



# Outlook

ORANGE COUNTY  
GROWTH MANAGEMENT DEPARTMENT

Planning Division Research and Strategic Planning Section

Issue 7

## Embracing Renewable Energy

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*A reliable, cost-efficient supply of energy is critical to Florida's continued prosperity... Through diversity and conservation efforts, we can reduce our dependence on imported oil, spur economic growth and ensure that a balanced mix of fuel sources and technologies are readily available for years to come." – Governor Bush, 2006*

*"I'd put my money on the sun and solar energy. What a source of power! I hope we don't have to wait 'til oil and coal run out before we tackle that."- Thomas Edison (1847–1931)*

### The Energy Crisis

Faced with rising energy costs and growing demand, much of U.S. industry and government are turning to renewable energy as a solution, and Orange County has the potential to see renewable energy sources become a key local industry. "Rising energy demand worldwide and environmental concerns have made investments in energy technologies the most compelling in decades," states General Electric CEO Jeffrey Immelt. Environmental issues are making news, and its not just environmental advocates paying attention. Multinational companies are taking action, because they see the opportunity to capture profit from the growth of new environmentally friendly markets and recognize the benefits of using technology to reduce their carbon footprint and minimize waste.

Government is also doing its part. In June, Gov. Charlie Crist signed an energy bill approved by the Legislature in April. Also in June, he delivered the keynote address entitled, "Green Technology Drives Green Economies" at the 2008 Serve to Preserve Florida Summit on Global Climate Change. In his opening remarks, Crist called HB 7135 the "most comprehensive energy and economic development policy in the history of our state." Gov. Crist added that the goal is to have ethanol comprise 10 percent of Florida's total fuel

supply by 2010 and that the Florida Public Service Commission is to develop a renewable portfolio standard to increase the use of wind, solar and other renewable energy.

Locally, the Metro Orlando Economic Development Commission's *Texture* publication highlights the energy industry as a major emerging economic resource in Central Florida. Orange County is in a strong position to develop renewable energy as a key industry in its economy. With the constant increases in energy costs, the interest in renewable energy likely will be sustained. This research will focus on Orange County's overall renewable energy potential by first investigating the job creating possibilities of renewable technologies and then examining if Orange County is positioned to take advantage of these emerging sectors.

### Why We Need Renewable Energy

According to the Department of Environmental Protection in their *2006 Florida's Energy Plan*, population growth is increasing the demand for power and transportation fuel. The state's electric consumption is expected to increase by close to 30 percent over the next ten years.

The demand for motor vehicle transportation fuel is expected to grow from 28 million gallons per day to more than 32 million gallons per day with Florida depending almost exclusively on other states and nations for supplies of oil and gasoline.

Florida ranks forty-fifth in total energy consumption per capita, including coal, natural gas, petroleum, and retail electricity sales. It is estimated that approximately 4% of energy in the state is generated through renewable resources.



Many renewable energy technologies exist, and though different entities classify different technologies as renewable, most lists include wind, solar, geothermal, hydropower, fuel cells and biomass. According to the Energy Information Administration, the statistical agency for the U.S. Department of Energy, renewable resources provided 7 percent of the nation's electricity supply in 2006.

Despite high growth rates, renewable energy still represents only a small part of today's energy picture. The general estimates are that renewable energy, excluding combustible renewables and renewable waste, accounted for less than 3% of total primary energy.

In electricity generation, renewables remain the third most important source of energy after coal and gas, providing 18% of total electricity.

Hydropower is the most important constituent among renewable sources of electricity. It accounts for almost 90% of total electricity generated from renewable sources and 16% of total electricity generation. Geothermal, wind and solar electricity generation account for approximately 1% of global electricity generation.

### What is Our Renewable Energy Potential

The Renewable Energy Policy Project recently completed a state-by-state analysis of the job-creating potential of renewable energy technologies. The results of this analysis were very encouraging, both for the country as a whole and for Florida, in particular. The report addresses the components of renewable generation technologies and examines where traditional industries exist that could, if provided with appropriate incentives, become suppliers of the billions of dollars of new parts that will be necessary.

**Table 1 Manufacturing Jobs and Investment for 185,000 MW**

Location	# of Firms	Jobs Wind	Jobs Solar	Jobs Geothermal	Jobs Biomass	Jobs Total
Texas	3,358	25,044	23,221	4,660	7,175	60,100
North Carolina	1,096	10,964	11,062	2,810	3,708	28,544
South Carolina	488	11,204	3,559	5,223	2,365	22,351
Florida	1,617	8,467	7,718	1,070	1,449	18,704
Tennessee	853	9011	5,122	1,078	2,451	17,662

Source : Renewable Energy Policy Project Technical Report Summary, 2006

The national demand is allocated to individual states and, eventually, to the county level. This report outlines the potential for Florida from a national perspective to accelerate renewable energy development. In all, there are more than 457 firms in Florida that are currently active in the industrial sectors that could contribute to delivering a 15% reduction in global warming emissions. The report indicated that Orange County is well situated within the state to capitalize on renewable energy component manufacturing.

