

# **Energy Planning in the Twenty-First Century A Guide for Florida Communities**



**By  
Treasure Coast Regional Planning Council  
Energy Task Force**

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## CONTENTS

Energy Task Force Members .....	inside front cover
Acknowledgments.....	ii
Foreword.....	iii
A. Trends and Conditions	
1. Introduction .....	1
2. Florida's Energy Profile .....	1
3. Trends in Florida .....	3
4. Barriers to Sustainability .....	4
B. Important Issues	
1. Energy Planning .....	5
2. Energy Efficiency and Conservation.....	5
3. Renewable Energy Resources .....	6
4. Sustainable Communities .....	6
5. Energy Efficient Buildings.....	7
6. Transportation Systems .....	7
C. Goals, Strategies, and Policies	
Coordinated Energy Planning .....	8
Energy Efficiency and Conservation.....	11
Greater Use of Solar and Other Clean Alternative Energy Resources.....	13
Sustainable Communities .....	16
Energy Efficient Buildings.....	19
Energy Efficient Transportation Systems.....	21
Appendices	
1. Glossary of Energy Terms.....	24
2. Energy Information Sources.....	28
3. Florida Energy Statistics .....	45
4. Florida Statutes Related to Energy .....	50
5. Bibliography .....	51
6. Significant Energy Resources and Facilities.....	52
7. Map of Major Electric Facilities and Transmission Line Routes.....	53
8. Map of Major Gas Lines and Service Areas .....	54
Council Staff .....	inside back cover

Cover Photograph: *Photovoltaic test facility located at the Florida Power and Light Company (FPL) Martin Plant site. Photograph courtesy of FPL.*

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## FOREWORD

The purpose of this energy planning guide is to enhance awareness of energy issues, promote good energy planning, reduce reliance on fossil fuels, increase energy efficiency and conservation, and promote the use of solar energy and clean alternative fuels. Energy use choices start at the local level with each individual. The planning decisions made by local communities can have a great influence on energy usage. Implementation of the principles included in this guide will lead to a cleaner environment, more sustainable communities, and a higher quality of life.

This energy planning guide is intended to be used for planning purposes only. All statements contained in this document, including the goals, strategies, and policies, are advisory. The goals and policies will be implemented only to the extent that financial resources are available from local revenue sources, legislative appropriations, grants or appropriations of any other public or private entities. The guide does not create regulatory authority or authorize the adoption of agency rules, criteria, or standards not otherwise authorized by law.

The goals and policies contained in this guide shall be reasonably applied where they are economically and environmentally feasible, shall not be contrary to the public interest, and shall be consistent with the protection of private property rights. This energy guide is not intended to be a mandate or dictum to the state, region, local governments, utilities, private industries, or citizens.

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# Energy

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## A. Trends and Conditions

### 1. Introduction

- Energy planning was not considered a priority issue when the state directed each regional planning council to prepare a strategic regional policy plan (SRPP).
- Energy planning may be best accomplished by creating a specific energy section in the SRPP, but at the present time regional planning councils do not have specific authority from the state legislature to add an energy section to the SRPP.
- This energy planning guide was developed as an advisory report to:
  1. improve the effectiveness in dealing with energy issues;
  2. help promote energy planning by the state;
  3. assist communities in becoming more energy efficient; and
  4. serve as a model for local governments and regional planning councils.

### 2. Florida's Energy Profile

- Most of Florida's energy usage is for transportation and electric power generation.
- Florida depends heavily on petroleum, ranking third behind Texas and California.
- Florida relies heavily on electricity, ranking third of all states in 1997.
- Only small amounts of fossil fuels are produced in Florida.
- The imbalance between consumption and production has created an energy deficit, making Florida one of the nation's largest net fossil fuel consumers.

#### ENERGY SUPPLY

- Petroleum products used for transportation, natural gas used by consumers, and most of the energy used for electrical generation are imported into the state.
- A portion of the electric power used in Florida is obtained from other states through bulk transmission lines.
- Florida Gas Transmission has historically supplied natural gas to Florida via a pipeline extending across the state from supply sources in the western gulf region.

- New natural gas transmission pipelines are being planned in Florida.
- The sun, which creates heat and causes great demand for electricity to operate air conditioning systems, also offers a solution through solar energy.
- Solar energy is the main renewable energy source abundant in Florida.

**ENERGY CONSUMPTION**

- Primary energy consumed in Florida by source in 1997 (see Appendix 3, part A):

Petroleum	51.8%
Coal	21.4%
Natural Gas	15.6%
Nuclear	7.5%
Other	3.7%

- Energy consumption by sector in Florida in 1997 (see Appendix 3, part C):

Transportation	35.4%
Residential	27.4%
Commercial	21.5%
Industrial	15.6%

- People in Florida use a relatively high amount of electricity primarily because of the use of air conditioners.
- Per capita demand for electricity steadily rose from 1970-1997 (FPSC 1999).
- Electric use and transportation each account for roughly half the energy consumed in Florida (see Appendix 3, parts A, G, and H).

**ENERGY SOURCE DIVERSITY**

- The main advantages of diversity in fuel supply are security and a hedge against the risk of price increases.
- The electric utilities serving Florida generally use a diverse mix of fuel sources for the generation of electricity.
- The transportation area has the least fuel diversity, being almost wholly dependent on petroleum as an energy source.
- The economy of Florida is especially vulnerable to petroleum price increases and supply disruptions because Florida’s reliance on tourism and commerce makes the state heavily dependent on transportation.

### **3. Trends in Florida**

- Florida is one of the fastest growing states in the nation.
- The population of Florida, which currently ranks fourth in the United States, is projected to increase 21.8% between 1997 and 2010 (Bureau of Economic Business Research 1998).
- The tremendous growth in population is expected to place significant strain on energy and environmental resources.
- Energy consumption in Florida is growing substantially in all sectors (Bureau of Economic Business Research 1998).
- Advances in technology have the potential to expand the use of solar energy and other clean alternative energy resources in Florida.

#### **ELECTRIC MARKET**

- Demand for electricity is forecast to increase substantially (Governor's Commission for a Sustainable South Florida 1997).
- Per capita consumption of electricity in Florida has steadily increased from 1992 to 1996 (Bureau of Economic Business Research 1998).
- Florida utilities propose to increase their existing generating capacity by about 22% during the next ten years.
- Renewable technologies such as solar photovoltaic modules that produce electricity directly from sunlight, and fuel cells that can be installed close to the end-use customer could have a dramatic effect on the way electricity is provided in the future.
- Certain large industrial customers have been appealing to the state legislature to deregulate the electric market, opening this industry to competition.

#### **BUILT ENVIRONMENT**

- Florida's growing population, coupled with suburban sprawl and the market trend toward larger residences, is contributing to higher energy demand and overall use.
- State and local governments are developing examples of improved building design and construction that are more energy and resource efficient (Florida Department of Community Affairs and Treasure Coast Regional Planning Council, 1999).

- Florida is beginning to follow the national trend toward traditional neighborhood design, which preserves natural resources and is significantly more energy efficient.

#### **TRANSPORTATION**

- Florida's growing population and large number of tourists has resulted in increasing demand for transportation facilities, services, and vehicles.
- Environmental and social impacts such as acid rain and human health effects may be worsened by the increased use of fossil fuels in transportation systems.
- Carbon dioxide emissions from cars and other vehicles are regarded as contributors to the greenhouse effect, which could produce global warming.
- Sea level rise, which may result from global warming, could be particularly threatening to states with significant coastal areas such as Florida.
- Mass transit and alternative fuel vehicles are being used by a growing number of Florida communities to reduce the amount of fossil fuel used in transportation systems.

#### **4. Barriers to Sustainability**

- The key principles of sustainability include:
  1. the needs of the future must not be sacrificed to the demands of the present;
  2. humanity's economic future is linked to the integrity of natural systems; and
  3. protecting the environment is impossible unless we improve the economic prospects of the Earth's poorest people.
- Addressing energy related issues is important to achieving sustainability because increased use of renewable resources helps to create a cleaner environment and reduce reliance on external sources of energy.
- The following barriers to achieving sustainability have been identified in Florida:
  1. federal and state regulations exist that encourage energy use and discourage the use of renewable energy technologies and energy efficiency (Governor's Commission for a Sustainable South Florida 1997);
  2. the relatively high initial cost of solar equipment, interconnection requirements, liability insurance, lack of net-metering, restrictive codes and covenants, and lack of convenient financing for renewable energy resources;
  3. lack of awareness of the benefits and availability of energy efficient technologies;
  4. the high initial cost of sustainable technologies; and
  5. the low cost of some energy products that do not include the complete cost of a broad array of sustainable concerns such as environmental, health, social impacts.

## **B. Important Issues**

### **1. Energy Planning**

- Comprehensive energy planning by the state is necessary in order to be effective in promoting energy planning at the regional and local level.
- Leadership is necessary in charting a specific plan to guide Florida's energy choices.
- Emerging competition in the electric industry may have the effect of causing existing power providers in Florida to focus more heavily on the short-term cost of electricity.
- Global warming is an issue of growing concern and debate.
- Transportation and electric power generation are key areas where energy planning is needed to promote sustainable energy choices.

#### **STATE PLANNING**

- Florida has existing legislation that provides tools to help achieve energy sustainability (Appendix 4).
- The development of a state energy plan would facilitate better coordination of energy related activities and augment regional and local interests in dealing with energy planning issues.
- One of the most effective roles for the state may be to continue encouraging the entry of cost-effective energy efficiency products and services into a healthy market economy.

#### **UTILITY PLANNING**

- Utility energy planning is important to sustainability because the electricity generated by Florida's utilities accounts for almost half of the energy used in Florida, and power plant fuel choices and operations have an effect on the health and welfare of Florida's citizens.
- Increased use of solar and clean alternative energy resources is important to creating sustainable communities in Florida.

### **2. Energy Efficiency and Conservation**

- The potential exists to save large amounts of energy through the development of efficiency programs for local governments, school systems, and private businesses.

- Simple changes in the types of light bulbs used and the schedule for turning lights on and off can have a significant effect on energy savings.
- A way for commercial, governmental, industrial and institutional offices to become more energy efficient is through the development of comprehensive energy efficiency and conservation plans.
- Education of homeowners about simple activities to save energy is important.
- It would be beneficial if the Florida Public Service Commission could expand the process to encourage wider citizen participation in the review of electric utility conservation and demand side management plans.
- The state may be able to promote additional conservation programs by providing incentives to the power providers to earn a profit on investments in new conservation programs that are not currently available.

### **3. Renewable Energy Resources**

- Photovoltaics and solar water heating offer great promise for displacing conventional fuels and preserving a cleaner environment in Florida.
- Recent technological advances are providing the tools to make greater use of renewable energy resources.
- The use of photovoltaics can be greatly increased through incentive programs and simplification of interconnection procedures.
- For typical homeowners, a solar water heater may represent the most energy efficient appliance they can purchase.

