

Utility Advisory Committee
Energy Roundtable II:
Conserving Energy and Saving Money
Tuesday, April 25, 2006 – 5:00 p.m. to 9:00 p.m.
Broward County Main Library Auditorium
Fort Lauderdale, Florida

UAC Members Present

Bunney Brenneman, Chair
Richard Barrett
Christine Campbell, Vice Chair
L. Thomas Chancey
Bob Cole
Caldwell Cooper
Joe Holland
Dr. Magdalene Lewis
Terri Murru
Bernie Petreccia
Fred Stresau

City Representatives Present

Mayor Jim Naugle
District I Commissioner Christine Teel
District III Commissioner Carlton Moore
David Hébert, Assistant City Manager
Albert Carbon, Public Works Director
Ted Lawson, Public Information Director
Peter Partington, City Engineer
Alex Hernandez, Chief Mechanical Inspector
Margarette Hayes, Housing & Community Development Manager
Chaz Adams, Public Information Office
Shannon Vezina, Public Information Office
Hal Barnes, Neighborhood Services
Jeri Pryor, Neighborhood Services
Peter Le Posa, Neighborhood Services
Betty Crews, Assistant to Peter Partington
Rafeela Persaud, Engineering
Margo Powell, Engineering

Speakers

Keynote Speaker: Jennifer Szaro, Sr. Energy Analyst, Florida Solar Energy Center
Featured Speaker: Tico Perez, past President, Orlando Utilities Commission; Partner,
Baker & Hostetler LLP

Panelists:

Colleen Kettles, Florida Solar Research & Education Foundation

Rand Eckhart, Energy Structures and Systems Inc.

Brian Lomel, TLC Engineering

Richard Evans, Community Greenhouse Foundation

Dr. Richard Weisskoff, Professor, University of Miami in Coral Gables

David Bates, FPL Energy Conservation

Special Guest

Margarette Hayes, Director of Housing & Community Development

Moderators

Bunney Brenneman, UAC Chair

David Hébert, Fort Lauderdale Assistant City Manager

Registration

Attendants and speakers registered for the event and information was made available regarding a wide range of energy conservation items and alternatives.

Welcome

Ms. Brenneman thanked those in attendance and invited them to share the information they learned this evening.

Proclamation

Ms. Brenneman introduced District I Commissioner Christine Teel, who presented a proclamation declaring April 25, 2006 Energy Roundtable II Day in Fort Lauderdale.

Christine T

Keynote Speaker

Ms. Szaro explained that political and economic forces had played an important role in their discussion this evening. In the past few years, Florida had experienced several hurricanes, soaring energy costs, issues of poor indoor air quality and mold growth, environmental degradation, and the need for local energy sources. Ms. Szaro explained that her research focused mainly on photovoltaics: solar energy generated by semiconductor materials. She had also investigated zero energy buildings and homes, which had been successful in California, Arizona and Nevada and even in some Northeastern states.

Jennifer Sz

Ms. Szaro wondered why Florida did not have more interest in zero energy buildings and homes. She had discovered that 32 states currently had better incentive programs allowing the cost of photovoltaic systems to be lower than they were in Florida.

Ms. Szaro continued that in a presentation to the Florida Energy Forum in Tallahassee recently, the Director of the Florida Solar Energy Center, Dr. James Fenton, stated he

wanted to reduce Florida's future energy demand by 8% through energy efficiency measures, intelligent energy policies such as rebates, and policies and laws that encouraged cost-effective, disaster tolerant, and energy efficient building. Dr. Fenton estimated savings to consumers of \$2.47 billion by 2014, the creation of 126,000 new jobs due to the need for high-level jobs and labor, the elimination of 26.4 million tons of carbon dioxide from the atmosphere, and a decrease in total demand of 25 Terawatt hours.

