

Recommendation 53:  
Priority Order of Reference for Supply/Demand Options

*It is recommended that the Florida Legislature:*

*1) adopt a policy that provides the widest possible range of energy supply options, ensuring that each supply type meets Florida's minimum environmental criteria as determined by the Florida Department of Environmental Protection, and*

*2) direct the Florida Public Service Commission to provide guidance to the state's generating utilities through a "priority order of preference" for future supply and demand options based on the guiding principles of reliability, efficiency, affordability, and diversity. In developing the priority order of preference the Public Service Commission should specify that energy efficiency and demand response constitute the preferred options in addressing Florida's future energy needs.*

**BACKGROUND INFORMATION**

Even with major successes in energy efficiency and conservation, demand for electric power in Florida will likely grow by almost 30 percent over the next 10 years. Presently, natural gas-fueled generation comprises about 37 percent of Florida's capacity as opposed to 19 percent nationally. While renewable generation advances are likely, the vast majority of new energy is expected to be produced from natural gas. This will compound the state's over-dependence on this single fuel, with its associated price volatility and supply disruption concerns.

In order to enhance the reliability and price stability of Florida's electric energy supply, the generation mix must be more diversified. Adding base load generation, particularly nuclear and coal, is a highly capital-intensive, risky and lengthy undertaking for electric utilities. The utilities need assurance that Florida's energy policy will support these investments.

In the past, generation mix primarily has been considered based on utilities' individual needs. But future energy production will require a more strategic, statewide perspective. To provide a guide to accomplish this, an annual calculation of an optimal state generation mix target is needed. This target could be used as a guideline for considering future generation additions.

A number of recent state actions have raised questions regarding Florida's long-term energy policy goals and priorities, especially in the context of generation fuels. This recommendation is intended to provide Florida's utilities with a clear policy statement of priority actions to address the state's increasing energy needs.

Recommendation 54:  
Nuclear Fuel as an Acceptable Baseload Generation Source

It is recommended that the Florida Legislature increase the potential for nuclear generation in Florida by:

- 1) endorsing and encouraging nuclear fuel as a base load generation source,
- 2) providing resources to the Florida Public Service Commission and the Florida Department of Environmental Protection with which to actively monitor and participate with the Federal government to simplify the permitting process for new nuclear facilities.

**BACKGROUND INFORMATION**

Last year, nuclear generation produced 13 percent of Florida's electric energy. Nuclear also was the least expensive of all base load energy sources. There have been no significant security or environmental incidents since the advent of Florida's first nuclear unit in 1971, yet no new nuclear generation has been added to Florida's generation mix for 28 years.

According to the U. S. Department of Energy, nuclear energy makes up the majority of non-carbon emitting electricity production. In 2005, 103 U.S. nuclear power plants prevented an estimated total of 681 million metric tons of carbon dioxide emissions. Nuclear power's lower generating cost, significant contribution to the reduction of greenhouse gases, and obvious positive impact on reducing imported fossil fuels, makes it a very desirable option for future generation.

Since its inception in 1973, Florida has had one of the most successful power-plant siting processes in the U.S. Increasing interest in nuclear power has prompted some suggestion that Florida's permitting process could serve as a model for new Federal regulations. Because of this long and successful experience, it is in Florida's best interest to be involved in the emerging federal nuclear permitting process. To ensure that the federal process meets Florida's needs, state representatives should be involved in developing future regulatory requirements and procedures.

This recommendation endorses expanded use of nuclear power as a base load generation source, and encourages the Federal government to create a regulatory environment that fosters expanding nuclear energy in a safe, efficient, and economical manner.

Recommendation 55:  
Reprocessing of Spent Nuclear Fuel

*It is recommended that the Florida Legislature strongly encourage the Federal government to address the spent nuclear fuel disposal issue by endorsing reprocessing as a compliment to long-term storage in the United States.*

**BACKGROUND INFORMATION**

Floridians have contributed more than \$1.2 billion to the federal nuclear waste disposal development effort, which remains plagued with licensing delays, increasing costs, technical challenges, public opposition and managerial problems. Nuclear-waste reprocessing, a long-standing practice in other countries, recently has garnered considerable interests as an alternative to long-term storage.