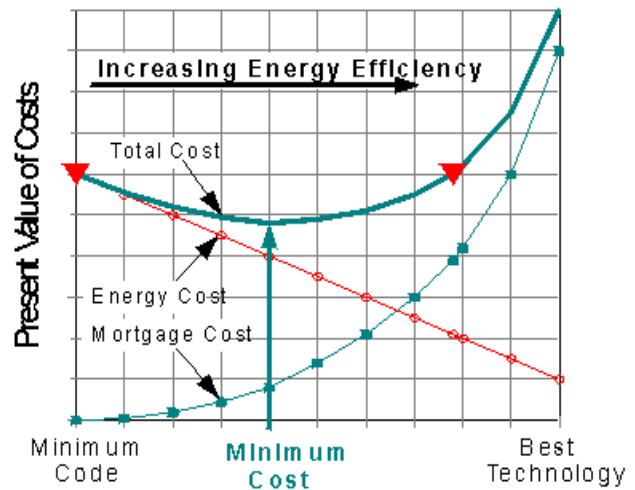
### **4. Sustainable Communities**

- Urban sprawl wastes energy by:
  1. making mass transit impractical in many areas;
  2. increasing commuting distances;
  3. making commuters reliant on private automobiles;
  4. inefficiently using urban infrastructure; and
  5. requiring duplication of infrastructure outside urban areas.
- The challenge to halting the massive expenditures of energy caused by sprawl is to divert future growth to urban areas where infrastructure already exists.
- There is a need for school districts to become directly involved in planning their facilities for community-wide energy efficiency and siting decisions.

- Expansion of the state’s Sustainable Communities Demonstration Program is a way that more communities can increase energy efficiency.

## 5. Energy Efficient Buildings

- Most homes can achieve considerable energy efficiency and monetary savings by going beyond minimum compliance with Florida’s Energy Code.
- Many improvements in energy efficiency are cost-effective.
- Energy efficient products may increase the monthly mortgage payment by a small amount, but they can decrease the monthly energy costs by a greater amount.



## 6. Transportation Systems

- A decrease in average vehicle fuel economy, combined with an increase in average vehicle miles traveled, is putting increased pressures on the economy and environment.
- A transportation energy component is critical to developing a comprehensive statewide energy program.
- Fuel efficiency and lower harmful emissions can be achieved by supporting efforts to have:
  1. sport utility vehicles meet passenger car standards for fuel efficiency and emissions;
  2. diesel fuel vehicles meet stricter emissions standards;
  3. the amount of sulfur reduced in gasoline;
  4. development of public transportation systems; and
  5. the timing of lights in highway traffic signal systems adjusted to minimize vehicle stops at traffic lights.
- Local governments can reduce transportation energy impacts by participating in the U.S. Department of Energy Clean Cities program, which is creating public and private partnerships to develop the alternative fuel vehicle market.

## C. Goals, Strategies and Policies

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### Goal 1

#### Coordinated Energy Planning

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##### Indicators:

- *Number of incentives adopted by local, state and federal governments to promote solar and other clean alternative energy resources*
- *Number of local governments that adopt an energy section and related policies in their comprehensive plan*

**Strategy 1.1:** Support incentives by local, state and federal governments to promote energy efficiency and conservation and the use of solar and other clean alternative energy resources.

**Policy 1.1.1:** Encourage local, state and federal governments to provide financial incentives, including tax credits, to promote energy efficiency and conservation and the use of solar and other clean alternative energy resources.

**Policy 1.1.2:** Explore the feasibility of a system that applies surcharges to products that do not meet strict standards for energy efficiency. The funds collected from the surcharge could be used to encourage the use of energy efficient products.

**Policy 1.1.3:** Promote streamlining of state and federal regulations to encourage use of solar and other clean alternative energy resources.

**Strategy 1.2:** Support the adoption of an energy plan by the State of Florida.

**Policy 1.2.1:** Encourage regional workshops on electric restructuring for purposes of 1) educating the public on the concerns and opportunities, and 2) developing a statewide position to effectively deal with deregulation if it is implemented through federal legislation.

**Policy 1.2.2:** Encourage studies to determine the complete system benefits and costs of burning fossil fuels versus renewable energy sources, and provide an analysis of the environmental and health costs to society.

**Strategy 1.3:** Develop regional programs promoting public awareness, education, and coordination of energy issues.

**Policy 1.3.1:** Encourage the interest and participation of citizens and local governments in the development and implementation of energy policies and programs in the region.

**Policy 1.3.2:** Provide for energy education and the public dissemination of information on energy and its social, economic and environmental implications. Coordinate with all interested parties to ensure that balanced, accurate information is provided to the public.

**Policy 1.3.3:** Encourage the Cooperative Extension Service in each county to continue providing and to expand development of programs to reach out to the community, and provide education on energy efficiency and environmental sustainability.

**Strategy 1.4:** Support efforts by local governments to become more energy efficient and self sustaining.

**Policy 1.4.1:** Assist local governments in developing an energy section and related policies for their local comprehensive plans.

**Policy 1.4.2:** Encourage local governments to participate in the Cities for Climate Protection (CCP) Campaign, which is sponsored by the International Council for Local Environmental Incentives (ICLEI). The goal of the CCP Campaign is to reduce greenhouse gas emissions that contribute to global warming and air pollution.

**Policy 1.4.3:** Sponsor periodic workshops to inform government officials and the public of the costs and benefits associated with various energy efficiency and conservation techniques, equipment, and materials.

**Strategy 1.5:** Support efforts to minimize power supply interruptions.

**Policy 1.5.1:** Encourage the power providers to continue designing future power generating facilities that are capable of using multiple fuel types where applicable.

**Policy 1.5.2:** Encourage a mix of energy sources that will contribute to the stability of the region's economy with minimal degradation of the region's environmental resources.

**Policy 1.5.3:** Avoid planting trees in areas where future tree growth will interfere with existing power lines.

**Strategy 1.6:** Support coordinated planning in the siting and design of new power generating facilities, power lines, and natural gas pipelines.

**Policy 1.6.1:** If increased capacity is needed, request that power providers that have existing power generating facilities expand these facilities using the best energy efficient technology available where feasible, rather than develop new power plant sites.

**Policy 1.6.2:** Encourage the power provides to design new power plants to use reclaimed wastewater for cooling, rather than relying on natural resources.

**Policy 1.6.3:** Support retrofitting, repowering, or decommissioning existing power plants that do not meet current clean air standards.

**Policy 1.6.4:** Encourage the development of power generating facilities that are more energy efficient and rely on clean alternative energy resources, such as natural gas, fuel cells, or solar energy.

**Policy 1.6.5:** Promote the development of distributed generation facilities that rely on clean alternative energy resources.

**Policy 1.6.6:** Support the development of new power generating facilities that incorporate high efficiency cogeneration technologies.

**Policy 1.6.7:** Encourage new power lines and natural gas pipelines to be sited along existing linear corridors and minimize impacts to existing land uses.

**Policy 1.6.8:** Encourage new power lines and natural gas pipelines to be sited in a way that minimizes impacts to existing urban areas and natural upland and wetland communities.

**Policy 1.6.9:** Encourage new power lines and substations to be sited in a way that protects the public health and welfare.

**Policy 1.6.10:** Encourage the burial of new distribution and transmission lines in urban areas. This will help prevent storm and accident-related power outages and allow trees to be planted along streets and sidewalks.

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## Goal 2

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### Energy Efficiency and Conservation

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#### **Indicators:**

- *Number of local governments that have energy efficiency and conservation plans*
- *Number of private businesses that adopt energy efficiency and conservation plans*
- *Number of school systems that adopt energy efficiency and conservation plans*

**Strategy 2.1:** Support the development of energy conservation programs.

**Policy 2.1.1:** Provide local governments, school systems, and private businesses with model energy efficiency and conservation programs and request that they be adopted and implemented.

**Policy 2.1.2:** Encourage all commercial, governmental, industrial, and institutional offices to appoint an energy manager with the responsibility of overseeing implementation of energy efficiency and conservation activities at the office.

**Policy 2.1.3:** Encourage all government employees to dress appropriately for the current weather conditions in order to reduce the level of air conditioning necessary in the work place.

**Policy 2.1.4:** Promote the use of computerized energy management designed to conserve energy and allow manual override when appropriate.

**Policy 2.1.5:** Encourage participation in the US Department of Environmental Protection Agency's Energy Star Buildings and Green Lights Program to increase energy efficiency through lighting upgrades in buildings.

**Policy 2.1.6:** Encourage participation in the US Department of Energy programs such as Rebuild America, Buildings for the 21<sup>st</sup> Century; Million Solar Roofs; Energy Smart Schools; and National Industrial Competitiveness through Energy, Environment and Economics (NICE<sup>3</sup>).

**Policy 2.1.7:** Encourage participation in the Florida Department of Environmental Protection's Pollution Prevention (P2) program.

**Strategy 2.2:** Support incentive programs to increase energy conservation.

**Policy 2.2.1:** Work with local governments to offer a reduction in property taxes based on the investment of energy efficient improvements in the property.

**Policy 2.2.2:** Encourage the Florida Public Service Commission to provide incentives to the power producers to make more conservation programs possible.

**Strategy 2.3:** Monitor the Florida Public Service Commission's review of utility energy efficiency and conservation goals and programs.

**Policy 2.3.1:** Encourage participation in the Florida Public Service Commission's review of utility energy efficiency and conservation goals.

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## Goal 3

### Greater Use of Solar and Other Clean Alternative Energy Resources

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#### Indicators:

- *Number of solar water heating systems in operation*
- *Number of solar pool heating systems in operation*
- *Number of photovoltaic systems interconnected to the electric grid*

**Strategy 3.1:** Support the use of solar and other clean alternative energy resources in new and existing developments.

**Policy 3.1.1:** Assist developers in incorporating solar design and other clean alternative technologies in new developments.

**Policy 3.1.2:** Design new street layouts that allow energy-efficient building orientation to capture prevailing breezes and to control solar exposure.

**Policy 3.1.3:** Promote the design of energy efficient buildings through: a) proper siting according to solar orientation; b) design of passive architectural systems; c) site designs that provide shade to buildings; d) use of sustainable building materials; and e) use of solar thermal and photovoltaic systems.

**Policy 3.1.4:** Design a solar community that can be used as a model for the Region and State of Florida.

**Policy 3.1.5:** Encourage the Florida Public Service Commission to continue reviewing existing rules concerning interconnecting small photovoltaic systems to the electric utility grid. The purpose of the review is to determine if the procedure can be simplified, and the associated costs can be reduced.

**Strategy 3.2:** Coordinate with local governments to encourage the use of solar and other clean alternative energy resources.

**Policy 3.2.1:** Encourage flexibility in zoning regulations that provide for: a) setback requirements that allow building orientation to make the best use of prevailing breezes and solar radiation; and b) energy conservation through the use of outdoor clotheslines, vegetable gardens, compost bins, and other reasonable practices consistent with Section 163.04, F.S.

**Policy 3.2.2:** Promote revisions to zoning regulations that protect access to direct solar radiation and remove restrictions which hinder the use of solar devices, or provide variances to allow solar devices where otherwise prohibited by height, setback, or accessory structure restrictions consistent with Section 163.04, F.S.

**Policy 3.2.3:** Encourage local governments to retrofit public buildings with solar and other clean alternative energy systems.

