

## conserving wisely

ORLANDO UTILITIES COMMISSION 2009 ANNUAL REPORT



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## OUC's commission

(seated, from left)

## **Buddy Dyer**

City of Orlando Mayor Commissioner

## Katie Porta

President

## Maylen Dominguez Arlen

First Vice President

(standing, from left)

## Craig McAllaster

Commissioner

## Ken Ksionek

General Manager & CEO

## Dan Kirby, AIA, AICP

Second Vice President

## a letter from the general manager/ceo & president

his past year was another challenging one for OUC customers and our community due to the prolonged economic downturn. OUC maneuvered successfully through these turbulent times thanks to our strong financial foundation and cost-cutting initiatives. We were able to maintain our AA bond rating, meet our revised electric sales forecast and provide the highest level of reliability while helping our customers conserve wisely.

OUC began cost-cutting measures in June of 2008 in order to prepare for an economic downturn. Thanks to these efforts, we were able to reduce our March 1, 2009 electric rate increase by half. However, the electric rate increase was still one of the largest in recent OUC history. Going forward, our goal is to maintain our current electric and water rates and not have any increase in 2010.

OUC reduced our budget and revenue forecast for 2009 to account for the lack of growth. Although we exceeded the reduced 2009 budget projections, we still saw a decrease in income from \$79.9 million in 2008 to \$72.9 million in 2009. OUC was able to finish ahead of budget largely due to our ongoing cost-saving measures.

Maintaining a high level of service while minimizing costs is not easy, but thanks to the efforts of all OUC employees, we were able to deliver affordability, reliability and environmental stewardship.

OUC maintained our reputation as "The *Reliable* One" and continued to provide outstanding service for our customers. In 2009, we were benchmarked once again as the most reliable electric utility in the state; our water business unit earned the top national award for utility management excellence; we dedicated the largest solar rooftop project in the southeast on the Orange

County Convention Center; and we are near completion of the 300-megawatt Stanton B combined cycle natural gas unit.

Assisting those experiencing hardship and giving back to the community we serve was more important than ever this past year. In addition to matching customer contributions, OUC designated \$500,000 to the Project Care utility assistance fund to help individuals and families facing financial hardship.

Planning for a sustainable future requires a commitment from OUC as well as our customers. It involves both a corporate commitment to expanding renewables and demand-side management programs and our customers' desire to conserve wisely.

OUC is doing our part by expanding our investment in renewable generation. We are partnering with a number of organizations to develop solar, landfill gas and biomass projects slated to go commercial in 2010. We are also working with the City of Orlando and Orange County to utilize stimulus and grant dollars to identify and weatherize the most inefficient homes in our area. In addition, OUC is looking at how we can help our customers consume less through technology and education.

Although we do not know how long this economic uncertainty will continue, we are planning conservatively for the future. Our strong financial foundation and commitment to providing affordability, reliability and environmental stewardship will allow OUC to continue to live up to our name "The Reliable One."

Katie Porta

MKatie Porta

President

Ken Ksionek

General Manager & CEO

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Katie Porta President



**Ken Ksionek** General Manager/CEO

# investing in a cleaner energy supply

Understanding that a diverse fuel mix is critical to sustainability, OUC is exploring all the options. Landfill gas, photovoltaics and solar thermal energy are already in use . . . biomass is on the horizon . . . and we are about to bring a new combined cycle natural gas unit online this winter.

## ADDING NATURAL GAS TO THE PORTFOLIO

orking to diversify our fuel mix and add cleaner generation to our energy portfolio, OUC is continuing round-the-clock start-up operations and testing on the 300-megawatt combined cycle Stanton Unit B. Fueled by clean-burning natural gas, the new unit will help reduce carbon emissions, while increasing reliability and keeping fuel costs as stable as possible. SEC B is scheduled to come online in Winter 2010.

Pictured below: The 300-megawatt Stanton B combined cycle unit uses cleanburning natural gas as its fuel source.

## MOVING ASSERTIVELY TOWARD RENEWABLES

As the most economical renewable source of energy, landfill gas is also reliable and sustainable . . . which is why it's been part of the OUC energy portfolio since 1998.