Nuclear reprocessing separates any usable elements (e.g., uranium and plutonium) from fission products and other materials spent in nuclear reactor fuels. The goal is to recycle the reprocessed uranium by placing it in a mixed-oxide fuel (MOX). MOX behaves similarly to the type of uranium that most reactors were designed to use, and allows it to be reprocessed. Nuclear reprocessing partially closes the loop in the nuclear fuel cycle, and significantly reduces the amount of nuclear waste required to be kept in storage facilities. In the future, using breeder reactors combined with reprocessing could extend mined uranium's usefulness by more than 60 times.

President Bush's National Energy Policy included the recommendation that "[t]he United States should also consider technologies ....to develop reprocessing and fuel treatment technologies that are cleaner, more efficient, less waste intensive, and more proliferation-resistant." The Department of Energy later requested an expression of interest from domestic and international industry in building a spent nuclear fuel recycling and transmutation facility that would meet these goals.

It is clear that an effective reprocessing program would greatly increase the probability of a viable and robust nuclear energy industry. A show of support from the State of Florida would be a positive move in that direction.

This recommendation implicitly endorses using nuclear energy as a base load generation source in Florida by addressing waste disposal, one of the long-standing obstacles to further deployment of nuclear facilities.

Recommendation 56:  
Financial Incentives for Alternative Energy Technologies

*It is recommended that the Florida Legislature provide more extensive financial and regulatory support for energy technologies determined to be appropriate alternatives for Florida through:*

- 1) tax incentives,*
  - 2) incentive rates, and/or*
  - 3) research grants,*
- with all financial incentives tied to established performance measures.*

**BACKGROUND INFORMATION**

In order to meet objectives of diversifying the state's electric fuel mix, reducing dependence on foreign oil, and dealing with climate change-related concerns, non-conventional energy sources must be encouraged. Technologies such as biomass, clean-coal processes and renewable-fueled generation present excellent future opportunities. However, projects using these emerging technologies tend to cost more to develop and present more operating risk to the owners.

The Florida Public Service Commission has made significant progress in providing rules that increase developers' ability to obtain financially viable power-purchase agreements. These rules will help existing and potential renewable-energy providers finance new projects, and strengthen established facilities' positions. The early development of the alternative generation industry in California enjoyed these benefits and more extensive incentive rates, coupled with significant tax advantages. Additional research grants to allow the construction of demonstration projects will further encourage non-conventional energy-source application. To ensure early development of these projects, these benefits should be offered only to those placed in service during the next 5 years.

States that have developed successful renewable energy industries characteristically have promoted stable markets, have designed flexible long-term tax incentives, and (most importantly for attracting investment) have remained steadfast in their commitment to renewable energy. This recommendation is intended to create a policy framework that combines financial incentives and a regulatory environment to support long-term growth of renewable-energy technologies.

Recommendation 57:  
Jointly-Owned Generation Projects

*It is recommended that the Florida Legislature, in order to expand the opportunity to improve individual and overall state system diversity:*

- 1) adopt a policy of encouraging jointly developed and/or jointly owned generating units, and*
- 2) require the Florida Public Service Commission to closely monitor and file an annual report on the status of jointly owned generation projects in conjunction with their Ten-Year Site Plans review.*

**BACKGROUND INFORMATION**

In order to achieve future price stability and enjoy new capacity economies of scale, all of the state's electric utilities should have access to a wide range of generation technologies when choosing new capacity. While this is an inherent ability of large systems, smaller utilities are limited in these options. A state energy policy encouraging jointly developed and/or jointly owned generating units could provide impetus for providing such generation options.

In order to determine the level of success of the policy, the Florida Public Service Commission should closely monitor, and file an annual report on, the status of jointly owned generation projects in conjunction with their annual Ten-Year Site Plan review. This recommendation is intended to encourage the use of innovative technologies through joint ownership opportunities. This recommendation would also further the state's goal of diversifying generation fuels.

Recommendation 58:  
Fuel Supply Reserve Margin

*It is recommended that the Florida Legislature, in order to assess and monitor the adequacy of the state's fuel infrastructure, including in-state and out-of-state natural gas and oil storage facilities:*

*require the Florida Public Service Commission to assess the feasibility of implementing a long-term fuel plan including a "fuel supply reserve margin" index based on the aggregate energy demand projections of the regulated utilities, natural gas distribution systems, and transportation requirement, and report its findings to the Florida Legislature.*

**BACKGROUND INFORMATION**

In order to assess the "safety margin" available in the state's electric generation capacity, the Public Service Commission uses an index called the reserve margin. It is the difference between the dependable capacity of a utility system – including firm power purchases excluding capacity for maintenance or forced outage – and the anticipated peak load for a specified period. The Public Service Commission and Florida Reliability Coordinating Council have adopted a 15 percent standard.