**Policy 3.2.4:** Distribute the latest information on solar and other clean alternative energy systems to local governments.

**Strategy 3.3:** Support state and federal tax incentives and initiatives to promote the use of solar and other clean alternative energy resources.

**Policy 3.3.1:** Encourage state and federal legislators to explore the feasibility of developing surcharges and financial or tax incentives to promote the use of solar and other clean alternative energy systems.

**Strategy 3.4:** Support public education about solar energy and other clean alternative energy resources.

**Policy 3.4.1:** Distribute educational materials on solar and other clean alternative energy resources to local governments, developers, and the public.

**Policy 3.4.2:** Maintain an updated list of businesses and contractors in the Region that specialize in selling, installing, and maintaining solar and other clean alternative energy systems.

**Policy 3.4.3:** Conduct periodic workshops promoting the use of solar and other clean alternative energy resources.

**Strategy 3.5:** Support the use of renewable energy sources.

**Policy 3.5.1:** Encourage new industry to be sited near sources of waste heat to maximize opportunities for cogeneration.

**Policy 3.5.2:** Encourage waste heat recovery in commercial and industrial facilities.

**Policy 3.5.3:** Disseminate information promoting the use of solar and other clean alternative energy resources.

**Policy 3.5.4:** Encourage companies that produce renewable resource and energy efficient products, such as photovoltaic systems and solar water heaters, to establish manufacturing facilities in the region.

**Policy 3.5.5:** Promote the use of resource recovery systems to meet future energy demands.

**Policy 3.5.6:** Establish waste recovery and recycling programs to reduce total energy use and demand on natural resources.

**Policy 3.5.7:** Promote the recovery and use of methane from landfills.

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## Goal 4

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### Sustainable Communities

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#### ***Indicators:***

- *Number of acres of natural areas protected*
- *Number of housing units approved inside versus outside the urban corridor*
- *Number of existing housing units retrofitted to become more energy efficient*
- *Emission levels of greenhouse gases*

**Strategy 4.1:** Preserve natural areas and discourage urban sprawl.

**Policy 4.1.1:** Develop a framework of incentives and programs for the preservation of environmentally significant natural systems. Such incentives and programs include: tax abatement or incentives, conservation easements, transfer of development rights, purchase of development rights and acquisition.

**Policy 4.1.2:** Preserve and manage complete natural systems as a network of connected nature preserves.

**Policy 4.1.3:** Encourage clustering and transfer of development rights to new and existing cities, towns and villages.

**Policy 4.1.4:** Promote densification of and investment in established cities, towns and villages.

**Policy 4.1.5:** Locate infrastructure investments in areas designated as existing or future cities, towns and villages.

**Strategy 4.2:** Support the development of cities, towns, and villages that maximize energy efficiency and sustainability.

**Policy 4.2.1:** Research and promote the types of land use patterns and development techniques which will reduce the total fossil fuel energy required to build and maintain urban land uses.

**Policy 4.2.2:** Assist local governments in reviewing and modifying local development regulations, in order to increase energy efficiency by promoting mixed use development patterns and locating new development where infrastructure already exists.

**Policy 4.2.3:** Site new housing in close proximity to employment and public services so as to reduce non-housing costs, such as transportation which are directly dependent on housing choice.

**Policy 4.2.4:** Favor forms of development and redevelopment that maximize public transportation alternatives, minimize the use of the collector and arterial roadway network, and reduce the total amount of daily vehicle miles traveled.

**Policy 4.2.5:** Plan and design new development and redevelopment to provide complementary interconnections for pedestrians and public transportation within and between residential areas, schools, employment and retail centers, recreational areas and other public facilities.

**Policy 4.2.6:** Create sustainable neighborhoods and communities by providing a balanced, well planned mix of land uses and building types in a compact design.

**Policy 4.2.7:** Minimize street widths to reduce energy requirements for construction and maintenance, as well as to reduce heat gain.

**Policy 4.2.8:** In areas where trees will not interfere with existing power lines, plant native shade trees along streets and sidewalks to prevent the pavement from heating and to encourage pedestrian traffic.

**Policy 4.2.9:** Encourage xeriscaping and the use of native vegetation to shade walls and windows, parking lots, and streets, thereby reducing air conditioning energy demands.

**Policy 4.2.10:** Require analysis of energy use by large scale developments to determine if more energy efficient systems can be utilized.

**Strategy 4.3:** Support retrofitting existing communities to become more energy efficient.

**Policy 4.3.1:** Increase public investment and assistance to foster infill, redevelopment, and energy efficient design in existing urban areas.

**Policy 4.3.2:** Create incentives to encourage private reinvestment in existing urban areas.

**Policy 4.3.3:** Work with local governments and private citizens to prepare redevelopment and revitalization master plans for areas with an identified need.

**Strategy 4.4:** Support programs that reduce greenhouse gas emissions and promote clean air.

**Policy 4.4.1:** Recommend that local governments participate in the International Council for Local Environmental Initiatives' (ICLEI) Cities for Climate Protection (CCP) campaign to slow the earth's warming trend and to improve air quality and urban livability.

**Policy 4.4.2:** Increase public awareness about campaigns to clean up polluting power plants (see Appendix 2).

**Policy 4.4.3:** Generate involvement in the Clean Fuels Florida (CFF) program to achieve compliance with federal mandates that govern air quality and promote energy and economic security.

**Policy 4.4.4:** Promote public participation in local utility energy efficiency programs.

**Strategy 4.5:** Support programs to reduce the harmful environmental and health effects of sulfur dioxide, nitrogen oxides, mercury, lead, and other emissions that are a result of burning fossil fuels.

**Policy 4.5.1:** Encourage the State of Florida to study or participate in studies of the environmental and health effects of the various emissions from power plants and motor vehicles.

**Policy 4.5.2:** Promote the development of a plan to minimize the harmful environmental and health effects of emissions.

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## Goal 5

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### Energy Efficient Buildings

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#### ***Indicators:***

- *Number of new homes certified in the EPA Energy Star program*
- *Number of new homes certified in the FPL Build Smart program*
- *Number of homes participating in the Florida Public Service Commission's Natural Gas Conservation Programs*
- *Number of existing buildings retrofitted to become more energy efficient*

**Strategy 5.1:** Support programs that will lead to more energy efficient building designs.

**Policy 5.1.1:** Promote awareness and participation in the EPA Energy Star program and FPL Build Smart program, as well as other energy efficiency and conservation programs offered by the US Department of Energy, State of Florida, and electric utilities.

**Policy 5.1.2:** Provide educational materials on energy efficient design principles, including: 1) proper siting according to solar orientation; b) design of passive architectural systems; c) site designs that provide shade to walls and windows; d) use of sustainable building materials; and e) use of solar mechanical systems.

**Policy 5.1.3:** Encourage that all new public and private buildings be inspected during construction and certified by a building commissioning agent to ensure that all energy related systems are installed and function properly.

**Policy 5.1.4:** Consider adding electric vehicle charging busways in all new construction.

**Policy 5.1.5:** Encourage the use of energy efficient mortgages.

**Policy 5.1.6:** Promote the use of clean alternative energy resources in new multifamily buildings.

**Strategy 5.2:** Support enforcement of the Florida Energy Efficiency Code for Building Construction.

**Policy 5.2.1:** Apply the state mandated energy code to all new construction, including state and federal government buildings.

**Policy 5.2.2:** Establish workshops for training building and zoning officials, review boards, and builders, in methods of energy performance calculations necessary to implement adopted code.

**Strategy 5.3:** Support programs to make existing buildings more energy efficient.

**Policy 5.3.1:** Promote weatherization and retrofit programs, such as those that add weather-stripping, insulation, and upgrade appliance efficiency.

**Policy 5.3.2:** Encourage local governments to adopt an ordinance that requires landscaping for energy conservation.

**Policy 5.3.3:** Encourage the use of recycled and recyclable products and energy efficient building materials and techniques.

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## Goal 6

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### Energy Efficient Transportation Systems

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#### Indicators:

- *Number of local governments that adopt pedestrian and bicycle plans*
- *Number of alternative modes of transportation available*
- *Number of private vehicle miles per capita traveled*
- *Gallons of gasoline used per capita in the Region*
- *Number of commuter rail passengers*

**Strategy 6.1:** Support the development and use of public transportation systems.

**Policy 6.1.1:** Establish public transportation systems in high-density areas, designated public transportation corridors, and central business districts.

**Policy 6.1.2:** Provide incentives for use of high-occupancy vehicles and alternative modes of transportation (e.g., car pools, van pools, buses, bicycles, etc.).

**Policy 6.1.3:** Work with local governments to increase land use densities around commuter rail stations and at strategic locations along designated public transportation corridors.

**Policy 6.1.4:** Promote the development and redevelopment of downtowns at strategic locations along designated public transportation corridors.

**Policy 6.1.5:** Plan and design new development and redevelopment to provide complementary interconnections for pedestrians and public transportation within and between residential areas, schools, employment and retail centers, recreational areas and other public facilities.

**Policy 6.1.6:** Site new buildings so they are convenient and accessible to public transportation facilities.

**Policy 6.1.7:** Promote non-automotive travel through the provision of convenient interconnections between modes, such as park and ride facilities and public transit stops at inter-city bus and train stations.

**Policy 6.1.8:** Encourage the use of clean alternative fuels in public transportation systems.

**Strategy 6.2:** Support the use of alternative fuel vehicles.

**Policy 6.2.1:** Encourage local governments, private industries, and individuals, to utilize alternative fuel vehicles and to develop alternative fueling infrastructure.

**Policy 6.2.2:** Promote participation by local governments and private industries in the US Department of Energy Clean Cities program in accordance with the Energy Policy Act of 1992.

**Strategy 6.3:** Support programs that reduce the use of fuel and the amount of vehicle emissions.

**Policy 6.3.1:** Ensure that intersection and traffic signal sequences are designed to minimize idle time for vehicles.

**Policy 6.3.2:** Encourage greater coordination between the Florida Department of Transportation and local governments in providing improvements to highway and street system, such as the use of synchronized traffic signals, demand-activated signals, exclusive turn lanes, roundabouts, and other traffic-calming techniques to reduce disruptions to the smooth flow of traffic.

**Policy 6.3.3:** Require patterns of development and redevelopment that maximize public transportation alternatives, minimize the use of collector and arterial roadways, and reduce the total amount of daily vehicle miles traveled.

**Policy 6.3.4:** Encourage public agencies and private businesses to promote car pooling and van pooling through incentives such as priority parking areas, exclusive car pool/high occupancy vehicle lanes, provision of vehicles and support facilities, and insurance discounts.

**Policy 6.3.5:** Encourage public agencies and private businesses to promote the use of video-conferencing and telecommuting to reduce the number of vehicles on the highway.

**Policy 6.3.6:** Support efforts to require sports utility vehicles to meet passenger car standards for fuel efficiency and emissions.