In partnership with Orange County, we have been capturing methane gas from the county landfill and piping it to the Stanton Energy Center (SEC) where it is co-fired with coal. In addition to helping reduce greenhouse gas emissions from the landfills, the 12-megawatt green energy program displaces more than three percent of the fossil fuel required for SEC Units 1 and 2, and provides enough electricity every day for 10,000 homes. The gas from the landfill produces close to

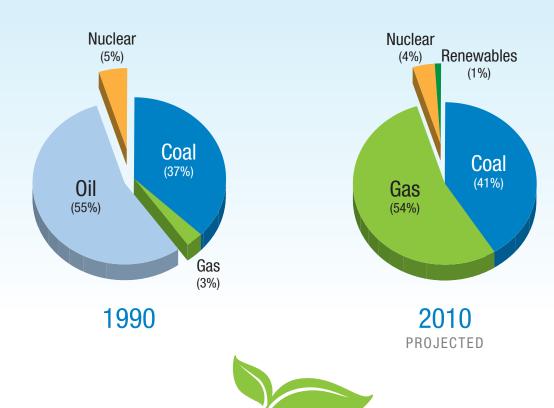
100,000 megawatt hours of reducedemissions power — offsetting about 44,000 tons of coal each year.

Looking to the future, OUC and Orange County have signed new agreements for future landfill projects — expanding capacity to 22 megawatts. OUC is also exploring several similar options with other parties.

Lining up another potential fuel source for Stanton Energy Center, OUC plans to work with the City of Orlando on evaluating the feasibility of a municipal solid waste gasification project. Slated to be located at an Orange County landfill, the project could process up to 300 tons of waste daily and convert it into synthetic gas (syngas), which OUC would purchase and pipe to SEC.



## FUEL DIVERSITY



**Biomass.** OUC is evaluating a variety of options for investing in biomass energy resources. We are currently studying co-firing biomass energy at our Stanton Energy Center, as well as exploring the availability of other regional biomass energy generating options.





**Solar/Biomass Hybrid.** In partnership with Florida State University and Harmony Development Group, OUC is moving forward with a 5-megawatt solar/biomass hybrid power plant to be located in Harmony's Florida Sustainable Energy Research Park. The project will use biomass gasifiers and solar concentrators to generate electricity.



## harnessing solar generation

A shining example of OUC's commitment to solar energy, the photovoltaic array at the Orange County Convention Center is the largest system of its kind on a convention center in the United States. It uses high-efficiency flat-plate collectors and covers about 200,000 square feet of roof. It will generate 1,300 to 1,500 megawatt-hours of electricity each year — enough to power 80-100 typical homes — without producing greenhouse gas emissions.

#### A BRIGHT FUTURE

UC is planning now for a brighter tomorrow with a number of innovative projects including:

- Solar Farm As part of a Purchase Power Agreement with a solar developer, OUC will develop a multi-megawatt utility-scale solar farm on 40-50 acres at the SEC or Jetport sites. Expected to be operational by late 2010, the project will generate enough electricity to provide power to about 1,000 homes.
- Solar Charging Stations As part of OUC's commitment to alternative fuels and efficient transportation, two of our three electric-vehicle charging stations at Reliable Plaza are powered by the sun and are the first of their kind in Orlando. Located in our parking garage, the 16-panel solar array provides a total of 2.8 kilowatts of power to charge the vehicles. The garage has been pre-wired for two more stations that can be connected to OUC power as we add more electric cars to our fleet.



### **RIGHT HERE, RIGHT NOW**

Of course, solar power is nothing new to OUC. We've been "catching rays" for years . . . with numerous commercial and residential projects already in place.

Orange County Convention Center — In May 2009, our largest project to date — the giant one-megawatt rooftop solar photovoltaic (PV) array at the Orange County Convention Center — "went live" and is now producing clean, green power. Named a "Solar America Showcase" by the U.S. Department of Energy, the project was a collaborative partnership between OUC and Orange County, made possible by a \$2.5 million grant from the Florida Department of Environmental Protection. The federal government also provided free technical assistance for design and installation.



As one of only 25 cities nationwide – and the only one in Florida – to be designated a "Solar American City," Orlando is looking to the sun to help reduce its carbon footprint. The city – along with ongoing partners Orange County and OUC – received \$400,000 in funding and technical expertise in 2008 from the U.S. Department of Energy to continue developing solar projects in our community that can be replicated across the country.