In order to accomplish these goals, Ms. Szaro felt that state and local government leadership and support were required. Ms. Szaro informed the audience that there was an energy omnibus bill pending in the state Senate. The bill included solar incentives and rebates, breaks for buying energy-efficient appliances, matching funds for municipal governments to pursue, renewable energy and efficiency measures, and funds for solar water heating and interconnection for photovoltaics.

Ms. Szaro stated that the City of Lakeland had created a solar water-heating program that had enabled them to incorporate this into their community at a very cost-effective price. Jacksonville Electric Authority had mandated their own renewable energy production and encouraged builders and developers to achieve more energy-efficient building, and to install solar water heating units on a commercial scale.

Ms. Szaro explained the programs she was involved in:

- ❖ SunSmart Schools program
 - \$500,000 per year for installing solar power systems on schools that were used for emergency shelters
 - Educated students in new technology, science and math opportunities
- ❖ Incorporate energy efficiency in FCAT curriculum
- ❖ Zero Peak Energy homes
 - Build energy-efficient buildings
 - Reduce usage during peak periods
 - Minimize loads
 - Utilize solar and photovoltaics

Introduction of UAC Members

Ms. Brenneman introduced Mayor Naugle, who thanked the UAC for their work and for bringing the panel together this evening.

Ms. Brenneman then introduced Commissioner Carlton Moore, and individual members of the UAC.

Featured Speaker

Chair Brenneman introduced Tico Perez, past President of the Orlando Utilities Commission; Partner, Baker & Hostetler LLP

Bunney Br

Tico Perez

Mr. Perez stated that he had been on the Orlando Utilities Commission for 8 1/2 years, and had been its president for three of those years. Mr. Perez noted that power and water were taken for granted by most people, who thought little about where they came from or how to conserve them. He felt the recent hurricanes had made people realize how precious these things were and how they must be conserved.

Mr. Perez listed the 10 top things individuals could do to conserve energy:

- ❖ Set thermostats between 78° and 80°
 - Every degree over 78° reduced the power bill by 6% to 8%
- ❖ Set thermostat to 85° when not at home
- ❖ Keep thermostat on “auto”
- ❖ Use ceiling fans - turn off when leaving rooms
- ❖ Service air-conditioning units every year
- ❖ Change air-conditioning filters every month
- ❖ Install 10 to 12 inches of insulation in attics
- ❖ Repair duct leaks
- ❖ Tint eastern and western exposure Windows
- ❖ Use compact florescent bulbs instead of incandescent

Mr. Perez explained that 56% of the average electric bill came from running air-conditioning/ heating units; 18% from running a water heater; 10% from running a refrigerator and only 8% from televisions, lights and small appliances.

Mr. Perez noted that water was the one resource that was challenged due to the erosion of the aquifer by seawater and increased development. Mr. Perez offered the following water conservation techniques:

- ❖ Turn off water when not using it
 - While washing the car, brushing your teeth, doing the dishes, etc.
- ❖ Use a broom to clean the driveway instead of a hose
- ❖ Cover pools and spas to reduce evaporation
- ❖ Repair water leaks

Mr. Perez explained that in Orlando, they had initiated a program to reduce water consumption by using a sliding scale that charged lower rates for customers who used small amounts of water and higher rates for customers who used larger amounts of water. This had resulted in a 20% reduction in consumption even through enormous growth in their customer base.

Roundtable Discussion

Ms. Brenneman introduced David Hebert, Assistant City Manager, who introduced Colleen Kettles, Florida Solar Research & Education Foundation.

Ms. Kettles explained that she had worked at the Florida Solar Energy Center starting in the late 70's when early federal tax credits for solar energy went into effect and there was a surge in solar energy around the country and in Florida. Those incentive programs had expired in 1985, and they had tried to develop some new incentive programs in the state of Florida. As of now, Florida had fallen behind other states in solar incentives. Ms. Kettles explained that utilities in Florida were constrained by the Public Service Commission in what they could offer their customers. From 1979 to 1994, FPL had offered a rebate for solar water heating that was in high demand, and was very popular, despite the fact that the PSC did not give them much credit for it, and the fact that the program did not pass the PSC's test for cost-effectiveness.