**Policy 6.3.7:** Support efforts to require diesel fuel vehicles to meet stricter standards for emissions.

**Policy 6.3.8:** Support efforts to reduce the amount of sulfur in gasoline.

**Strategy 6.4:** Support programs to maximize pedestrian and bicycle traffic.

**Policy 6.4.1:** Work with local governments and private developers to design and develop a network of sidewalks and bicycle paths that will result in safe, convenient links between home, work, shopping, recreation, and schools.

**Policy 6.4.2:** Provide incentives to non-automotive travel such as sheltered bus stops, bicycle locking facilities at major destinations, shaded pathways, and protected crossings.

## APPENDIX 1

### Glossary of Energy Terms

**Alternative Fuels**--Natural gas, liquefied natural gas, liquefied petroleum gas, electricity, hydrogen, coal-derived liquid fuels, fuels (other than alcohol) derived from biological material, methanol, and mixtures containing 85% or more by volume of methanol, denatured ethanol, other alcohol with petroleum or other fuels.

**Alternative Fuel Vehicle (AFV)**--A vehicle that is powered by fuels other than current forms of petroleum or diesel oil.

**Bagasse**--Residue generated by crushing sugarcane that is used as a feedstock in electric power plants.

**Barrel of Oil Equivalent**--The numerical value of the energy contained in a standard barrel of oil. This unit is commonly used for measuring energy production for consumption. 5,800,000 Btu = 1 standard 42 gallon barrel of oil.

**Biofuels**—Non-fossil biomass energy sources and biomass-derived fuels which together encompass all energy sources from recent-term organic matter (plant or animal).

**Biomass**--Organic material in any form (wood, crop residue, animal manure, and others) that contains energy stored in chemical form.

**British Thermal Unit (Btu)**--The energy required to raise the temperature of one pound of water by one degree Fahrenheit.

**Carbon Sequestration Strategies**--Regulatory and/or business policies and practices designed to reduce anthropogenic emissions of greenhouse gases to the atmosphere by capturing and storing such gases in chemical, biological, or geological media that are stable or isolated from the atmosphere. Also may refer to policies or practices which remove greenhouse gases from the atmosphere by facilitated production of biomass or other relatively stable materials.

**Clean Cities Coalition**--A voluntary program initiated by the United States Department of Energy (DOE) to accelerate and expand the use of alternative fuel vehicles (AFV) in communities throughout the country and to provide refueling and maintenance facilities for their operation.

**Co-generation**--The generation of two forms of useful energy in a single energy conversion process. For example, a turbine may produce both mechanical energy for an electric generator and heat for a building.

**Corporate Average Fuel Economy Standards**--A regulatory fuel economy standard imposed by Congress for an average passenger car originally set at 18 miles per gallon in 1978 and continuously revised to 27.5 miles per gallon by the late 1980s.

**Crude Oil**--A mixture of hydrocarbons that exists in liquid phase in underground reservoirs and remains liquid at atmospheric pressure after passing through surface separating facilities.

**Demand-Side Management**--Utility programs used to reduce peak electric demand from consumers and increase energy efficiency.

**Deregulation**--A proposed policy reform to reduce government intervention of the energy industry based on the rationale that such reform will allow a greater number of energy producers and suppliers to compete in the market and that increased competition results in efficient energy production and protects consumers.

**Distributed Generation**--A term for power generation facilities that are placed at or near the site where the energy is used.

**Distribution**--The conveyance of power from the substation to the customer.

**Distribution Line or System** -- Powerlines under 69 kV that convey electricity from the substation to the customer.

**Eco-industrial Parks**--Industrial parks which seek to co-locate industries which can benefit from the synergies of proximity by: utilizing the waste streams of one to serve as feedstock for another; providing excess steam or energy; increasing efficiency in materials, water, and energy use; reducing waste generation and providing for innovation and technology development.

**Efficiency**--The useful output of any system divided by the total input.

**Energy**--Capacity to work by performing mechanical, physical, or electrical tasks or to cause a heat transfer between two objects at different temperatures.

**Energy Alternatives**--Sources of energy such as fossil fuels (coal, petroleum, and natural gas), nuclear, biomass, hydrogen, geothermal, and solar.

**Energy Conservation**--Reduction or elimination of unnecessary energy use and waste.

**Energy Efficiency**--Percentage of the total energy input that does useful work and is not converted into low-quality usually useless heat in an energy conversion system or process.

**Energy Efficient Mortgages**--Mortgage loans that take into account the cost-savings resulting from energy-efficient devices or structures built into a residential building in calculating the total mortgage amount, monthly payments, and interest. Usually a more energy-efficient mortgage means a borrower qualifying for higher than the normal amount.

**Energy Information Administration (EIA)**--An independent statistical and analytical agency within the United States Department of Energy. EIA maintains a comprehensive data and information program relevant to energy resources and reserves, energy production, energy demand, energy technologies, and related financial and statistical information.

**Externalities**—Considerations, often subtle or remote, that can be accounted for when evaluating a process or product but usually are not. For example, externalities for a power plant may include down-wind particulate fallout and acid rain.

**Final Energy**--A form of energy that is used directly by consumers (e.g., electricity).

**Fossil Fuels**--Fuels such as coal or petroleum derived from remnants of plants and organisms of a past geological age.

**Fuel Cell**--A device that produces electricity from a chemical reaction such as between hydrogen and oxygen.

**Hydrogen Energy Technology**--Any technology that is used to generate, store, distribute, or use hydrogen in a sustainable energy system.

**Interconnection**--A connection or link between power systems that enable them to draw on each other's reserve capacity in time of need. Interconnection between a photovoltaic (PV) energy system and the local electric grid is required for operation of grid-connected PV systems.

**ISO Quality Standards**--A series of self-enforced, internationally uniform standards on elements of an environmental or energy system which can be audited and certified. ISO 14000 standards are designed by the International Standards Organization.

**Mass Transit**--Buses, trains, trolleys, and other forms of transportation that carry large numbers of people.

**Natural Gas**--The gaseous component of petroleum. It is primarily methane (CH<sub>4</sub>) and is commonly used as a household and industrial fuel. It is also the least environmentally damaging of all fossil fuels. Many consider it to be a transition fuel.

**Net Metering**--A metering system that measures the difference between the energy that is generated on-site and the energy that is consumed on-site. Net metering is used when a generator of electricity wishes to sell excess energy to a centralized grid.

**Petroleum**--A generic term applied to oil and oil products in all forms such as crude oil, lease condensate, unfinished oils, and petroleum products.

**Photovoltaic (PV) Cell**--A device that converts the energy in light directly to electric energy.

**Primary Energy**--See Primary Fuels.

**Primary Fuels**--Conventional fuels such as petroleum, coal, nuclear, and hydroelectric.

**Renewable Energy**--Form of energy that theoretically can last indefinitely without reducing the available supply because it is replaced through natural processes, or because it is essentially inexhaustible. Examples include solar, biomass, wind, geothermal, and hydrogen.

**Repowering**--Process whereby an existing power generating facility is modified to increase the output capacity and increase its generating efficiency.

**Service Drop**--The power lines between a utility's power pole/transformer and a customer's point of connection/meter.

**Sustainability**--The state of having met the needs of the present without endangering the ability of future generations to be able to meet their own needs.

**Sustainable Energy System**--Any energy system that supports the objective of moving residents and businesses towards cleaner, safer, more reliable, more efficient, domestically produced, and ultimately renewable or inexhaustible fuels and associated energy technologies.

**Transmission**--The transfer of power from the generation site to the substation.

**Transmission Line on System**--Powerlines at or above 69 kV that transfer electricity from the generation site to the substation or end user in the case of an industry.

## **APPENDIX 2**

### **ENERGY INFORMATION SOURCES**

Compiled by Deborah B. Evans, Energy Chair, Florida Chapter Sierra Club  
12307 Old Country Road, Wellington, FL 33414  
561-798-8205

#### **In Florida**

**1. Florida Solar Energy Center**, 1679 Clearlake Road, Cocoa, FL 32922-5703

Voice: 321-638-1000  
Web: [www.fsec.ucf.edu](http://www.fsec.ucf.edu)  
Fax: 407-638-1010

Solar and hydrogen research institute and educational facility. Part of the University of Central Florida. Has an annual open house (Sun Day) generally the first Sunday after Earth Day. Helped form the nonprofit corporation Florida Green Building Coalition (a membership organization with membership open to any interested individual) whose mission is to improve the built environment and provide environmental and economic benefits. July 2001 FGBC approved a green home designation standard. Address is the same as for FSEC. Web: [www.floridagreenbuilding.org/](http://www.floridagreenbuilding.org/)

**2. Florida House Institute for Sustainable Development, Inc.**, a/k/a The Florida House Foundation, 4600 Beneva Road South, Sarasota, FL 34233-1710

Office: 941-927-2020  
Florida House: 941-316-1200  
Web: [www.i4sd.org/](http://www.i4sd.org/)

A nonprofit organization committed to helping communities achieve sustainability. Projects include 20/20 Foresight visioning process, Citizen Planners work groups, Virtual Neighborhood, Business Partners program, ongoing education program of conferences and workshops, construction of Florida House Learning Center (at same location as Institute; phone 941-316-1200) in partnership with Sarasota County Extension Service. Florida House received 18,000 visitors in its first five months of operation. Contact John Lambie, President. Recently created a for-profit arm, Eco-Smart Homes & Buildings Program, to implement sustainable building and construction practices. Contact Matt Ross, Executive Director, 4411 Bee Ridge Road, Suite 344, Sarasota, FL 34233, phone 888-329-2705; fax 941-377-9460; pager 888-619-3592; e-mail, [ecoman@ecohouse.com](mailto:ecoman@ecohouse.com); web: [www.ecohouse.com](http://www.ecohouse.com)

**3. Florida Design Initiative**, School of Architecture, Florida A & M University, Tallahassee, FL 32307-4200

Office: 850-599-3244

Fax: 850-599-3436  
Email: [larry.peterson@fam.u.edu](mailto:larry.peterson@fam.u.edu)  
Web: [www.state.fl.us/fdi/](http://www.state.fl.us/fdi/)

Program is no longer in existence; however, web site is a searchable archival site. Began in 1992 in response to Governor Chiles' executive order 91-253 mandating 30% reduction in energy use by all state agencies in 3 yrs. Promoting sustainable design, addressed the needs of professionals in the fields of architecture, engineering, planning, interior design and landscape architecture. Contact Professor Larry Peterson at FAMU.

#### **4. Center for Construction and Environment**, College of Architecture, University of Florida, Gainesville

Brad Guy 352-392-9029 and [minou@grove.ufl.edu](mailto:minou@grove.ufl.edu)  
Dr. Charles Kibbert, 352-392-7502  
Web: [www.bcn.ufl.edu/sustainable/](http://www.bcn.ufl.edu/sustainable/)

Primarily a research center, its mission is to foster implementing sustainability principles into the built environment internationally. In addition to its research, the center develops sustainable residential building codes, conducts courses, and conferences. It also is a clearinghouse for information relating to the planning, architecture, and construction of sustainable development(s).

#### **5. Metro-Dade County Department of Environmental Resources Management (DERM)**, Urban CO2 Project, 33 S.W. 2nd Avenue, Suite 1200, Miami, FL 33130-1540

Voice: 305-372-6895  
Web: [www.metro-dade.com/derm/environment/](http://www.metro-dade.com/derm/environment/) (click on C in directory, look for CO2 Reduction Program and click on Sustainable Environment and Education).

