

Sumter Electric Cooperative, Inc.

Sumterville, Florida

**Initial Comments Regarding
The Four PURPA Standards
In
The Energy Independence and
Security Act Of 2007**

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**On Behalf Of
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Introduction

The Energy Independence and Security Act of 2007 (“EISA 2007”) that was enacted December 19, 2007 contains four new federal standards that must be considered for implementation by all electric utilities with annual retail sales greater than 500 million kilowatt-hours. Those new standards are in addition to the six standards set forth in the Public Utility Regulatory Policies Act of 1978 (“PURPA”), the four standards contained in the Energy Policy Act of 1992 (“EPAAct 1992”) and the five standards contained in the Energy Policy Act of 2005 (“EPAAct 2005”). The relevant sections of EISA 2007 are shown in Appendix A hereto. EISA 2007 adds four new Federal standards to PURPA Section 111(d):

- 1) Integrated Resource Planning - EISA 2007 Sec. 532(a)(16);
- 2) Rate Design Modifications to Promote Energy Efficiency Investments - EISA 2007 Sec. 532(a)(17);
- 3) Consideration of Smart Grid Investments- EISA 2007 Sec. 1307(a)(16); and
- 4) Smart Grid Information - EISA 2007 Sec. 1307(a)(17).

The requirements of EISA 2007 do not mandate that the affected electric utilities implement those new standards. Instead, PURPA states that “each state regulatory authority (with respect to each electric utility for which it has ratemaking authority) and each nonregulated electric utility shall consider each standard” and then “make a determination concerning whether or not it is appropriate to implement such standard” (PURPA Section 111 (a)). PURPA further states that “nothing in this subsection prohibits any state regulatory authority or nonregulated electric utility from making any determination that it is not appropriate to implement any such standard.” Sumter Electric Cooperative, Inc. (the “Cooperative” or “Sumter”) has annual retail sales well in excess of 500 million kWh and is a nonregulated electric utility, which PURPA defines as “any electric utility other than a state regulated electric utility.” Thus, it is the

responsibility of the Cooperative's Board of Trustees to make its own independent determination regarding whether or not to implement each of the new PURPA standards. That determination must follow an appropriate consideration of the standards that includes evidence presented during the course of a public hearing.

The purpose of these initial comments is to contribute to the body of evidence used by the Board of Trustees to make their determination on each standard based upon findings that are appropriate for the member-consumers of the Cooperative. The federal legislation anticipates that state regulatory authorities and nonregulated electric utilities would need to consider utility-specific conditions and circumstances during their evaluation of the PURPA standards and determine the ability of each utility to accomplish the goals of PURPA via the implementation of the four new PURPA standards. For that reason, with respect to each of the four PURPA standards, the Board of Trustees may decide to implement the standard as stated in EISA 2007, implement a modification of the standard, or decline to implement the standard. Subject to the receipt and review of additional evidence, if any, the following comments and recommendations address general considerations regarding each of the four standards and specific issues and circumstances applicable to the Cooperative that the Staff believes should be a part of the Board of Trustees' deliberations.

PURPA Goals

The goals of PURPA continue to be the same as those stated in the original Public Utilities Regulatory Policy Act of 1978, that is to encourage (1) conservation of energy supplied by electric utilities, (2) optimal efficiency of electric utility facilities and resources, and (3) equitable rates for electric consumers. The first goal focuses on retail energy users and promotes conservation by end-use consumers. The second goal applies to electric utilities, their use of energy, and the facilities they utilize to deliver energy. The third goal recognizes the need for

proper development and administration of retail rates, providing a check and balance relative to the other two goals, so that the programs, policies and rates employed by electric utilities to achieve the first two goals reflect their associated costs and are not arbitrary, unfair or unduly discriminatory.

The Cooperative's Board of Trustees should make its determination regarding each PURPA standard based on whether or not, given the Cooperative's particular circumstances, that standard will accomplish any one or more of those three purposes, without harming the Cooperative's ability to accomplish the others(s). Thus, if implementation of a standard adversely impacts even one of the three goals, the Cooperative's Board of Trustees may decline to implement that standard.

Sumter Electric Cooperative, Inc.

The Cooperative has several organizational and operational characteristics that should materially influence the Board of Trustees' consideration of the PURPA standards. First, the Cooperative is member-owned and thus self-regulated. The Cooperative's member-consumers elect the Board of Trustees that establishes and oversees the Cooperative's policies, rates, and service rules and regulations. Unlike investor-owned electric utilities, the Cooperative has no third party investors to satisfy. Thus, there is no conflict of interest between the utility's owners and consumers regarding profitability. In fact, the Cooperative is a not-for-profit organization. Revenues collected in excess of operating expenses (such difference referred to as "margins") are assigned back to the Cooperative's member-consumers in the form of capital credits. Under this form of organization, all costs associated with the programs, policies and rates adopted to implement the PURPA standards will be borne in full by the Cooperative's member-consumers.

The Cooperative owns and operates an electric distribution utility. Unlike vertically integrated electric utilities that also own and operate electric generation facilities and

transmission lines (together commonly called “bulk power systems”), the Cooperative does not make decisions independently regarding the generation and transmission functions and the related costs incurred to furnish electric energy to the Cooperative’s member-consumers. Instead, such bulk power system services are planned and coordinated by Sumter Electric Cooperative, Inc. and nine other electric distribution cooperatives in Florida through a generation and transmission electric cooperative, Seminole Electric Cooperative, Inc. (“Seminole”). Seminole is governed by a Board of Trustees comprised of representatives from each of those electric distribution cooperatives. It is through that participation on Seminole’s Board as a “Member” and owner of Seminole that the Cooperative has direct input to and an active role in decisions made affecting generation and transmission issues.

In 1975, the Cooperative and the other Members of Seminole executed a long-term “all requirements” wholesale power contract with Seminole that had an initial term extending through the year 2020. An amendment to that contract extended the initial term to the year 2045. Under the terms of that wholesale power contract, the Cooperative is required to purchase from Seminole all of its power requirements for distribution within the State of Florida.

As later discussed herein, the Cooperative’s status as a Member of Seminole and its wholesale power contract with Seminole are significant contributing factors in the Cooperative’s consideration of the PURPA standards and impact the Cooperative’s ability to implement the standards. Attached hereto in Appendix B is a statement prepared by Seminole that reflects Seminole’s input regarding the Cooperative’s consideration of the four EISA 2007 PURPA standards. Additional references to information contained in Appendix B will be made, where appropriate, during the remainder of these comments.

Integrated Resource Planning Standard

The first of the four new PURPA standards that the Cooperative's Board must decide whether or not to implement is the Integrated Resource Planning standard, which states:

“(16) INTEGRATED RESOURCE PLANNING.—Each electric utility shall—
“(A) integrate energy efficiency resources into utility, State, and regional plans; and
“(B) adopt policies establishing cost-effective energy efficiency as a priority resource.

Integrated Resource Planning (“IRP”) is succinctly described on page 2 of Seminole's statements in Appendix B as “ a comprehensive planning process wherein electric utilities consider both supply-side (i.e., power plants) and demand-side (i.e., demand management, energy efficiency/energy conservation) resource options in the course of meeting the current and future system electric demand and energy requirements.” The Integrated Resource Planning process consists of several steps, starting with identification of basic objectives such as reliability of service, quality of service, and meeting peak demand requirements. Next, historical and current data are collected to examine the electric system's load patterns and trends. Based on that information and other data such as econometrics, demographics, and appliance saturation, a demand forecast is prepared to determine the current and future power requirements. To meet those forecasted power requirements, the IRP process considers and evaluates the utilization of two types of resources generally categorized as supply-side and demand-side.

Supply-side resources for Seminole and its Members include central station generating plants, and contracts to purchase power from the wholesale market, including renewable resources. Demand-side resources for Seminole and its Members include active load management of customer appliances, consumer and Member-owned distributed generation, passive load management via time-of-use rates, and energy efficiency and conservation

programs. The “integrated” aspect of the IRP process is that both supply-side and demand-side resource options are given, as far as is practicable, equal consideration in meeting the power requirements.

Within the context of the IRP process just described, the Integrated Resource Planning standard in EISA 2007 focuses on the role that cost-effective energy efficiency resources can play in the utility’s plans and policies.

When considering this standard, the Board should have a clear understanding of the term “energy efficiency.” First, though energy efficiency may sometimes be used interchangeably with conservation, there are some distinctions between the two. The reduction in energy usage achieved by conservation usually is accompanied by a change in the consumer’s behavior. Energy efficiency, however, reduces the consumer’s energy usage without requiring a behavioral change or diminished lifestyle. For example, conservation is turning off a light bulb, whereas energy efficiency is replacing an incandescent light bulb with a compact-fluorescent light bulb.

Secondly, energy efficiency plans and programs may include *operational* applications to utilities’ electric distribution systems as well as the more commonly regarded *customer-oriented* applications. As described later herein, the Cooperative has already implemented several such energy efficient operational measures that have lowered the distribution system energy losses (also called “line losses”) and thus significantly reduced the amount of generated energy that the Cooperative must purchase to meet its consumers’ power requirements.

The Integrated Resource Planning standard specifies integrating energy efficiency resources into three scopes of plans: utility, State, and regional. As an electric distribution utility that purchases most of its power under a wholesale power contract with Seminole, the Cooperative has limited ability to make an independent determination regarding the complete implementation of this standard. However, the Cooperative can address the adoption of this

standard from a “utility” perspective. Further, as a Member of Seminole, the Cooperative can and should encourage Seminole to engage in planning activities and developing policies that are consistent with the implementation of that standard on behalf of all Seminole Members located throughout most of Florida, thereby having some degree of influence from a “State” perspective and, albeit to a much lesser extent, on a regional basis.

From the utility perspective, the Cooperative has already implemented many operational and consumer-oriented programs to promote energy efficiency. Operational efficiencies have resulted in lower line losses in the Cooperative’s electric distribution system, thereby reducing the energy that is generated and transmitted to the Cooperative, and promoting more efficient facility usage. For example, optimization software is used to help balance transformer loading and feeder capacity. The Cooperative is also performing a system voltage conversion to increase the nominal voltage of the distribution system from 12.5 kV to 25 kV and thereby decrease overall system energy losses. These and other efforts have helped Sumter significantly lower their energy purchases from Seminole. In fact, annual distribution losses have decreased from a high of 8 percent in 1993 to only 4 percent in 2007, which translated into approximately 110,000,000 kWh fewer energy purchases from Seminole in 2007.

Additionally, Sumter has been managing their peak demand for many years. Residential and commercial consumers can participate in an active load management program in which the Cooperative controls one or more of the following end use electric appliances: water heating, central heating, and central air conditioning. In 2008 over 24,000 consumers participated in the load management program, saving the Cooperative almost \$2,000,000, while providing participating consumers with \$1,280,000 in billing credits. Sumter also reduces the peak demand in other ways. At one end of the distribution system, a voltage control program lowers electrical load at the Cooperative’s substations. At the other end of the distribution system, a diesel

generator program for commercial consumers makes use of dispersed generation to supply all or part of those consumers' power requirements during peak load conditions, thus reducing the Cooperative's wholesale demand costs. Throughout the distribution system, electronic and radio-controlled capacitor banks help reduce losses during the summer peak season. All these programs are coordinated with Seminole and are designed to lower the Cooperative's demand at the time of the Seminole system peak.

Sumter also promotes energy efficiency and conservation through several programs offered to consumers. Six-hundred thirty-eight (638) free home energy audits were performed by the Cooperative's in-house Energy Services Specialist in 2008 alone. These audits include a complete building inspection with infrared technology used to pinpoint energy leaks and other areas of concern. A summary of the audit results is provided to the consumer with written recommendations for upgrades and savings opportunities. Additionally, more than 9,700 compact-florescent light (CFL) bulbs have been distributed by Sumter to its consumers. Based on an estimated average savings of 45 watts per light (using a 15-watt CFL as compared to a 60-watt incandescent bulb) for 6 hours per day, the Cooperative is achieving an energy reduction of more than 950,000 kWh per year.