- Harris Engineering The civil engineering firm installed a 10.5kilowatt photovoltaic array on its headquarters in downtown Orlando. The first privately owned office building in the city to install solar panels, Harris expects to save 10 percent on energy costs over the next decade.
- Orange County Public Schools —
   To give students hands-on experience with renewable energy, OUC has installed and is currently refurbishing solar energy panels (3,960 watts each) at five local schools, one in each of Orange County's five learning districts. Solar panel installations power concession stands at Edgewater, Dr. Phillips and Boone High Schools; an auto mechanics building at Colonial High School; and a science building
- at Robinswood Middle School. When the buildings are not in use, the energy created by the solar panels goes back into the OUC power grid.
- The Orlando Science Center OUC will provide the Science Center with a \$100,000 contribution to install a 31.5-kilowatt photovoltaic system.
- IKEA The home furnishings store located near The Mall at Millenia installed a 1,920-square-foot rooftop solar hot water array — the largest commercial solar thermal project in Central Florida.
- Fountains at Millenia The apartment complex installed a 56-kilowatt photovoltaic array.

## Helping Customers Install Solar

t isn't always easy being green — especially when you have budget concerns. So, OUC has implemented several programs to help offset the upfront costs of installing solar hot water or solar photovoltaic systems. Customers can spread out installation costs for as long as seven to 10 years on their monthly bills. Or, they can finance the systems through low/no-interest loans arranged by OUC through the Orlando Federal Credit Union. In addition:

- Customers receive a production incentive of \$0.05/kilowatt hour as a credit on their monthly bill for installing solar PV and \$0.03/kilowatt hour for installing solar hot water.
- OUC offers net metering to customers who install renewable energy systems up to 2 megawatts in size.

OUC is working with its large-demand customers on a 600-800 kilowatt Purchase Power Agreement for solar thermal or photovoltaic systems. Excess power would be sold back to the grid.



# ensuring reliability through performance and innovation

At OUC, our name "The *Reliable* One" guides everything we do — from keeping the power on . . . to strengthening and upgrading security . . . to providing the infrastructure that helps Central Florida's economy grow and thrive.

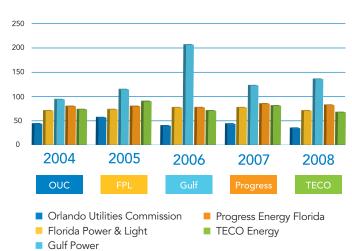
### **CONTINUING TO BE #1**

n 2009, OUC once again lived up to our name, "The *Reliable* One," as we were benchmarked as the most reliable utility in the state for the eighth year in a row. Comparison of the

Florida Public Service
Commission's utility data shows
OUC's performance well ahead
of Florida's four largest utilities in
key measurements of overall
electric reliability: LBar (average
length of single service
interruptions) and System
Average Interruption Duration
Index (SAIDI), the average
number of outage minutes
per year.

Meanwhile, our OUC linemen also took home the title for best team overall at the Florida Municipal Electric Association's 9th Annual Florida Lineman's Competition.

#### SYSTEM AVERAGE INTERRUPTION DURATION INDEX



## IMPLEMENTING CUTTING-EDGE SOLAR PV TECHNOLOGY

Always seeking new ways to enhance the reliability of our system, we installed

the first utility pole-mounted solar PV system in Florida.
This innovative solar panel demonstration project is expected to help enhance the Smart Grid capabilities and reliability of the electric distribution grid. The pilot project includes 10 of Petra Solar's SunWave<sup>TM</sup> intelligent photovoltaic solar systems that together can produce up to 2 kilowatts — enough to power a small home — that is pumped directly into the power grid.



## ENHANCING SECURITY AND IMPROVING COMMUNICATION

To ensure reliability and protect our system, we enhanced security by strengthening employee passwords, providing training on security and sabotage, and implementing advanced electronic controls such as Intrusion Protection Systems. We also improved communication by upgrading our existing two way radio system for better coverage and greater interconnectivity, and entered into agreements with Orange and Osceola counties for access to their public safety radio systems.

