. The system also serves a nearby Lockheed Martin facility.

OUC envisions building other chiller plants serving commercial campuses, hotels, retail shopping centers, and tourist attractions. OUC recently received three awards from the Associated Builders and Contractors Inc. for one of the top construction projects in Orlando. The Awards were the Eagle Award for mechanical work, General Contractor Award of Merit, and the Subcontractor Award of Merit. *OUCooling* was also featured in the January-February 2003 issue of *Relay – Florida's Energy and Electric Utility Magazine.*

3.0 Proposed Numeric Conservation Goals

OUC's proposed numeric conservation goals are based on the FIRE model results for the Rate Impact Test. Because the Rate Impact Test results for all measures evaluated were less than 1.0, none are considered to be cost-effective from OUC's perspective. As such, OUC's proposed numeric conservation goals shown in Table 3-1 are zero for the 2005 through 2014 period. Details of the evaluation performed to support the proposed numeric goals, as well as a description of the FIRE model itself, can be found in OUC's *2004 Numeric Conservation Goals: Demand-Side Management Measure Evaluation,* filed with the Florida Public Service Commission in conjunction with this report.

Table 3-1.
Proposed Numeric Conservation Goals

	Residential Reduction			Commercial/Industrial Reduction		
Year	Summer kW	Winter kW	MWh	Summer kW	Winter kW	MWh
2005	0	0	0	0	0	0
2006	0	0	0	0	0	0
2007	0	0	0	0	0	0
2008	0	0	0	0	0	0
2009	0	0	0	0	0	0
2010	0	0	0	0	0	0
2011	0	0	0	0	0	0
2012	0	0	0	0	0	0
2013	0	0	0	0	0	0
2014	0	0	0	0	0	0