Still another area of consumer-oriented energy efficiency programs that the Cooperative offers is special pricing on products. For example, a discount is offered for the Energy Home Shield radiant barrier system. This radiant barrier system can be installed as a retrofit in existing buildings to reflect heat away from the living areas, allowing the insulation and air conditioning system to work more efficiently. The system is designed for quick and easy installation in any accessible attic space, without disturbing existing insulation. The radiant barrier lowers the attic temperature during summer months as much as 30 degrees, and increases the attic temperature during winter months to provide year-round cost savings.

Additional programs being considered by the Cooperative to encourage energy efficiency are low interest loans or rebates to consumers who install solar water heating systems, high efficiency heat pumps, or additional insulation in their home.

The Cooperative uses a wide range of ways to educate their customers on the benefits of energy efficiency. The *SECO News* is a monthly publication prepared specifically to inform the Cooperative's member-consumers on a variety of energy-related topics, including energy efficiency and conservation. This publication is often distributed at community functions and is posted on the Cooperative's website. The website also offers much energy efficiency information to consumers, including on-line energy audits, energy saving tips, and a link to Touchstone Energy's Home Energy Library. Additionally, the Cooperative offers a speakers bureau of Energy Services Specialists who make presentations to schools, civic clubs, and other organizations throughout the Cooperative's service area. The most popular of those presentations are the ones that provide practical tips on how to lower energy bills.

The Cooperative also educates consumers about the use of renewable energy resources as a means to promote energy efficiency. The Cooperative is currently interconnected with 11 consumer-owned solar photovoltaic systems in their service territory and, as previously mentioned, is evaluating programs to promote solar water heating in the near future. Secondly, Sumter owns and operates a hybrid Toyota Prius that is retrofitted with plug-in capability and the latest lithium-ion battery technology, allowing this prototype vehicle to achieve 100 miles per gallon or better. This Prius serves as an excellent traveling promotional display of hybrid technology and generates much attention and interest from the public. Additionally, the Cooperative has on staff several Energy Service Specialists certified to provide Green Home inspections. Green Home inspections incorporate multiple environmental, ecological and sustainability factors into the evaluation process. Consumers are provided with feedback and

recommendations regarding disaster resistance, low water use, energy efficiency, and native landscaping to promote energy efficiency.

The overall impact of the Cooperative's consumer-oriented energy efficiency programs and educational activities are difficult to quantify, given the many other factors that influence consumers' energy usage, such as weather, appliance saturation, economic conditions, price changes, and so forth. However, the annual energy use per consumer for the Cooperative's residential consumer class has decreased each year for the past three calendar years.

In addition to the utility-specific energy efficiency programs and activities just described, the Cooperative participates with other Members of Seminole in developing and implementing energy efficiency measures, as explained on pages 2 through 5 of Appendix B hereto. Actually, since Seminole was formed to provide the bulk power supply (generation and transmission) services of a vertically integrated utility, it is through Seminole that the Cooperative's IRP planning can be best accomplished. As mentioned on page 2 of Appendix B, even though electric cooperatives are not required by Florida law to perform IRP, Seminole and its Members do in fact "incorporate the principles of integrated resource planning into the generation planning process and are jointly committed to the active promotion of cost effective energy efficiency by Member consumers." The quantifiable energy efficiency objectives and action plan approved by Seminole's Board of Trustees in September 2008 as part of a new Seminole strategic plan demonstrate that commitment, which Seminole summarizes as follows:

It is Seminole's intent that the result of the planning decisions it makes, in conjunction with the planning decisions made by its Members, will establish cost-effective energy efficiency and other demand-side alternatives as a first priority option. It is recognized that the determination of cost effectiveness and service area compatibility will be an individual system consideration.

In light of the Cooperative's past, current, and planned energy efficiency activities, coupled with their participation in Seminole's energy efficiency activities, the Board should find

in its determination of the Integrated Resource Planning standard that the Cooperative, to the extent it is able to do so as an electric distribution utility, has already integrated energy efficiency resources into integrated resource planning, and has adopted policies establishing cost-effective energy efficiency as a priority resource. The Board should adopt a finding to that effect.

Rate Design Modifications to Promote Energy Efficiency Investments

The second of the four new PURPA standards that the Cooperative’s Board must decide whether not to implement is the Rate Design Modifications to Promote Energy Efficiency Investments standard, which states:

“(17) RATE DESIGN MODIFICATIONS TO PROMOTE ENERGY EFFICIENCY INVESTMENTS.—

“(A) IN GENERAL.—The rates allowed to be charged by any electric utility shall—

“(i) align utility incentives with the delivery of cost-effective energy efficiency; and

“(ii) promote energy efficiency investments.

“(B) POLICY OPTIONS.—In complying with subparagraph (A), each State regulatory authority and each non-regulated utility shall consider—

“(i) removing the throughput incentive and other regulatory and management disincentives to energy efficiency;

“(ii) providing utility incentives for the successful management of energy efficiency programs;

“(iii) including the impact on adoption of energy efficiency as 1 of the goals of retail rate design, recognizing that energy efficiency must be balanced with other objectives;

“(iv) adopting rate designs that encourage energy efficiency for each customer class;

“(v) allowing timely recovery of energy efficiency related costs; and

“(vi) offering home energy audits, offering demand response programs, publicizing the financial and environmental benefits associated with making home energy efficiency improvements, and educating homeowners about all existing Federal and State incentives, including the availability of low-cost loans, that make energy efficiency improvements more affordable.”.

The intent of this standard is for utilities to consider the alignment of their retail rates and incentives relative to their costs, and to address the inherent management disincentives that traditionally exist with respect to promoting energy efficiency investments. The cause for such disincentives is the fact that a decrease in a utility's energy sales (i.e., due to energy efficiency) usually results in a greater reduction in the utility's revenues than its costs, thus decreasing the utility's profits. For investor-owned utilities, such a reduction in profits means less value to the shareholders, which is a direct conflict with the major financial goal of that utility's management to maximize the shareholders' wealth. Although the Cooperative, as a not-for-profit organization, does not have that same financial goal, decreased energy sales do typically have the same detrimental effect on the Cooperative's margins, which adversely impacts the Cooperative's cash flow and financial ratios.

The reduction in margins is due to the structure of most retail rates, which rely in part on charges applied to consumers' energy usage to produce those margins, as well as to recover a portion of the utility's fixed costs. Various methods of "decoupling" revenues from margins have been suggested to deal with this issue and such methods may be effective for investor-owned utilities. However, the Cooperative's member-owner-consumer organizational structure makes such methods inapplicable, since all revenues are furnished by the members as consumers and all financial impacts are experienced by those same members as owners. Thus, it is prudent for the Cooperative's Board to maintain awareness of this condition when setting both the Cooperative's retail rates and promoting energy efficiency investments.

While considering the implementation of this standard, with respect to the alignment of rates and delivery of cost-effective energy efficiency, the Board should note several aspects of the wholesale rate under which the Cooperative purchases power from Seminole. As often stated elsewhere in these comments, the Cooperative is an all requirements wholesale customer of

Seminole. Since the Cooperative does not generate any material amount of electric energy, the Cooperative's costs against which the cost-effectiveness of energy efficiency investments are measured are primarily the costs incurred by the Cooperative under Seminole's wholesale rates applicable to its Members. The Cooperative currently purchases most of its power requirements under Seminole's Rate Schedule SECI-8, which is applicable to the Cooperative's net firm demand and energy requirements. A brief description of that wholesale rate is contained on pages 6 and 7 of Appendix B attached hereto.

Rate Schedule SECI-8 contains five wholesale rate components. One of those components is billed as a fixed dollar amount per month that changes annually, though it is determined partially by the amount of energy supplied to Cooperative during the most recent three calendar years. Two other rate components are energy charges that change periodically, to recover fluctuations in Seminole's energy costs. Currently, 5% of those energy charges billed to the Cooperative (representing 3.3% of total power cost) is time-based. At the Cooperative's option, that 5% figure could increase in future years, to as much as 20%. The final two wholesale rate components are demand charges applied to the Cooperative's 60-minute kilowatt demand coincident with Seminole's monthly system peak. The Transmission Demand Charge is billed during all months, whereas the Production Demand Charge is only billed during eight peak months (January through March, June through September, and December). Those two demand charges comprise about one-fourth of the Cooperative's annual purchased power expense.

It should be noted that although the two aforementioned wholesale demand charges possess some time-based cost characteristics, those wholesale price signals do not precisely "align" with retail rates or incentives that are billed primarily on a "per kWh" basis, which is the rate structure applied to the vast majority of the Cooperative's consumers. The design of retail

rate charges or incentives that promote energy efficiency investments and also appropriately reflect wholesale coincident peak demand costs must take that issue into account.

Of the wholesale rate components just described, approximately 27% of the per unit costs vary either seasonally or on a time-of-day basis, and thus provide the Cooperative some type of time-based price signal on which to base cost-effective energy efficient investments. In particular, the Seminole standard wholesale rate structure provides incentives to Members to lower their on-peak demand (see reference to Florida Public Service Commission Order No. PSC-01-0421-FOF-EC in Appendix B, pages 2 and 3) and to some extent their on-peak energy. In addition, Seminole offers its Members rates for interruptible service that provide the Members with consumer-specific “aligned” critical peak period price signals. Looking ahead, Seminole’s recently formed Energy Efficiency Working Group will be examining ways to expand the current demand response and energy efficiency programs of Seminole and its Members, as described in Appendix B hereto.

Turning now to the Cooperative’s retail rates and incentives, it should be recalled that the same “management disincentive” for reducing energy sales exists for the Cooperative as it does for other utilities, though perhaps for different reasons. Thus, the Cooperative’s retail rate structure should recognize and address that issue as the impact on the adoption of energy efficiency is included as one of the goals of the rate design, and as the encouragement of energy efficiency for each customer class is considered. One specific way that the Cooperative has already begun to address that issue (the first policy option of this standard) is by increasing the fixed monthly Customer Charge in its retail rate schedules so that recovery of the Cooperative’s fixed costs is less dependent on energy-based charges. As future rate revisions are implemented, subsequent increases to the Cooperative’s Customer Charges should be implemented to further diminish the management disincentives regarding energy efficiency.

The Cooperative's electric rate tariff contains several rate schedules that reflect standard, commonly used electric rate structures, applicable to the following consumer classes: (1) residential, (2) general service, (3) general service demand, (4) large general service demand, and (5) lighting service. The current retail rate pricing structure applied to those customer classes uses one or more of the following charges: a fixed dollar amount per month, a fixed amount per kWh applied to all energy usage, and an amount per kW applied to all or a portion of the consumer's monthly peak kW demand. A wholesale power cost adjustment is billed as a per kWh charge applicable to the energy provided to all customer classes including outdoor lighting. The current structure of these retail rate schedules, and specifically the flat energy charges, provide some degree of encouragement for energy efficiency in that the consumer's energy cost increases uniformly with increased usage, and conversely decreases uniformly with decreased usage, in a readily apparent manner. An inverted energy charge may provide greater encouragement for energy efficiency, but that structure has several drawbacks that conflict with other ratemaking objectives.