Miami-Dade County has an ordinance promoting landscaping for energy conservation. They are also working with TREEmendous Miami and other organizations to create reductions in energy requirements (and thus reductions in CO2 emissions) in the areas of transportation, land use, electrical production/use, and solid waste. Currently contact Myra Flagler at 305-372-6495 and Sean McCrackine, public relations, at 305-372-6770.

#### **6. Demonstration Home in Florida**

George and Joyce Chase, Arcadia; 863-993-0391.

Along the Peace River, completely off the grid using PV. Please call to arrange visit.

#### **7. Florida Energy Extension Service (FEES)**, at any county's Cooperative Extension Office. Part of the University Florida, Institute of Food and Agricultural Services (IFAS)

Voice 352-392-7403

Web: [www.energy.ufl.edu](http://www.energy.ufl.edu); [www.ifas.ufl.edu](http://www.ifas.ufl.edu); [www.agen.ufl.edu/](http://www.agen.ufl.edu/)  
Fax 352-392-9606

Newsletters, pamphlets (many available on-line) videos, speakers on a variety of energy, sustainability and consumer issues to enable people to understand the connection between energy efficiency, environmental protection and profitability. Works with professionals in the construction and real estate businesses to promote the efficient use of energy and natural resources through their Florida Building Code Core Training, Build Green and Profit, Sell Green and Profit programs.

**8. The Project for an Energy Efficient Florida (PEEF)**, 1260 Cedar Center Drive, Tallahassee, FL 32301

Voice: 850-222-0585  
Fax: 850-222-3741  
Web: [www.creativepursuitsinc.com/](http://www.creativepursuitsinc.com/)

Formed in 1991 with funding from national foundations concerned about energy issues. Sponsored by the American Planning Association, Florida Chapter.

**9. Florida Conservation Foundation**, 1251-B Miller Avenue, Winter Park, FL 32789

Voice: 407-644-5377  
Web: [www.ficus.usf.edu/ficusold/orgs/flconserv/](http://www.ficus.usf.edu/ficusold/orgs/flconserv/) and [www.sundial.net/~florida](http://www.sundial.net/~florida).  
Email: [florida@sundial.net](mailto:florida@sundial.net)

Various publications on energy, sustainability and environmental issues, some available through web site. Publishers of Solar Florida, A Sustainable Energy Future, by John O. Blackburn, an energy economist.

**10. LEAF ( Legal Environmental Assistance Foundation)**, 1114-E Thomasville Road, Mount Vernon Square, Tallahassee, FL 32303-6288

Voice: (850)681-2591  
Fax: (850)224-1275  
E-mail: [leaf@igc.apc.org](mailto:leaf@igc.apc.org)  
Web: [www.ficus.usf.edu/orgs/leaf](http://www.ficus.usf.edu/orgs/leaf)

An environmental membership organization representing its members in various legal actions in Florida, Alabama and Georgia. Actively involved in energy matters at the Florida Public Service Commission. Also works extensively on water and environmental justice issues. A member of the Florida Clean Power Coalition.

**11. Florida Public Service Commission**, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-8153

Consumer Affairs: 800-342-3552  
Consumer Affairs Fax: 800-511-0809  
Commission Fax: 850-487-1716  
Records/Reporting: 850-413-6770  
Web: [www.psc.state.fl.us](http://www.psc.state.fl.us)

Regulates electric, gas and water utilities. Some publications on conservation and energy-efficiency available through web site. Can also obtain docket information and documents from web site.

**12. Treasure Coast Regional Planning Council**, 301 East Ocean Boulevard, Suite 300, Stuart, FL 34994

Voice: 561-221-4060  
Fax: 561-221-4067  
Web: [www.tcrpc.org](http://www.tcrpc.org)

Covers Indian River, St. Lucie, Martin and Palm Beach counties. Promotes community sustainability. Available for \$6.50 is an energy plan for the Treasure Coast region, Energy Planning in the Twenty-First Century, A Guide for Florida Communities, which can serve as a model for Florida communities outside the Treasure Coast region as well.

**13. Department of Community Affairs**, 2555 Shumard Oak Boulevard, Tallahassee, FL 32399-2100

Voice: 850-488-8466  
Fax: 850-921-0781  
Web: [www.dca.state.fl.us](http://www.dca.state.fl.us)  
Housing and Community Development: [www.dca.state.fl.us/fhcd/](http://www.dca.state.fl.us/fhcd/)  
Energy Office: 850-488-2475

Involved with energy issues in several arenas: land use and transportation planning, local government comprehensive plans, sustainable communities, affordable housing, appliance energy conservation standards, building energy efficiency rating system (BEERS), energy efficiency code for building construction, weatherization assistance for low-income families.

**14. Alternative Fuels Information and Training Center at the Center for Urban Transportation Research (CUTR)**, University of South Florida, College of Engineering, 4202 East Fowler Avenue, CUT100, Tampa, FL 33620-5375

Voice: 813-974-3120  
Fax: 974-5168  
Web: [www.cutr.eng.usf.edu/](http://www.cutr.eng.usf.edu/)

Produces numerous reports and publications to promote alternative fuel vehicles. In 1988, CUTR was created by the Florida Legislature, Florida Board of Regents, and USF to find cost-effective, state-of-the-art solutions to transportation problems. In 1991 the U. S. Congress designated CUTR the National Center for Transit Research and reaffirmed this designation in 1998. Expertise in planning, engineering, economics, safety, and communications offers innovative solutions to public and private sector clients nationwide.

**15. Small Business Development Centers** (generally affiliated with colleges of business at universities). They assist businesses 3 years of age and younger. Most have an Office of Energy Assistance.

Florida Atlantic University, 777 Glades Road, P. O. Box 3091, Boca Raton, FL 33431-0991. Voice: 561-267-2274 Fax: 561-362-5623  
Email: [sbdc@fau.edu](mailto:sbdc@fau.edu) Web: [www.fausbdc.com/](http://www.fausbdc.com/)

Florida International, University Park, trailer MO-1, Miami, FL 33199  
Voice: 305-348-3630 Fax: 305-348-2965  
Juan Carlos Abril, Director of Office of Energy Assistance

University of Central Florida, P. O. Box 161530, Orlando, FL 32816-1530  
Voice: 407-823-5554 Fax: 407-823-3073 Web: [www.bus.ucf.edu/sbdc](http://www.bus.ucf.edu/sbdc)  
Rick Dolan, Director (15 years of history on energy issues in Florida)

**16. Florida Department of Environmental Protection (FDEP)**, 2600 Blair Stone Road, Tallahassee, FL 32399-2400

Voice: 850-488-0300  
Web: [www.dep.state.fl.us/](http://www.dep.state.fl.us/)

Partnership for Ecosystem Protection (PEP) program through the Division of Air Resource Management's Office of Air Programs Communication and Outreach (OAPCO) to help facilities reduce pollution and help the environment through pollution prevention and reduction, waste reduction and minimization; web: [www.dep.state.fl.us/air/](http://www.dep.state.fl.us/air/). The Division of Waste Management also has the Pollution Prevention (P2) program, Julie Abcarian, Manager. Power Plant Siting, Hamilton (Buck) Oven, phone: 850-487-0472

**17. Alliance for Florida's Future**, Winter Park, FL

Voice: 407-629-6564 and 407-646-2648  
Fax: 407-628-2496  
Messages: 407-263-7923  
Email: [jsiry@floridaclimatealliance.net](mailto:jsiry@floridaclimatealliance.net)  
Web: [www.floridaclimatealliance.net/](http://www.floridaclimatealliance.net/)

State coordinator is Joseph Siry, a professor at Rollins College, Winter Park. A 39-member environmental and civic coalition with the goal of protecting air quality and reducing global warming. Promotes energy conservation, emissions reduction, and increased use of non-carbon polluting technology appropriate to Florida.

#### **18. Florida Clean Power Coalition**

Works to improve human health and the environment through reducing air pollution from electric power plants and increasing energy efficiency and clean renewable resources. Since 1998 has published 4 reports (Taking Our Breath Away; Florida's Dirty Dinosaurs; Lethal Loophole: the dirtiest power plants in Florida and the loophole that allows them to pollute; Powerful Choices: Economic Impacts of Florida's Energy Future) to educate the public about our use of electric energy in Florida and the environmental problems it causes. Most, if not all of these reports, are available through web sites of some member organizations: Florida Consumer Action Network [www.fcan.org/](http://www.fcan.org/) and Florida PIRG [www.pirg.org/floridapirg](http://www.pirg.org/floridapirg) or contact the Legal Environmental Assistance Foundation (No. 11) and Project for an Energy Efficient Florida (No. 9).

#### **19. Energy 2020 Commission**

Web: [www.myflorida.com/energy](http://www.myflorida.com/energy)

Formed by governor's executive order to explore electric utility deregulation, it's Final Report Florida. . . Energy Wise! A Strategy for Florida's Energy Future can be viewed at [www.myflorida.com/myflorida/government/taskandcommissions/energy\\_commission/pdfs/final\\_report.pdf](http://www.myflorida.com/myflorida/government/taskandcommissions/energy_commission/pdfs/final_report.pdf) and at [http://www.frcc.com/downloads/final\\_report.pdf](http://www.frcc.com/downloads/final_report.pdf)

#### **20. TREEmendous Miami**

Telephone: 305-378-1863

Email: [treemendousmiami@mail.com](mailto:treemendousmiami@mail.com)

Web: [www.treemendousmiami.com](http://www.treemendousmiami.com); or [www.ficus.usf.edu/ficusold/orgs/tree](http://www.ficus.usf.edu/ficusold/orgs/tree)

Carrying out the Cool Communities project started by American Forests and interacts with the Metro-Dade County CO2 Reduction Project. See No. 6 above.

#### **21. Southern Alliance for Clean Energy, P. O. Box 12742, Pensacola, FL 32575**

Voice: 866-522-SACE, 850-437-9059

Fax: 850-437-9079

Also P. O. Box 1842, Knoxville, TN 37901-1842, 865-637-6055, Fax: 865-524-4479

Web: [www.cleanenergy.org](http://www.cleanenergy.org)

Email: [info@cleanenergy.org](mailto:info@cleanenergy.org)

Formerly the Tennessee Valley Energy Reform Coalition, this non-profit coalition of 21 environmental and citizen organizations is active in eight states in the Southeast U.S.

This group monitors regional energy policies to propose environmentally and economically sound reforms to meet the needs of citizens and ratepayers in the Southeast. They work for positive solutions to the negative impacts of power production by promoting clean air policies, renewable energy and energy efficiency.

### **Outside Florida**

#### **1. Southface Energy Institute**, 241 Pine Street, Atlanta, GA 30308

Voice: 404-872-3549  
Fax: 404-872-5009  
Web: [www.southface.org/](http://www.southface.org/)

A membership organization in existence since 1978, promotes energy efficient and sustainable building technologies through education, technical assistance and research. Provides information and assistance on solar and alternative technologies. In 1996 opened the Southface Energy and Environmental Resource Center (also called ECO House), a demonstration home and workplace open to the public.