### SUPPORTING ECONOMIC GROWTH

OUC continues to keep an eye on the horizon, helping to build the business community and supporting economic growth in Central Florida.

Our new Lake Nona electric substation began providing power to the recently opened Burnett College of Biomedical Sciences and the Burnham Institute for Medical Research. OUC will serve the University of Central Florida College of Medicine's Medical Education Building when it opens in summer 2010, as well as the Nemours Children's Clinic and the Veteran's Affairs (VA) Medical Center, which recently began construction.

And thanks in part to OUC's efficient district cooling solution that provides chilled water for air conditioning, this new medical city will also be one of the most environmentally friendly. In fact, UCF's medical facilities, which will be served by the Lake Nona chiller plant, will be among the greenest on any campus and built to meet Leadership in Energy and Environmental Design (LEED) standards.



Burnham Institute for Medical Research









## In 2009, OUC:

pumped **28.9 billion gallons** of water, produced **6.8 million megawatts** of power, installed **1,312,333 feet** of electric wire and answered **688,480 calls** from customers.



## Taking Reliability on the Road

ith more than 775 vehicles ranging from plug-in hybrids to bucket trucks - OUC's fleet logs more than 4.7 million miles annually. So, to keep our fleet as reliable as our service, we're driving innovation in many ways. One example: As part of an overall plan to reduce emissions, we are using a clean-burning alternative fuel called "B20" - a blend of 80 percent petroleum diesel and 20 percent biodiesel. Since 2006, we've purchased 322,032 gallons of B20, reducing our carbon footprint by 44 metric tons of CO2e (carbon dioxide equivalent). Soon, we'll have the option to purchase our biodiesel fuel locally. Thanks to a \$2.5 million grant from the Florida Department of Environmental Protection, Central Florida's LYNX transit system plans to open a biodiesel blending facility and fueling station at its Orlando Operations Center.

OUC is also steering toward more fuelefficient vehicles. In fact, we're the first municipal utility in Florida to acquire a plug-in hybrid that gets up to 99 mpg. In addition to the plug-in, we have 13 other traditional hybrids in the fleet.



## protecting our water supply and pursuing efficient use

"Blue is the new green." While the topic of climate change has received widespread coverage, our water supply is beginning to dominate headlines across the nation. From ensuring water quality to conservation, OUC has a long history of providing our customers with clean, safe, reliable water. This year, we added three new conservation rebate programs for toilets, cisterns, and Florida Water Star construction. Moving forward, recycling water will be at the forefront of our efforts as we work to protect this vital resource.

### **HONORED FOR EXCELLENCE**

or decades, OUC has worked diligently to ensure a high-quality, adequate water supply for our customers. As testimony to that commitment, we were one of only six water utilities in the nation to earn the Association of Metropolitan Water Agency's Platinum Award for Utility Excellence. One of the key reasons OUC received this award was due to our establishing and tracking performance measures.

#### **KEEPING IT SAFE**

When it comes to water, safety is critical in many ways. To continue improving the quality and safety of our drinking water in



2009, OUC decreased the amount of chlorine used in the treatment process. Our staff installed chlorine concentration monitors just prior to the storage tanks, so that operators know exactly how much of the chemical needs to be added to the water. This eliminates guesswork and reduces chlorine levels.

Water is essential to public safety, too. And in that regard, OUC has taken steps to improve the reliability of fire hydrants. In 2009, we completed an audit where we inspected and maintained every hydrant in our water distribution system to verify that they are working properly.

## A LONG-RANGE, BIG-PICTURE STRATEGY

OUC was granted a 20-year Consumptive Use Permit (CUP) from the St. Johns River Water Management District (SJRWMD) in 2004 that enables us to meet our future customer needs. Part of the permit requires us to submit compliance reports every five years. In 2009, we spent considerable time and effort responding to requests for



additional information (RAIs) received from the SJRWMD regarding our 5-year compliance report. In September 2009, SJRWMD deemed the report complete. This milestone signifies that the District will not issue additional RAIs and will draft a technical staff report with CUP conditions that may differ from original conditions.

OUC is aware that Mother Nature — in the form of extremely wet and dry weather significantly impacts our water supply and our ability to make groundwater withdrawals from the Floridan Aquifer, the state's primary source of potable water. The State of Florida also has recognized that traditional, less expensive groundwater supplies are finite.