The Cooperative's electric rate tariff also contains several optional rate schedules with rate structures that encourage efficient energy usage. For the Residential and General Service consumer classes, credits are given to participants in the Cooperative's load management program. The Residential and General Service rate schedules state specific "Peak Periods" designating when load control is likely to occur. Time-of-day rate schedules are offered to consumers in the General Service and General Service/Demand consumer classes. Schedule GSDI is available to any consumer agreeing to receive interruptible service, and bills a demand charge that reflects critical peak pricing during designated periods of interruption. Schedule CSA is applicable to consumers with electric loads of at least 500 kW. The "unbundled" rate structure used by Schedule CSA to pass through wholesale power costs enables the Cooperative to "align

utility incentives with the delivery of cost-effective energy efficiency.” Collectively, these bill credits and optional rate schedules cover all the Cooperative’s consumer classes. Thus, the Cooperative has already implemented this PURPA standard’s second, third, and fourth policy options.

Regarding the standard’s fifth policy option addressing timely recovery of energy-efficiency related costs, once again, the flat energy charge in the Cooperative’s rate schedules provides a reasonable balancing of incorporating energy efficiency objectives in the rate design process, including timely recovery of energy-efficiency related costs. As previously stated herein, all costs incurred by the Cooperative are ultimately born by the Cooperative’s member-consumers. To the extent that the Cooperative provides consumers with excessive incentives or does not recover costs related to energy efficiency investments made by the Cooperative, rate inequity issues may arise, adversely impacting one of the three goals of PURPA.

The sixth policy option listed under this PURPA standard, regarding consumer education and assistance in regards to energy efficiency efforts, is unquestionably one that the Cooperative has already adopted and implemented, as described in some detail earlier in these comments regarding the Integrated Resource Standard.

In summary, the process of electric utility rate design is a dynamic, ongoing process that strives to achieve the major goal of meeting the utility’s total revenue requirements while sending proper price signals and balancing multiple objectives. Though energy efficiency has always been one of the acknowledged principle objectives of ratemaking, there is no doubt that it will have an increasing influence on that process. Seminole and the Cooperative have each already taken steps to charge wholesale and retail rates, respectively, that reasonably align utility incentives with the delivery of cost-effective energy efficiency and promote energy efficiency

investments pursuant to the six stated policy options, and the Board should adopt a finding to that effect.

Smart Grid Investment Standard

The third of the four new PURPA standards that the Cooperative's Board must decide whether or not to implement is the Smart Grid Investments standard, which states:

“(16) CONSIDERATION OF SMART GRID INVESTMENTS.—

“(A) IN GENERAL.—Each State shall consider requiring that, prior to undertaking investments in non-advanced grid technologies, an electric utility of the State demonstrate to the State that the electric utility considered an investment in a qualified smart grid system based on appropriate factors, including—

- “(i) total costs;
- “(ii) cost-effectiveness;
- “(iii) improved reliability;
- “(iv) security;
- “(v) system performance; and
- “(vi) societal benefit.

“(B) RATE RECOVERY.—Each State shall consider authorizing each electric utility of the State to recover from ratepayers any capital, operating expenditure, or other costs of the electric utility relating to the deployment of a qualified smart grid system, including a reasonable rate of return on the capital expenditures of the electric utility for the deployment of the qualified smart grid system.

“(C) OBSOLETE EQUIPMENT.—Each State shall consider authorizing any electric utility or other party of the State to deploy a qualified smart grid system to recover in a timely manner the remaining book-value costs of any equipment rendered obsolete by the deployment of the qualified smart grid system, based on the remaining depreciable life of the obsolete equipment.

Notwithstanding the specific wording that directs each “State” rather than each *utility* to consider the standard, the Cooperative is including this standard in its EISA 2007 PURPA compliance process, with the caveat that the Cooperative's ability to implement this standard is limited to its own electric distribution system grid. Furthermore, the Cooperative's consideration

of this standard is restricted to Section (16)(A), since Sections (16)(B) and (16)(C) are not relevant due to the organizational structure of the Cooperative.

Descriptions of the “smart grid” can be found in all forms of media, from technical papers and industry journals to newspapers and national advertising. While it seems that all interested parties have their own concept of the smart grid, EISA 2007 itself provides no definition. However, Section 1301 of EISA 2007 does contain a list of the following, “which together characterize a Smart Grid.”

- (1) Increased use of digital information and control technology to improve reliability, security, and efficiency of the electric grid.
- (2) Dynamic optimization of grid operations and resources, with full cyber-security.
- (3) Deployment and integration of distributed resources and generation, including renewable resources.
- (4) Development and incorporation of demand response, demand-side resources and energy-efficiency resources.
- (5) Deployment of "smart" technologies (real-time, automated, interactive technologies that optimize the physical operation of appliances and consumer devices) for metering, communications concerning grid operations and status, and distribution automation.
- (6) Integration of "smart" appliances and consumer devices.
- (7) Deployment and integration of advanced electricity storage and peak-shaving technologies, including plug-in electric and hybrid electric vehicles, and thermal-storage air conditioning.
- (8) Provision to consumers of timely information and control options.
- (9) Development of standards for communication and interoperability of appliances and equipment connected to the electric grid, including the infrastructure serving the grid.
- (10) Identification and lowering of unreasonable or unnecessary barriers to adoption of smart grid technologies, practices, and services.

The National Rural Electric Cooperative Association (NRECA) has defined a smart grid as follows:

“A collection of technologies including Advanced Metering Infrastructure (AMI) and distribution automation, integrated through an effective communications infrastructure and software tools to provide enhanced value and services to members.”

Based on that definition and the smart grid characteristics listed in Section 1301 of EISA 2007, it is apparent that the Cooperative's electric distribution system has, for several years, demonstrated many of the technologies and functionalities of a smart grid. Generally speaking, electric cooperatives' low customer density, self-regulated rate structure and member ownership have contributed to the deployment of smart grid technologies in many service areas. NRECA, in comments presented to the Federal Energy Regulatory Commission (FERC) and National Association of Regulatory Utility Commissioners (NARUC) Smart Grid Collaborative, stated:

“Cooperatives have taken the lead in integrating advanced grid technologies where and to the extent they help them provide their consumer-owners with safe and reliable power at the lowest reasonable cost.”

Sumter, like those electric cooperatives referenced by NRECA, has already made extensive investments in smart grid technologies. Over \$3.5 million dollars is currently invested in a Supervisory Control and Data Acquisition (“SCADA”) system, Geographic Information System (“GIS”), Outage Management System, and other advanced system communication capabilities. The GIS, which maps the Cooperative's electric distribution system, incorporates 100% of system facilities, and is integrated with the Cooperative's Outage Management System to provide quick fault discovery and response. Additionally, all service buckets, material handlers and line trucks utilize a mobile viewer computer system to provide a complete electronic map of the electric distribution system with aerial photography overlays, which is linked to the consumer information database. A satellite-based communications system, to be completely deployed by June 2009, will enable several communications enhancements, such as dispatching trouble tickets to trucks and real-time updating of the Outage Management System. The Cooperative is also replacing its legacy analog microwave communication system with a digital 6.2 GHz system. Other smart grid technologies currently deployed in the system include

a transmission ring which provides an automatic restoration scheme, substation tie breakers and automatic restoration through smart switches for consumers with critical electric service needs, such as hospitals.

For future investments, the Cooperative is researching the various technologies available that will support smart grid operations for their distribution system. Those technologies include: advanced metering infrastructure (“AMI”) with remote disconnect and in-home displays with expandability to end use appliance communication and control, and distribution line automation (automatic sectionalizing and capacitor control). Finally, Sumter will begin converting the communication systems to the individual substations to a 100 Mb Ethernet radio system to support increased automation as well as supporting backhaul capabilities for an AMI system.

These enhancements, as well as other smart grid investments, will be deployed by the Cooperative at, as phrased by NRECA, “the pace of value.” In other words, the Cooperative will evaluate smart grid options based on appropriate factors, including the ones listed in this PURPA standard, and deploy such investments when the Cooperative determines that the member-consumers will receive sufficient value therefrom, and the Board should adopt a finding to that effect.

It should also be noted that Seminole is particularly well situated to address the deployment of smart grid investments that reflect certain of the characteristics listed in EISA 2007, namely the items above numbered (3), (4), and (7), as discussed on pages 7 and 8 of Appendix B hereto.

Smart Grid Information Standard

The fourth new PURPA standard that the Cooperative’s Board must decide whether or not to implement is the Smart Grid Information standard, which states:

“(17) SMART GRID INFORMATION.—

“(A) STANDARD.—All electricity purchasers shall be provided direct access, in written or electronic machine-readable form as appropriate, to information from their electricity provider as provided in subparagraph (B).

“(B) INFORMATION.—Information provided under this section, to the extent practicable, shall include:

“(i) PRICES.—Purchasers and other interested persons shall be provided with information on—

“(I) time-based electricity prices in the wholesale electricity market; and

“(II) time-based electricity retail prices or rates that are available to the purchasers.

“(ii) USAGE.—Purchasers shall be provided with the number of electricity units, expressed in kwh, purchased by them.

“(iii) INTERVALS AND PROJECTIONS.—Updates of information on prices and usage shall be offered on not less than a daily basis, shall include hourly price and use information, where available, and shall include a day-ahead projection of such price information to the extent available.

“(iv) SOURCES.—Purchasers and other interested persons shall be provided annually with written information on the sources of the power provided by the utility, to the extent it can be determined, by type of generation, including greenhouse gas emissions associated with each type of generation, for intervals during which such information is available on a cost effective basis.

“(C) ACCESS.—Purchasers shall be able to access their own information at any time through the Internet and on other means of communication elected by that utility for Smart Grid applications. Other interested persons shall be able to access information not specific to any purchaser through the Internet. Information specific to any purchaser shall be provided solely to that purchaser.”

This standard attempts to empower consumers with more detailed and timely information regarding the cost and amount of their electric energy usage. As worded, however, the information set forth in the standard (except for the “Sources” information described in Section (A)(iv)) is simply not currently available, for a number of reasons.

First, as stated by Seminole on page 9 of Appendix B hereto, “At present, a real-time wholesale power market does not exist within the Florida Reliability Coordinating Council (FRCC) region where Seminole's system resides. This means that there is not a real-time clearinghouse price for electricity which would be meaningful or reliable for handoff to retail consumers as an adjunct to real-time energy pricing programs.” Therefore, it is not currently possible for the Cooperative to provide “time-based electricity prices in the wholesale electricity market.

However, if and when the Cooperative determines it is appropriate to offer time-of-use rates to its consumers, then information regarding such “time-based electricity retail prices or rates” will be provided, as available, to consumers.

The information regarding pricing and usage “on not less than a daily basis” is not currently available with the Cooperative’s existing metering and communications system. However, after the future deployment of additional smart grid equipment previously mentioned, it may be possible for the Cooperative to provide consumers with the daily (and perhaps hourly) usage information described in the standard.

In regards to providing consumers and other interested persons with information on the sources of generation and the associated greenhouse emissions, Seminole has committed to provide this information on the required annual basis via Seminole’s website. It will therefore be possible for the Cooperative, through a link to Seminole’s website, to provide that information to its member-consumers and other interested persons.

At some future date, the Cooperative may have access to the type of detailed and timely energy usage and pricing information set forth in this standard, and further may possess the necessary communications technology to provide such information to its consumers. For the present time, however, the Cooperative has neither the information nor the technology necessary

to do so, and thus the only portion of this standard that the Cooperative is able to implement is Section (17)(B)(iv). The Board should adopt a finding to that effect.

Conclusion

Based on the foregoing, the Cooperative's Board of Trustees should consider taking the following action on the four new PURPA standards set forth in EISA 2007:

Integrated Resource Planning Standard– The Board should find in its determination of the Integrated Resource Planning standard that the Cooperative, to the extent it is able to do so as an electric distribution utility, has already integrated energy efficiency resources into its IRP process, and has adopted policies establishing cost-effective energy efficiency as a first priority resource.