It would be helpful and informative to have such an index based on the fuel supply and fuel delivery systems. This index would not only provide analysis for normal conditions but provide contingency information for outages of various elements of the fuel cycle. It would also guarantee a review of the aggregated fuel supply at least once a year.

## Recommendation 59:

### Natural Gas Storage

*It is recommended that the FLORIDA LEGISLATURE, in order to provide:*

- 1) enhanced system security during weather events,*
- 2) more flexible management of fuel price volatility, and*
- 3) added “peak day” deliverability,*

*direct the Florida Public Service Commission to identify regulatory changes necessary to provide a “clear path” for Florida utilities to obtain and utilize natural gas storage facilities.*

### **BACKGROUND INFORMATION**

Florida is among the nation's fastest-growing states. By 2013, natural gas demand is anticipated to grow significantly, especially in the peak summer season. Gas storage can provide an important back-up fuel source for Florida should its fuel supply be interrupted, specifically in the Gulf of Mexico, by a hurricane or other unexpected curtailment. Storage facilities located on the Central Gulf Coast can accept reserve supplies in anticipation of such emergencies.

During peak load periods, the energy available by natural gas pipeline is fully used. Using gas storage capacity located near the generation sites will reduce the need to use other fuel sources, such as oil, to meet system electrical demand. Natural gas storage also may be a valuable hedge during times of volatile price fluctuations.

Natural gas storage will likely become a valuable part of future energy policy in Florida, as it is in other regions of the country. Because it is a relatively new proposal in Florida, statutory and regulatory changes will be necessary to support this infrastructure, including allowances for storage recovery costs.

## Recommendation 60:

### Deployment of Liquefied Natural Gas Projects

*It is recommended that the Florida Legislature:*

- 1) encourage the deployment of liquefied natural gas (LNG) projects, and*
- 2) instruct the Florida Public Service Commission and the Florida Department of Environmental Protection to closely review such projects as may be economically and environmentally appropriate, and to give priority to removing barriers to the deployment of LNG projects.*

### **BACKGROUND INFORMATION**

Liquefied natural gas (LNG) is natural gas that has been converted to liquid form for ease of storage or transport. The liquefaction process involves removing certain components such as dust, helium, or impurities that could cause difficulty downstream, (e.g. water and heavy hydrocarbons) and then condensing the gas into a liquid at nearly atmospheric pressure. LNG is transported in specially designed cryogenic sea vessels or cryogenic road tankers, is stored in specially designed tanks, or is directly injected into a gas pipeline system. Delivery systems usually are located at coastal or off-shore sites.

Given Florida's growing dependence on natural gas, LNG offers an opportunity to supplement Florida's energy supply via pipelines. The Public Service Commission and the Department of Environmental Protection should be encouraged to review rules that impede its deployment. Also, federal rulemaking in this area should be closely monitored to avoid potential barriers to meeting Florida's needs.

## Recommendation 61:

### Energy Element in Comprehensive Plans

*It is recommended that the Florida Legislature require local governments to recognize and provide for the inclusion of an energy element in their comprehensive plans.*

#### **BACKGROUND INFORMATION**

Adopted by the 1985 Legislature, Florida's Growth Management Act requires Florida's 67 counties to adopt Local Government Comprehensive Plans that guide future growth and development. Comprehensive plans contain chapters, or "elements," that address future land use, housing, transportation, infrastructure, coastal management, conservation, recreation and open space, intergovernmental coordination, and capital improvements. A key component of the Act is its "concurrency" provision that requires facilities and services to be available as development affects the county.

There have been several unsuccessful attempts to include a "utility element" as a required component in comprehensive plans. Electric and natural gas utilities generally have planning horizons as long as, or longer than, the period of local land use plans. Addressing potential energy infrastructure needs (such as electric generation, substation, transmission, and fuel supply sites and corridors) early in the process can yield benefits for both local citizens and the utility. Utility and city/county planners can, in a public forum, reach consensus on the placement of future energy facilities based on local land use trends. This can potentially eliminate unexpected problems later in the siting process.