Ms. Kettles felt that utility incentives were one area that needed improvement and this must take place at the state government level. The Legislature was now considering bills offering cash rebates to businesses and consumers for the purchase of solar water heating, pool heating, and photovoltaic equipment. She encouraged everyone to contact their legislators in support of these bills and to urge them to put more money into these programs.

Ms. Kettles was also involved in an incentive program for builders to include solar water heating in new construction, and the Front Porch Sunshine Program. The Front Porch Program identified 20 communities around the state to install solar water heaters at no cost to consumers.

Ms. Brenneman introduced City Engineer Peter Partington, and Mr. Hébert introduced Rand Eckhart, Energy Structures and Systems Inc.

Mr. Eckhart explained that Energy Structures and Systems was a sustainable energy development company, focusing on building structure. The company helped decrease energy usage by using both passive solar design, which dropped cooling and lighting loads, and through the use of energy efficient appliances and solar water heating. They also integrated grid-tied and battery-backup solar electric systems.

Ms. Brenneman introduced Brian Lomel, TLC Engineering. Mr. Lomel explained that he was a mechanical engineer and usually worked with architects designing large commercial buildings. Through his research for a class he taught for the American Institute of Architects, he had learned that from the 1890s to the 1920s, Florida, California and Arizona were the largest manufacturers and consumers of solar domestic water heating, meaning that this technology had been around for a long time.

Mr. Lomel explained that a building that had "sustainable design" or "net zero effect" meant that all the sunlight, water, and anything that entered a specific piece of property was used on the property, and no storm water was exported or energy imported for consumption. Mr. Lomel felt that Green Building Design meant only that a building was "less bad." He explained that Green Building Design was quantified through

Leadership in Energy and Environmental Design [LEED] certification. This was used to define a building's energy efficiency, water conservation materials and resources and indoor air quality.

Mr. Hebert introduced Richard Evans, Community Greenhouse Foundation, who explained the relationship between government resources, housing programs, economic development, job training and energy efficiency. Mr. Evans explained that there were many creative ways to drive down housing costs. Mr. Evans felt creative ways must be used to encourage large developers to build energy efficient housing. Mr. Evans described a circular system in which Economic Development departments would use tax incentives and special loan programs to encourage solar manufacturing plants and solar efficient buildings. Once the products were available, employees would need training, which would be provided by local schools. Manufacturers would move to the area, bringing their products and their employees, who would themselves need affordable housing and training to build the houses, completing the cycle.

Ms. Breneman introduced Dr. Richard Weisskoff, Professor at the University of Miami in Coral Gables, who explained that he had spent eight years working on a book about the economics of Everglades restoration. He had discovered while researching his book that the economics of Everglades restoration had everything to do with energy, population, employment and the economy of the entire area. Dr. Weisskoff had concluded that if the region kept growing at the present rate, using the models utilized by the South Florida Water Management District without correcting for agriculture, tourism, construction and Everglades restoration funds, there was not enough land or water for nature; it would all be used up by the cities or agriculture.

Dr. Weisskoff described the way the state projected county populations from the 1980s to 2020, beginning with steep growth and then slowing. At every census correction, it was discovered that the growth rate never actually slowed; it continued in a steep climb. Dr. Weisskoff had redrawn the graphs taking into consideration tourism, construction, agriculture and Everglades restoration, and confirmed that population was in a continuing steep climb. The Army Corps of Engineers had hired consultants who estimated that water use would fall in approximately 2010; Dr. Weisskoff had determined that water consumption would keep increasing with population. Along with increased water consumption was increased sewage output. Dr. Weisskoff stated, "the solution is save it, don't use it. Look at the future, get scared, and do something about it."