Rate Design Modifications to Promote Energy Efficiency Investments Standard - The Board should find that Seminole and the Cooperative have each already taken steps to charge wholesale and retail rates, respectively, that reasonably align utility incentives with the delivery of cost-effective energy efficiency and promote energy efficiency investments pursuant to the six stated policy options.

Consideration of Smart Grid Investments Standard - The Board should find that the Cooperative will evaluate smart grid options based on appropriate factors, including the ones listed in this PURPA standard, and deploy such investments when the Cooperative determines that the member-consumers will receive sufficient value therefrom.

Smart Grid Information Standard – The Board should find that the only portion of this standard that the Cooperative is able to implement at this time is Section (17)(B)(iv), pertaining to providing consumers and other interested persons with information on the sources of generation provided by the Cooperative and the associated greenhouse emissions, because Seminole has committed to make that information available on an annual basis to the Cooperative, through a link to Seminole's website.

APPENDICES

APPENDIX A

Excerpts from The Energy Independence and Security Act of 2007

Excerpt Of The
ENERGY INDEPENDENCE AND SECURITY ACT OF 2007

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Public Law 110–140
110th Congress

An Act

Dec. 19, 2007
[H.R. 6]

Energy
Independence
and Security Act
of 2007.
42 USC 17001
note.

To move the United States toward greater energy independence and security, to increase the production of clean renewable fuels, to protect consumers, to increase the efficiency of products, buildings, and vehicles, to promote research on and deploy greenhouse gas capture and storage options, and to improve the energy performance of the Federal Government, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

(a) **SHORT TITLE.**—This Act may be cited as the “Energy Independence and Security Act of 2007”.

(b) **TABLE OF CONTENTS.**—The table of contents of this Act is as follows:

- Sec. 1. Short title; table of contents.
- Sec. 2. Definitions.
- Sec. 3. Relationship to other law.

TITLE I—ENERGY SECURITY THROUGH IMPROVED VEHICLE FUEL ECONOMY

Subtitle A—Increased Corporate Average Fuel Economy Standards

- Sec. 101. Short title.
- Sec. 102. Average fuel economy standards for automobiles and certain other vehicles.
- Sec. 103. Definitions.
- Sec. 104. Credit trading program.
- Sec. 105. Consumer information.
- Sec. 106. Continued applicability of existing standards.
- Sec. 107. National Academy of Sciences studies.
- Sec. 108. National Academy of Sciences study of medium-duty and heavy-duty truck fuel economy.
- Sec. 109. Extension of flexible fuel vehicle credit program.
- Sec. 110. Periodic review of accuracy of fuel economy labeling procedures.
- Sec. 111. Consumer tire information.
- Sec. 112. Use of civil penalties for research and development.
- Sec. 113. Exemption from separate calculation requirement.

Subtitle B—Improved Vehicle Technology

- Sec. 131. Transportation electrification.
- Sec. 132. Domestic manufacturing conversion grant program.
- Sec. 133. Inclusion of electric drive in Energy Policy Act of 1992.
- Sec. 134. Loan guarantees for fuel-efficient automobile parts manufacturers.
- Sec. 135. Advanced battery loan guarantee program.
- Sec. 136. Advanced technology vehicles manufacturing incentive program.

Subtitle C—Federal Vehicle Fleets

- Sec. 141. Federal vehicle fleets.
- Sec. 142. Federal fleet conservation requirements.

TITLE II—ENERGY SECURITY THROUGH INCREASED PRODUCTION OF
BIOFUELS

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- Sec. 201. Definitions.
- Sec. 202. Renewable fuel standard.
- Sec. 203. Study of impact of Renewable Fuel Standard.
- Sec. 204. Environmental and resource conservation impacts.
- Sec. 205. Biomass based diesel and biodiesel labeling.
- Sec. 206. Study of credits for use of renewable electricity in electric vehicles.
- Sec. 207. Grants for production of advanced biofuels.
- Sec. 208. Integrated consideration of water quality in determinations on fuels and fuel additives.
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- Sec. 210. Effective date, savings provision, and transition rules.

Subtitle B—Biofuels Research and Development

- Sec. 221. Biodiesel.
- Sec. 222. Biogas.
- Sec. 223. Grants for biofuel production research and development in certain States.
- Sec. 224. Biorefinery energy efficiency.
- Sec. 225. Study of optimization of flexible fueled vehicles to use E-85 fuel.
- Sec. 226. Study of engine durability and performance associated with the use of biodiesel.
- Sec. 227. Study of optimization of biogas used in natural gas vehicles.
- Sec. 228. Algal biomass.
- Sec. 229. Biofuels and biorefinery information center.
- Sec. 230. Cellulosic ethanol and biofuels research.
- Sec. 231. Bioenergy research and development, authorization of appropriation.
- Sec. 232. Environmental research and development.
- Sec. 233. Bioenergy research centers.
- Sec. 234. University based research and development grant program.

Subtitle C—Biofuels Infrastructure

- Sec. 241. Prohibition on franchise agreement restrictions related to renewable fuel infrastructure.
- Sec. 242. Renewable fuel dispenser requirements.
- Sec. 243. Ethanol pipeline feasibility study.
- Sec. 244. Renewable fuel infrastructure grants.
- Sec. 245. Study of the adequacy of transportation of domestically-produced renewable fuel by railroads and other modes of transportation.
- Sec. 246. Federal fleet fueling centers.
- Sec. 247. Standard specifications for biodiesel.
- Sec. 248. Biofuels distribution and advanced biofuels infrastructure.

Subtitle D—Environmental Safeguards

- Sec. 251. Waiver for fuel or fuel additives.

TITLE III—ENERGY SAVINGS THROUGH IMPROVED STANDARDS FOR
APPLIANCE AND LIGHTING

Subtitle A—Appliance Energy Efficiency

- Sec. 301. External power supply efficiency standards.
- Sec. 302. Updating appliance test procedures.
- Sec. 303. Residential boilers.
- Sec. 304. Furnace fan standard process.
- Sec. 305. Improving schedule for standards updating and clarifying State authority.
- Sec. 306. Regional standards for furnaces, central air conditioners, and heat pumps.
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- Sec. 308. Expedited rulemakings.
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- Sec. 313. Electric motor efficiency standards.
- Sec. 314. Standards for single package vertical air conditioners and heat pumps.
- Sec. 315. Improved energy efficiency for appliances and buildings in cold climates.
- Sec. 316. Technical corrections.

Subtitle B—Lighting Energy Efficiency

- Sec. 321. Efficient light bulbs.

- Sec. 322. Incandescent reflector lamp efficiency standards.
- Sec. 323. Public building energy efficient and renewable energy systems.
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- Sec. 325. Energy efficiency labeling for consumer electronic products.

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- Sec. 411. Reauthorization of weatherization assistance program.
- Sec. 412. Study of renewable energy rebate programs.
- Sec. 413. Energy code improvements applicable to manufactured housing.

Subtitle B—High-Performance Commercial Buildings

- Sec. 421. Commercial high-performance green buildings.
- Sec. 422. Zero Net Energy Commercial Buildings Initiative.
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Subtitle C—High-Performance Federal Buildings

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Subtitle F—Institutional Entities

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Sec. 1601. Effective date.

42 USC 17001.

SEC. 2. DEFINITIONS.

In this Act:

(1) DEPARTMENT.—The term “Department” means the Department of Energy.

(2) INSTITUTION OF HIGHER EDUCATION.—The term “institution of higher education” has the meaning given the term in section 101(a) of the Higher Education Act of 1965 (20 U.S.C. 1001(a)).

(3) SECRETARY.—The term “Secretary” means the Secretary of Energy.

42 USC 17002.

SEC. 3. RELATIONSHIP TO OTHER LAW.

Except to the extent expressly provided in this Act or an amendment made by this Act, nothing in this Act or an amendment made by this Act supersedes, limits the authority provided or responsibility conferred by, or authorizes any violation of any provision of law (including a regulation), including any energy or environmental law or regulation.

Excerpt Of The

ENERGY INDEPENDENCE AND SECURITY ACT OF 2007

Utility Energy Efficiency Programs
Section 532

Subtitle D—Energy Efficiency of Public Institutions

SEC. 531. REAUTHORIZATION OF STATE ENERGY PROGRAMS.

Section 365(f) of the Energy Policy and Conservation Act (42 U.S.C. 6325(f)) is amended by striking “\$100,000,000 for each of the fiscal years 2006 and 2007 and \$125,000,000 for fiscal year 2008” and inserting “\$125,000,000 for each of fiscal years 2007 through 2012”.

SEC. 532. UTILITY ENERGY EFFICIENCY PROGRAMS.

(a) **ELECTRIC UTILITIES.**—Section 111(d) of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2621(d)) is amended by adding at the end the following:

“(16) **INTEGRATED RESOURCE PLANNING.**—Each electric utility shall—

“(A) integrate energy efficiency resources into utility, State, and regional plans; and

“(B) adopt policies establishing cost-effective energy efficiency as a priority resource.

“(17) RATE DESIGN MODIFICATIONS TO PROMOTE ENERGY EFFICIENCY INVESTMENTS.—

“(A) IN GENERAL.—The rates allowed to be charged by any electric utility shall—

“(i) align utility incentives with the delivery of cost-effective energy efficiency; and

“(ii) promote energy efficiency investments.

“(B) POLICY OPTIONS.—In complying with subparagraph (A), each State regulatory authority and each non-regulated utility shall consider—

“(i) removing the throughput incentive and other regulatory and management disincentives to energy efficiency;

“(ii) providing utility incentives for the successful management of energy efficiency programs;

“(iii) including the impact on adoption of energy efficiency as 1 of the goals of retail rate design, recognizing that energy efficiency must be balanced with other objectives;

“(iv) adopting rate designs that encourage energy efficiency for each customer class;

“(v) allowing timely recovery of energy efficiency-related costs; and

“(vi) offering home energy audits, offering demand response programs, publicizing the financial and environmental benefits associated with making home energy efficiency improvements, and educating homeowners about all existing Federal and State incentives, including the availability of low-cost loans, that make energy efficiency improvements more affordable.”.

(b) NATURAL GAS UTILITIES.—Section 303(b) of the Public Utility Regulatory Policies Act of 1978 (15 U.S.C. 3203(b)) is amended by adding at the end the following:

“(5) ENERGY EFFICIENCY.—Each natural gas utility shall—

“(A) integrate energy efficiency resources into the plans and planning processes of the natural gas utility; and

“(B) adopt policies that establish energy efficiency as a priority resource in the plans and planning processes of the natural gas utility.

“(6) RATE DESIGN MODIFICATIONS TO PROMOTE ENERGY EFFICIENCY INVESTMENTS.—

“(A) IN GENERAL.—The rates allowed to be charged by a natural gas utility shall align utility incentives with the deployment of cost-effective energy efficiency.

“(B) POLICY OPTIONS.—In complying with subparagraph (A), each State regulatory authority and each non-regulated utility shall consider—

“(i) separating fixed-cost revenue recovery from the volume of transportation or sales service provided to the customer;

“(ii) providing to utilities incentives for the successful management of energy efficiency programs, such

as allowing utilities to retain a portion of the cost-reducing benefits accruing from the programs;

“(iii) promoting the impact on adoption of energy efficiency as 1 of the goals of retail rate design, recognizing that energy efficiency must be balanced with other objectives; and

“(iv) adopting rate designs that encourage energy efficiency for each customer class.

For purposes of applying the provisions of this subtitle to this paragraph, any reference in this subtitle to the date of enactment of this Act shall be treated as a reference to the date of enactment of this paragraph.”

(c) CONFORMING AMENDMENT.—Section 303(a) of the Public Utility Regulatory Policies Act of 1978 (15 U.S.C. 3203(a)) is amended by striking “and (4)” inserting “(4), (5), and (6)”.