#### **2. Carolina Green Building Council**, c/o Carolina Recycling Association, 7330 Chapel Hill Road, Suite 207, Raleigh, NC 27607

Web: [www.cra-recycle.org/](http://www.cra-recycle.org/)  
Voice: 919-851-8444  
Fax: 919-851-6009  
Email: [NCRcycles@aol.com](mailto:NCRcycles@aol.com)

Annual conferences for several years which have been sponsored by the U.S. Green Building Council. Publishes a guide to finding green building products throughout the nation.

#### **3. Rocky Mountain Institute**, 1739 Snowmass Creek Road, Snowmass, CO 81654-9199

Office: 970-927-3851  
Fax: 970-927-4178  
Web: [www.rmi.org](http://www.rmi.org)

Independent, nonpartisan, nonprofit resource policy center and research and educational foundation. Seeks to harness the problem-solving power of free-market economics to foster the efficient and sustainable use of resources as a path to global security. Focuses work in 7 areas -- agriculture, economic renewal, energy, green development, security, transportation and water -- and carries on international outreach and technical-exchange programs. E Source spinoff (3333 Walnut Street, Boulder, CO 80301-2515, 720-548-5000, fax -5001, web [www.esource.com](http://www.esource.com)) is the leading source of information on advanced techniques for electric efficiency. Sometimes works with Electrotek,

[www.electrotek.com/](http://www.electrotek.com/), a consulting company with international clientele, for the power engineering industry.

**4. City of Austin, Environmental and Conservation Services Department**, 206 E. 9th Street, Suite 17.102, Austin, TX 78701

Office: 512-499-3504 and -3500

Fax: 512-499-285

Web: [www.austinenergy.com/](http://www.austinenergy.com/)

A city with its own electric utility, recognized for its innovative green building program at the United Nations' Rio Summit.

**5. American Council for an Energy-Efficient Economy (ACEEE)**, 1001 Connecticut Avenue, N. W., Suite 801, Washington, DC 20036

Office: 202-429-8873

Orders: 202-429-0063

Fax: 202-429-0193

Web: [www.aceee.org](http://www.aceee.org)

A nonprofit organization whose purpose is advancing energy efficiency as a means of promoting both economic prosperity and environmental protection. Sells many publications and guides to help buyers purchase the right energy-efficient equipment for their needs. Recently started EfficiencyNet, an electronic network for citizen action in support of efficiency-friendly energy policies. Will alert participants by Email or fax. No cost to participant and no commercial or fundraising solicitations.

**6. American Forests**, 910 17th Street, N.W., Suite 600, Washington, DC 20006

Voice: 202-955-4500

Fax: 202-955-4588

Web: [www.americanforests.org](http://www.americanforests.org)

Global ReLeaf 2000 project to plant 20 million trees for the new millennium and a national sprawl initiative. Notable feature of web site is the personal climate change calculator where our individual contributions to carbon emissions can be calculated and how many trees need to be planted to offset our contributions.

**7. SEREF (Solar Energy Research and Education Foundation)**, 122 C Street, N.W., Fourth Floor, Washington, DC 20001

Voice: 202-383-2663

Web: [www.serefonline.org](http://www.serefonline.org)

Nonprofit group providing funding for solar projects.

8. **Home Power**, The Hands-on Journal of Home-Made Power, Home Power Magazine, P. O. Box 520, Ashland, OR 97520

Voice: 800-707-6585

Fax:: 541-512-2343

Web: [www.homepower.com/](http://www.homepower.com/)

Published bi-monthly. \$22.50 per year. This magazine provides information for users and would-be users of home-made electricity.

9. **Home Energy Magazine**, 2124 Kittredge Street, No. 95, Berkeley, CA 94704

Voice: 510-524-5405

Web: [www.homeenergy.org](http://www.homeenergy.org)

Home Energy is published by a non-profit organization whose mission is to provide objective and practical information on all aspects of home performance, from residential energy conservation to indoor air quality to building more energy efficient homes. Six issues yearly. Reliable, up-to-date, how-to, where-to-buy, hands-on information. Emphasizes a whole-building approach the residence as an interactive system stressing comfort, health and safety, energy efficiency, durability and affordability in covering heating and cooling systems, appliances, the building envelope, building materials, new technologies and best practices. It has published a series of Consumer Guides, and consolidated the best of its research and hands-on guidelines into a book for homeowners and remodeling contractors, No-Regrets Remodeling.

10. **ICLEI (International Council for Local Environmental Initiatives)**, U. S. office: 15 Shattuck Square, Suite 215, Berkeley, CA

Voice: 510-540-8843

Fax: 510-540-4787

Web: [www.iclei.org/](http://www.iclei.org/)

ICLEI is an international association of local governments dedicated to the prevention and solution of local, regional, and global environmental problems through local action. The Council is formally associated with the International Union of Local Authorities (IULA). Supported in the U.S. by the EPA, its Cities for Climate Protection Campaign is an international effort helping local governments reduce their greenhouse gas emissions through energy efficiency programs and other measures.

11. **United States Environmental Protection Agency (USEPA)**, 401 M Street, SW (6202J), Washington, DC 20460

Web: [www.epa.gov/](http://www.epa.gov/)

Energy Star: [www.energystar.gov/](http://www.energystar.gov/)

Energy Star Fax Line System: 202-564-9659  
Energy Star/Green Lights Hotline: STAR-YES (888-782-7937)  
Fax: 202-775-6680.

Various programs to encourage energy efficiency. See ICLEI above.

12. **U.S. Department of Energy**, 1000 Independence Avenue, S.W., Washington, DC 20585

Phone: 800-DIAL-DOE  
Web: [www.energy.gov/](http://www.energy.gov/)

Energy Efficiency and Renewable Energy Network: [www.eren.doe.gov/](http://www.eren.doe.gov/)  
Office of Industrial Technologies: [www.oit.doe.gov/](http://www.oit.doe.gov/)  
Energy Information Administration: [www.eia.doe.gov/](http://www.eia.doe.gov/)  
Center of Excellence for Sustainable Development: [www.sustainable.doe.gov/](http://www.sustainable.doe.gov/)

The mission of the Center of Excellence is to define what sustainable development is and how it can apply to communities and consumers; show how sustainable development is being practiced by other urban and rural communities across the nation; provide access to a "tool kit", including manuals, workbooks, data bases, case studies and model codes and ordinances; help identify public and private sources of technical and financial assistance to carry out local programs; provide information about the public participation processes other communities have found work best in planning and implementing sustainable development; develop a menu of energy efficiency and renewable energy programs that fit the unique needs of each community.

13. **Renew the Earth**, 1200 Eighteenth Street, NW, Suite 1100, Washington, DC 20036

Voice: 202-721-1545  
Fax: 202-467-5780  
Web: [www.renewtheearth.org/](http://www.renewtheearth.org/)

The successor to Renew America, which was established in 1989, this is an international organization specializing in identifying, verifying and promoting model programs that protect, restore, and enhance the environment. It addresses a spectrum of community issues such as designing green buildings, protecting farmland, preventing pollution and environmental justice. Offers effective models for solving environmental problems, educational programs, and online publications.

14. **REPP-CREST**, 1612 K Street, N.W., Washington, DC 20006

Web: [www.crest.org/](http://www.crest.org/)

Publishes information about renewable energy, energy efficiency and sustainability on the internet.

15. **Earth Day Network**, 91 Marion Street, Seattle, WA 98104

Voice: 206-264-0114  
Fax: 206-682-1184  
Email: [earthday@earthday.net](mailto:earthday@earthday.net)  
Web: [www.earthday.net/](http://www.earthday.net/)

Gaylord Nelson and Dennis Hayes, organizer of the first Earth Day in 1970, head this nonprofit organization. They coordinate Earth Day activities worldwide. Their goal is to promote a healthy environment and a peaceful, just, sustainable world by spreading environmental awareness through educational materials, publications, events, activities, and annual campaigns.

16. **U. S. Green Building Council**, 1015 18th Street, NW, Suite 805, Washington, DC 20036

Voice: 202/82-USGBC (828-7422)  
Fax: 202-828-5110  
Web: [www.usgbc.org/](http://www.usgbc.org/)

A national non-profit environmentally-based building coalition which advises on "Green Building" techniques for commercial buildings, high-rise residential buildings and industries. Through LEEDTM, a self-assessing system to rate new and existing commercial, institutional and residential high-rise buildings, can evaluate environmental performance from a "whole building" perspective over a building's life cycle, thereby providing a definitive "Green Building" standard.

17. **Alliance to Save Energy**, 1200 18th Street, N.W., Suite 900, Washington, DC 20036

Voice: 202-857-0666  
Fax: 202-331-9588  
Web: [www.ase.org](http://www.ase.org)  
Email: [info@ase.org](mailto:info@ase.org)

A nonprofit coalition of business, government, environmental and consumer leaders who promote the efficient and clean use of energy worldwide for the benefit of consumers, the environment, the economy, and national security. From the website, lesson plans for elementary, middle school and high school can be downloaded; can also view the Green Schools program.

18. **Environmental Defense Fund**, 257 Park Avenue South, New York, NY 10010

Web: [www.edf.org](http://www.edf.org)  
Voice: 800-684-3322  
Email: [contact@environmentaldefense.org](mailto:contact@environmentaldefense.org)

A nonprofit advocacy group founded in 1967 in Long Island, New York, to ban the use of DDT, its goals now include stabilizing the earth's climate, safeguarding the world's oceans, protecting human health, and defending and restoring biodiversity. To accomplish these goals it has programs for energy, transportation, ecosystem restoration, global and regional air, environmental health, environmental justice and more.

**19. Natural Resources Defense Council**, 40 West 20th Street, New York, NY 10011

Voice: (212) 727-2700  
Fax: (212) 727-1773  
Web: [www.nrdc.org](http://www.nrdc.org)  
Email: [nrdcinfo@nrdc.org](mailto:nrdcinfo@nrdc.org)

Nationwide environmental organization using law, science and the support of its members to protect the earth's wild life and wild places and ensure a safe and healthy environment for all living things. Take the website tour of their award-winning energy-efficient, green design offices in New York, Washington and San Francisco.

**20. World Resources Institute**, 10 G Street, N.E., Suite 800, Washington, DC 20002

Phone: 202-729-7200  
Fax: 202-729-7610  
Web: [www.wri.org/](http://www.wri.org/)

An environmental think tank going beyond research to create practical ways to protect the Earth and improve people's lives. Visit their recently launched Safe Climate.net website ([www.safeclimate.net/](http://www.safeclimate.net/)) to learn how everyone can take decisive action to reduce energy use and address global warming.

**21. Worldwatch Institute**, 1776 Massachusetts Ave., N.W., Washington, DC 20036-1904

Phone: 202-452-1999  
Fax: 202-296-7365  
Web: [www.worldwatch.org/](http://www.worldwatch.org/)

A non profit public policy research organization whose purpose is to inform policymakers and the public about emerging global problems and trends and the complex links between the world economy and its environmental support systems. Its mission is to foster the evolution of an environmentally sustainable society where human needs are met in ways that do not threaten the health of the natural environment or the prospects of future generations. Publishes books, magazines and papers. Most notable is its annual State of the World, published in 34 languages.