Mr. Hébert introduced David Bates, FPL Energy Conservation. Mr. Bates said that they must devise ways to provide energy and conserve energy in preparation for the expected increase in Florida population. Mr. Bates informed everyone that FPL had managed to defer building 12 new power plants in Florida by its conservation programs

over the past 20 years, but Mr. Bates admitted they needed to do more. Mr. Bates listed several programs offered by FPL:

- ❖ The free home energy survey
- ❖ Incentive programs for replacement of air-conditioning systems
- ❖ Duct system testing and repair
- ❖ Incentive program for ceiling insulation
- ❖ Build Smart program for energy efficient home-building
- ❖ Load management program
- ❖ Other programs for commercial air-conditioning and lighting load control
- ❖ The Sunshine Energy program
 - Customer-supported program to support renewable energy sources and education
 - FPL built a 150 kilowatt Solar PV system for every 10,000 customers enrolled in the program

Public Question and Answer Session

Mr. Chancy asked Mr. Bates about FPL's Sunshine Energy program, and Mr. Bates explained that this was a nonprofit program and monies went directly toward purchasing energy attributes from renewable producers both inside and outside Florida, and to the construction of photovoltaic facilities in Florida. Energy generated by the program was put directly back into the grid.

Mr. Doug White, South Middle River Civic Association, wondered why local builders did not use insulated concrete form [ICF] blocks here. He was currently using these to build a home in Fort Lauderdale. He noted that homes built with ICF were not only energy efficient, but could withstand 200 mph winds. Mr. White was also concerned that high winds would rip solar panels from his roof.

Ms. Szaro said they had researched the impact of winds on solar panels; right now they only wind tested to 120 mph, but they were working to get UL to increase the wind rating. Ms. Szaro announced that in field-testing over the last two years, they had only lost a portion of one system during the hurricanes. Ms. Szaro said it was possible to have a structural engineer certify a solar system with the wind loading calculations up to a category five storm. Ms. Szaro said they were studying ICF technology, and were including it in their zero energy and disaster tolerant buildings. They were also studying Structural Insulated Panels [SIPs] and aerated concrete.

Mr. Eckhart said their PV systems were wind loaded at 150 mph; out of twelve systems sold to the Orange County school district, only two modules were lost due to storm debris. Other houses with integrated roof tile systems, a GE product, had not lost one module in the hurricanes. Mr. Eckhart said they were using aerated autoclave concrete block, and they could get wind loading on the walls to 200 miles an hour. It was rated R11 but performed like an R20 and enabled them to eliminate drywall on interior walls.

He felt the aerated autoclave concrete met the needs of this area of the country better than the ICF block.

Mr. Evans advised everyone to visit www.DSIRE.usa.org for information on solar systems, tax credits and incentive programs. Mr. Evans remarked that increased demand would lead to an increase in more energy efficient building.

Mr. Jack Handley said he was in the process of building town homes, and his architect had never heard of the term photovoltaic. Mr. Handley wanted to put PV units on his roof, but did not know where this was covered within the Florida Building Code. Mr. Eckhart said he had not encountered any problems with the building code; his company had an engineer who worked with them and met with the local electrical inspectors on site. Mr. Eckhart and his engineer educated these local electrical inspectors. Mr. Eckhart said PV units were covered in NEC code Chapter 960.

Ms. Jennie Brooks asked what incentive programs and monies were available to improve the energy efficiency of older homes. Ms. Kettles informed her that the federal tax credits for solar water heating or PV systems dealt with new and existing homes. Incentives were also offered for Energy Star appliances. FPL also offered incentives for certain appliance upgrades.

Mr. Perez said the FPL home energy audit would provide specific information about credits and incentives for which she was eligible. They were currently testing a prepaid meter technology; Mr. Perez felt that when consumers could see exactly how much power they were using and how much they had remaining, it made them acutely aware of how better to manage their own usage.

Mr. Bates said the home energy survey was the start of the education process; it helped consumers to realize exactly where they were using electricity in their homes so they could manage their usage more effectively. The survey provided a detailed report, including recommendations and incentive information for air conditioner and appliance replacement. He recommended that anyone interested in the energy survey call 1-800-DIAL FPL.