## Recommendation 62:

### Financing of New Transmission Facilities to Relieve Congestion

*It is recommended that the Florida Legislature require the Public Service Commission to:*

- 1) ensure the implementation of a cost-sharing process for new transmission lines and upgrades determined to be required for reliability by Florida Reliability Coordinating Council, and*
- 2) provide early cost recovery for associated transmission sites held by regulated utilities for future use and investment in associated lines outside a utility's service territory intended to resolve congestion problems.*

### **BACKGROUND INFORMATION**

Florida's electric utilities have a long history of cooperatively developing of transmission projects. Over the years, a number of significant transmission facilities have been jointly financed and built by utilities enjoying the benefits. As the use of the Florida grid becomes more complex under the Federal Energy Regulatory Commission's open-access rules, benefits accrued to individual utilities are less obvious, and the need for transmission upgrades is not always obvious to the transmission-line owners.

The Florida Reliability Coordinating Council (FRCC) is charged with assessing, on a periodic basis, the viability of Florida's electric transmission grid. While problems have been identified, there presently is no formal mechanism to determine how needed projects affecting several utilities are to be financed. Also, regulatory treatment of investments made outside a utility's service territory is somewhat unclear. The Florida Public Service Commission should be given the authority to define and adopt rules for the financing projects identified by the FRCC as needed.

Recommendation 63:  
Amendments to Power Plant Siting Act and Transmission Line Siting Act

*It is recommended that the Florida Legislature amend the Power Plant Siting Act and the Transmission Line Siting Act to clarify responsibilities and address procedural concerns.*

**BACKGROUND INFORMATION:**

The Power Plant Siting Act (PPSA) is a centralized, coordinated licensing process encompassing the permitting, land use and zoning, and proprietary interests of all state, regional, and local agencies in the jurisdiction of the electric power plant's proposed location. The PPSA provides for a single certification (license) for those electric power plants it defines as steam or solar powered, 75 megawatts or greater, and were constructed after October 1, 1973. The provisions apply to nuclear power in addition to coal, gas and waste-to-energy facilities, although regulation of nuclear radiation is preempted by the federal government. Certain associated facilities may be certified in conjunction with the plant, including transmission lines necessary to connect the plant to the electric grid.

The Transmission Line Siting Act (TLSA) also is a centralized, coordinated licensing process encompassing permitting, land use and zoning, and proprietary interests of all state, regional, and local agencies in the jurisdiction of a transmission line's proposed location. The TLSA provides for a single certification (license) for transmission lines subject to the TLSA. Transmission lines it covers, such as those which are 230 kilovolts or greater, 15 miles or more in length and cross a county line. Intermediary substations also may be certified as part of the project.

During the 2006 Session the Legislature significantly revised both the Power Plant Siting Act and the Transmission Line Siting Act. The intent was to streamline and expedite these regulatory proceedings. However, subsequent to the bill's implementation, additional procedural and technical concerns were identified. Specific issues of concern included adequate notice of informational meetings by local governments, timelines governing document submittal, and determining completeness for siting applications.

During the 2007 Legislative Session, HB 7123 was introduced to address the concerns noted following passage of the statutory revisions in 2006. HB 7123 ultimately was vetoed by the Governor.

## Recommendation 64:

### Location of Energy Infrastructure on Certain State Lands

*It is recommended that the Florida Legislature:*

*1) define electric transmission and fuel supply facilities as critical infrastructure, and  
2) after a thorough review of the process for permitting, site approval, compatibility of use, access to public lands, and the development of a process to equitably share the costs, encourage, the co-location of electric transmission and linear fuel supply facilities on appropriate public lands.*

### **BACKGROUND INFORMATION**

Critical infrastructure refers to physical and/or virtual systems and assets so vital to the community that if incapacitated or destroyed, the effects would be debilitating to local security, economic security, or public health and safety. In most jurisdictions, energy facilities are included in this category. Any state-adopted energy policy should specifically designate electric, natural gas, and transportation fuel production and delivery systems as critical infrastructure.

As land use becomes a more critical issue in Florida, efficient and diversified use of public lands will become increasingly important. Land presently used for major highways, flood control projects, etc., present excellent opportunities to accommodate linear utility facilities (power lines, gas pipelines, transportation fuel delivery systems). Co-location of infrastructure minimizes land use impacts by limiting the number of linear features in an area, and reduces environmental impacts through reduced clearing. Interested parties should be encouraged to jointly explore such projects.

In the future, the state should develop a more formal system to balance preserving and managing state lands purchased or managed for their natural resources with the need for energy infrastructure siting.