22. **World Wildlife Fund**, 1250 Twenty-Fourth Street, N.W., P.O. Box 97180, Washington, DC 20077-7180

Voice: 1-800-CALL-WWF  
Web: [www.worldwildlife.org](http://www.worldwildlife.org)

Founded in 1961, directs its conservation efforts toward three global goals: protecting endangered spaces, saving endangered species, and addressing global threats.

23. **Clean Air Trust**, 1625 K Street, N.W., Suite 790, Washington, DC 20006

Voice: 202-785-9625  
Web: [www.cleanairtrust.org](http://www.cleanairtrust.org)

A nonprofit 503(c)(4) corporation founded in 1995 by Senators Edmund Muskie of Maine and Robert Stafford of Vermont. The trust educates the public and policymakers about the value of the Clean Air Act, promotes enforcement of the Act through grassroots education, and defends the Act against attack by special interest polluters.

24. **Smithsonian Institution National Museum of American History**, "Powering a Generation of Change."

Web: [www.americanhistory.si.edu/csr.powering](http://www.americanhistory.si.edu/csr.powering)

A project of the Division of Information Technology and Society at the Smithsonian, this ongoing project was established in 1997 to document the story of electric power restructuring in North America. A partial listing of the contents of the website: fuel cell history and basics, electricity basics, the emergence of electric utilities in America, the energy crisis of the 1970s, the Public Utility Regulatory Pricing Act (PURPA), deregulation, the Energy Policy Act of 1992.

25. **Public Citizen, Critical Mass Energy and Environment Program**, 215 Pennsylvania Avenue, S.E., Washington, DC 20003

Voice: 202-546-4996  
Web: [www.citizen.org](http://www.citizen.org)

Founded by Ralph Nader 30 years ago, this program aims to protect citizens and the environment from the dangers posed by nuclear power and seeks policies leading to safe, affordable and environmentally sustainable energy. Also works to protect the world's water resources from commodification, privatization and mass diversion.

### **Trade Associations, Businesses**

1. **Florida Solar Energy Industry Association (FLSEIA)**, 145 Wekiva Springs Road, Suite 187, Longwood, FL 32779

Voice: 800-59-SOLAR or 407-774-9939  
Fax: (407) 774-9941  
Web: [www.flaseia.org/](http://www.flaseia.org/)

Colleen Kettles, Acting Executive Director. Florida Chapter of Solar Energy Industries Association (SEIA), 122 C Street, NW, Fourth Floor, Washington, DC 2001

Voice: 202-383-2600  
Fax: 202-383-2670  
Web: [www.seia.org/](http://www.seia.org/)

## 2. **Association of Energy Engineers**, Southeast Florida Chapter

Web: [www.aeesefflorida.org/](http://www.aeesefflorida.org/)

Monthly meetings. Monthly electronic newsletter edited by Concept Communiques, Inc., (Robert Farmer), 5200 North Federal Highway, Suite 2, Fort Lauderdale, FL 33308

Voice: 954-493-8127  
Fax: 954-491-9877  
Web [www.conceptcommuniques.com/](http://www.conceptcommuniques.com/)

View the Governor's Commission for a Sustainable South Florida Energy Advisory Committee's A Report on Energy Issues, December 1997 at:  
[www.conceptcommuniques.com/pdfs/EAC\\_Report.pdf](http://www.conceptcommuniques.com/pdfs/EAC_Report.pdf)

## 3. **American Solar Energy Society (ASES)**, 2400 Central Avenue, Suite G-1, Boulder, CO 80301

Voice 303-443-3130  
Fax 303-443-3212  
Web: [www.ases.org/](http://www.ases.org/)

United States Section of the International Solar Energy Society. Offers various publications; publishes Solar Today magazine bimonthly. Annual national solar energy conference. Each October (Energy Awareness month) sponsors in conjunction with the U. S. Dept. of Energy a national Tour of Solar Homes. In 2001 there were over 800 homes and business to tour in 44 states.

## 4. **Real Goods**, 966 Mazzoni St., Ukiah, CA 95482-3471

Voice: 800-762-7325  
Fax: 707-468-9486  
Technical Assist: 707-744-2101  
Web: [www.realgoods.com](http://www.realgoods.com)

Catalog of sustainable living products; newsletter; Solar Living Center; demonstration home program and various other programs.

**5. Lehman Hardware and Appliances**, One Lehman Circle, P. O. Box 41, Kidron, OH 44636

Voice: 888-Get Lehmans (888-438-5346) or 330-857-5757

Orders only: 877-Get Lehmans (877-438-5346)

Fax: 330-857-5785

Web: [www.lehmans.com](http://www.lehmans.com)

Email: [info@lehmans.com](mailto:info@lehmans.com)

Lehman's Non-Electric Catalog. Serving the Amish and others without electricity since 1955.

**6. Jade Mountain**, P. O. Box 4616, Boulder, CO 80306-4616; Showroom at 717 Poplar Avenue, Boulder, CO 80304

Voice: 800-442-1972 or 303-222-3500

Fax: 303-222-3599

Web: [www.jademountain.com/](http://www.jademountain.com/)

Jade Mountain Appropriate Technology News (catalog) of energy-efficient products and renewable energy devices. Also a showroom in Boulder. Offers technical advice and support.

**7. Bullfrog Films**, P. O. Box 149, Oley, PA 19547

Web: [www.bullfrogfilms.com](http://www.bullfrogfilms.com)

Voice: 800-543-FROG

28-year-old company now the largest distributor in the U.S. of independently produced films pertaining to environmental issues.

**8. The Video Project**, P. O. Box 77188, San Francisco, CA 94107

Web: [www.videoproject.org](http://www.videoproject.org)

Toll free: 800-4-PLANET

E-mail: [video@videoproject.net](mailto:video@videoproject.net)

Educational videos on environment, science and social studies.

**9. The American Institute of Architects**, 1735 New York Avenue, NW, Washington, DC 20006-5292

Voice: 800-AIA-4847  
Fax: 202-626-7547  
Web: [www.aia.org/](http://www.aia.org/)

AIA's Committee on the Environment (COTE) offers publications, computer software and seminars on sustainable architecture, and a listing of architects nationwide who are interested in this field. Their web site: [www.e-architect.com](http://www.e-architect.com). Environmental Resource Guide published by John Wiley & Sons. See web site at: [www.wiley.com](http://www.wiley.com)

**10. Florida Municipal Electric Association, Power Links to Florida Energy and Electric Industry Sites**

Web: [www.fmeanet.net/energy\\_sites.html/](http://www.fmeanet.net/energy_sites.html/)

Website with information and news pertaining to Florida's electric power industry, municipal, cooperative and investor-owned utilities, electric deregulation and restructuring.

**11. International Facilities Management Association, 1 East Greenway Plaza, Suite 1100, Houston, TX 77046**

Voice: 713-623-4362  
Fax: 713-623-6124  
Web: [www.ifmea.org](http://www.ifmea.org)

Facilities managers coordinate the physical workplace with the people and work of the occupying organizations. Various colleges and universities offer Bachelor of Science and Master of Science degrees in facilities management. Established in 1980, this not-for-profit organization for professionals in this field is active in 54 countries. This organization conducts research and educational programs for its members, and assists in developing strategies to manage human, facility, and real estate resources. The organization's EnergyNet website [www.ifmaenergynet.org](http://www.ifmaenergynet.org) provides news and information on energy basics, deregulation, alternative power options, saving dollars with energy efficiency.

**12. American Wind Energy Association, Washington, DC**

Voice: 202-383-2502 or 202-383-2512  
Web: [www.amea.org](http://www.amea.org)

Formed in 1974, this membership organization for businesses and individuals is also an advocacy organization promoting the use of wind energy as a clean source of electricity for consumers worldwide.

**13. American Bioenergy Association, 209 Pennsylvania Avenue, S.E., Washington, DC 20003**

Voice 703-516-4444 and 202-467-6540

Web: [www.biomass.org](http://www.biomass.org)

Advocates for the biomass industry on power and transportation issues. The website contains a comprehensive A to Z list of links to sources of information on biomass energy and other renewable technologies.

## APPENDIX 3

### Florida Energy Statistics

The following statistics were taken from the web site of the U.S. Department of Energy, Energy Information Administration ([www.eia.doe.gov/](http://www.eia.doe.gov/)).

#### A. Primary Energy Consumed in Florida, 1997.

Natural Gas	509.0	Trillion Btu
Petroleum	1,691.4	Trillion Btu
Coal	697.3	Trillion Btu
Nuclear	244.0	Trillion Btu
Biomass	79.2	Trillion Btu
Hydroelectricity*	10.6	Trillion Btu
Other**	31.3	Trillion Btu
Total Energy	3,262.8	Trillion Btu

\*May include net imports of electricity generated from this resource.

\*\*Geothermal, wind, photovoltaic, and solar.

#### B. Petroleum Consumed in Florida, 1997.

Motor Gasoline	444	Thousand Barrels per Day
Distillate Fuel	118	Thousand Barrels per Day
Jet Fuel	84	Thousand Barrels per Day
Residual Fuel	137	Thousand Barrels per Day
LPG*	22	Thousand Barrels per Day
All Other	35	Thousand Barrels per Day
Total	838	Thousand Barrels per Day

\*Liquefied Petroleum Gases

#### C. Energy Consumption by Sector in Florida, 1997.

Residential	991	Trillion Btu
Commercial	779	Trillion Btu
Industrial	565	Trillion Btu
Transportation	1,280	Trillion Btu
Total	3,615	Trillion Btu

#### **D. Residential Use of Energy in Florida, 1997.**

Natural Gas	13.8	Trillion Btu
Petroleum	15.9	Trillion Btu
Coal	0.0	Trillion Btu
Wood	8.1	Trillion Btu
Solar*	29.4	Trillion Btu
Geothermal	1.6	Trillion Btu
Electricity	299.7	Trillion Btu
Electrical System Losses**	622.5	Trillion Btu
Total	991.0	Trillion Btu

\*May include small amounts consumed by commercial sector.

\*\*The amount of energy lost during generation, transmission, and distribution of electricity.

#### **E. Commercial Use of Energy in Florida, 1997.**

Natural Gas	38.7	Trillion Btu
Petroleum	15.6	Trillion Btu
Coal	0.0	Trillion Btu
Wood	0.8	Trillion Btu
Geothermal	0.4	Trillion Btu
Electricity	235.0	Trillion Btu
Electrical System Losses*	488.1	Trillion Btu
Total	778.5	Trillion Btu

\*The amount of energy lost during generation, transmission, and distribution of electricity.

#### **F. Industrial Use of Energy in Florida, 1997.**

Natural Gas	140.5	Trillion Btu
Petroleum	120.8	Trillion Btu
Coal	33.7	Trillion Btu
Wood and Waste	70.1	Trillion Btu
Hydroelectricity	8.1	Trillion Btu
Other*	0.0	Trillion Btu
Electricity	62.3	Trillion Btu
Electrical System Losses**	129.4	Trillion Btu
Total	565.1	Trillion Btu

\*Geothermal, wind, photovoltaic, and solar.