EXCERPT OF THE
ENERGY INDEPENDENCE AND SECURITY ACT OF 2007

Smart Grid
Sections 1301 to 1309

TITLE XIII—SMART GRID

SEC. 1301. STATEMENT OF POLICY ON MODERNIZATION OF ELECTRICITY GRID. 15 USC 17381.

It is the policy of the United States to support the modernization of the Nation's electricity transmission and distribution system

to maintain a reliable and secure electricity infrastructure that can meet future demand growth and to achieve each of the following, which together characterize a Smart Grid:

(1) Increased use of digital information and controls technology to improve reliability, security, and efficiency of the electric grid.

(2) Dynamic optimization of grid operations and resources, with full cyber-security.

(3) Deployment and integration of distributed resources and generation, including renewable resources.

(4) Development and incorporation of demand response, demand-side resources, and energy-efficiency resources.

(5) Deployment of “smart” technologies (real-time, automated, interactive technologies that optimize the physical operation of appliances and consumer devices) for metering, communications concerning grid operations and status, and distribution automation.

(6) Integration of “smart” appliances and consumer devices.

(7) Deployment and integration of advanced electricity storage and peak-shaving technologies, including plug-in electric and hybrid electric vehicles, and thermal-storage air conditioning.

(8) Provision to consumers of timely information and control options.

(9) Development of standards for communication and interoperability of appliances and equipment connected to the electric grid, including the infrastructure serving the grid.

(10) Identification and lowering of unreasonable or unnecessary barriers to adoption of smart grid technologies, practices, and services.

15 USC 17382.

SEC. 1302. SMART GRID SYSTEM REPORT.

The Secretary, acting through the Assistant Secretary of the Office of Electricity Delivery and Energy Reliability (referred to in this section as the “OEDER”) and through the Smart Grid Task Force established in section 1303, shall, after consulting with any interested individual or entity as appropriate, no later than 1 year after enactment, and every 2 years thereafter, report to Congress concerning the status of smart grid deployments nationwide and any regulatory or government barriers to continued deployment. The report shall provide the current status and prospects of smart grid development, including information on technology penetration, communications network capabilities, costs, and obstacles. It may include recommendations for State and Federal policies or actions helpful to facilitate the transition to a smart grid. To the extent appropriate, it should take a regional perspective. In preparing this report, the Secretary shall solicit advice and contributions from the Smart Grid Advisory Committee created in section 1303; from other involved Federal agencies including but not limited to the Federal Energy Regulatory Commission (“Commission”), the National Institute of Standards and Technology (“Institute”), and the Department of Homeland Security; and from other stakeholder groups not already represented on the Smart Grid Advisory Committee.

15 USC 17383.

SEC. 1303. SMART GRID ADVISORY COMMITTEE AND SMART GRID TASK FORCE.

(a) SMART GRID ADVISORY COMMITTEE.—

(1) ESTABLISHMENT.—The Secretary shall establish, within 90 days of enactment of this Part, a Smart Grid Advisory Committee (either as an independent entity or as a designated sub-part of a larger advisory committee on electricity matters). The Smart Grid Advisory Committee shall include eight or more members appointed by the Secretary who have sufficient experience and expertise to represent the full range of smart grid technologies and services, to represent both private and non-Federal public sector stakeholders. One member shall be appointed by the Secretary to Chair the Smart Grid Advisory Committee. Deadline.

(2) MISSION.—The mission of the Smart Grid Advisory Committee shall be to advise the Secretary, the Assistant Secretary, and other relevant Federal officials concerning the development of smart grid technologies, the progress of a national transition to the use of smart-grid technologies and services, the evolution of widely-accepted technical and practical standards and protocols to allow interoperability and inter-communication among smart-grid capable devices, and the optimum means of using Federal incentive authority to encourage such progress.

(3) APPLICABILITY OF FEDERAL ADVISORY COMMITTEE ACT.—The Federal Advisory Committee Act (5 U.S.C. App.) shall apply to the Smart Grid Advisory Committee.

(b) SMART GRID TASK FORCE.—

(1) ESTABLISHMENT.—The Assistant Secretary of the Office of Electricity Delivery and Energy Reliability shall establish, within 90 days of enactment of this Part, a Smart Grid Task Force composed of designated employees from the various divisions of that office who have responsibilities related to the transition to smart-grid technologies and practices. The Assistant Secretary or his designee shall be identified as the Director of the Smart Grid Task Force. The Chairman of the Federal Energy Regulatory Commission and the Director of the National Institute of Standards and Technology shall each designate at least one employee to participate on the Smart Grid Task Force. Other members may come from other agencies at the invitation of the Assistant Secretary or the nomination of the head of such other agency. The Smart Grid Task Force shall, without disrupting the work of the Divisions or Offices from which its members are drawn, provide an identifiable Federal entity to embody the Federal role in the national transition toward development and use of smart grid technologies. Deadline.

(2) MISSION.—The mission of the Smart Grid Task Force shall be to insure awareness, coordination and integration of the diverse activities of the Office and elsewhere in the Federal Government related to smart-grid technologies and practices, including but not limited to: smart grid research and development; development of widely accepted smart-grid standards and protocols; the relationship of smart-grid technologies and practices to electric utility regulation; the relationship of smart-grid technologies and practices to infrastructure development, system reliability and security; and the relationship of smart-grid technologies and practices to other facets of electricity supply, demand, transmission, distribution, and policy. The Smart Grid Task Force shall collaborate with the Smart Grid Advisory Committee and other Federal agencies and offices.

The Smart Grid Task Force shall meet at the call of its Director as necessary to accomplish its mission.

(c) AUTHORIZATION.—There are authorized to be appropriated for the purposes of this section such sums as are necessary to the Secretary to support the operations of the Smart Grid Advisory Committee and Smart Grid Task Force for each of fiscal years 2008 through 2020.

42 USC 17384.

SEC. 1304. SMART GRID TECHNOLOGY RESEARCH, DEVELOPMENT, AND DEMONSTRATION.

(a) POWER GRID DIGITAL INFORMATION TECHNOLOGY.—The Secretary, in consultation with the Federal Energy Regulatory Commission and other appropriate agencies, electric utilities, the States, and other stakeholders, shall carry out a program—

(1) to develop advanced techniques for measuring peak load reductions and energy-efficiency savings from smart metering, demand response, distributed generation, and electricity storage systems;

(2) to investigate means for demand response, distributed generation, and storage to provide ancillary services;

(3) to conduct research to advance the use of wide-area measurement and control networks, including data mining, visualization, advanced computing, and secure and dependable communications in a highly-distributed environment;

(4) to test new reliability technologies, including those concerning communications network capabilities, in a grid control room environment against a representative set of local outage and wide area blackout scenarios;

(5) to identify communications network capacity needed to implement advanced technologies.

(6) to investigate the feasibility of a transition to time-of-use and real-time electricity pricing;

(7) to develop algorithms for use in electric transmission system software applications;

(8) to promote the use of underutilized electricity generation capacity in any substitution of electricity for liquid fuels in the transportation system of the United States; and

(9) in consultation with the Federal Energy Regulatory Commission, to propose interconnection protocols to enable electric utilities to access electricity stored in vehicles to help meet peak demand loads.

(b) SMART GRID REGIONAL DEMONSTRATION INITIATIVE.—

(1) IN GENERAL.—The Secretary shall establish a smart grid regional demonstration initiative (referred to in this subsection as the “Initiative”) composed of demonstration projects specifically focused on advanced technologies for use in power grid sensing, communications, analysis, and power flow control. The Secretary shall seek to leverage existing smart grid deployments.

(2) GOALS.—The goals of the Initiative shall be—

(A) to demonstrate the potential benefits of concentrated investments in advanced grid technologies on a regional grid;

(B) to facilitate the commercial transition from the current power transmission and distribution system technologies to advanced technologies;

(C) to facilitate the integration of advanced technologies in existing electric networks to improve system performance, power flow control, and reliability;

(D) to demonstrate protocols and standards that allow for the measurement and validation of the energy savings and fossil fuel emission reductions associated with the installation and use of energy efficiency and demand response technologies and practices; and

(E) to investigate differences in each region and regulatory environment regarding best practices in implementing smart grid technologies.

(3) DEMONSTRATION PROJECTS.—

(A) IN GENERAL.—In carrying out the initiative, the Secretary shall carry out smart grid demonstration projects in up to 5 electricity control areas, including rural areas and at least 1 area in which the majority of generation and transmission assets are controlled by a tax-exempt entity.

(B) COOPERATION.—A demonstration project under subparagraph (A) shall be carried out in cooperation with the electric utility that owns the grid facilities in the electricity control area in which the demonstration project is carried out.

(C) FEDERAL SHARE OF COST OF TECHNOLOGY INVESTMENTS.—The Secretary shall provide to an electric utility described in subparagraph (B) financial assistance for use in paying an amount equal to not more than 50 percent of the cost of qualifying advanced grid technology investments made by the electric utility to carry out a demonstration project.

(D) INELIGIBILITY FOR GRANTS.—No person or entity participating in any demonstration project conducted under this subsection shall be eligible for grants under section 1306 for otherwise qualifying investments made as part of that demonstration project.

(c) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated—

(1) to carry out subsection (a), such sums as are necessary for each of fiscal years 2008 through 2012; and

(2) to carry out subsection (b), \$100,000,000 for each of fiscal years 2008 through 2012.

SEC. 1305. SMART GRID INTEROPERABILITY FRAMEWORK.

15 USC 17385.

(a) INTEROPERABILITY FRAMEWORK.—The Director of the National Institute of Standards and Technology shall have primary responsibility to coordinate the development of a framework that includes protocols and model standards for information management to achieve interoperability of smart grid devices and systems. Such protocols and standards shall further align policy, business, and technology approaches in a manner that would enable all electric resources, including demand-side resources, to contribute to an efficient, reliable electricity network. In developing such protocols and standards—

(1) the Director shall seek input and cooperation from the Commission, OEDER and its Smart Grid Task Force, the Smart Grid Advisory Committee, other relevant Federal and State agencies; and

(2) the Director shall also solicit input and cooperation from private entities interested in such protocols and standards, including but not limited to the Gridwise Architecture Council, the International Electrical and Electronics Engineers, the National Electric Reliability Organization recognized by the Federal Energy Regulatory Commission, and National Electrical Manufacturer's Association.

(b) SCOPE OF FRAMEWORK.—The framework developed under subsection (a) shall be flexible, uniform and technology neutral, including but not limited to technologies for managing smart grid information, and designed—

(1) to accommodate traditional, centralized generation and transmission resources and consumer distributed resources, including distributed generation, renewable generation, energy storage, energy efficiency, and demand response and enabling devices and systems;

(2) to be flexible to incorporate—

(A) regional and organizational differences; and

(B) technological innovations;

(3) to consider the use of voluntary uniform standards for certain classes of mass-produced electric appliances and equipment for homes and businesses that enable customers, at their election and consistent with applicable State and Federal laws, and are manufactured with the ability to respond to electric grid emergencies and demand response signals by curtailing all, or a portion of, the electrical power consumed by the appliances or equipment in response to an emergency or demand response signal, including through—

(A) load reduction to reduce total electrical demand;

(B) adjustment of load to provide grid ancillary services; and

(C) in the event of a reliability crisis that threatens an outage, short-term load shedding to help preserve the stability of the grid; and

(4) such voluntary standards should incorporate appropriate manufacturer lead time.

(c) TIMING OF FRAMEWORK DEVELOPMENT.—The Institute shall begin work pursuant to this section within 60 days of enactment. The Institute shall provide and publish an initial report on progress toward recommended or consensus standards and protocols within 1 year after enactment, further reports at such times as developments warrant in the judgment of the Institute, and a final report when the Institute determines that the work is completed or that a Federal role is no longer necessary.