Recommendation 65:  
Location of Energy Infrastructure on Certain Federal Lands

*It is recommended that the Florida Legislature instruct the Florida Public Service Commission and the Florida Department of Transportation to:*

- 1) encourage and work closely with the Federal Department of Transportation to recognize electric transmission and fuel supply facilities as critical infrastructure,*
- 2) gain permission to use appropriate federal lands, where compatible, to co-locate electric transmission and linear fuel supply facilities.*

**BACKGROUND INFORMATION**

The 2005 Energy Policy Act acknowledged the potential for increased use of federal lands for energy distribution infrastructure. The Act directed selected federal agencies to designate multipurpose energy corridors on federal lands in the Western U.S. by August 2007 and in the rest of the nation by August 2009. The central purpose was to perform the environmental and other analyses needed to identify areas on Federal lands suitable for use as energy corridors, and to ensure that, if needed, these corridors will be available for such use in future years.

Any statewide energy policy should be sensitive to the use of Florida's limited and shrinking land resources. In the past, Florida's electric and natural gas utilities have had difficulty gaining permission to place linear facilities on federal rights-of-way.

The ability for linear facilities such as high voltage transmission lines and natural gas pipelines to share land with interstate highways would be a more efficient use of Florida's land. Appropriate state agencies should be encouraged to actively seek cooperation from federal counterparts to accomplish this objective.

Recommendation 66:  
Future Siting for Distributed Generation Systems

*In order to minimize the need for substations and transmission and distribution lines, the Florida Legislature should require local governments to, working in conjunction with their local electric and natural gas utilities, make provisions for siting small generation facilities close to demand centers (distributed generation).*

**BACKGROUND INFORMATION**

The term “distributed generation” describes electricity generated from multiple small energy sources in various locations, rather than one large, single facility. It reduces the amount of energy lost in transmitting electricity because the electricity is generated very near where it is used, perhaps even in the same building. This also reduces the size and number of power lines that must be constructed.

Typically, distributed power sources have low maintenance, low pollution and high efficiencies. In the past, these traits required dedicated operating engineers and large plants in order to maintain these characteristics. However, modern embedded systems can achieve these operating characteristics with automated operation and clean fuels, such as solar, wind and natural gas.

Consumers in Florida are allowed to build, own, and operate such facilities to generate power for their own use. Distributed generation also may be a viable option for utilities. Barriers to these applications can be local zoning and land use regulations. Efficiency and energy conservation considerations as well as urban-land limitations favor including the distributed generation option for utilities. Local governments should be encouraged to reduce or eliminate barriers to their application.

## Recommendation 67:

### Distributed Energy

*It is recommended that the Florida Legislature direct the Public Service Commission to examine the potential economic congestion relief benefits to the major load areas in the State resulting from the development of distributed generation and active load control and to identify economic incentives to developers of distributed generation and active load control that provide relief to such congestion.*

#### **BACKGROUND INFORMATION**

The optimal placement of resources, such as distributed generation (DG) and active load management technologies, requires identifying the level of congestion costs on specific locations on the transmission and distribution system. Analytical techniques for determining congestion costs are readily available.

Distributed generation and active load controls perform the same function in that remote generation is not required to provide power to a load in a high demand area. In geographic areas where there is significantly more demand than supply, often generation that is not the least cost alternative is dispatched because lower-cost generation is not accessible on the transmission and distribution system. In those circumstances, DG and active load controls provide power at a far lower cost than remote generation. The lack of optimally located DG and active load controls cause congestion costs to be passed on to Florida's electric consumers. In addition, remote generation results in higher line losses than non-remote generation, which also results in costs to Florida ratepayers.

Because of the cost-of-service regulatory jurisprudence practiced in Florida Public Service regulation, the general economic benefits of optimal DG location and active load controls accrue to all ratepayers, as do the costs for not optimally locating these resources. To the extent that these resources are located in congested areas, the benefits can be substantially greater than when located in low demand areas. Optimal location can be rewarded with purely economic subsidies (i.e., net positive economics impacts) which would benefit all ratepayers in the state and be economically neutral to utility shareholders.

The PSC can, in coordination with the control area operators (i.e., utilities) and the FRCC, establish target zones for DG deployment and active load management and target appropriate subsidies that result in lower costs for all Florida ratepayers and are economically neutral to utilities. In other words, since location of DG and active load controls in highly constrained areas results in substantial savings in electric costs for all ratepayers, the economic benefits of these deployments can be maximized when optimally located. Incentives that create ratepayer benefits should be actively pursued.