Mr. Lomel explained that incentives were available for standing seam reflective metal roofs as well, but these were very expensive to install.

Mr. Kaiser Talib, architect at Urbanform Design Group, noted that city building departments were not well educated in energy-conscious design. He was currently building a home in Fort Lauderdale with a thermal transfer unit on the roof for solar hot water. He also intended to install photovoltaic elements, water-cooling compressors, and an induction cook top stove. Mr. Talib explained that he also applied for a variance to install a wind generator, but this had resulted in a struggle with the local Civic Association. Mr. Talib felt the building department did not understand that Florida

statute clearly stated that no covenants, amendments, or building codes prevented anyone from the use of solar or alternative sources of energy treatments on buildings. He asked for the panel's help in educating city officials so there was no need for a variance. Mr. Talib felt that city and state governments' taking the lead in building energy conserving buildings would become the foremost tool in educating future generations.

Mr. Evans agreed that citizens needed to let public officials know that how public buildings were constructed was important to them, and it should be a priority. Mr. Lomel agreed that education needed to be pushed even further. Mr. Bates noted that the economics of several energy conservation techniques such as wind energy generation, trash burning plants, landfill gas recapture, and solar thermal had come down significantly in price, and utilities were investing in those.

Mr. Robert Smith he had recently installed low flush toilets and flow restrictors, and he had seen his water bill reduced by 25%. He felt they should initiate a citywide program to encourage all residents to do the same.

Mr. Perez said that while energy prices would become a problem, water would become a crisis in Florida soon, and they must do something to reduce their usage.

Ms. Ellen Brodsky, Director of the Broward Electoral Reform Coalition, asked what could be done to encourage citizen cooperatives to create their own solar energy sites that would benefit local energy consumers. She mentioned programs in western states that allowed homeowners with solar panels on their roofs to sell their excess power back to the power company.

Mr. Perez explained that the Orlando Utilities Commission bought back, at retail rates, energy put into the grid by solar homes.

Mr. Eckhart noted that the Keys and New Smyrna did the same thing. Mr. Eckhart explained that municipalities could save a lot of money if all of the public buildings were able to sell power back. He also noted that once the rebate programs kicked in, there would not be enough qualified people to work on these systems.

Ms. Szaro advised everyone that if they wanted to have a genuine impact on the state level, they should call their local representatives and ask them to support Bill SB 888, currently on the floor of the Florida Senate.

Ms. Charlene Burke asked for more specifics regarding incentive programs that did not entail out of pocket costs. She also wanted it noted that alternative forms of energy would have a positive impact on global climate change. Ms. Kettles said several state incentive programs had been in discussion since last year, and she was hopeful that

residents would soon have access to rebates for the purchase of solar water heaters, Energy Star appliances and other energy efficient materials. She felt the most contractors who made these products available would work with their customers to soften the blow of the upfront costs by knocking the rebate amount off of the price. Ms. Kettles agreed that the less energy we produced through the use of fossil fuels, the better off we would be.

Mr. Doug Fleischmann asked about the pros and cons of point-of-use water heaters versus tank water heaters. Mr. Bates said these were usually space savers, and they offered some savings in reduction of standby losses and decrease in air-conditioning costs compared to a tank water heater that was located inside the house in. Mr. Lomel said that in a commercial building, there was an increase in the cost of wiring an initial electrical setup for the tankless models. Ms. Kettles added that electric tankless units created a demand surge. Gas powered tankless units did not have this problem and were also eligible for a tax credit due to their energy efficiency rating. Ms. Kettles did not recommend tankless units as a rule, and advised people to insulate their water heater tanks instead.

Mr. George Kavers felt Florida was lagging seriously nationwide in terms of demand side management. He reported that more than 20 states currently had public benefit funds that took away the demand side responsibilities from the utilities. Mr. Kavers felt that change really needed to come from Tallahassee. He asked if FPL was willing fight to remove demand side management from the utilities and lobby for a public benefit fund and distributed energy. Mr. Kavers also thought that distributed energy systems were the fastest and most efficient way to get solar energy systems online. He noted that New York and California were subsidizing systems like these through sales tax and property tax cuts, and were able to cut system costs in half.