(d) STANDARDS FOR INTEROPERABILITY IN FEDERAL JURISDICTION.—At any time after the Institute's work has led to sufficient consensus in the Commission's judgment, the Commission shall institute a rulemaking proceeding to adopt such standards and protocols as may be necessary to insure smart-grid functionality and interoperability in interstate transmission of electric power, and regional and wholesale electricity markets.

(e) AUTHORIZATION.—There are authorized to be appropriated for the purposes of this section \$5,000,000 to the Institute to support the activities required by this subsection for each of fiscal years 2008 through 2012.

SEC. 1306. FEDERAL MATCHING FUND FOR SMART GRID INVESTMENT COSTS. 42 USC 17386.

(a) **MATCHING FUND.**—The Secretary shall establish a Smart Grid Investment Matching Grant Program to provide reimbursement of one-fifth (20 percent) of qualifying Smart Grid investments.

(b) **QUALIFYING INVESTMENTS.**—Qualifying Smart Grid investments may include any of the following made on or after the date of enactment of this Act:

(1) In the case of appliances covered for purposes of establishing energy conservation standards under part B of title III of the Energy Policy and Conservation Act of 1975 (42 U.S.C. 6291 et seq.), the documented expenditures incurred by a manufacturer of such appliances associated with purchasing or designing, creating the ability to manufacture, and manufacturing and installing for one calendar year, internal devices that allow the appliance to engage in Smart Grid functions.

(2) In the case of specialized electricity-using equipment, including motors and drivers, installed in industrial or commercial applications, the documented expenditures incurred by its owner or its manufacturer of installing devices or modifying that equipment to engage in Smart Grid functions.

(3) In the case of transmission and distribution equipment fitted with monitoring and communications devices to enable smart grid functions, the documented expenditures incurred by the electric utility to purchase and install such monitoring and communications devices.

(4) In the case of metering devices, sensors, control devices, and other devices integrated with and attached to an electric utility system or retail distributor or marketer of electricity that are capable of engaging in Smart Grid functions, the documented expenditures incurred by the electric utility, distributor, or marketer and its customers to purchase and install such devices.

(5) In the case of software that enables devices or computers to engage in Smart Grid functions, the documented purchase costs of the software.

(6) In the case of entities that operate or coordinate operations of regional electric grids, the documented expenditures for purchasing and installing such equipment that allows Smart Grid functions to operate and be combined or coordinated among multiple electric utilities and between that region and other regions.

(7) In the case of persons or entities other than electric utilities owning and operating a distributed electricity generator, the documented expenditures of enabling that generator to be monitored, controlled, or otherwise integrated into grid operations and electricity flows on the grid utilizing Smart Grid functions.

(8) In the case of electric or hybrid-electric vehicles, the documented expenses for devices that allow the vehicle to engage in Smart Grid functions (but not the costs of electricity storage for the vehicle).

(9) The documented expenditures related to purchasing and implementing Smart Grid functions in such other cases as the Secretary shall identify. In making such grants, the Secretary shall seek to reward innovation and early adaptation,

even if success is not complete, rather than deployment of proven and commercially viable technologies.

(c) INVESTMENTS NOT INCLUDED.—Qualifying Smart Grid investments do not include any of the following:

(1) Investments or expenditures for Smart Grid technologies, devices, or equipment that are eligible for specific tax credits or deductions under the Internal Revenue Code, as amended.

(2) Expenditures for electricity generation, transmission, or distribution infrastructure or equipment not directly related to enabling Smart Grid functions.

(3) After the final date for State consideration of the Smart Grid Information Standard under section 1307 (paragraph (17) of section 111(d) of the Public Utility Regulatory Policies Act of 1978), an investment that is not in compliance with such standard.

(4) After the development and publication by the Institute of protocols and model standards for interoperability of smart grid devices and technologies, an investment that fails to incorporate any of such protocols or model standards.

(5) Expenditures for physical interconnection of generators or other devices to the grid except those that are directly related to enabling Smart Grid functions.

(6) Expenditures for ongoing salaries, benefits, or personnel costs not incurred in the initial installation, training, or start up of smart grid functions.

(7) Expenditures for travel, lodging, meals or other personal costs.

(8) Ongoing or routine operation, billing, customer relations, security, and maintenance expenditures.

(9) Such other expenditures that the Secretary determines not to be Qualifying Smart Grid Investments by reason of the lack of the ability to perform Smart Grid functions or lack of direct relationship to Smart Grid functions.

(d) SMART GRID FUNCTIONS.—The term “smart grid functions” means any of the following:

(1) The ability to develop, store, send and receive digital information concerning electricity use, costs, prices, time of use, nature of use, storage, or other information relevant to device, grid, or utility operations, to or from or by means of the electric utility system, through one or a combination of devices and technologies.

(2) The ability to develop, store, send and receive digital information concerning electricity use, costs, prices, time of use, nature of use, storage, or other information relevant to device, grid, or utility operations to or from a computer or other control device.

(3) The ability to measure or monitor electricity use as a function of time of day, power quality characteristics such as voltage level, current, cycles per second, or source or type of generation and to store, synthesize or report that information by digital means.

(4) The ability to sense and localize disruptions or changes in power flows on the grid and communicate such information instantaneously and automatically for purposes of enabling automatic protective responses to sustain reliability and security of grid operations.

(5) The ability to detect, prevent, communicate with regard to, respond to, or recover from system security threats, including cyber-security threats and terrorism, using digital information, media, and devices.

(6) The ability of any appliance or machine to respond to such signals, measurements, or communications automatically or in a manner programmed by its owner or operator without independent human intervention.

(7) The ability to use digital information to operate functionalities on the electric utility grid that were previously electro-mechanical or manual.

(8) The ability to use digital controls to manage and modify electricity demand, enable congestion management, assist in voltage control, provide operating reserves, and provide frequency regulation.

(9) Such other functions as the Secretary may identify as being necessary or useful to the operation of a Smart Grid.

(e) The Secretary shall—

(1) establish and publish in the Federal Register, within 1 year after the enactment of this Act procedures by which applicants who have made qualifying Smart Grid investments can seek and obtain reimbursement of one-fifth of their documented expenditures;

(2) establish procedures to ensure that there is no duplication or multiple reimbursement for the same investment or costs, that the reimbursement goes to the party making the actual expenditures for Qualifying Smart Grid Investments, and that the grants made have significant effect in encouraging and facilitating the development of a smart grid;

(3) maintain public records of reimbursements made, recipients, and qualifying Smart Grid investments which have received reimbursements;

(4) establish procedures to provide, in cases deemed by the Secretary to be warranted, advance payment of moneys up to the full amount of the projected eventual reimbursement, to creditworthy applicants whose ability to make Qualifying Smart Grid Investments may be hindered by lack of initial capital, in lieu of any later reimbursement for which that applicant qualifies, and subject to full return of the advance payment in the event that the Qualifying Smart Grid investment is not made; and

(5) have and exercise the discretion to deny grants for investments that do not qualify in the reasonable judgment of the Secretary.

(f) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary such sums as are necessary for the administration of this section and the grants to be made pursuant to this section for fiscal years 2008 through 2012.

SEC. 1307. STATE CONSIDERATION OF SMART GRID.

(a) Section 111(d) of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2621(d)) is amended by adding at the end the following:

“(16) CONSIDERATION OF SMART GRID INVESTMENTS.—

“(A) IN GENERAL.—Each State shall consider requiring that, prior to undertaking investments in nonadvanced grid technologies, an electric utility of the State demonstrate

Procedures.
Federal Register,
publication.
Deadline.

Records.

to the State that the electric utility considered an investment in a qualified smart grid system based on appropriate factors, including—

- “(i) total costs;
- “(ii) cost-effectiveness;
- “(iii) improved reliability;
- “(iv) security;
- “(v) system performance; and
- “(vi) societal benefit.

“(B) RATE RECOVERY.—Each State shall consider authorizing each electric utility of the State to recover from ratepayers any capital, operating expenditure, or other costs of the electric utility relating to the deployment of a qualified smart grid system, including a reasonable rate of return on the capital expenditures of the electric utility for the deployment of the qualified smart grid system.

“(C) OBSOLETE EQUIPMENT.—Each State shall consider authorizing any electric utility or other party of the State to deploy a qualified smart grid system to recover in a timely manner the remaining book-value costs of any equipment rendered obsolete by the deployment of the qualified smart grid system, based on the remaining depreciable life of the obsolete equipment.

“(17) SMART GRID INFORMATION.—

“(A) STANDARD.—All electricity purchasers shall be provided direct access, in written or electronic machine-readable form as appropriate, to information from their electricity provider as provided in subparagraph (B).

“(B) INFORMATION.—Information provided under this section, to the extent practicable, shall include:

“(i) PRICES.—Purchasers and other interested persons shall be provided with information on—

“(I) time-based electricity prices in the wholesale electricity market; and

“(II) time-based electricity retail prices or rates that are available to the purchasers.

“(ii) USAGE.—Purchasers shall be provided with the number of electricity units, expressed in kwh, purchased by them.

“(iii) INTERVALS AND PROJECTIONS.—Updates of information on prices and usage shall be offered on not less than a daily basis, shall include hourly price and use information, where available, and shall include a day-ahead projection of such price information to the extent available.

“(iv) SOURCES.—Purchasers and other interested persons shall be provided annually with written information on the sources of the power provided by the utility, to the extent it can be determined, by type of generation, including greenhouse gas emissions associated with each type of generation, for intervals during which such information is available on a cost-effective basis.

“(C) ACCESS.—Purchasers shall be able to access their own information at any time through the Internet and on other means of communication elected by that utility

for Smart Grid applications. Other interested persons shall be able to access information not specific to any purchaser through the Internet. Information specific to any purchaser shall be provided solely to that purchaser.”.

(b) COMPLIANCE.—

(1) TIME LIMITATIONS.—Section 112(b) of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2622(b)) is amended by adding the following at the end thereof:

“(6)(A) Not later than 1 year after the enactment of this paragraph, each State regulatory authority (with respect to each electric utility for which it has ratemaking authority) and each nonregulated utility shall commence the consideration referred to in section 111, or set a hearing date for consideration, with respect to the standards established by paragraphs (17) through (18) of section 111(d).

Deadlines.

“(B) Not later than 2 years after the date of the enactment of this paragraph, each State regulatory authority (with respect to each electric utility for which it has ratemaking authority), and each nonregulated electric utility, shall complete the consideration, and shall make the determination, referred to in section 111 with respect to each standard established by paragraphs (17) through (18) of section 111(d).”.

(2) FAILURE TO COMPLY.—Section 112(c) of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2622(c)) is amended by adding the following at the end:

“In the case of the standards established by paragraphs (16) through (19) of section 111(d), the reference contained in this subsection to the date of enactment of this Act shall be deemed to be a reference to the date of enactment of such paragraphs.”.

(3) PRIOR STATE ACTIONS.—Section 112(d) of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2622(d)) is amended by inserting “and paragraphs (17) through (18)” before “of section 111(d)”.

SEC. 1308. STUDY OF THE EFFECT OF PRIVATE WIRE LAWS ON THE DEVELOPMENT OF COMBINED HEAT AND POWER FACILITIES.

(a) STUDY.—

(1) IN GENERAL.—The Secretary, in consultation with the States and other appropriate entities, shall conduct a study of the laws (including regulations) affecting the siting of privately owned electric distribution wires on and across public rights-of-way.