Adapting to Florida's unique hydrology means managing changes in water resources due to wide variations in precipitation. Increasingly, wetlands and lakes are becoming critical ecosystems. So, in addition to vigilantly monitoring withdrawals from the aquifer, OUC is carefully monitoring water levels at 25 lakes/wetlands to ensure that groundwater pumping does not impact these precious natural resources.

Looking at the big picture, OUC is participating in two research projects with

the American Water Research Foundation, including a study on methods to treat membrane residual water from brackish water treatment.

## MATCHING THE RIGHT WATER WITH THE RIGHT USE

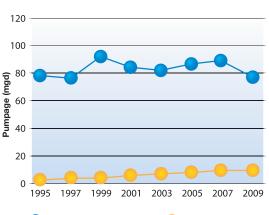
Ensuring the right water for the right use is a priority for OUC. That's why we are expanding efforts to "recycle" (or "reclaim") water, which extends potable water supply. "Reclaimed water" is highly treated wastewater that is safe for human contact and ideal for meeting our region's irrigation needs. To expand the use of reclaimed water, primarily in areas of new growth, OUC has embarked on two projects with local partners:

- Through the City of Orlando's Eastern Regional Reclaimed Water Distribution System (ERRWDS), reclaimed water from the Iron Bridge Plant will soon be conveyed to Baldwin Park and the southeast area of the city.
- Project RENEW will deliver reclaimed water to the City of Apopka. Although 75 percent of the design for the RENEW pipeline has been completed, a location conflict with Florida Gas Transmission

caused a delay. A request for a two-year extension will be submitted to SJRWMD.

OUC is also looking beyond our traditional service territory to develop innovative, collaborative efforts with local and regional partners. We are considering using the existing Taylor Creek Reservoir and/or the St. Johns River to provide surface water as an alternate water supply (AWS). OUC, along with five other utilities, recently completed a preliminary design report and environmental impact document for this AWS project.

## POTABLE AND RECLAIMED WATER USED IN OUC SERVICE AREA







# teaching conservation, reaching out to the community

As a global challenge, conserving energy and water is everyone's responsibility. Recognizing that, OUC has offered many affordable, customer-oriented conservation programs for years . . . and we have also taken the message into the community to inform people of all ages and walks of life about what they can do to make a difference.

#### THE POWER TO SAVE

or decades, OUC has encouraged customers to conserve energy and water. But, in light of growing environmental concerns, the conservation message has become increasingly more urgent. With that in mind, we have ramped up our efforts to tell customers what they can do to save money, energy and water.

We got the message out largely with new technology in our "Power to Save" campaign, which gave customers the opportunity to view OUC conservation and education videos on Bright House Networks, our local cable television provider. Viewers could access information (like how to read their electric meter or how to check for faucet leaks) around the clock . . . and at no cost. In addition to giving customers the

access they requested, this new method of information delivery helped OUC save money and resources by offering a waste-free alternative to mailing out conservation DVDs. We also used digital billboards along major thoroughfares as a low-cost means of reaching commuters. Of course, we communicated the "old-fashioned way," too. Over the past year, OUC conservation support personnel made nearly 100 public appearance related to conservation at schools, business expos, professional organizations and homeowner association meetings.

Thinking ahead to 2010 and beyond, OUC is looking at its budget to expand energy and water conservation programs, enhance customer education and increase customer assistance.

#### **BRIGHT IDEAS FOR ENERGY SAVINGS**

Sometimes, little things can make a big difference. Take light bulbs, for example.

After surveys revealed that using highefficiency light bulbs is the number one way OUC residential customers try to save electricity, we decided to encourage more of a good thing. To raise awareness of the benefits of using compact fluorescent light bulbs (CFLs) rather than incandescent ones, we distributed more than 5,000 20-watt CFLs during home energy audits and community events in 2009 alone.

Available at our service centers and through the Orlando Federal Credit Union, CFLs are given to each OUC customer on designated CFL give-away days. In addition, CFLs are also given to those customers who sign up for our Green Energy Programs — as well



as to those who enroll in Project Care, Rely-A-Pay, OUConvenient Billing and Budget Billing programs.