Mr. Bates explained that in deregulated areas, utilities were required to collect funds for conservation and low-income programs. Mr. Bates noted that in the past decade, FPL ranked as one of the top DSM [Demand Side Management] producers in the nation, despite the fact that they did not have those types of public funds. FPL did use Rate Impact Measure [RIM] tests to determine if a program was cost-effective. Because their programs were cost-effective, Mr. Bates noted that FPL's rates were among the lowest in the nation. Mr. Bates did not feel that FPL would lobby right now for a public benefit fund because of the success of the programs they already had.

Mr. Alex Hernandez, Fort Lauderdale Chief Mechanical Inspector, said the City saw solar pool heating plans every day, but they did not see photovoltaic systems yet. He asked members of the audience to contact their chief electrical and mechanical inspectors when they were considering these systems and invited them to call him personally.

An audience member suggested that money that utilities were squandering on lowering demand side management could help provide rebate funding for the photovoltaic systems on homes that Ms. Kettles had noted was so under funded. He felt that the states that had public benefit funds spent that money far more effectively than utilities did. Mr. Bates said he could not directly state whether FPL would be a proponent or opponent of public benefit funds. He felt that compared to what other utilities had done, FPL had been successful in implementing their conservation programs, resulting in the deferral of 12 power plants so far.

Ms. Kettles said they had compiled facts regarding Florida's and other states' DSM programs over the years. Ms. Kettles said that utilities in Florida did not support a public benefit fund; there was no incentive for them to support it and because the Public Service Commission did not support it. Ms. Kettles felt the problem was with the Public Service Commission.

Special Guest

Margarette Hayes

Ms. Brenneman introduced Margarette Hayes, Fort Lauderdale Housing & Community Development Manager. Ms. Hayes stated that Fort Lauderdale had hosted a workforce housing roundtable in January. At this event, Ms. Brenneman had informed Ms. Hayes of the Florida Green Communities initiative and offered a possible way for nonprofit developers to afford to construct Green housing. It was a partnership between the Florida Green Building coalition, the Enterprise Foundation, an affordable housing advocacy group, and the Florida Community Loan Fund. This was a national initiative to change our thought processes about the design of affordable housing.

Ms. Hayes said the Housing and Community Development Department's major focus was to provide housing opportunities for persons at or below 80% of area median income. For a family of four, this figure was approximately \$48,150. As part of the housing initiatives, the Housing and Community Development Department had a substantial rehabilitation and repair program. This helped them to implement the ADA accessibility requirements and energy efficiency requirements. They were also partners with FPL in their Build Smart program to make housing units more affordable. The national objective was a program to build 8,500 multifamily and single-family homes over the next five years that were environmentally sensitive.

Ms. Hayes stated that the national partners were the National Resource Defense Council, the American Institute of Architects, the American Planning Association, Home Depot, Fanny Mae, Freddie Mac, and other corporate financial and philanthropic organizations. The goal was to promote energy conservation, conserve national resources, and provide easy access to jobs, schools and other services. The initiative provided technical assistance, grants, loans, and incentives to developers.

Ms. Hayes provided the web address for the program: www.FloridaGreenBuilding.org

Closing Remarks**Bunney Brenneman**

Ms. Brenneman thanked the panel and presented each of them with a Certificate of Appreciation from the City of Fort Lauderdale and the Utility Advisory Committee.

Ms. Brenneman then thanked the City Commission, Mayor Jim Naugle, City Manager George Gretsas, Assistant City Manager David Hébert, Director of Public Works Albert Carbon, City Engineer Peter Partington, Rafaela Persaud, Margo Powell, Chaz Adams from the Public Information Office, Betty Crews, Shannon Vezina and the Utility Advisory Committee.

Reception

Attendants and speakers attended a reception with refreshments.

The event ended at 9:00 p.m.