(2) REQUIREMENTS.—The study under paragraph (1) shall include—

(A) an evaluation of—

(i) the purposes of the laws; and

(ii) the effect the laws have on the development of combined heat and power facilities;

(B) a determination of whether a change in the laws would have any operating, reliability, cost, or other impacts on electric utilities and the customers of the electric utilities; and

(C) an assessment of—

(i) whether privately owned electric distribution wires would result in duplicative facilities; and

(ii) whether duplicative facilities are necessary or desirable.

(b) REPORT.—Not later than 1 year after the date of enactment of this Act, the Secretary shall submit to Congress a report that describes the results of the study conducted under subsection (a).

SEC. 1309. DOE STUDY OF SECURITY ATTRIBUTES OF SMART GRID SYSTEMS.

Deadline.
Reports.

(a) DOE STUDY.—The Secretary shall, within 18 months after the date of enactment of this Act, submit a report to Congress that provides a quantitative assessment and determination of the existing and potential impacts of the deployment of Smart Grid systems on improving the security of the Nation's electricity infrastructure and operating capability. The report shall include but not be limited to specific recommendations on each of the following:

(1) How smart grid systems can help in making the Nation's electricity system less vulnerable to disruptions due to intentional acts against the system.

(2) How smart grid systems can help in restoring the integrity of the Nation's electricity system subsequent to disruptions.

(3) How smart grid systems can facilitate nationwide, interoperable emergency communications and control of the Nation's electricity system during times of localized, regional, or nationwide emergency.

(4) What risks must be taken into account that smart grid systems may, if not carefully created and managed, create vulnerability to security threats of any sort, and how such risks may be mitigated.

(b) CONSULTATION.—The Secretary shall consult with other Federal agencies in the development of the report under this section, including but not limited to the Secretary of Homeland Security, the Federal Energy Regulatory Commission, and the Electric Reliability Organization certified by the Commission under section 215(c) of the Federal Power Act (16 U.S.C. 824o) as added by section 1211 of the Energy Policy Act of 2005 (Public Law 109-58; 119 Stat. 941).

Excerpt Of The
ENERGY INDEPENDENCE AND SECURITY ACT OF 2007

Effective Date
Section 1601

TITLE XVI—EFFECTIVE DATE

SEC. 1601. EFFECTIVE DATE.

2 USC 1824 note.

This Act and the amendments made by this Act take effect on the date that is 1 day after the date of enactment of this Act.

Approved December 19, 2007.

LEGISLATIVE HISTORY—H.R. 6:

CONGRESSIONAL RECORD, Vol. 153 (2007):

Jan. 18, considered and passed House.

June 12-15, 18-21, considered and passed Senate, amended.

Dec. 6, House concurred in Senate amendments with amendments.

Dec. 12, 13, Senate considered and concurred in House amendments with an amendment.

Dec. 18, House concurred in Senate amendment.

WEEKLY COMPILATION OF PRESIDENTIAL DOCUMENTS, Vol. 43 (2007):

Dec. 19, Presidential remarks.



APPENDIX B

**Seminole's Input for Sumter ECI Consideration
In Implementing the Directives under the
Energy Independence and Security Act of 2007**

**Seminole's Input for Cooperative's Consideration
In Implementing the Directives under the
Energy Independence and Security Act of 2007**

With the passage of the Energy Independence and Security Act of 2007 (EISA 2007), all electric utilities with retail sales of over 500 million kWh are required to consider whether to implement four new Public Utilities Regulatory Policies Act of 1978 (PURPA) standards. Sumter Electric Cooperative, Inc. (Cooperative) meets that kWh threshold, and thus under EISA 2007, its Board of Trustees must consider whether to implement each of the new PURPA standards after a public hearing process. The final determination must be in writing, based upon the evidence presented during the hearing process, and made available to the public.

As the Cooperative's all requirements power supplier,¹ Seminole Electric Cooperative, Inc. (Seminole) is best situated to address certain aspects of the new standards on the Cooperative's behalf. The purpose of this document is to provide input regarding those aspects of the standards under Seminole's purview and/or responsibility. The Cooperative may utilize this document as evidence in its hearing process if it deems appropriate.

The four new PURPA standards deal with the following areas: 1) integrated resource planning, 2) rate design modifications to promote energy efficient investments, 3) smart grid investments and 4) smart grid information. Seminole is providing comments below regarding each of these standards. The specific statutory language describing these standards is summarized as follows:

1. Integrated Resource Planning - Each electric utility shall (A) integrate energy efficiency resources into utility, State and regional plans; and (B) adopt policies establishing cost-effective energy efficiency as a priority resource.
2. Rate Design Modifications – The rates charged by any electric utility shall (i) align utility incentives with the delivery of cost-effective energy efficiency; and (ii) promote energy efficiency investments.
3. Consideration of Smart Grid Investments – Each State shall consider smart grid investment based on appropriate factors including total costs, cost effectiveness, improved reliability, security, system performance and societal benefits.
4. Smart Grid Information - All electricity purchasers shall be provided from their electricity provider direct access, in written or electronic machine-readable form as appropriate, to information concerning their energy usage

¹ In 1975, Seminole and the Cooperative entered into an all requirements wholesale power contract ("Wholesale Power Contract") which provides that the Cooperative is required to purchase from Seminole all of its power requirements for distribution within the State of Florida. The all requirements Wholesale Power Contract has a term extending through 2045.

and time-based electricity prices in the wholesale electricity market, along with retail prices or rates that are available to purchasers. Updates of the information on prices and usage shall be offered on not less than a daily basis, shall include hourly price and use information, where available, and shall be a day ahead projection of price information to the extent available. Further, purchasers shall be provided annually with written information on the sources of power provided by the utility, by type of generation, including the greenhouse gas emissions associated with each type of generation for intervals during which such information is available on a cost-effective basis.

PURPA Standard: Integrated Resource Planning

Integrated Resource Planning is a comprehensive planning process wherein electric utilities consider both supply-side (i.e., power plants) and demand-side (i.e., demand management, energy efficiency/ energy conservation) resource options in the course of meeting the current and future system electric demand and energy requirements.

Existing law in Florida does not specifically require electric cooperatives to perform integrated resource planning. However, the exercise of integrated resource planning is generally considered prudent and is essentially necessary if a Florida electric utility seeks approval to construct power plants. Under Section 403.519 of the Florida Statutes, in approving a Need Certification for an electric cooperative such as Seminole, the Florida Public Service Commission (FPSC) must expressly consider the conservation measures taken by or reasonably available to the applicant or its members which might mitigate the need for the proposed plant.

Seminole and its Members incorporate the principles of integrated resource planning into the generation planning process and are jointly committed to the active promotion of cost effective energy efficiency by Member consumers. Seminole is the full requirements wholesale supplier to ten Member cooperatives in Florida. Seminole provides firm wholesale electric service under a single wholesale rate structure. Seminole also provides a non-firm service option to its Members under interruptible rate schedules. The rate signals contained in Seminole's rate schedules provide a cost-basis for our Members to gauge the cost effectiveness of demand management and energy efficiency programs. Seminole's Members assess the viability of these programs in their respective service areas and Seminole's load forecast of power supply needs reflects the effect of its Members' demand-side management and energy efficiency programs.

The FPSC has acknowledged this arrangement between Seminole and its Members in its various orders granting Seminole's petitions for need determination for construction of new electric generating facilities. In addition, in its February 21, 2001 order granting Seminole's need for a new generating facility (Order No. PSC-01-0421-FOF-EC in Docket No. 001748-EC), the FPSC expressly noted the effectiveness of Seminole's rate schedules in providing appropriate rate signals when it stated that

"Seminole's rate structure is properly designed to provide incentives to lower on-peak demand".

At present, Seminole and its Members have two coordinated demand management programs which have reduced Seminole's requirements for generating capacity. The load management program whereby the Members install load management devices on their consumers' appliances (e.g., air conditioning, heating, water heaters and pool pumps) currently provides aggregate peak reduction capability of approximately 100 MW, representing over 2% of Seminole's annual peak demand. In addition, Seminole has a Member distributed generation program. Under this program, approximately 124 MW of on-site load center based peaking generation is currently under Seminole's dispatch control.

Seminole's Members have implemented a range of energy efficiency programs which have reduced Seminole's total requirements for electric energy. These reductions have not been specifically quantified or estimated but are inherently included in Seminole's load history. As such, Seminole's load forecast effectively extrapolates the impact and natural expansion of existing energy efficiency programs into the future.

In 2008, Seminole and its Members took action to strengthen their joint commitment to encourage demand side efficiency. On September 11, 2008, Seminole's Board of Trustees (Board) approved a new strategic plan. Seminole's strategic plan includes the following objectives relating to demand management and energy efficiency:

1. Seminole and its Members will increase demand management capability on a system-wide basis
2. Seminole and its Members will work to achieve reduced growth in residential kWh usage per consumer.

Also on September 11, 2008, Seminole's Board approved the following joint Seminole and Member action plan for expanding demand-side management and energy efficiency programs which is intended to be Seminole and its Members' first step in implementing the strategic plan:

- I. **Seminole's Commitment to Demand-Side Management (DSM)/Energy Efficiency** – Seminole's commitment to the promotion of DSM/Energy Efficiency will consist of the following elements:
 - **Cost Effectiveness** – Seminole will support and encourage demand-side programs which are determined to be a cost-effective alternative to supply-side resources.
 - **Seek Consensus Among Members** - Staff will work with the Board to gain consensus on a "minimum" level of commitment from all Members. This is detailed below under the section entitled Members' Commitment to DSM/Energy Efficiency.

- **Cost Effectiveness Evaluation** – Seminole will provide assistance to Members (if requested) in evaluating the cost-effectiveness of demand-side programs.
- **Marketing Resources** – Seminole will work with the Member staffs and the Energy Efficiency Working Group (see Energy Efficiency Working Group below) as appropriate to produce marketing literature which can be used by our Members to promote demand-side programs. The costs for design and production of promotional materials will be Seminole's responsibility.
- **Energy Efficiency Training** – Seminole will work with the Member staffs and the Energy Efficiency Working Group to assess the training needs for Member personnel engaged in residential and commercial energy audits.
- **Joint Action Opportunities** - Seminole will provide assistance to Members desiring to join with other Members or other utilities to provide demand-side programs and/or contract for these services (i.e., to improve the cost effectiveness of these programs through economy of scale).
- **Demand Response** – Seminole will work with the Members and the Energy Efficiency Working Group to promote the expansion of demand response capability as an economic alternative to expansion of Seminole's generation. Seminole currently has two demand response programs: (1) Residential Load Management, and (2) Member Generation. We will review these programs to determine where improvements can be made that promote cost-effective program expansion.
- **Economic Incentives** – Seminole will work with the Member staffs and the Energy Efficiency Working Group to assess the need for and cost feasibility of economic incentive programs to promote DSM/Energy Efficiency programs. The evaluation of Seminole funding to promote demand side programs will be a joint endeavor in conjunction with the work of the Energy Efficiency Working Group. Any incentive payments paid by Seminole would require approval of Seminole's Board.

II. Member System Commitment to Demand-Side Management (DSM)/Energy Efficiency - Seminole and its Members will take the following actions:

- **Consumer Education** – The Members and Seminole will work jointly to implement a comprehensive statewide consumer education program which has as its central objectives educating consumers on energy efficiency and encouraging behavior on their part to conserve energy and reduce their costs.
- **On-site Energy Survey/Audit** - Members will implement and promote a residential and/or a commercial customer energy survey/audit program which provides a comprehensive on-site inspection, advises consumers of energy saving measures which are likely to be cost effective, and explains the cooperative's programs related to energy efficiency. This program will be offered and actively marketed to customers either system-wide or on a targeted basis for high energy users (i.e., not just in response to high bill complaints).
- **On-Line Energy Survey/Audit** –Members' website will address and encourage energy efficiency, provide the capability for a residential consumer to perform an

on-line energy survey/audit, and make available a record of such self-service energy audits for regulatory reporting purposes.