**Table 2 Top 5 Counties in Florida**

County	Firms	Wind		Solar		Geothermal		Biomass		Total	
		Millions	Jobs	Millions	Jobs	Millions	Jobs	Millions	Jobs	Millions	Jobs
Orange	105	\$166.10	907	\$308.80	1,338	\$74.30	268	\$40.30	209	\$589.50	2,722
Hillsborough	104	\$127.70	755	\$235.60	1,175	\$5.00	27	\$5.70	36	\$374.00	1,993
Brevard	85	\$107.30	688	\$199.00	721	\$5.00	26	\$2.40	15	\$313.70	1,450
Miami-Dade	206	\$154.80	1,044	\$60.90	229	\$14.20	70	\$13.20	84	\$243.10	1,427
Broward	179	\$110.20	720	\$76.90	476	\$22.20	131	\$27.90	190	\$237.20	1,517

Source: Renewable Energy Policy Project Technical Report Summary, 2006

In 2007, the Florida Legislature appropriated \$12.5 million for the Renewable Energy Technologies Grant Program, providing funding for projects that generate or utilize renewable energy resources, including hydrogen, biomass and solar energy. Since the creation of the Florida Energy Act in 2006, a total of \$27.5 million has been appropriated for the Renewable Energy Technologies Grant Program.

It is well understood that a national program to develop renewable energy will benefit the regions and states that have the best renewable resource base – solar, wind, biomass and geothermal. The table below shows the number of employees within the Orlando MSA at potentially active firms identified by the NAICS codes for renewable electric power industry. The 6-digit NAICS codes replaced the 4-digit SIC codes, which were the highest level of detail available in the SIC. When interpreting the results of a 6-digit code search, it is important to be aware of the potential broadness of companies included.

Table 3 Identifying Potential Renewable Energy Industries within the Orlando MSA

2002 NAICS Code	2002 NAICS Industry Description	Number of Establishments	Annual Payroll (\$1,000)	Number of Employees
22	Utilities	55	97,037	1,802
221	Utilities	55	97,037	1,802
2211	Electric power generation, transmission, & distribution	33	78,562	1,402
22111	Electric power generation	22	D	g
221112	Fossil fuel electric power generation	19	D	g
22112	Electric power transmission, control, & distribution	11	D	c
221122	Electric power distribution	11	D	c
2213	Water, sewage, & other systems	19	D	c
22131	Water supply & irrigation systems	15	D	c
221310	Water supply & irrigation systems	15	D	c

Source: 2002 Economic Census

### Existing Efforts

Renewable energy is an emerging sector in Orange County, reflecting a response to the national imperative to reduce dependence on oil and make use of environmentally-friendly alternatives to fossil fuels, the County has made important inroads to this crucial industry. As businesses and nonprofit entities engage in a variety of research and development projects aimed at deploying more cost-efficient, environmentally-friendly power, Orange County is set to become a haven for renewable energy and alternative fuel endeavors.

With Orange County serving as headquarters for two major power generation companies, Siemens Power Generation, Inc. and Mitsubishi Power Systems, and additional leading utility companies and related service and equipment companies, the County is well established in the traditional energy sector. With a solid foundation already in place, the industry has shifted focus towards alternative fuel sources. Siemens Power has become the leading supplier of wind turbines, a highly efficient renewable solution to meet energy needs and environmental concerns.

The County's traditional energy industry is buoyed by major utility providers, such as the Orlando Utilities Commission and Progress Energy, as well as fuel distributors and wholesalers, engineering, consulting, construction and equipment firms that support energy providers. Orange County's energy sector is also augmented by the presence of businesses that produce energy conservation products, such as photovoltaic systems.

The Orange County Convention Center's rooftop will soon bear the largest solar project in the Southeast. Orange County received a \$1.8 million grant through the Florida Department of Environmental Protection's (FDEP) Renewable Energy Technologies 2007 Grant Program to help fund a giant photovoltaic system that will cover the roof of the nation's second-largest convention center with panels to convert sunlight into pollution free energy.

The grant will be matched by a \$3.8 million commitment from Orange County Government and OUC also will contribute \$1.5 million to the project and receive 10 years' worth of Renewable Energy Credits. The \$7M multi-purpose project will also construct a Climate-Change Education Center, inside the convention center, to promote the many environmental and economic benefits of solar and other renewable energy technologies.

Orange County owns and operates the third-largest landfill in Florida, the home of the only landfill gas-to-energy project in the state. The project takes advantage of \$4 million in federal funding and tax incentives, allowing OUC to replace finite fossil fuel with this cleaner burning, renewable energy source.

### How Do We Develop a Green Economy?

Local policies and initiatives can drive the demand for a green economy. Here are few examples that Orange County could follow.

- Commitments to install solar or other renewable energy systems on public buildings financed with capital budgets, bonds or performance contracting.
- Commitments to purchase green products and services from local providers.
- Tax incentives, rebates, reduced fees, or streamlined permitting for private building owners that invest in energy efficiency, renewable energy, or green building.
- Green building codes, energy conservation ordinances, or other requirements for new green buildings or retrofits of existing buildings.
- Land use and infrastructure policies to support green manufacturing companies.

These are just a few examples of the many policy options available to local governments. Throughout this document, there have been examples of specific local policies and programs aimed at building a green sector and attracting green-collar jobs.

Our quality of life, standard of living and national security depend on energy. A strong balanced energy research program, based on the most efficient use of natural resources while minimizing dependence on imported energy, is critical to Orange County, Florida and the United States. With proven dedication to advancing the use of alternative energy sources, Orange County should continue to be a strong area of opportunity for alternative energy initiatives and industry formation.

### Sources:

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