\*\*The amount of energy lost during generation, transmission, and distribution of electricity.

### **G. Transportation Use of Energy in Florida, 1997.**

Natural Gas*	6.0	Trillion Btu
Petroleum	1,273.6	Trillion Btu
Ethanol	0.1	Trillion Btu
Electricity	0.2	Trillion Btu
Electrical System Losses**	0.4	Trillion Btu
Total	1,280.1	Trillion Btu

\*Consumed in the operation of pipelines, primarily in compressors, and as vehicle fuel.

\*\*The amount of energy lost during generation, transmission, and distribution of electricity.

### **H. Electric Utility Use of Energy in Florida, 1997.**

Natural Gas	310.0	Trillion Btu
Petroleum	265.6	Trillion Btu
Coal	663.6	Trillion Btu
Nuclear	244.0	Trillion Btu
Hydroelectricity*	2.5	Trillion Btu
Wood and Waste	0.0	Trillion Btu
Geothermal*	0.0	Trillion Btu
Total**	1,485.6	Trillion Btu

\*May include net imports of electricity generated from this resource.

\*\*May also include net imports of electricity generated from nonrenewable energy sources.

### **I. Energy Prices in Florida, 1995.**

Coal	1.79	Dollars per Million Btu
Natural Gas	2.90	Dollars per Million Btu
Petroleum	6.71	Dollars per Million Btu
Nuclear Fuel	0.53	Dollars per Million Btu
Biomass	1.36	Dollars per Million Btu
Electricity*	20.55	Dollars per Million Btu
Total	10.20	Dollars per Million Btu

\*Final cost to the consumer, including cost of energy required for the generation, transmission, and distribution of electricity.

**J. Energy Expenditures in Florida, 1995.**

Natural Gas	1,517	Million Dollars
Petroleum	10,847	Million Dollars
Coal	1,169	Million Dollars
Nuclear Fuel	163	Million Dollars
Biomass	62	Million Dollars
Electricity	11,745	Million Dollars
Cost of Fuels	2,547	Million Dollars
Total	22,956	Million Dollars

**K. Florida's Energy Use Rankings in 1997.**

	<b>Rank</b>	<b>Share of U.S. Total (%)</b>
Total Energy Consumption	8	3.8
Coal Consumption	12	3.3
Natural Gas Consumption	12	2.2
Petroleum Consumption	3	4.6
Electricity Consumption	3	5.6
Residential Sector Use	4	5.4
Commercial Sector Use	4	5.2
Industrial Sector Use	20	1.6

**L. Florida's Energy Prices\* and Rankings, 1995.**

	<b>Florida</b>	<b>United States</b>	<b>Rank</b>
All Energy	10.20	8.28	9
Motor Gasoline	8.46	9.14	46
Petroleum	6.71	7.23	46
Natural Gas	2.90	3.81	47
Coal	1.79	1.37	9
Electricity	20.55	20.30	18

\*Prices in Dollars per Million Btu

**M. Florida's Energy Expenditures and Rankings, 1995.**

	<b>Billion Dollars</b>	<b>Share of U.S. Total (%)</b>	<b>Rank</b>
All Energy	23.0	4.5	7
Petroleum	10.8	4.6	4
Motor Gasoline	7.0	5.1	3
Natural Gas	1.5	2.0	14
Coal	1.2	4.3	8
Electricity	11.7	5.7	4

## APPENDIX 4

### Florida Statutes Related to Energy

Chapter/ Section	Subject
163.04	Energy devices based on renewable resources.
187.201(12)	Energy; State Comprehensive Plan.
196.175	Renewable energy source exemption.
211 Part I	Tax on Production of Oil and Gas
235.212	Low-energy use design; solar energy systems; swimming pool heaters.
235.215	Energy efficiency contracting.
255.257	Energy management plan; buildings occupied by state agencies.
255.258	Shared savings financing of energy conservation in state-owned buildings.
288.041	Solar energy industry.
350	Florida Public Service Commission
361	Public Utilities: Special Powers
366	Public Utilities
377	Energy Resources
403 Part II	Electrical Power Plant and Transmission Line Siting
403 Part VIII	Natural Gas Transmission Pipeline Siting
409.508	Low-income home energy assistance program.
489.145	Energy efficiency contracting.
553 Part VIII	Thermal Efficiency Standards
553 Part IX	Energy Conservation Standards
553 Part XI	Building Energy-efficiency Rating System
704.07	Solar easements.

The Florida Public Service Commission has recently adopted new rules concerning the interconnection of small photovoltaic systems. The rule is in Section 25-6.065, Florida Administrative Code.

## APPENDIX 5

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## **APPENDIX 6**

### **Significant Energy Resources and Facilities**

#### **1. Energy Resources**

##### A. Imported Nonrenewable Resources

1. Coal (C)
2. Natural Gas (G)
3. Nuclear (N)
4. Oil (O)

##### B. Local Renewable Resources

1. Biomass (B)
2. Geothermal
3. Hydrogen
4. Solar
5. Solid Waste (W)

##### C. Possible Future Resources

1. Tidal
2. Wind

#### **2. Regional Facilities**

##### A. Power Plants (Primary and secondary fuel types are shown after each plant)

1. FPL Martin Plant: G, O
2. FPL Riviera Plant: O, G
3. FPL St. Lucie Plant: N
4. Fort Pierce Utilities Authority Plant: G, O
5. City of Lake Worth Plant: G, O
6. City of Vero Beach Plant: G, O

##### B. Cogeneration/Small Power Production Facilities

1. Indiantown Cogeneration: C
2. Palm Beach County Solid Waste Authority: W
3. Osceola Plant: B
4. Okeelanta Plant: B

##### C. Bulk Electric Transmission Lines

1. FPL Levee-Midway 500 kV
2. FPL Lake Pointsett-Martin-Midway 500 kV
3. FPL Crane-Bridge-Plumosus 230 kV

##### D. Natural Gas Transmission Lines

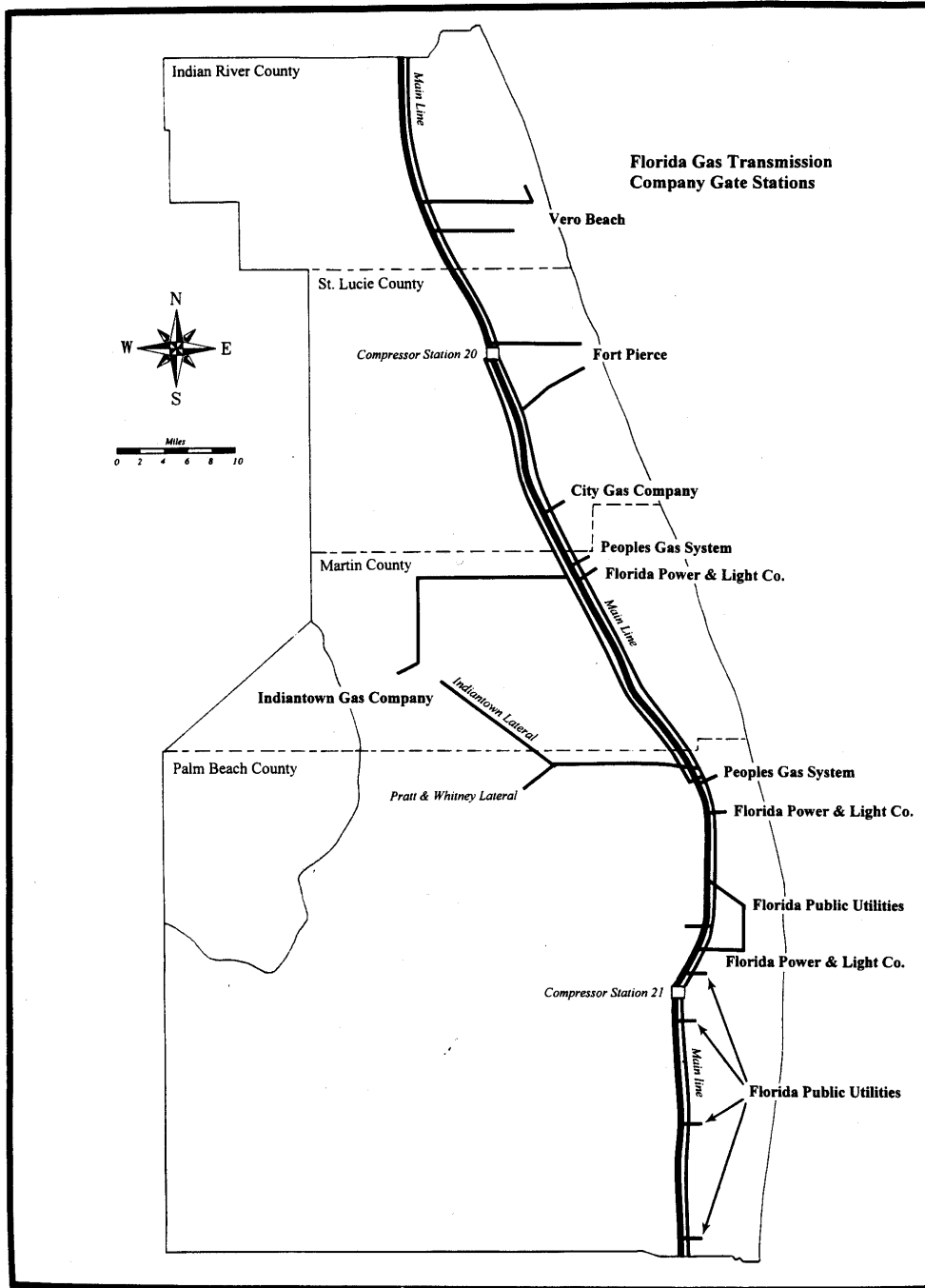
1. Florida Gas Transmission Lines (4", 18", 24", and 30" lines)

##### E. Local Natural Gas Distribution Companies

1. City Gas Company of Florida (serving the Cities of Vero Beach, Port St. Lucie, and northern Martin County)
2. Fort Pierce Utilities Authority (serving the City of Fort Pierce, Tropicana Products, Inc., and northern Port St. Lucie)
3. Florida Public Utilities (serving portions of Palm Beach County)
4. Teco/Peoples Gas (serving portions of Palm Beach County and Martin Counties)



## Treasure Coast Region Major Gas Lines and Service Areas



Note: This map is to be used for planning purposes only and may contain inaccuracies.

# TREASURE COAST REGIONAL PLANNING COUNCIL

## STAFF

<i>Employee</i>	<i>Title</i>
Michael J. Busha	Executive Director
Marcela Camblor	Urban Design Coordinator
Sandy Gippert	Accounting Manager
Elizabeth Gulick	Administrative Secretary
Wynsum Hatton	Administrative Assistant
Terry L. Hess	Planning Director
Peter G. Merritt	Regional Ecologist
Diane Martin	Accounting Clerk
Shirley Monroe	Computer Graphic Designer
Penny Myszkowski	Secretary/Receptionist
James Snyder	DRI Coordinator
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