- **Incentive Programs** - Members will consider, on an ongoing basis, offering economic incentives to their consumers, to encourage cost effective energy efficiency improvements.

III. Seminole/Member Energy Efficiency Working Group – Seminole and its Members will establish a working group to promote energy efficiency and facilitate the sharing of information relating to demand-side programs. Any costs incurred by the Working Group will be the responsibility of Seminole. As a part of its charge to promote energy efficiency, the Working Group will:

- Establishment of Interactive Websites – Review the best practices among utilities for website design and provide assistance to Seminole Members to implement improved websites with features which provide information relating to energy efficiency and include on-line energy survey/auditing capability.
- Alternative Rate Structures – Review retail rate structure alternatives that promote energy efficiency (e.g., inverted energy rate, time-of-use rate, etc.) and promote implementation as appropriate.
- Seminole Funding of Incentives - Assess on an ongoing basis the aggregate results of the demand-side programs of Seminole's Members. As a part of such assessment, the Working Group will review whether Seminole-funded rebates may be appropriate and acceptable in order to gain wider acceptance of cost-effective demand-side programs and make recommendations as appropriate.
- Cooperative Research Network (CRN) – Review the capabilities and work product of CRN to ensure that Seminole and its Members are taking full advantage of the energy efficiency-related work product of CRN.
- Touchstone Energy – Review educational materials and on-line services offered by Touchstone Energy which relate to consumer education and demand-side programs. These materials and services may be of assistance to cooperatives and their member consumers in the promotion of consumer initiatives to conserve energy.
- Assess Demand Response Program Expansion – Review the effectiveness and expansion opportunities associated with Seminole's demand response programs and make recommendations as appropriate.
- Smart Metering/Smart Grid – Share experiences with smart metering technology and discuss how smart metering can be used to advance energy efficiency and demand response programs.

It is Seminole's intent that the result of the planning decisions it makes, in conjunction with the planning decisions made by its Members, will establish cost-effective energy efficiency and other demand-side alternatives as a first priority option. It is recognized that the determination of cost effectiveness and service area compatibility will be an individual system consideration.

PURPA Standard: Rate Design Modification

This standard requires that the Cooperative consider modifying its retail rate design in order to promote its Member consumers' investment in energy efficiency measures. As previously mentioned, the Cooperative is required to purchase all of its power requirements from Seminole under the Wholesale Power Contract. A key consideration in determining the appropriate pricing signals to be reflected in its rates to the Cooperative's retail consumers is the specific price signal reflected in Seminole's power bills to the Cooperative.

Under the Wholesale Power Contract with the Cooperative, Seminole has three rate schedules available for the Cooperative's full demand and energy requirements. The three rate schedules currently in effect are Rate Schedule SECI-8, Rate Schedule INT-1 and Rate Schedule INT-2. Rate Schedule SECI-8 is applicable to serve the total firm demand and energy requirements at the Cooperative's delivery points. Rate Schedules INT-1 and INT-2 are available for interruptible electric service from Seminole to the Cooperative.

Seminole's current Rate Schedule SECI-8 reflects a basic rate design methodology that has been in place for many years. The wholesale rate schedule provides the following separate unit charges:

1. Production Demand Charge – expressed on a dollar per kW per month basis and applied to the Cooperative's metered kW at the time of Seminole's monthly system peak during eight peak months of the year (January through March, June through September and December)
2. Production Fixed Energy Charge – a fixed dollar per month charge
3. Transmission Demand Charge – expressed on a dollar per kW per month basis and applied to Cooperative's metered kW at the time of Seminole's monthly system peak for each month during the year
4. Non-fuel Energy Charge – a non-time differentiated rate expressed on a dollar per kWh basis
5. Fuel Rates – Effective January 1, 2009, Seminole implemented a time-of-use feature for the recovery of its fuel costs. Seminole now recovers its fuel costs through three fuel rates (i.e., Levelized Fuel Rate, On-Peak Fuel Rate and Off-Peak Fuel Rate). The time differentiated fuel rates (i.e., On-Peak and Off-Peak Fuel Rates) are developed each year based upon Seminole's incremental fuel price differentials between the on and off-peak periods. The designated on-peak periods are the same as those utilized in the time-of-use rates offered by Florida's investor owned utilities and approved by the Florida Public Service Commission. The Levelized Fuel Rate is a non-time differentiated rate and is equal to Seminole's estimated average costs of fuel for a designated period. Each of the

three fuel rates are initially billed based upon estimated costs and are subsequently tried-up for actual fuel costs every six months.

- a. On-Peak Fuel Rate - expressed on a dollar per kWh basis and applied to 5% of the kWh purchased by the Cooperative during the on-peak periods each month.
- b. Off-Peak Fuel Rate – expressed on a dollar per kWh basis and applied to 5% of the kWh purchased by the Cooperative during the off-peak periods each month.
- c. Levelized Fuel Rate –expressed on a dollar per kWh basis and applied to 95% of the kWh purchased by the Cooperative during all hours in each month.

As described above, Seminole's wholesale rate schedule, which applies to the Cooperative's purchases of firm service, contains Production and Transmission Demand charges that are based upon monthly coincident peak demands. Effective January 1, 2009, 5% of the Cooperative's kWh purchases reflect on and off peak fuel costs differences. The Cooperative may utilize these time differentiated prices contained in Seminole's demand and fuel charges to develop retail rates which track the Cooperative's cost of buying power from Seminole.

Seminole's Rate Schedules INT-1 and INT-2 provide an option for the Cooperative to provide interruptible service to specific end-use consumers on the Cooperative's system. Rate Schedule INT-1 is available to the Cooperative to provide interruptible service to end-use consumers that are supplied by Cooperative delivery points located within Progress Energy Florida's (PEF) transmission control area. Rate Schedule INT-2 is available to the Cooperative to provide interruptible service to end-use consumers that are supplied by Cooperative delivery points in all other areas other than within PEF's transmission control area. The rates, terms, and conditions set forth in both Rate Schedules INT-1 and INT-2 are based upon the interruptible wholesale service that Seminole purchases from PEF. PEF's interruptible wholesale service rates to Seminole are based upon PEF's retail rate schedules for interruptible service (i.e., Interruptible General Service and Interruptible General Service – Optional Time of Use). PEF's optional time of use schedule contains on and off peak demand charges and on and off peak energy charges.

PURPA Standard: Smart Grid Investments

EISA 2007 does not define the term "smart grid"; however, EISA 2007 contains a statement of United States policy on the modernization of the electricity grid which includes a list of ten technological options/functions which characterize a smart grid. Seminole is best situated to address three of those ten options as discussed below:

- (1) Deployment and integration of distributed resources and generation, including renewable resources.**

As described in the discussion regarding the Integrated Resource Planning standard above, Seminole and its Member systems have a joint distributed generation program. Under the distributed generation program, Seminole's Members may install (or partner with their retail customers to install) distributed peaking generation. These generators serve a dual need (1) to enhance reliability by providing back-up generation during transmission and/or distribution system outages, and (2) to offset and avoid a portion of Seminole's system generation requirements.

With respect to distributed renewable generation, Seminole and its Members have had for many years a standard interconnection program for consumer-owned small photovoltaic systems. Currently, Seminole's Members have approximately 50 such photovoltaic interconnections. In 2008, Seminole modified its full requirements wholesale power contract to provide for net metering for consumer-owned renewable resources.

(2) Development and incorporation of demand response, demand-side resources and energy-efficiency resources.

Also as discussed in the Integrated Resource Planning standard, above, under the Seminole coordinated load management program, Seminole's Members may install and operate direct control load management systems for the purpose of reducing coincident peak demand. Seminole coordinates with its Members to develop device control strategies in order to optimize the reduction in peak demands. The resulting reductions in Seminole's coincident peak demand lowers Seminole's requirements for system generating capacity (and associated reserves) and provides demand cost reductions to the participating Member Systems.

(3) Deployment and integration of advanced electricity storage and peak-shaving technologies, including plug-in electric and hybrid electric vehicles, and thermal-storage air conditioning.

In conjunction with Seminole's integrated resource planning approach, Seminole staff continues to pursue distributed generation and transmission technologies which may be cost effective or otherwise superior alternatives to conventional expansion. One such smart grid technology being evaluated by Seminole staff is bulk electric storage. Storage battery technology is available which shows increasing potential to allow peak shifting (on-peak to off-peak). Peak shifting via electric energy storage is an approach that may reduce energy costs, and reduce or defer generation and/or transmission/ distribution expansion, thereby reducing cost to consumers.

PURPA Standard - Smart Grid Information

This standard includes the requirement that electricity purchasers be provided with direct access to information concerning actual and projected time-based pricing and usage on not less than a daily basis either in writing or in electronic form. At present, a real-time wholesale power market does not exist within the Florida Reliability Coordinating Council (FRCC) region where Seminole's system resides. This means that there is not a real-time clearinghouse price for electricity which would be meaningful or reliable for handoff to retail consumers as an adjunct to real-time energy pricing programs. However, effective January 1, 2009, Seminole implemented time-of-use fuel rates for its Members which entails on and off-peak energy pricing at the wholesale level. The time differentiated energy prices may be utilized by Seminole's Members as the basis for offering time-of-use rates at the retail level.

The Smart Grid Information standard also includes a requirement that purchasers and other interested persons be provided annually with written information on the sources of the power provided by the utility, by type of generation, including greenhouse gas emissions associated with each type of generation. As the Member's full requirements power supplier, Seminole is best equipped to provide such information. Seminole commits that it will provide (via its website) annual information concerning its sources of power by type of generation and fuel. Seminole will also provide information on the greenhouse gas emissions from its electric generation system.

APPENDIX C

GDS Associates, Inc. Qualifications and Experience

STATEMENT OF QUALIFICATIONS

GDS Associates, Inc. is a multi-service consulting and engineering firm with extensive engineering, project management, and consulting experience. The firm was formed in 1986 and employs a staff of approximately 150 professionals and support personnel. GDS Associates' broad range of expertise focuses on clients associated with, or affected by, electric, gas, water and wastewater utilities. In addition, services regarding electric distribution and transmission design, information technology, market research, and statistical analyses are provided to a diverse client base. GDS Associates is headquartered in Marietta, Georgia, with offices in Austin, Texas; Auburn, Alabama; Manchester, New Hampshire; and Madison, Wisconsin, and serves clients throughout the United States.

J. Steven Shurbutt is a founding Principal of GDS Associates. As Vice-President for Distribution Services, Mr. Shurbutt oversees most of the financial services performed by GDS Associates on behalf of electric distribution utilities. During the past 35 years, he has conducted retail rate studies, cost allocation studies, financial forecasts, and other financial and rate design services for more than 150 electric utility clients. He has appeared as an expert witness before regulatory authorities in 12 states and has also been involved in technical analyses associated with wholesale rate cases before the Federal Energy Regulatory Commission. Mr. Shurbutt has participated in member/pooling rate studies and rate design on behalf of generation and transmission electric cooperative utilities. He has advised wholesale rate customers on issues regarding interpretation of wholesale rate provisions and price signals, and the incorporation of same into retail rates. His retail rate assignments have included developing innovative rates for various classes of utility service customers and numerous successful power supply contract negotiations with large industrial customers on behalf of utility clients. He assisted more than 20 electric utilities in Florida, Georgia, Texas, South Carolina and Virginia with evaluating the PURPA Standards set forth in the Energy Policy Act of 2005 ("EPAct 2005"). Mr. Shurbutt holds an MBA in Finance from Georgia State University and a Bachelor of Industrial Engineering from the Georgia Institute of Technology. He is a registered Professional Engineer and Senior Member of the Institute of Industrial Engineers.