Commercial lighting has become more efficient, too. OUC will install LED (Light-Emitting Diode) lighting in Orlando's Thornton Park area, replacing older "cobrahead" lights, for a net energy savings of 50 watts per light. Although LEDs cost more initially, OUC will save money over the long term on energy and maintenance costs.

## ENCOURAGING CUSTOMERS TO REDUCE CONSUMPTION

Over the past five years, OUC conservation programs have helped residential customers collectively reduce energy consumption by about 1,848 megawatt hours.

During the same time frame, nearly 20,000 OUC customers have participated in our Residential Energy Survey Programs. Delivered in-person, online, or on DVDs, these surveys help customers "audit" their homes for potential savings. Based on the household information they provide, OUC generates a customized report showing their energy usage with tips on how to lower their utility bills.

OUC also provides a number of rebate programs for efficiency upgrades and

home fix-up — including attic insulation, duct and air-return repairs, installation of solar window film and solar screen, window caulking, weather stripping, water heater insulation and heat pumps. Nearly 4,000 customers have taken advantage of these programs over the past five years.

OUC provides similar services and incentives to commercial customers.

#### PROVIDING GREEN LEADERSHIP

As a leader in Central Florida's green movement, OUC established an integrated energy alliance with the City of Orlando and Orange County to promote green market transformation in Central Florida. We are also conducting a series of solar energy training courses for code officials, commercial energy managers, policy makers, home owners, commercial building owners and entrepreneurs, as well as stakeholder workshops with community leaders to determine best practices and needs of our community.

In order to help small businesses during these tough economic times, OUC partnered with the Disney Entrepreneur Center for a pilot efficiency program that will offer conservation credits to companies that may be experiencing financial difficulties.



## Environmental Education: A.W.E.S.O.M.E.

ducating young people about the importance of conserving resources is a vital lifeline to ensuring a sustainable environment for the future. The Orlando Science Center clearly understands that, and so does OUC. With that in mind, we have partnered to implement Project "A.W.E.S.O.M.E." (Alternative Water & Energy Supply, Observation, Methods & Education).

During the 2009-2010 school year, OUC will deliver a series of 90-minute workshops on energy and water conservation to 5,500 fifth graders in our service area.

## **Helping Our Schools Save Money**

hen it comes to conservation education, the best "lessons learned" come from real-life experience. A shining example of how well our Commercial Indoor Lighting Retrofit Program works is Orange County Public Schools (OCPS), where we replaced inefficient lamps and standard magnetic ballasts with high-efficiency fluorescent lamps and electronic ballasts. By reducing the number of light bulbs, OCPS lowered heat output and reduced cooling expenses.

To date, 28 schools have been retrofitted, reducing energy usage by 1.59 megawatts and saving the district \$618,942 annually. Warehouses and bus depots will be retrofitted in the next phase of the project.

OUC provided initial funding for the retrofit, which will be paid back by savings generated from the performance contracts. For OCPS, the project was totally cost-neutral, requiring no out-of-pocket expense.

## 1.59mw savings=



1,346 acres of trees planted



tons of carbon dioxide reduced



passenger cars not driven for one year



387
households
electricity use
for one year

# the year in review by the numbers

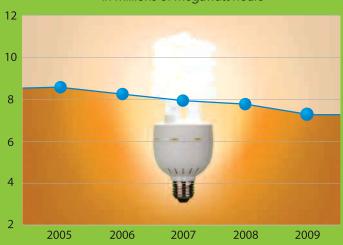
#### OUC METERED ACCOUNTS



Total:	313,026	100%
Water Only	48,292	15%
Electric Only	93,644	30%
■ Electric & Water	171,090	55%

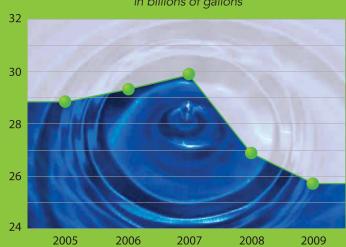
## **ELECTRIC SALES**

in millions of megawatt hours



## **WATER SALES**

in billions of gallons







## **Reliable Plaza**

100 West Anderson St.
Orlando, FL 32801
Phone: 407.423.9100 • Fax: 407.236.9616

www.ouc.com